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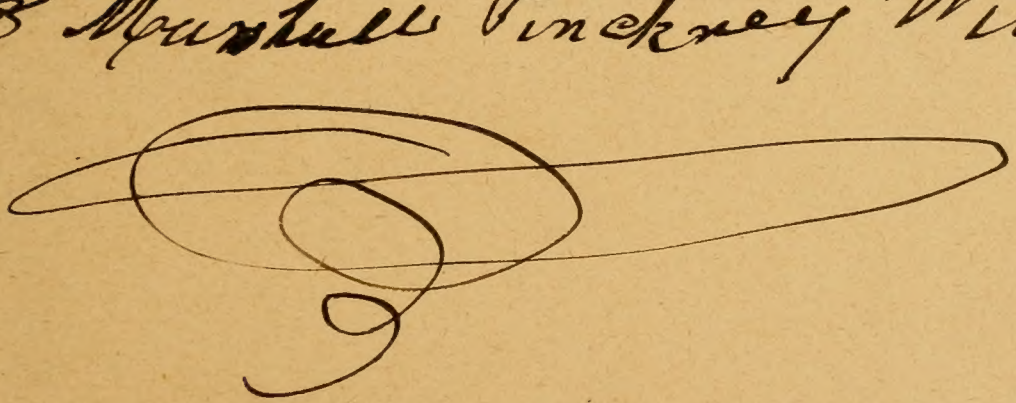
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THE

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IMPORTANT NOTICE.—Advertisers are cautioned against having Letters addressed to INITIALS, or to FICTITIOUS NAMES, at Post-offices, as Letters so addressed are not forwarded, but are sent at once to the Returned Letter Office.

ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.
GRAND ROSE EXHIBITION, by the National Rose Society, on TUESDAY, July 4. Band of the Royal Horse Guards, from 3 o'Clock. Admission from 1 o'Clock, 2s. 6d. Show Closes at 6 o'Clock.

ROYAL BOTANIC SOCIETY, Gardens, Regent's Park, W.
EXHIBITION of PLANTS, FLOWERS and FRUIT, on WEDNESDAY, July 5. Gates open at 2 o'Clock. The Bands of the 1st Life Guards and Royal Horse Guards will be in attendance. Tickets, to be obtained at the Gardens only by vouchers from Fellows of the Society, price 5s. each, or on the day of Exhibition 7s. 6d.

LUDLOW ROSE SHOW.—The ANNUAL EXHIBITION of ROSES will be held at the Assembly Rooms, Ludlow, on FRIDAY, July 7. Liberal Money Prizes to Amateurs, Nurserymen, and Cottagers. For Schedules, &c., apply to Rev. V. T. ORGILL, Hon. Sec., Ludlow.

BIRMINGHAM ROSE SHOW will be held at the Aston Lower Grounds, on THURSDAY and FRIDAY, July 13 and 14. Prizes amount to ONE HUNDRED and TWENTY-THREE POUNDS. Schedules forwarded on application to
Mr. W. T. SMEDLEY, Secretary.
57, Colmore Row, Birmingham.

THE WIRRAL ROSE SOCIETY (affiliated with the National Rose Society) will hold its next Exhibition in the Archery Ground, Birkenhead Park, on SATURDAY, July 15 next, when Prizes amounting to ONE HUNDRED and THIRTY-SEVEN POUNDS, together with Medals, &c., will be offered. The Judges in the Nurserymen's Classes will be the Revs. Canon Hole and H. H. D'Ombrain. Schedules may be obtained from the Hon. Secs.,
E. CLAXTON, The Rosery, Allerton, Liverpool; and
J. SMITH, Woodhey, Rock Ferry, Cheshire.

HORTICULTURAL SHOW at LUTON, in connection with the Bedforshire Agricultural Meeting at Luton, JULY 19. Most of the Prizes offered will be open to all England.
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Prizes for COLLECTIONS of FRUIT, &c.
For particulars, apply to Park Square, Luton. S. C. OLIVER, Hon. Sec.

THE ROYAL SOUTHAMPTON HORTICULTURAL SOCIETY.
GREAT SUMMER SHOW, SATURDAY and MONDAY, August 5 and 7. THREE HUNDRED and TWENTY POUNDS in Prizes for Flowers, Fruits, Vegetables, Honey, Hives, and Bee Appliances. Honey Fair, for the sale of Honey, &c. Entries close on July 29. A subscription of 5s., paid before July 8, clears all Entry Fees.
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JOSEPH MAUGHAN, Borough Surveyor,
Borough Surveyor's Office, Town Hall, Grimsby, June 20, 1882.

DARWIN MEMORIAL.

A COMMITTEE has been formed with the object of raising money to ERECT a STATUE to the Memory of CHARLES DARWIN, and to ESTABLISH a FUND associated with his name, which will be devoted to the furtherance of BIOLOGICAL SCIENCE.

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Lettuce Plants, All the Year Round, Drumhead and Giant White Cos.			

Special prices to large buyers, stating quantities required. F. GEE being determined not to be undersold. Genuine Bedfordshire grown Seeds and Plants for present Season of all kinds for the Garden or Farm, of best quality, at lowest prices.
CATALOGUES on application to
FREDERICK GEE, Seed and Plant Grower, &c., Biggleswade, Bedfordshire.

Primulas—Primulas—Primulas.
Thirteenth Year of Distribution.

WILLIAMS' superb strain, 1s. 6d. per doz., 10s per 100. CINERARIAS same price. Package and carriage free.
The above are quite equal to those I have sent out in previous years. Cash with order.
JOHN STEVENS, The Nurseries, Coventry.

MEIN'S No. 1 CABBAGE.—The earliest, the largest, the finest in existence. Should be grown by all Market Gardeners. A correspondent writes, under date June 12, 1882:—"I have cut Cabbages since April 20 from the Seed you sent me last year, and have an abundance of them left, averaging from 4 to 6 lb. in weight."
Price 1s. per ounce (post-free).
Special price per pound on application.

STUART AND MEIN, Kelso, N.B.

Best Time to Sow Now, for Early Flowering in Spring.

PANSIES.—Assortment of 18 splendid varieties, containing each one packet, 3s. 6d.; assortment of 12 fine varieties, containing each one packet, 1s 3d; splendid mixed per pound 36s., per ounce 3s. Carefully saved only from exhibition flowers, 1000 seeds 2s. 6d., per packet 6d. My collection of Pansies gained the 1st Prize at the Exhibition at Magdeburg Price LIST forwarded gratis and post-free on application.
FRED. ROEMER, Seed Grower, Quedlinburg, Germany.

6000 Grape Vines.

THE LIVERPOOL HORTICULTURAL COMPANY (JOHN COWAN), Limited, The Vineyard and Nurseries, Garston, near Liverpool, have a splendid stock of VINES, grown from eyes this year, suitable for present planting.
CATALOGUE free. The Trade supplied.
Also a large stock of TEA ROSES.

NOTE PRICES.—Strong good plants for present planting—Early CABBAGE, SAVOY, Green Curled and Variegated KALE, Brussels SPROUTS, COUVE TRONCHUDA, Red Pickling CABBAGE, Hardy Green and Rosette COLEWORT, 3s. 6d. per 1000, 60s. 20,000, very fine. Veitch's Autumn Giant, Walcheren, and Snow's Winter White CAULIFLOWER, 9d. per 100, 7s. per 1000, 30s. for 5000. Early, Medium, Late White, and Purple Sprouting BROCCOLI, 6d. per 100, 4s. 6d per 1000, £4 for 20,000. CELERY, White and Red, 7d. per 100, 5s. per 1000. Cash or banker's reference with order.—EDW. LEIGH, Wrotham Farm, Dunfold, Godalming.

CAULIFLOWER, BRUSSELS SPROUT PLANTS.
VEITCH'S AUTUMN GIANT, 3s. 6d. per 1000.
BRUSSELS SPROUTS, 3s per 1000.
Packages 3d per 1000 extra. Order of
R. BATH Crayford; or J. BATH, 34, Wellington Street, Covent Garden, W.C.

NEW ROSES of 1882, in pots.—Vendors' Selection, 30s. per dozen; Purchaser's, 36s. per dozen. The above comprise all the best English and French raised Hybrid Perpetuals, Perpetual Polyantha, Teas, Hybrid Teas, and Perpetual Moss.

ROSES of 1881, of above-named classes, 18s. to 24s per dozen, in pots.

CHOICE ROSES. — Tea-scented, Hybrid Tea, Noisette, China, and Bourbon, 18s. to 24s. per dozen, strong plants in pots
Descriptive LIST on application.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

CAULIFLOWER, BRUSSELS SPROUT PLANTS.
VEITCH'S AUTUMN GIANT, 3s. 6d. per 1000.
BRUSSELS SPROUTS, 3s. per 1000.
Packages 3d. per 1000 extra. Order of
R. BATH, Crayford; or J. BATH, 34, Wellington Street, Covent Garden, W.C.

NOTICE.

SELLING OFF OF NURSERY STOCK.

EWING & CO.,

EATON, near NORWICH.

Great Reduction in Price for Cash Payments, viz.,

15 per Cent. for Cash before delivery.
10 per Cent. for Cash within One Month of date of invoice.
5 per Cent. for Cash within Three Months of date of invoice.
After Three Months no discount can be allowed.

In addition to their immense Outdoor Stock of ROSES; FRUIT TREES, Bushes and Roots; ORNAMENTAL TREES and SHRUBS, they have ready for immediate Sale a very extensive Stock of New and Scarce ROSES in Pots; Tea and Noisette ROSES in Pots; CLEMATISES of best Old and New Varieties, in Pots; Variegated and Choice Green-leaved IVIES, in Pots; AMPELOPSIS VEITCHII, and many other Hardy CLIMBING and CREEPING PLANTS, in Pots, &c.

N.B. Cut Roses, &c., can be supplied at cheap rates, carefully packed for travelling long distances.

A slight extra charge must in most cases be made for packing. Where cash in payment of goods is sent *with the order*, the amount for *package* may be forwarded in stamps *after* despatch of goods.

N.B. Post-office Orders should be made payable to EWING AND CO., at Eaton, near Norwich. Cheques crossed GURNEY AND CO., Norwich.

Trade Terms on application.

Novelty.
GRAND NEW BEDDING PLANT.

LOBELIA ANDREW HOLMES.—First-class Certificate, Leeds Horticultural Society. Unsolicited Testimonial enclosed with remittance :—

"*The Grove, Catton, near Norwich, June 7, 1882.*

"MR. GEORGE HOLMES.—I am obliged by your promptness, and regarding the Lobelia I am most agreeably surprised and pleased. To my thinking it is the most beautiful variety I have ever seen. I shall keep them for stock, and if unsuccessful in doing so, I must apply again to you, as I should like to bed-out another year with it.—Yours, T. J. C. R."

Price 1*s.* each; 9*s.* per dozen; 60*s.* per 100. The usual discount to the Trade.

GEORGE HOLMES, Florist, York.

EIGHTY THOUSAND CLEMATIS, in Pots, of all the finest double and single varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12*s.* to 24*s.* per dozen, strong plants.

Descriptive LIST on application.

RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Tuberous Begonias.

JOHN LAING AND CO.'S Gold Medal Collection is unrivalled. They have now in cultivation 100,000 Begonias, which present to the public an unprecedented floral display of single and double flowers. A visit is solicited (Catford Bridge Station, South-Eastern Railway).

Prices, 12*s.* to 60*s.* per dozen.

CATALOGUES on application. Address

JOHN LAING AND CO., Forest Hill, S.E.

Bulbs!—Bulbs!—Bulbs!

To SUPPLY the TRADE.

SEGERS AND CO., BULB GROWERS, Lisse, near Haarlem, Holland, beg to announce that their crop of TULIPS, which they have harvested, are good samples.

CATALOGUES may be had on application. No Auction Sales or Retail Trade supplied, but the Wholesale only.

☞ Please observe name and address.

East Lothian Intermediate Stocks.

THOMAS METHVEN AND SONS beg to offer their choice strain of the above, in three colours, viz, Scarlet, Purple and White, at 1*s.*, 2*s.* 6*d.* and 5*s.* each colour. 15, Princes Street, Edinburgh.

Exhibition Plants.

W. G. CALDWELL AND SONS have the following selected SPECIMEN PLANTS to offer, many of which are well known at Liverpool, Manchester, and other large Shows, having taken many First Prizes. All are in excellent condition, and fit for competition this season :—

ERICA CAVENDISHII, 5 feet by 5 feet through, splendid specimens, well set with bloom.

ERICA TRICOLOR SPECIOSA, 4 feet by 4 feet through, well set with bloom; many other varieties of Ericas in all sizes.

ALLAMANDAS, APHELEXIS, BOUGAINVILLEAS, CLERODENDRONS, COCOS, CROTONS, CYCAS, GLEICHENIAS, LATANIAS, RONDELETIAS, SEAFORTHIAS, STEPHANOTIS, SWAINSONIAS, VINCAS, &c.

Prices, names, and sizes on application.

The Nurseries, Knutsford.

To the Trade.

PALMS—PALMS—PALMS.—The following can be supplied in good healthy stuff in 60-sized pots, fit to shift into 48's at once :—

LATANIA BARBONICA (extra strong, just about characterising), 40*s.* per 100, 6*s.* per dozen.
,, ,, second size, 28*s* per 100, 4*s.* per dozen.
PHŒNIX DACTYLIFERA, 25*s.* per 100, 3*s.* 6*d.* per dozen.
,, ,, CANARIENSIS, 30*s.* per 100, 4*s.* per dozen.
,, ,, RECLINATA, 30*s.* per 100, 5*s.* per dozen.
CHAMÆROPS HUMILIS, 28*s.* per 100, 4*s.* per doz.
ARECA VERSCHAFFELTI, very strong, 140*s.* per 100, 18*s.* per dozen.
COCOS WEDDELLIANA (just characterising), 100*s.* per 100, 15*s.* per dozen.
EUTERPE EDULIS, 55*s.* per 100, 7*s.* 6*d.* per dozen.

WILLIAM M. CROWE, Boleyn Nursery, Upton, Essex.

CHOICE BRITISH and HARDY EXOTIC FERNS.—Forty distinct kinds, 20*s.*; twenty varieties, 10*s.*; all strong plants. Names on application.

HUSSEY AND SON, Mile End Nursery, Norwich.

SMITH'S SEEDS OF FLORISTS' FLOWERS,

From Noted and Magnificent Strains,

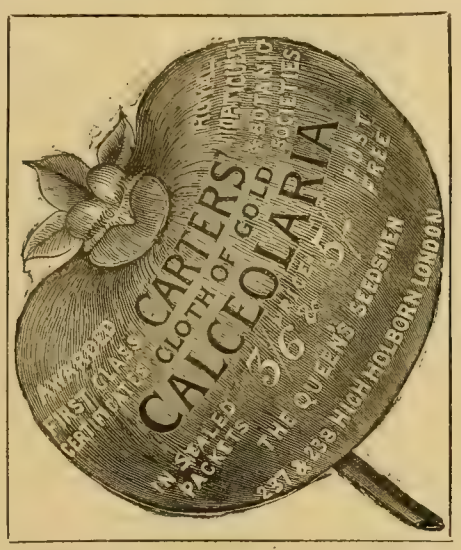
Which can be recommended with the greatest confidence.

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RICHARD SMITH & CO.,

SEED MERCHANTS AND NURSERYMEN,

WORCESTER



GARDEN REQUISITES.

COCOA-NUT FIBRE REFUSE.

4*d.* per bushel; 100 for 25*s.*; truck (loose, about 2 tons), 40*s.*; 4-bushel bags, 4*d.* each.

LIGHT BROWN FIBROUS PEAT, 5*s.* 6*d.* per sack; 5 sacks, 25*s.*; sacks, 4*d.* each.

BLACK FIBROUS PEAT, 5*s.* per sack, 5 sacks 22*s.*; sacks, 4*d.* each.

COARSE SILVER SAND, 1*s.* 9*d.* per bushel; 15*s.* per half ton, 26*s.* per ton; in 2 bushel bags, 4*d.* each.

YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1*s.* per bushel.

SPHAGNUM MOSS, 8*s.* 6*d.* per sack.

Manures, Garden Sticks, Virgin Cork, Tobacco Cloth, Russia Mats, &c. Write for Free PRICE LIST.

H. G. SMYTH,

17A, Coal Yard, Drury Lane (late of Castle St., Long Acre), W.C.

COCOA-NUT FIBRE REFUSE, by Chubb's Patent Process, as supplied to all the Royal Gardens and principal Nurseries of Europe; useful at all seasons. Invaluable for Potting, Plunging, Forcing, Ferneries, Strawberries, Bedding-out Plants, &c.; Destroys all Slugs and Insects.

JULY 1, 1882.—In consequence of the great scarcity of husks and enormous Continental demand for our "Refuse," we are compelled from this date to advance prices as follows, and only Orders accompanied by remittance will receive attention (in rotation). We also find it necessary to caution purchasers to beware of spurious imitations and buy the genuine "Refuse" direct. Sacks, 1*s.* 6*d.* each; 10 Sacks, 13*s.*; 15 Sacks, 18*s.*; 20 Sacks, 23*s.*; 30 Sacks, 30*s.* (all Sacks included); Truck-load, free on rail, £2. Limited quantities of P.M. *Special Quality*, granulated, in sacks only, 2*s.* 6*d.* each (2 prize medals), valuable for potting and use in conservatory. Terms strictly cash with order.—To obtain the genuine article, buy direct from the Manufacturers, CHUBB, ROUND AND CO., Fibre Works, West Ferry Road, Millwall, London, E.

COCOA-NUT FIBRE REFUSE, best and pure only, 4 bushel bag, 1*s.* 4*d.*; 15 bags, 14*s.*; 30 bags, 25*s.*; sent to all parts. Truckloads 33*s.*, free to rail.

A. FOULON, 32, St. Mary Axe, London, E.C.

COCOA-NUT FIBRE REFUSE, as supplied to the Royal Horticultural Society, the best newly made, £1 10*s.* per truckload of about 2 tons; 4-bushel bags, 1*s.*; 30 bags of newly-made, £1 5*s.*, bags included; all free on to rail. A remittance to accompany all orders.—Established 1873.—J. STEVENS AND CO., Greyhound Yard, and 132, High Street, Battersea, S.W.

12-oz. Sample Packets, free by post, 12 stamps.

FIBROUS PEAT for ORCHIDS, &c.—BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6*s.* per truck. BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, 15*s.* per ton per truck. Sample bag, 5*s.*; 5 bags, 22*s.* 6*d.*; 10 bags, 45*s.* Bags included. Fresh SPHAGNUM, 10*s.* 6*d.* per bag.

SILVER SAND, Coarse or Fine, 52*s.* per truck of 4 tons. Red Sandstone ROCKWORK, £5 per truck of 4 tons. GRAVEL, good colour, 25*s.* per truck of 6 tons.

WALKER AND CO., Farnborough Station, Hants.

LOAM, splendid Yellow Fibrous, 15*s.* 6*d.* per ton. Good useful brown PEAT, 22*s.* 6*d.* per ton, free to Bricklayers' Arms, S. E. R. Truckloads only, or 2 tons of each in one truck.—A. FOULON, 32, St. Mary Axe, E.C.

DENYN'S Unrivalled ROLL PAPER and CLOTH, as supplied to over 3000 Nurseries, 14 lb., 9*s.*; 28 lb., 18*s.*; cwt., 70*s.*—J. DENYN, Manufacturer, 73, Rendlesham Road, Clapton, London, E.

Thomson's Vine and Plant Manure.

Manufactured and Sold by

THE LIVERPOOL HORTICULTURAL COMPANY

(JOHN COWAN), LIMITED.

This is the Manure used to produce the splendid Grapes grown at the Tweed Vineyard, Clovenfords.

Full particulars on application. The Trade supplied.

All Letters to be addressed to THE MANAGER, The Vineyard and Nursery, Garston, near Liverpool.

Weeds!—Weeds!—Weeds!—Great success of SMITH'S Celebrated WEED KILLER, the best preparation ever invented for destroying weeds on garden walks and carriage drives. Splendid testimonials.

4 gallons, sufficient to make 100 gallons when mixed with cold water, 7*s.* 6*d.*
16 gallons, do. do. do. do. 400 gallons, £1 8*s.*
40 gallons, do. do. do. do. 1000 gallons, £3.

Sent carriage paid. Manufactured only by

MARK SMITH, Chemist, Louth, Lincolnshire.

Weeds almost cease to grow where this article has been used two seasons.

GISHURST COMPOUND.—Used by many of the leading Gardeners, since 1859, against Red-spider, Mildew, Thrips, Greenfly, and other Blight, in solutions of from 1 to 2 oz. to the gallon of soft water, and of from 4 to 16 oz. as a winter dressing for Vines and Fruit Trees. Has outlived many preparations intended to supersede it. In Boxes, 1*s.*, 3*s.*, & 10*s.* 6*d.*

AMERICAN BLIGHT on APPLE TREES CURED by rubbing a wet hard Painter's brush on Gishurst Compound, and working the lather into the infected part.

GISHURSTINE keeps feet dry, softens hard boots, preserves leather, takes a polish. In boxes, 6*d.* and 1*s.* each.—Wholesale by PRICE'S PATENT CANDLE COMPANY (Limited). Retail by Seedsmen and Oilmen. Complaints are made of difficulty in getting Gishurstine. Some leading Nurserymen have put it on their lists, others are requested to do so.

VIRGIN CORKWOOD, for Ferneries, Rockeries, and Ornamental Work in Gardens, supplied at wholesale rates to Nurserymen and Seedsmen by

WM. RANKIN AND SONS, 10, Carlton Place, Glasgow, and Lisbon, Portugal.

Shipments direct from Lisbon at special quotations.

ARCHANGEL and PETERSBURG MAT MERCHANTS and IMPORTERS.—All the usual kinds at reduced rates. Sacks and Seed Bags, new and second-hand, of every description. Raffia Fibre, Netting and Tiffany, Tarpaulins, Rick-covers, Horse-cloths, Ropes, Lines, and Twines. Price LIST on application to J. BLACKBURN AND SONS, 4 and 5, Wormwood Street, London, E.C.

PROTECTION for Flowers, Fruit Trees, and Plants.—TIFFANY. 20 yds. in each piece, 3*s.* 6*d.*, 4*s.* 6*d.*, to 12*s.* SCRIM for shading, 36 in., 2½*d.*, 3*d.*, 3½*d.*, 4½*d.*, 5½*d.*, and 6*d.* per yd.; 54 in., 4*d.*, 4½*d.*, 5*d.*, 5½*d.*, 6*d.*, and 7*d* per yd.; 72 in., 6*d.*, 7*d*, 8*d.*, 9*d.*, 10½*d.*, and 1*s.* per yd. NETTING, 1 yd. to 4 yds. wide; any length cut.

J. BLACKBURN AND SONS, Russian Mat Warehouse, Wormwood Street, London, E.C.

ARCHANGEL and ST. PETERSBURG MATS, RAFFIA, SEED BAGS and SACKS NETTING and SHADING, &c. Prices on application.

MARQUEES and TENTS, SECOND-HAND GOVERNMENT TENTS, 45 feet round, complete, 35*s.*, suitable for the Garden, Cricket Clubs, &c.

W. PETERS, 44, Tenter Street South, Goodman's Fields, E.

Raffia—Raffia—Raffia.

C. E. OSMAN, 14, Windsor Street, Bishopsgate, London, E.C., has just received a consignment of fine quality. Price very moderate.

All HORTICULTURAL SUNDRIES at low prices.

NEW ARCHANGEL MATS.

HURST & SON

Have just received a consignment of the above in splendid condition. Special low quotations can be had on application.

152, HOUNDSDITCH, LONDON, E.

RICK CLOTHS—RICK CLOTHS.

The best and most durable are those made from extra all long Flax Sail Cloth. A quantity in stock, for sale or hire.

SHADING CANVAS, from 2½*d.* per yard, and upwards.

TANNED NETTING, from 1 to 4 yards wide, 1*d.* per sq yard.

RUSSIA MATS. RAFFIA FIBRE.

BEST ROLL TOBACCO PAPER.

JAMES T. ANDERSON,

149, Commercial Street, Shoreditch, London, E.

NETTING for FRUIT TREES, SEED BEDS, RIPE STRAWBERRIES, &c.

TANNED NETTING for protecting the above from Frost, Blight, Birds, &c., 2 yards wide, 3*d.* per yard, or 100 yards 20*s.*; 4 yards wide, 6*d.* per yard, or 50 yards 20*s.*

NEW TANNED NETTING, suited for any of the above purposes, or as a Fence for Fowls, 2 yards wide, 6*d.* per yard; 4 yards wide, 1*s.* per yard; ¾-inch mesh, 4 yards wide, 1*s.* 6*d.* per yard.

TIFFANY, 6*s.* 6*d.* and 7*s.* 6*d.* per piece of 20 yards.

EATON AND DELLER, 6 and 7, Crooked Lane, London Bridge.

CRANSTON'S NURSERY and SEED CO.'S SPRING CATALOGUE

(Free on application) contains a List of all the

NEW FRENCH and ENGLISH ROSES,

TEA-SCENTED and NOISETTE ROSES

In great variety, now ready for planting out

STANDARD TEA-SCENTED and NOISETTE ROSES,

Established in Pots;

HYBRID PERPETUAL ROSES

For Greenhouse Culture;

BEDDING and HERBACEOUS PLANTS

Of all the Leading Varieties;

CLEMATIS, DAHLIAS, &c.

KING'S ACRE, near Hereford.– May, 1882.

DANIELS' CHOICE SEEDS,

FOR PRESENT SOWING.



Post or Carriage Free at Prices Quoted.

	Per oz.
DANIELS' DEFIANCE CABBAGE.—The most magnificent variety ever sent out, weight 12 lb. to 15 lb., remarkably early, short-legged, and compact, and of the most delicious Marrow flavour. Should be in every garden. .. .. .. Per packet 1s. 6d.	s. d. 3 6
From Rev. E. P. CAMBRIDGE, *Warmwell Rectory, July 21.*—"Daniels' Defiance Cabbage has turned out the finest and most delicate flavoured I have ever eaten."	
ONION—Daniel's Golden Rocca, magnificent variety, equal to the finest imported onions, per pkt. 1s. 6d. ..	
,, Daniels' Giant Rocca (true), splendid variety, frequently weighing 2 to 3 lb. each	1 0
,, Large Red Tripoli	1 0
,, ,, White	0 8
,, White Lisbon	0 6
,, ,, Spanish	0 6
,, New Queen	1 4
LETTUCE—Black-seed Bath Cos	1 0
,, Wheeler's Tom Thumb	1 6
,, Hardy Hammersmith	1 0
PARSLEY—Daniels' Queen .. .. Per packet, 1s. ..	
TURNIP—Daniels' Improved Snowball	0 6

Special quotations for larger quantities on application.

DANIELS BROS.,
Royal Norfolk Seed Establishment, Norwich.

GRASS SEEDS

FOR LAWNS,

Of the finest close-growing Evergreen kinds, 1s. per lb. Special preparations for all purposes, soils, and situations. Advice gratis.

Unsolicited Testimonials:—

"Knowing how difficult it is to obtain pure stocks of grass seeds, even when price is a secondary consideration, I write to say the supply I obtained from you for our new terrace lawns has given the greatest satisfaction."

"Please send me three bushels of the very best Lawn Grass Seeds, suitable for an exceedingly hot upland soil. . . . The seed I have had of you has been the only kind which has been able to resist the influence of the sun and drought upon my thin, gravelly soil."

FARM SEEDS

Of all kinds, which have given unqualified satisfaction. See Illustrated and Descriptive LIST, free on application.

UNSURPASSED FLOWER and VEGETABLE SEEDS. LIST Free by Post.

RICHARD SMITH & CO.,
SEED MERCHANTS and NURSERYMEN,
WORCESTER.
(ESTABLISHED 1804.)

EXHIBITION OF ORCHIDS.

B. S. WILLIAMS

Begs to announce that his Exhibition of Orchids, as previously announced, is still on view.

Patrons of Horticulture are especially invited to inspect this Exhibition.

The Exhibition contains large and small specimens of ODONTOGLOSSUMS, CATTLEYAS, LÆLIAS, ONCIDIUMS, CYPRIPEDIUMS, MASDEVALLIAS, VANDAS, AERIDES, ANGULOAS, and other rare and showy ORCHIDS.

AN EARLY INSPECTION IS RESPECTFULLY INVITED.

VICTORIA AND PARADISE NURSERIES,
UPPER HOLLOWAY, LONDON, N.

EXHIBITION OF BEGONIAS.

JOHN LAING & CO.'S

Unrivalled Gold Medal Collection is now in great beauty. It contains all the finest varieties in cultivation, both Double and Single, as well as innumerable Seedlings of great merit. The new show-house is 100 feet by 20 feet, and presents the finest mass of bloom ever seen.

ACRES OF THE FINEST ROSES

are also in bloom. Trees can now be selected for autumn removal.

☞ *Trains from Charing Cross or Cannon Street (S.E.R.) to Catford Bridge, which is six minutes' walk from the Nursery, or from Victoria to Forest Hill Station, which is one mile distant, where conveyances are always in waiting.*

STANSTEAD PARK, FOREST HILL, S.E.

PAUL & SON,

THE "OLD" NURSERIES, CHESHUNT,

Respectfully announce as ready for delivery the NEW CHESHUNT-RAISED ROSES.

H.P. WHITE BARONESS, a pure white, thoroughly double sport of the Baroness Rothschild.

H.P. PAUL'S SINGLE CRIMSON, a vivid almost scarlet seedling from Duke of Edinburgh.

Strong plants in pots, 5s. each.

The CHESHUNT SEEDLINGS, it may be noted, have always proved grand Roses when grown elsewhere.

NEW FRENCH ROSES, including the splendid Light Roses H.P. Helen Paul, Violet Bouyer, and others. The best lot for many years. 3s. 6d. each, 36s. per dozen.

New Single Roses, Miniature Roses, Old-fashioned Striped Roses, in pots, 1s. 6d. to 3s. 6d. each.

The Finest Lot of Extra Sized Roses in pots ever held by the Firm, 30s. to 72s. per dozen.

The New and other Roses are now coming finely into flower. An inspection respectfully invited.

PAUL & SON, The "Old" Nurseries, CHESHUNT.
One Mile from Cheshunt Station on Great Eastern Railway.

IMPORTED ORCHIDS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, July 5, at half-past 12 o'Clock precisely, by order of Messrs. SHUTTLEWORTH, CARDER & Co., a large Importation of ODONTOGLOSSUM CRISPUM (ALEXANDRÆ), CATTLEYA TRIANÆ var., in splendid condition, and extra fine masses; ODONTOGLOSSUM PESCATOREI, MASDEVALLIA CHIMÆRA, M. TROCHILUS, M. SHUTTLEWORTHI, ANGULOA RUCKERI—all semi-established, and CYPRIPEDIUM SCHILIMII, ALBUM, &c.

On view morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

SPECIAL OFFER OF ORCHIDS

The following beautiful and rare Orchids are offered at low prices, and will be found to be nice-sized, healthy plants; they have not yet been flowered, and probably contain many rare varieties in value quite out of proportion to prices at which they are quoted. They are offered by the importer to make room for fresh importations constantly arriving.

	Each.—s.	d.
Aërides affine 5s. and	7	6
,, Fieldingi 7s. 6d &	10	6
,, Lobbi 5s. and	7	6
,, japonicum .	3	6
,, maculosum ..	5	0
Angræcum citratum 5s. &	7	6
Calanthe Sieboldi 5s. and	7	6
,, sylvatica	5	0
,, Veitchii	3	6
,, vestita	2	6
Cattleya Acklandiæ ..	5	0
,, amethystina ..	5	0
,, aurea	21	0
,, citrina	3	6
,, dolosa 5s, 7s 6d, &	12	0
,, gigas 10s. and	15	0
,, Luddemanniana ..	5	0
,, marginata ..	5	0
,, Mossiæ 3s. 6d. and	5	0
,, Trianæ 5s. and	10	6
Chysis aurea	5	0
,, lævis	5	0
Cœlogyne corrugata ..	5	0
,, cristata 3s. 6d. and	5	0
Cymbidium eburneum 5s &	7	6
Cypripedium barbatum	3	6
,, Hookeri 3s. 6d. &	5	0
,, Lawrenceanum ..	10	6
,, niveum 3s. 6d. and	5	0
,, venustum	3	6
Epidendrum vitellinum	3	6
Dendrobium bigibbum	7	6
,, chrysanthum ..	3	6
,, crassinode 7s 6d &	10	6
,, formosum giganteum, fine imported plants 3s. 6d. and	7	6

	Each.—s.	d.
Dendrobium chrysotoxum	3	6
,, Freemanni ..	5	0
,, heterocarpum 3s. 6d. and	5	0
,, Wardianum ..	10	6
Grammatophyllum Ellisi	15	0
Lælia albida and anceps 3s. 6d. and	5	0
,, autumnalis ..	5	0
,, Dayana	5	0
,, majalis	3	6
Masdevallia amabilis 5s &	7	6
,, Harryana 5s. and	7	6
,, ignea	5	0
,, maculatum ..	3	6
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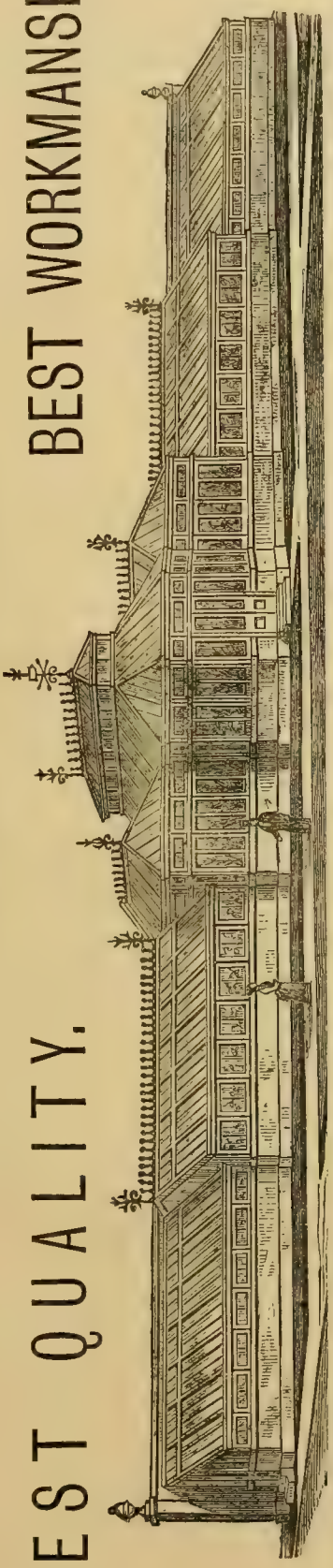
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THE

Gardeners' Chronicle.

SATURDAY, JULY 1, 1882.

ROUND ABOUT WEYBRIDGE.

THE residence of Admiral the Hon. F. Egerton at St. George's Hill is one of the most delightful of the many houses built in Surrey during the present generation. As a rule, the site of a new house requires some time to mature, for years alone can impart the mellowness of age. There are exceptions, no doubt, to this general rule. A grey house built of sandstone may not be so long in mellowing as one of very red and staring bricks, and an unlevel site very greatly assists the mellowing influence of the gardens. Sir William Armstrong built a house in a rocky glen at Rothbury and named it, most appropriately, Cragside, and you would hardly imagine that the house and shrubberies were the growth of a few years only. On a flat site the same appearance of maturity could not have been produced without a park and timber requiring a hundred years to form. As a general rule wine and houses both need time, and neither cellars nor sites should be recent.

The name of St. George's Hill has a residential sound about it. One can hardly imagine such a hill within 20 miles of St. Paul's, and in Surrey, too, clipped about by the Thames and Mole and Wey, with a railway to town, without a house upon it. Almost every hill in Surrey is crowned by an edifice. Leith Hill has its tower where old Mr. Hull lies buried on his head, "they say," ready for the righting of a topsy-turvy world. Boxhill has its cottage, Denbies its palatial pile, St. Martha and St. Catherine's their chapels, and Sydenham —or Norwood to be more correct—its Crystal Palace. Even Newland's Corner, on the North Downs, has its sign-post. But St. George's Hill had no crown beyond the remains of a Roman camp near the top, till Admiral Egerton capped the summit with a Swiss cottage, and built his own house on a lower slope. Why the hill remained for a long time houseless is easily ascertained from the history of Surrey. At first sight it seems strange, as already said, that a spot so desirable should have so long remained a solitude. The whole of Surrey is seen from its summit, the Thames from Windsor to London, the chalk hills of the Surrey backbone as far as Farnham, and the sandy heights of Blackdown and Hindhead beyond, with the heaths and Fir woods of Woking and Bagshot, and the barren wastes of Chobham. One could hardly mention, within reasonable limits, the domestic features of the nearer landscape. The building of great houses begins here at the earliest period. Esher Place, the modern house of Mr. Money Wigram, was preceded by the historic palace of the Bishops of Winchester, which Wolsey rebuilt, and which Horace Walpole preferred when adorned and altered by Mr. Pelham and the landscape gardener Kent, to all other villas, not omitting Mr. Southcote's Woburn Farm. Mr. Southcote was the inventor of the *ferme ornée*, and laid out elaborate gardens and an ornamental farm, much praised by the poets of the last century, a mile south of

Chertsey—St. Anne's Hill, with the house of Charles James Fox, being a mile west of that town. Woburn Farm, known at the present time as a park, the property of the Hon. and Rev. W. J. Petre, has now become a Roman Catholic college. In the same village of Addlestone is the Crouch Oak, which once marked the boundary of Windsor Forest, which may here be mentioned in connection with the numberless residences of the district, because it stands in the private grounds of a villa; and, as an example of other kinds of houses, here most happily situated, it is right to notice that in pretty Addlestone will be found the cottages for 200 children, known as the Princess Mary's Village Homes.

Esher, which Henry VIII. had annexed to the chase of Hampton Court, and of which Pope sang in sententious rather than harmonious verse—

"Esher's peaceful grove,
Where Kent and Nature vie for Pelham's love,"

is noted for some fine old timber, for a Holly 9 feet in girth, and for a votive urn among the woods with an inscription to Mr. Pelham. The adjoining royal residence of Claremont belonged to Thomas Pelham, brother of the above, and whose title of Earl of Clare (followed by the higher title of Duke of Newcastle) obtained for it the name of Clare Mont. After the Duke's death in 1769, £100,000 were spent upon a new residence by Lord Clive, the founder of the Indian Empire, whose house and grounds were built and modelled by the noted "Capability" Brown, gardener to George III., at whose death the grateful king exclaimed, "Brown's dead! we may do as we like now!"

The other houses near Esher, such as Moore Place and Melbourne Lodge, need not be noticed, nor the villas of Surbiton, which have risen beside the Thames in our time. Hampton Court across the river, seems from the top of St. George's Hill to form part of its delightful precincts, and Richmond Park, on this side the silvery, wooded stream, seems to be within easy reach. And, although we must omit all details, an interesting story might be told of Ham House, hard by Richmond Park, the seat of the Earl of Dysart, a Jacobean house—not the Ham House which stood at the junction of the Thames and Wey, which James II. built for Catherine Sedley, but a home of famous Elms and Fir trees, where the friend of Jeanie Deans, the second Duke of Argyll, was born, in 1678, and where the Cedar of Lebanon, of which he was one of the earliest growers, found an early home in England, spreading thence along the Thames' side, where many of the oldest specimens of that tree are found.

Another residence in Weybridge, beneath St. George's Hill, is Waverley Cottage, with the Roman Catholic chapel in the grounds containing the tomb of Louis Philippe and his family. We now arrive at Burwood, the residence of the Earl of Ellesmere, father of the present owner of St. George's Hill, and at Oatlands, the last residence to be here named, though scores remain which might well claim notice. Oatlands was originally a royal residence, being, like Nonsuch at Ewell, one of the several houses built by Henry VIII. It was a stately palace with a noble park, and as St. George's Hill, rising immediately behind on its west side, was included in the estate, it remained till the division of the property one of the few non-residential hills in this part of Surrey. Happily for St. George's Hill it ceased to form part of a great estate, and then it was that the Earl of Ellesmere planted the Pinetum, and prepared the place for residence.

The present estate consists of 1500 acres, one half of which area is in Fir plantations, full of pheasants. In climbing the hill, which is frequently the scene of picnics of school children and numerous other gatherings which neither the owner nor his pheasants object to, you pass first through a forest of Scotch Fir, rivalling those of Strathspey, and then you reach the sheltered Pinetum, where some specimens of Conifers were planted at a very early date which flourish untouched by wind or frost, though some of them are of tender sorts, such as Cryptomeria japonica and Pinus insignis. There is a tree of the former kind 67 feet high, an insignis 43 feet high and rather more than 6 feet girth at 5 feet above the ground, and a Taxodium sempervirens 75 feet high. There are noble Araucarias, and numerous Spruces, from the Hemlock to the Douglas, and, in short, a very fine collection of exotic Conifers. Rhododendrons blush throughout the hill, and the Whortleberry forms a green carpet in many places, which will indicate to those who know the habit of this pretty little dwarf shrub that the sandy soil is not compact, as at St. Martha's Hill, which does not produce the Whortleberry, but loose, or rubbly, as at Leith Hill, Deepdene, or the Hurstwood, *i.e.*, Whortleberry wood.

One of the most curious trees on the hill, which, for its novel appearance, one would be most anxious to possess, is that which Mr. Jacob Rose, the able gardener and bailiff at St. George's Hill, called a "Russian variety of branching Oak, all heart, and the timber everlasting." The Mountain Ash, the Birch, some patches of Oak scrub, and many Hawthorn bushes, are among the native trees and shrubs, which are met with in all directions. Some of the fine old Thorns are grieving their owner by their moss-grown stems, and the signs and symptoms of decay that begin to affect them. The Hawthorn grows alike on Surrey sands and Essex clays, but a rather poor sand, such as the Conifers affect, does not please it best, nor can it anywhere avoid the sere and yellow leaf of age. There is nothing else amiss with any of the Thorns we saw.

The house at St. George's Hill is a very good one, in the midst of a capital garden, with numerous shrubs and a delightful lawn. The variety of shrubs is very great, and an observant visitor will at once perceive that no pains have been spared in obtaining the sorts suitable to the soil. The Cypresses, Junipers, and Hollies are very numerous and attractive. Mr. Rose prefers the Golden Queen Holly; a weeping green specimen is also worthy of being placed in our list. The Cupressus argentea is one of the best, and measures 8 feet through. The C. Lawsoniana erecta viridis measures 20 feet high and 14 and 16 feet through, and C. gracilis as much. The rarest Retinosporas are here; the Golden Yews are coming on, and in a few years will spread their fine foliage wide. The Thuyopsis borealis grows 20 feet high and 14 feet through. The Thuyas are good. T. gigantea and T. Lobbi, T. Vervaeneana, T. pendula, T. Wareana, and others of the rarest species, also attain here their full proportions, several of them reaching 30 feet in height. The Elms and Acers are excellent, especially the variegated and weeping Elm, and the twisted Exeter variety. Mr. Rose praises the Cornus variegata for its compact form and dense foliage. He also pointed out his double white Cherries, and the Ailantus, or Tree of the Gods, more than 30 feet high, and to his Weeping Birches and Laburnums, especially the late sort called pendula. Other specimens in this excellent garden are Magnolia conspicua, and several other Magnolias, several sorts of Mespilus, and many kinds of Thorn. The flower borders on the lawn are not too numerous, and do not depend on the short display of summer bedding plants. They are all prettily edged with Euonymus alba variegatus, 9 inches high and about the same in thickness. Many sorts of Clematis are grown here in narrow beds 20 feet long, and edged with the Euonymus, and they are literally covered with flowers. Several more columns might be filled with the names of other shrubs and with other details. Let us conclude by mentioning the good old flowers known to our predecessors, of the hardy herbaceous kinds, which are held in great esteem here, and the curious edgings of the kitchen garden, which are all of Oak instead of Box, the seeds having been sown thirteen years ago. They are about 9 inches high by 6 inches through, and are more open than Box, and less convenient for slugs. Finally, the screen hedges are all of Thuya Lobbi, 8 feet high and 2 feet through. *H. E.*

CONSERVATORY DECORATION.

It has often occurred to me that this part of a gardener's duties is frequently overdone during the summer months with a preponderance of flower, and that not always of the choicest kind. In order to give a change in the arrangement from the plan followed in the winter months, our practice of late years has been to make use of more plants of graceful and ornamental foliage than hitherto. This gives, we think, a coolness and refreshing appearance to the surroundings during the months when there is an abundance of flower outside in borders, beds, and shrubberies. Coming from the open air, and the gay colours abounding in the flower-garden, into a conservatory toned down with foliage, and having climbers rambling at their own sweet will, will give a quiet to the eye, and a pleasing change in the use of plants that give a tropical appearance, many of which cannot be used during the winter time for these purposes.

We have just completed a grouping in our conservatory here on a border of about five times the length of its width. For this we used as the most prominent plants, such as the green-leaved Dracænas and Cordylines, tall graceful plants of Chamædorea glaucifolia, and other Palms, such as Seaforthia elegans, Areca rubra, and Phœnix reclinata, with here and there some tall plants of a green-leaved Grass (a species of Panicum) with elegant foliage. As an undergrowth we used Curculigo recurvata, the Sedges Cyperus laxus and alternifolius, with several kinds of Ferns of the more hardy kinds, such as Pteris albo-lineata, argyræa, serrulata, and umbrosa; Aspleniums also, and Onychium japonicum (a useful Fern), Adiantum pubescens, and other hardy Maidenhairs as well, and the ever useful Aspidistra lurida variegata.

Besides these many other plants could be used for an arrangement of this kind. Of Palms Euterpe edulis and the Kentias, with the even hardier sorts of Chamærops, Corypha, and Livistona. Of plants with variegated foliage selections can be had from such as Eurya japonica, Eulalia japonica variegata, Ophiopogon jaburan, and the many variegated forms of Begonias. The flowering section of these latter plants are also useful, both the shrubby and tuberous-rooted kinds. A plant or two of Eucharis or Pancratium will look well, so will the Vallota purpurea, or Agapanthus, dotted here and there under the foliage of the taller plants. In the arrangement aforementioned the only flowers we used were some good plants of Astilbe (Spiræa) japonica, and the yellow Paris Daisy (Chrysanthemum fruticosum, Etoile d'Or); though I think a few Gloxinias might with advantage have been used here and there.

I ought to say this grouping has been kept on a flat surface, scarcely a plant being elevated off the border, and is also arranged to face all ways. In this manner the greater part is, as it were, looked down upon. Staging of any kind finds no favour here for the conservatory, neither ought it to be used in any such house where a natural effect is desired. It is labour thrown away both in painting and material to have such, and that often of an elaborate kind, which it seems a pity to hide by the plants that it is built to accommodate.

Where such kinds of plants as I have mentioned can be used in the manner described, the other houses will be considerably relieved by the inmates receiving more room to develope their growth, the better to withstand another winter. One caution is, however, necessary with the more tender subjects used—to avoid applying cold water when they require any. Surrounding circumstances will, however, suggest the best remedy for this matter. *James Hudson, Gunnersbury House, Acton, W.*

MOUNT EDGECUMBE.

Probably the most charmingly situated and picturesque country seat in England, which Garrick truly described when he said—

"This Mount all the mounts of Great Britain surpasses,
'Tis the haunt of the Muses—this mount of Parnassus."

It is the property of the Earl of Mount Edgecumbe, and is situated upon the opposite bank of the Tamar from Plymouth. Since the Tamar is now the new geographical boundary line which separates the two great counties of Devon and Cornwall, Mount Edgecumbe can no longer be claimed by Devonshire, but is, in point of fact, in Cornwall. The Mount is the extreme end of a promontory several miles in length, and three miles in breadth, from which extensive views of a peculiarly romantic character are obtained from all points of the compass. The mansion is a castellated Tudor building, and was built by Sir Richard Edgecumbe in 1550. In 1762, however, the original round towers were taken down, and an octagonal tower built at each angle. The hall in the centre of the building is adorned with Doric columns, and pilasters of Devonshire marble. The pictures are chiefly family portraits, by Sir Peter Lely and Sir Joshua Reynolds, the principal of which is one of that heroic Earl of Sandwich who was blown up with his ship in the great fight at Salebay, May 28, 1672. The view given in the illustration on p. 17 is taken from the east front, showing the dome of the conservatory at the south-east angle, two beautiful specimens of the Stone Pine planted representatively at the extreme angles of the flower garden, and steps, vases, and statuary upon the terrace surrounding the garden. But we will first of all notice the attractions of the park from the point at which it was entered near to the walled-in kitchen and fruit gardens. These gardens are about half-a-mile distant from the house.

The park consists of about 700 acres, and a private drive over 10 miles in length sweeps round it in the most natural way imaginable by the brink of the sea, of which there are some fascinating views through Pine-clad glens and glades of Ferns, through steep ravines or rocky chasms, to the still ocean some hundreds of feet below. There is the range of the Dartmoor hills from Lord Haldon's to Launceston, nearly 30 miles in length; and who has not heard of the weird charms of Dartmoor, its romantic scenery, its legends and curiosities, which are so familiar to tourists, and which are still so interesting to the peasantry of Devonshire. The road to the church through the deer park commands an almost incomparable prospect; indeed, what is called the "Harbour View" is situated near to here; it is a kind of open arbour overlooking Looe Point, a prominent peak in the sea, lying due west; to the north is Brentor, the highest peak in Dartmoor, upon which the tower of a church figures conspicuously and of which some curious legends are told in the neighbourhood. A strange panorama now presents itself to the eye of a stranger: there is a full view of Devonport and the boundary line which separates it from Plymouth; of Saltram, the beautiful seat of the Earl of Morley; of Drake's Island, and a peep of the Hamoaze which is formed by the estuary of the Tamar. The Beech grove nexts attracts the eye, owing to the appearance of the trees, which are leafless to a height of 40 feet, and have a strange look in the centre of a park so famous for its rich leafage. The unusual length of naked stem is caused by the high elevation at which the trees are planted, and their exposure, from which there is really no protection—a forest-like group in the middle of the most luxuriant herbage! Looking toward the sea, there is the Mewstone Rock and Folly tower on Penlee point—two notable objects in the neighbourhood. Here, too, are the lovely Fern glades, at an elevation of 270 feet above the level of the sea, sloping down to the margin of the wood by the brink of the water. This Fern glade is the favourite place of His Royal Highness the Prince of Wales when shooting at Mount Edgecumbe, and well may it captivate and charm even a Royal visitor, for in addition to the sport of shooting, the views from the situation are delightful! The peeps through the trees—the coast-guard station, the villages of Kingsand and Cawsand, overlooking Cawsand Bay; the breakwater situated at a distance of 1850 fathoms south of the citadel at Plymouth; and the lighthouse at the west end, of white granite, 55 feet high, and 114 feet in diameter at its base, which was constructed in 1841.

Here by the brink of the sea is the finest forest of Pinasters (Pinus Pinaster) in England, the timber of which is very valuable, and their quaint looking appearance renders them highly ornamental as well. Some of them are indeed growing in a peculiar fashion, almost horizontally, others ascend to a lofty height and then drop over the sea or span the lovely drive which follows the course of the sea and is beautifully bordered with Hypericum lucidum. But these are not the only quaint-looking objects, for there are Cork trees still more quaint-looking and of remarkable size. They fringe the sea, and this perhaps gives them a weird charm which in another situation they would not possess. Now in the distance may be seen Picklecoombe Fort, built on the Mount Edgecumbe property and suggested and partly carried out by the late Duke of Wellington. Hundreds of little craft are sailing about in the bay, and the castellated tower of the fort is now and then visible among the trees, the chief of which are the Ilex Oaks, of which there are many extraordinary specimens. Something like 5 miles of zig-zag paths radiate from this drive to the sea, and there is a broad green drive or walk down to the fort which is bordered by flowering shrubs. Of the latter there are fine samples of Azalea indica and Camellias which flower in immense profusion close to the sea and well sheltered from the cold winds: one Camellia—the old double white—produced as many as 2720 blooms last season.

After these the charming Benthamia fragifera brightens the scene with its lovely yellow flowers; there is an Ilex hedge perhaps 20 feet or more high, with groups of Camellias underneath or a glowing bank of the green Cistus (Cistus laxus), bearing flowers nearly double the size that are usually seen and much brighter in colour. It is climate and a well chosen situation that lead to this result. The spot is partially protected, but there is an open sweeping peep towards the sea through which the sun's warm rays pass freely, and which no doubt accounts in some degree for the size and colour of the flowers. But the "peep" answers a double purpose. There is a view to Boresand Fort, a casemated fort in the middle of the sea, and to the far-famed Eddystone Lighthouse. Beyond this point the woods are of a different character, there being more of the deciduous element visible everywhere, of Larch, Beech, &c. At the bottom of the Beech wood there is a pretty cottage lately built close to the sea which is very appropriately called "Beechwood Cottage," or it might equally appropriately have been called "The cottage by the sea." There is change of scene everywhere, of different trees and shrubs, of woodland walks and glens, and jungles strangely fashioned, or abrupt elevations covered with underwood or hardy Ferns here, there, and everywhere. Once more emerging from under the shadow of the woods there is the beautiful winter villa built by the late Earl on the Devonshire side of the water in view, where the sun shines from the time it rises till it sets. But of greater interest to the stranger is Plymouth Hoe, which overlooks Mill Bay and the Sound.

Foremost among the specimen trees which abound largely between here and the house, which is but a short distance off, are three noteworthy specimens of the Stone Pine, which were favourites of the late Lady Mount Edgecumbe, large Scotch Firs, green belts of Conifers, pyramids of the Turkey Oak, and Spanish Chestnuts in a valley where the underwood of flowering Alder and Rhododendrons is rich beyond description, and a remarkable example of that luminousness which should more largely characterise the woods and plantations surrounding the private grounds of all extensive demesnes. Flowers in woods! why should there not be plenty of them?—of common Rhododendrons, mock Oranges, Guelder Roses, Foxgloves, seedling Antirrhinums, and many others. We have now reached the point from which we started, namely, the east front—

"Then to the arbours walk, then to the bowers,
Thence to the walks again, thence to the flowers."

And truly enough the bower and arbour walk are upon a slope at the east side of the flower garden and overlooking it. And the flowers, both rich and rare, are charmingly diversified in the four quarters of the garden, which is terraced and ornamented with marble statues of Jupiter, Mars, Minerva, and many others. Upon the south side there are Box designs in groups and star beds, which are filled with summer flowering plants. The wall creepers are Magnolias, Jasmines, Myrtles, Wistaria sinensis, Roses in variety and Honeysuckles. There are also fine healthy Orange trees in tubs dotted about in suitable situations, and the borders are glowing with Chrysanthemum fruticosum, which is always in flower at Mount Edgecumbe. The main drive leads to the north front from the Tamar. The trees upon this side are principally Elms, the best views of which are obtained from the bower at the east side of the flower garden.

The Pleasure Garden lies east of the house, and contains large collections of trees, flowering shrubs, and herbaceous plants. The Cedars of Lebanon are many of them remarkable both for size and beauty. One or two of the trees are indeed majestic in their proportions, the whole forming a grove of striking splendour, and yet the lawns are as green as need be, notwithstanding that the trees are studded about so thickly upon them. This is indeed well named a pleasure garden, for everything that can conduce to man's comfort may here be found—not only beautiful trees, shrubs, and flowers, but also bowers of Roses or shells, from which the whole garden may be viewed mid the fragrance and perfume of scented creepers and the rich attractions of flowering shrubs. The shell bower has been erected of shells and spar from the Cornwall mines. At one corner of the garden there is the large Cedar—"a tree of trees"—having fifteen main limbs still left, any of which would be considered a fair sized tree elsewhere. The shubbery borders are cheerful with flowers of Deutzia scabra laden with its drooping white blossoms; Benthamia fragifera with its large yellow Anemone-shaped flowers, choice Rhododendrons and others. Among them the front lines of course are Day Lilies, Geums, Campanulas, and a good assortment of herbaceous plants generally. In this garden also may be seen an extraordinary sample of a "fluted Lime tree," having a dense canopy of foliage, formed about 6 or 8 feet from the base of whorls of young growth, which gives the tree a peculiar, if not grotesque, appearance. And a specimen of the Lucombe Oak is said to be quite as large as the famous one in the Exeter nursery, but not as handsome in shape. From here a considerable area must be traversed in order to visit a series of gardens in another quarter of the grounds, entitled respectively the Spring Garden, the English Garden, the French Garden, the Battery Garden, and the Orangery.

(*To be continued.*)

MAKING UP ORCHIDS FOR EXHIBITION.

I do not see that Mr. Douglas, at p. 802 of your last volume, has thrown the least light on this important subject. The clause which he would have inserted in the schedule that "All Orchids to be exhibited in the pots or baskets in which they were grown," would only be another hard nut for the judges to crack, and would not in the least hinder exhibitors from massing small plants. Even if Mr. Douglas added a given length of time for them to have been in such baskets or pots, there is still nothing to debar an exhibitor from jumbling together any amount of varieties immediately previous to any given date. As for excepting Cypripediums and Masdevallias from this rule, and thus allowing them to be made up as at present, I should say that of all plants these are among the easiest to grow into genuine exhibition specimens. I consider any man a very poor cultivator who, to make a specimen, finds it necessary to "make up" the following Cypripediums:—C. Stonei, C. Lowii, C. caudatum, C. Haynaldianum, C. Sedeni, C. Dominii, C. lævigatum, C. Dayanum, C. selligerum, C. barbatum, C. Parishii, and many others too numerous to mention. C. niveum I have exhibited in a group of twelve, after four years' cultivation, from an imported plant; but I have no objection against any cultivator who exhibits a reasonable sized panful of C. niveum, C. concolor, or C. Fairrieanum; but, like Mr. Anderson, I would limit the size of pan or pot used. Such Masdevallias as M. Harryana, M. Lindeni, M. Veitchii, M. Davisii, and M. ignea, can be kept in the very best of condition for several years without any cutting up. Our largest plant of M. Harryana came from the Meadowbank sale eight years ago in a 5-inch pot; it now fills an 18-inch pot. with its leaves and flowers perfect even to the very centre. There is a genuine specimen look about such a plant which the most artful of "makers up" could never imitate. The kind of plants which I would pass as a judge, supposing them to be made up within

defined limits (say 18-inch pots or pans) are Vanda teres, Ionopsis paniculata, Comparettia falcata, Camarotis purpurea, Promenæa citrina, and P. stapelioides, Cattleya bulbosa, C. Acklandiæ, C. marginata, Dendrobium Falconeri, D. pulchellum, D. japonicum, Saccolabium ampullaceum, Sophronites of sorts, Odontoglossum Cervantesii, O. Rossii, Mesospinidium vulcanicum, Oncidium bifolium, Epidendrum vitellinum, &c. The manner in which plants of the last named Orchid have been crushed together of late years is grievous to think about, more especially when one could not find a decent spike among fifty. The stored-up vigour in the imported bulbs has enabled this plant to stand two or three seasons of exhibition work, but I would be very sorry to have to grow on a few even of such plants. A dry-looking imported bit would be worth a dozen of them. Exactly the same might be said of Oncidium concolor, Cattleya citrina, and Odontoglossum Roezlii. Those who "bed out" Odontoglossum vexillarium certainly deserve to be disqualified, seeing that a small healthy piece can in four years be grown into a specimen large enough for any purpose. Nor is there the least excuse for massing such Cattleyas as Mossiæ, Mendelii, and gigas. With the hundreds of fine imported specimens sold each year there is not any great difficulty in growing a Cattleya fit for any exhibition. When Mr. Douglas says it is usual in the South for exhibitors to put six or seven varieties in one pot I presume he is speaking of his own experience. As an exhibitor in the South I beg to state that the few pounds offered in prizes would never tempt me to break the smallest root of a Cattleya. What Cattleyas and Lælias have been exhibited from here are still in the same pots. I quite agree with Mr. Douglas that years ago there used to be large specimens of Cattleyas, and I also believe there are a few actually in existence now. Perhaps if there was a single prize or medal offered really worth taking the trouble to win some very remarkable Cattleyas would spring up from here and there.

The very unsatisfactory state of things respecting the exhibiting of Orchids has been brought about through many causes. In the first place it is nonsense to compare the growing of these fantastic fellows with such well-behaved and sensible-looking plants as Ericas, Pelargoniums, Palms, Crotons, &c. A judge has only to see that there is but one stem in a pot, and he knows that all above must be genuine. With Orchids there is no common basis unless it be its creeping stem, which is always decaying upwards, having on either side young plants that have started perhaps years before. With the old stem gone it is impossible to tell if these younger plants are seedlings or offsets from one common basis. A clever, or as Mr. Dominy would call him, a smart man, studies Nature and makes up his exhibition plants accordingly.

Cause No. 2. Incompetent judges. These must not be confounded with dishonest judges, which we have much reason to hope are as rare as the Koh-i-noor or as extinct as the dodo. I consider men quite incapable of judging Orchids who have never grown them or have never had a collection of their own to notice how they were grown. Then again there are some judges who tell you they have not grown Orchids for some years, perhaps thirty. Such men look with suspicion on any new Orchid unless it is as floriferous as Dendrobium nobile or as showy as Sobralia macrantha. They are also strong advocates for evenness in size and like to see a level dozen; this at once drives exhibitors to make up in width what some of their older specimens are in height. Thus to match a Vanda suavis with ten or a dozen spikes it would be necessary, to suit these judges, to make up such dwarf growing Orchids as Burlingtonias in a mass 3 feet across. Out of three judges appointed for Orchids one at least should be a grower of the present day; another might well be an exhibitor of the past; while the third should be an enthusiastic amateur, the owner of a representative collection.

Cause No. 3. Exhibitors showing in big classes when they have scarcely a genuine well grown plant at all, or, when they have two or three good plants, trying to win a prize where fifteen are required.

Cause No. 4. The cutting up of medium-sized imported plants into a number of small bits. An excellent case in point will be found in a contemporary of yours. In its last number a Dendrobium pruner describes how he cut a really handsome specimen of Dendrobium formosum into six or seven small bits. Unfortunately he has been preceded by far too many Orchid dividers. Daylight has already broken in upon this subject, as the nurserymen no longer, except in special cases, break up sound imported masses.

Cause No. 5. The overdrawn pictures of exhibited Orchids indulged in by reporters of this and all other garden periodicals till within the last two years—praising masses of Masdevallias, Odontoglossum crispum, &c., that were made up plants of the worst type.

The remedies lie, in reality, in limiting, as Mr. Anderson says, the size of the pots for made up Orchids, good judges, and in making ourselves better cultivators, so that every year we shall have less need to fall back upon the making up business. Briefly, we are all going to turn over a new leaf. *J. C. Spyers.*

New Garden Plants.

PINUS BUNGEANA.*

We are glad to have the opportunity of figuring the cone of this species, the White-bark or Lace-bark Pine of China. The tree is of moderate height, with long slender branches, glaucous grey, the bark smooth dull grey, ultimately shedding in flat plates, like that of the Birch or Plane, the exposed surface being very pale. The young shoots are glaucous green, naked at the base. The leaves are in bundles or tufts of three, with very short deciduous sheaths at the base; and are from 3—3½ inches long, pale, bright green, rigid, somewhat three-angled, owing to the prominence of the midrib above. On cross section a double layer of hypoderm cells is seen, with resin canals beneath the surface (peripheral). Fortune describes the adult tree as having a naked unbranched trunk, which at a height of 4—5 feet sends up a number of vertical branches, which after reaching a certain height branch out, forming a top or head to the tree. The tree is a native of the rigorous climate of northern China, where the hardiest evergreen, with few exceptions, is not able to withstand the climate. In China it is chiefly grown in cemeteries or near temples. The male catkins are of a greenish-yellow colour.



Fig 1.—PINUS BUNGEANA.

The cones are lateral, 2—2½ inches long, ovate ovoid obtuse, scales with a flat 4-sided top marked with a transverse ridge, from whose centre protrudes a small hooked prickle.

Our illustration was taken from a specimen growing in Mr. Kinghorn's nursery at Richmond, and now about 11 feet in height, and which, still in the young state, does not show much of the habit described by Fortune in the older trees, inasmuch as it is well furnished at the base. The bark, however, begins to flake off, fig. 1 showing the inner surface of one such flake dotted over with reservoirs for resin. *M. T. M.*

* *Pinus Bungeana*, Zuccarini, ex Parlatore in *DC. Prod.*, xvi. sect. 2 (1868), p. 398; Murray, *Pines and Firs of Japan* (1863), p. 18, c. ic.; Veitch, *Manual of Conifers* (1881), p. 161; Masters, *Journal of the Linnean Society*, vol. xviii., 506.

Cattleya (labiata Warscewiczii) Sanderiana, *Rchb. f.*

There it is before me, the grand flower of a monumental plant. Isatiable, never contented as are Orchidists—many of them, at least some, say, grand as it is, it may yet prove to be only a whimsical *début* (! !), and much larger ones may follow. As to myself, I feel quite delighted at seeing this grand thing as it is. I expect the flower belongs to Mr. Brymer's inflorescence. It is well known that on the 15th ult., just when Mr. Stevens was polishing his hammer to flourish it over those giant bulbs, the above-named gentleman appeared as *deus ex machina* with a glorious raceme of the same plant. We wish all importers may enjoy such agreeable incidents.

It is well known that Orchids with columnar stems are giants. There are several of the grand flowers in a raceme. The expansion of them is superior to anything seen up to these days. Sepals and broad petals of the finest and cleanest light purple. The *pièce de resistance*, of course, is the lip. Oh, what a lip! Its grand anterior blade is wavy, with numerous dark purple blotches on a brighter ground, giving one a certain velvet impression. Two fine eye-blotches are placed on the mouth of the tube, clear gamboge colour inside, whitish outside. The middle line of the disc is narrow, brown, with white lines or nerves. Column very strong and firm.

I may add, that at my left hand I have very numerous flowers, types of Warscewiczii, from my late friend; numerous flowers, types of gigas, from poor Don Benita; and flowers collected by the recent collectors.

The plant is grand, and quite worthy to bear Mr. J. Sander's name. *H. G. Rchb. f.*

Tulipa primulina, *Baker, n. sp.**

Bulb ovoid, an inch thick, with bright red-brown outer tunics with a point as long as the lamina, matted inside with adpressed hairs. Stem 2 inches long below the surface, under half a foot long above it, 1-flowered. Leaves 4—6, crowded near the surface of the ground, linear, green, glabrous, channelled down the face, the outer 3—4 inches by ¼—⅓ inch broad. Peduncle glabrous, 2—3 inches long. Flower very fragrant. Perianth infundibuliform, pale primrose-yellow, 1 inch long; outer segments lanceolate, ⅓ inch broad, tinged with bright red all over the back; inner oblong, ½ inch broad at the middle. Stamens half as long as the perianth; anthers bright orange-yellow, oblong, ⅛ inch long; filaments rather lighter in colour, flattened, with a dense tuft of hairs at the base. Ovary ampulliform, narrowed gradually to the apex; stigma minute.

Allied to T. cretica and T. Lownei. Differs from T. australis by its pale primrose-yellow flowers and strong scent.

The very pretty little Tulip which Mr. Baker describes above was found by me in the Aures Mountains, three hours west of Batna, in Eastern Algeria, in May, 1882. It grows on the ridges and open glades in the Cedar forest, at an elevation of about 6000 feet, though not very plentiful, and flowers in May. It is extremely sweet-scented. I previously knew of the existence of such a plant from a drawing and specimen collected by Mr. Hammond at Elkantara, which is about 30 miles farther in the interior than the place where I found it, and beyond the range of Cedars; but Mr. Baker is not sure of the identity of the two, as the Elkantara plant has the inner and outer segments more uniform, longer, narrower and more acuminate. It seems quite distinct as a wild plant from T. fragrans, but I do not know how long it may remain so under cultivation. It was the only good bulbous plant I found in the Djibel Aures, where neither Orchids nor Ferns, and very few bulbs, seem to exist. *H. J. Elwes.*

Fuchsia Sunray.—This is a gem among Fuchsias. It strikes you at a distance as being something out of the common, but it is when you come to examine it minutely that its soft beauty enchants and fascinates the eye. I am of course referring to plants that are up in colour. The leaves are ribbed down the centre with a line of thick dark copper-colour, the young leaves are of a soft rosy-pink changing to white, and the older ones have dashes of green in them; in all making a plant of exquisite beauty for the amateur's greenhouse or conservatory.

* *Tulipa primulina*, Baker, n. sp.—Humilis, glabra, bulbo ovoideo, tunicis exterioribus castaneis acuminatis intus pilosis; foliis 4—6 confertis linearibus; pedunculo glabro unifloro 2—3 pollicari; floribus suaveolentibus primulino-luteis; perianthii pollicaris segmentis omnibus acutis, exterioribus lanceolatis dorso ubique rubro-suffusis, interioribus oblongis; staminibus perianthio duplo brevioribus, filamentis basi dense pilosis; ovario ampulliformi, stigmatibus minutis.

DR. BONAVIA'S HYBRID HIPPEASTRUMS.

In 1875, in the Lucknow Horticultural Garden, I had five or six kinds of ordinary Hippeastrums; one was a deep carmine, a second an expanded scarlet, a third a cream coloured one (probably H. Solandræflora); a fourth a curious small but firm petalled orange variety, with upright flowers; a fifth, a red



Fig. 2.—Pinus Bungeana. (see p. 8.)

one with bands on the middle of the petals, evidently a descendant from Amaryllis vittata, and another or two. I had them all in pots, in what is called a "chick" house—a house with walls and tops of reeds to keep out excessive heat and sunlight, and under which Ferns, Palms, &c., are successfully grown. With these materials, in April I began to cross promiscuously, to obtain as much Hippeastrum seed as I could. A large number seeded well. The seeds were sown as soon as ripe, and they germinated within a fortnight or twenty days. The bulbs were given more space every year, and eventually planted out in borders under the shade of shrubs and trees. They grew wonderfully, and about their third year many flowered, producing interesting varieties. These were crossed again among themselves, and with their parents, and the process of crossing and sowing went on annually; after the first time I showed the native head gardener how to manage it. These crossings and re-crossings have now produced some marvellous results—both of form and colour—and something quite different from their original ancestors. Several of the most distinct have been lately named and catalogued. I append the descriptions of some of the most distinct:—

Lucknow.—Large funnel-shaped; white band on each petal from base to tip; remaining surface of petals feathered, streaked and powdered with carmine; outer petals, 2 inches broad; petioles over 3 inches long.

Lucy.—Trumpet-shaped, of a rich cream colour, with the edges of all the petals elegantly crisped, and dotted and tinted with scarlet. There is a pale cream band on all the petals, and the upper ones are elegantly feathered with deep crimson.

Padshah.—Funnel-shaped, large, broad-petalled, of a fiery scarlet colour, white centre, upper petals feathered carmine, petioles 4 inches long.

Bona Via.—Funnel-shaped, large, broad, and firm petalled, of a carmine-scarlet, with a large white centre, feathered green, the three outer petals form a fine triangle, the three inner beautifully curved outwards; the scape is nearly a yard long.

Tara-i-Hind.—Funnel-shaped, large, with very broad petals, and a very distinct white band on each petal from base to tip; the remaining surface of the petals is strongly feathered, streaked, and reticulated with deep crimson on a pale carmine ground; the white bands form a fine and prominent star.

Ridley.—Funnel-shaped, large, and broad petalled, of a white colour, boldly feathered, streaked, and splashed with crimson; the streaks are so disposed as to leave a white band in the middle of each petal.

Palmer.—Funnel-shaped, rather narrow petalled, pure white, with very bold deep crimson feathers rising from the base of the petals to about an inch of the tip.

Girdhari.—Funnel-shaped, broad, and firm petalled, rose colour, with large white centre, feathered green; from the white centre a crown of dark rose rays arises, petals tipped and edged paler rose; the three outer petals form a fine triangle.

Citrina.—Funnel-shaped, broad petalled, white, with a distinct lemon-yellow blush, upper petals with a pair of very faint red streaks.

Formosa.—Loose petalled, disposition of petals in the way of Amaryllis formosissima, flower rather drooping, of a cream colour, upper petals feathered crimson from base to tip, petiole over 3 inches, very distinct.

Dilkoosha.—Broad petalled, fashioned somewhat like A. formosissima, of a rich orange-scarlet, veined deeper scarlet, with short white bands, green edged near the centre, upper petals with crimson and white feathers.

These are some of the marvellous forms and colourings which have been produced from five or six of the most ordinary Hippeastrums, and taking those now in existence as a basis for future work, there is no telling what grand future is in store for the Lucknow hybrid Hippeastrums. They are cultivated in the open, and with the most ordinary care. They have taken to the soil and climate very kindly. Here are a few points which have been brought out during these experiments:—

1. I have in many cases tried them with their own pollen, in order to endeavour to repeat in the seedlings the fine colouring of the parent, but have failed in every case. They appear not to be susceptible of fertilisation with their own pollen. Some of them set seed with foreign pollen with great ease, others do not.

2. It would appear that these Hippeastrums have Sprekelia blood in their composition, otherwise the form of A. formosissima in formosa and Dilkoosha is not easily accounted for.

3. There is often no knowing what form and colours may result from the mixing of the elements of two plants. It is like shaking their atoms in a kaleidoscope—every shake produces a new picture.

Truly, as Mr. Douglas says in the *Gardeners' Chronicle* of April 8, 1882, the Amaryllis has a great future. Some of the Lucknow strains crossed with the fine English ones might produce marvels of beauty. I gave up charge of the Lucknow Horticultural Garden in 1877, and the work of hybridisation is now carried on by my former assistants, Mr. Ridley, who is now superintendent, and Girdhari, the native head gardener. This is a Government garden, and is supported by the sale of produce and plants of all kinds. I have some of the Lucknow hybrid Hippeastrums, and intend making further experiments with them. *E. Bonavia, M.D., Civil Surgeon, Etawah, June* 3, 1882.

Lælia euspatha.—This very rare Orchid is, we learn, now flowering with Mr. J. Calvert, 3, Euston Villas, Wood Green, N.

ALPINE PLANTS.

THE ANEMONE.—The genus Anemone contains a great variety of species, and among them some of the earliest of spring flowers. They succeed well in gardens, so that I am at a loss to understand the relatively little attention paid to them by amateurs.

Anemone vernalis, L., is one of the first flowers we meet with in the Alps after the melting of the snow; it makes its appearance about the same time as the Soldanella, and shortly after Crocus vernus. It is an essentially granitic species, and is only exceptionally found on the limestone mountains. Its foliage is downy, and less elegant than that of most species of the genus, but its flower is so remarkable as to attract the attention of every traveller. The sepals on the inner side are white, with blue veins, and on the outer surface they are clothed with close fine hairs, which reflect the solar rays and produce a rainbow or prism-like appearance, which is specially remarkable at sunrise or sunset. The hairs become blue, violet, red, changing their colour like the chameleon. When the flower is withered and fertilisation has been effected, the calyx persists and continues to reflect the sun's rays. The older the flower becomes, the more intense is the coloration, until at length the calyx dries up to give place to the carpels, the feathery styles of which require room to develope themselves. The centre of the flower is occupied with a large tuft of golden-yellow stamens. This pretty and remarkable species is easily cultivated, but it sometimes happens that no flowers are produced. Often, also, the flower arrives at the bud stage, but suddenly dries up before expanding. This occurs probably because the air is too dry for this delicate flower, accustomed in its native locality to flower in an atmosphere charged with moisture. I have, therefore, endeavoured to induce the plant to expand its flowers by frequent watering, and by occasionally immersing the pot in water from the time the bud first appears to the period of full expansion. I have succeeded so well in this manner that I recommend the plan to the readers of the *Gardeners' Chronicle*, although the English climate should be more favourable than ours for the development of this pretty flower, so that possibly my recommendations may be deemed unnecessary. I succeed very well with seedlings when the seed is sown immediately after having been gathered. When I transplant any Anemones from the Alps, I prefer always to do so in autumn or immediately after the plant has flowered, but not in spring. Anemones of all descriptions require to be treated as semi-bulbous plants, with which the cultivator may do what he pleases when the plant is going to rest; on the rockwork an aspect exposed to the sun, but not so much so as to cause the plant to become burnt. The pocket in which it is to grow should be well drained with pieces of coke, so that the water, which is to be given freely when the plant comes into flower, may escape freely. The compost should be made of leaf-mould, peat-soil, and granite-sand.

A. Halleri is the largest, the most beautiful, and the rarest of our alpine Anemones. It is difficult to find and especially to uproot, by reason of its deeply penetrating roots. Its flower is large, solitary, placed at the end of a long slender stem, completely covered with hairs. The corolla is deep lilac, with a crowd of golden-yellow stamens which fill up the base of the flower. The petals and sepals are covered on the outer side with silky hairs. The foliage is finely divided, and covered with silvery hairs, which give it a special appearance. This beautiful plant is scarcely met with anywhere but in the high Alps of the Valais, the Grisons, and the Tyrol. It is also found in Bohemia. To grow it successfully it must have a very deep pocket, well drained, and filled with a light soil rich in humus. It likes exposure to the sun, but it must not be placed full south. It prefers an easterly or a westerly aspect. If the plants are transplanted care must be taken to select young specimens which have strong roots, and to preserve all the rootlets. It is a "social" plant, thriving best in association with others of the same species. They must not be placed directly on the rockery when they are brought from the mountains, but they should be preserved during the winter in pots, and not planted out till the following spring. I have not yet tried to grow it from seed, because I have never been able to procure seed. It flowers in cultivation in April, but in the Alps in July and August.

A. Pulsatilla, L., is found throughout the greater part of central Europe, but always in limestone districts exposed to the sun. Nevertheless, it is nowhere a common plant. Its flower is of medium size, deep lilac, with a centre of golden-yellow stamens. Its finely-cut foliage is of itself ornamental when the flower has withered. It is a very free flowering species, which succeeds in the open ground as well as on the rockery. I have seen beautiful edgings made of it. It demands nothing more than calcareous soil and fair exposure to the sun. It flowers in early spring. I have had fine tufts of it in full flower in March.

A. montana, Hoppe, is considered by some as a variety of the preceding; it differs from it, however, by well-marked characters. The divisions of its leaves are both longer and broader. The flower, instead of being erect, as in A. Pulsatilla, is bent downwards, whence the name A. nutans applied to it by some botantists, and its sepals, instead of being oblong-lanceolate, are obtuse and rounded. The perianth is smaller, and of a blackish violet. Its root also is stronger, longer, more tap-shaped, and less divided than in A. Pulsatilla. It is difficult to transplant, because it is rare that it can be dug up without injuring the root. Nevertheless, I have often succeeded in transplanting it, and in flowering the plant. I have not yet tried to grow it from seed. This plant I have scarcely seen in Switzerland anywhere but in the dry hills of the Valais and in the Grisons. It requires exposure to the sun, and is cultivated like A. Pulsatilla.

A. pratensis, L., a native of central Germany, does not differ greatly from the two species above-mentioned. It is cultivated in the same way, but its flowers are smaller.

A. patens, L., is also a German species, extending to the far north. Its leaves are large and fine, and differ from those of A. Pulsatilla; but the flowers, although larger and finer, closely resemble those of that species. A. patens flowers before A. Pulsatilla, and there was a fine tuft of it bearing fourteen flowers in the Geneva Botanic Garden at the beginning of March. It is grown in the same manner as A. Pulsatilla, but it does not bear so hot a sun, and it prefers exposure either to the east or to the west.

A. alpina, L., is the most widely distributed species in our Alps, and occurs also in the mountains of central Europe. Its foliage is fine and elegant, very much divided, and of a deep green. The flower stem bears in the centre a large involucre of the same form as the leaves; the flower itself is of a bluish-white colour. It is met with in almost all the alpine pasturages above an elevation of 1000 metres. On limestone soils the flower is white, but on granitic or schistose soils the flowers assume a yellow tinge (see p. 238, August 20, 1881); nevertheless, some authors have considered A. sulphurea as a distinct species, a view with which I cannot concur. A. alpina is cultivated on the rockery in rather shady positions, and in a soil rich in humus, and mixed with lime. It requires a deep and good pocket, because its roots are very large. A. sulphurea requires schist or loamy soil (*glaise*), mixed with leaf-mould. These two species have flowered very well this year, and in our botanic garden, but the flowers have been smaller than on the Alps. I believe this arises from the dry weather we had this spring, for in the year before this the flowers were larger. I have grown A. alpina and A. sulphurea successfully from seed. *H. Correvon, Botanic Garden, Geneva.*

(To be continued.)

CARDIFF CASTLE.

CARDIFF CASTLE, the property of the Marquis of Bute, is beautifully situated in very extensive grounds, through which the rapidly flowing Taff passes before entering the estuary of the Severn. A massive tower and gateway forming the most direct approach to the Castle stand opposite to the end of the High Street, and suggest the days when towns were formed by the dwellings of retainers, and others seeking protection, clustering around each place of strength. Just within the gateway is Robert's Tower, so called from its being supposed to have been the place of captivity of Robert, Duke of Normandy, for twenty-six years. We pass through a large enclosure bounded on the side next the river by a lofty wall, with a corridor giving access from the gateway to the lofty tower; at the nearest angle of the Castle, 100 yards distant. The enclosure is surrounded on the sides beyond and opposite to the Castle by an embankment 40 feet high, surmounted by embattled walls, which are now covered with a varied collection of climbing plants. In the midst of the enclosure rises an artificially made mound 75 feet high, surmounted by a tower in the Perpendicular style of architecture. The moat surrounding the base has only been cleared out within the last few years, and again filled with water, wherein may be seen quantities of trout of large size swimming under the shade of the large Hawthorn trees with which the steep slope of the mound is covered. The outer slope of this moat is planted with fine varieties of Rhododendrons and hardy Azaleas, which are now in full beauty, over a carpet of Violas of various hues. This planting has the effect of relieving a scene that would be almost sombre, from its surroundings of masonry and embankments covered with lofty timber trees, of which the evergreen Oaks are most conspicuous by their great height and girth.

The Castle is still undergoing restorations, which were commenced a few years before the present owner became of age. The internal decorations are of mediæval character, and are of the most magnificent description—an almost fabulous sum having been spent upon the embellishment of the tower alone. A grand panorama is here visible of the surrounding district, comprehending the well-wooded valley of the Taff, and the cathedral of Llandaff on its banks; and on the side of a wooded height overlooking its waters are seen the towers of Castle Coch, another mansion, 5 miles distant, belonging to the same owner as Cardiff. Northward rise hill upon hill far into the interior of Wales, while turning southward, the view takes in the town of Cardiff with its suburbs of Canton, Roath, Grangetown, &c.; the estuary of the Severn, and the English shore beyond; and in the middle distance rises the sea of masts from the crowded shipping of all nations in the docks of the ports of Cardiff and Penarth. Leaving the Castle front, we pass by a gateway beneath the embankment and over the outer moat into the ornamental grounds, which are of great extent, and in the most scrupulous order. Turning to the left, a wide drive leads to a covered bridge over the moat, forming another entrance to the Castle; this drive has wide grass margins, and is flanked by extensive herbaceous borders which are now gay, especially with a fine collection of Delphiniums in full bloom, mingled amongst the shrubs at the back of the borders.

Crossing by the covered bridge we arrive again at the foot of the Castle walls, festooned with Jasmine, Wistaria, Ampelopsis, &c., and with a series of beds on grass filled with summer bedding plants along the base. Beyond the Castle we reach a lofty corridor wall 100 yards long, which is covered for 30 feet of its height with Vines, that annually yield large quantities of Grapes for wine making; the sorts grown are Royal Muscadine and Miller's Burgundy. At the foot of this wall is arranged a geometrical flower garden, with massive dressed stone bordering. Leaving the Castle by the drive leading through the grounds to the castellated entrance on the Cowbridge Road, we pass through a fine expanse of lawn recently levelled and relaid by the gardener, Mr. Pettigrew, and on which are many effective pieces of planting, and beds of Rhododendrons, Pæonies, &c. This part of the grounds borders upon the river Taff for some distance, and on the further side is situated the Sophia Gardens of 11 acres in extent, which the Marquis of Bute generously keeps up, and allows the public the free use of; as also of the adjoining 26 acres bordering the river on that side, which are tastefully laid out with shrubberies, drives, and substantial lodge entrances, and devoted to the sports and popular meetings of the people. Leaving this portion of the pleasure grounds, and passing to the kitchen garden by the large and pleasantly situated gardener's house, we again encounter extensive herbaceous borders backed by lofty timber, and enter through mounds of roots and rockwork, so covered with a luxuriant growth of choice hardy Ferns as almost to rival the dense growth of our native bracken. The fruit-houses are situated here, and entering the first range, 70 feet long, entirely devoted to Black Hamburgh Grapes, and divided into two compartments, we find a heavy crop of fruit colouring well, and the Vines perfectly clean and healthy; the back wall being covered with Lemons. The next portion is the early house, from which about half of the crop is cut; the bunches are of medium size, finely coloured, and the berries of

good size. Camellias cover the back wall in this compartment.

Passing the fruit-room, which is under the Ivy-clad ruins of the abbey of Grey Friars, we enter the greenhouse, from which the fine specimen Azaleas, which have completed their bloom, are not yet removed; this house is gay with Petunias, Pelargoniums, &c., and is unfortunately crowded with Tree Ferns that have grown too big for their quarters—lofty house though it is. A fine Peach-house, also a lean-to against this wall, is next reached; its dimensions are 60 feet by 15, with a back wall 16 feet high giving a fine length of rafter, and is completely filled by four trees which have been planted six years, and being grown on the quick extension system covered the available space in three years, we are informed. The varieties are Barrington, Noblesse, Royal George, and Bellegarde; and no finer examples of high cultivation could possibly be exhibited than they, every leaf being of immense size and of intensely dark green colour, reminding one of the leaves of Nerium splendens; and not a vacant space is to be seen, nor the slightest appearance of crowding in any part; while the fruits—which are, after all, the test point—are placed with the greatest regularity throughout the house, and consist exclusively of very large examples, which must have pleased the eye of many of the visitors to the Bath and West of England Society's show who happened to have the pleasure of seeing the house. The back wall of this house is also utilised for furnishing cut blooms of Camellias. A span range with lofty lanthorn-topped roof is devoted to Vines, 60 feet by 25, and divided into two compartments. The first part, planted three years ago with Foster's Seedling on the right hand side and Black Hamburgh on the left, is carrying a fine crop of fruit; a second cane is taken up from each Vine to replace the supernumeraries cut away last season after fruiting. Each Vine carries eight to ten bunches of from three to four pounds in weight on the Foster's Seedling side, while the Black Hamburgh carry twelve bunches of fine size just commencing their second swelling. The next house is planted entirely with Black Alicante, with the exception of one cane of Alnwick Seedling. This house has been four years planted; the canes planted inside were cut away last season, and a second cane is here also being run up from the permanent Vines to take their places. Every second cane is thus in full crop, carrying large bunches which promise to swell off well. The only other occupants of this range are Tomatos in pots, the sort grown being principally Glamorgan, which Mr. Pettigrew considers much superior to any other he has tried.

Entering a similar span-roofed range we find the first division is a plant stove containing a general collection of healthy stuff, especially noticeable being six immense plants of Eucharis amazonica, apparently over 5 feet in diameter. One of the side beds is at present used for Melons, of which a fine show is rapidly swelling off. The centre bed of the adjoining house is used for Pines, and the side beds for Melons and Cucumbers respectively. The Melons in this house are all Eastnor Castle, and are quite a sight, each plant carrying eight fruits of large size, many of them reaching five and even six pounds in weight. We understand they are treated to liberal supplies of water throughout their entire growth, and that the crop is continuous under the system adopted. The Cucumber grown on the other side of the house is Pettigrew's Cardiff Castle, and he may well be proud of such a crop of shapely fruits, of that average size that is most serviceable for supply, and cannot fail to gain recognition on any exhibition table where quality rather than bulk is preferred. Ranges of pits filled with Pines run parallel with the ends of the span-roofed houses just described, and are filled with most promising batches of plants in the most robust vigour. About a hundred fruits are well advanced, and promise to swell off finely; the successions for autumn and winter are equally promising, as is also the large batch of small successional suckers, in another run of pits. Queens and Smooth Cayennes are the sorts principally depended upon.

Entering other pits used for forwarding stove stuff for table and general furnishing, which is all in the most excellent condition, we again find more successional Pines in the back beds—indeed fruits are grown more largely than plants, as the family is rarely resident at the Castle, and Pines especially are largely grown to meet the constant demand for high-class fruit for sending off. In a propagating department young stove and greenhouse plants are being worked up to supply the place of those constantly injured through being used for chapel and other decorations that have to be carried out irrespectively of the absence of the family. Passing more ranges of pits occupied with Ericas, Petunias, Pelargoniums, tuberous Begonias, Melons, Cucumbers, &c., all in excellent order, we take a hasty glance at the kitchen garden department, and the fruit trees upon the enclosing walls. This garden is 3 acres in extent, and has good walls furnished with vigorous young trees planted about six years ago by the present gardener. Pyramidal Pear, Apple, and Plum trees are noticeable by their regularity in form along the borders by the sides of all the walks. Effective flower borders are also in this garden, and especially noteworthy is a long border of varieties of Violas in full bloom.

The quarters of vegetables are all in the best state of cultivation, and everything in the cleanest and most orderly condition. Mushrooms are largely grown, and very fine crops are at present being cut from beds in the house devoted to their cultivation, while later crops will be had from beds coming on out-of-doors. Crossing a spacious level lawn of about 5 acres, surrounded by shrubberies and herbaceous borders in which are many fine old plants, relieved by Palms, variegated Phormiums, and other sub-tropical plants turned out for the summer, sets of beds are observed filled on one part of the lawn with ordinary bedding plants, in another with some of the more effective herbaceous plants in masses of a bed of a sort, and again in another case the whole of the beds are filled with hybrid perpetual Roses. Beyond this is the Cathays Park, placed at the disposal of the Bath and West of England Society for their show, which has proved such a success, to which this fine site has contributed not a little. We thread our way across it through the extensive arrangement of stands and sheds to the upper garden, which is also used for the production of fruits and vegetables. This garden, standing in an angle of the park, is enclosed by walls on the two outer sides, and by high ornamental iron railings on the sides towards the park; it is 4 acres in extent, and has also a walled slip behind, of 1 acre more. The walls are here equally well furnished with vigorous young trees, and the borders with large and shapely pyramidal fruit trees. Large breaks are planted with the various general kitchen garden crops, all in the highest state of cultivation; and especially noticeable is a large breadth of Strawberries, carrying an extraordinary crop of quickly swelling fruits. Two long and wide borders, quite across the garden, are fitted with dwarf Roses, principally hybrid perpetuals of all the leading sorts. To conclude our hasty note, we may say that neatness and order are evinced in every department under the charge of Mr. Pettigrew, and reflect great credit upon him for his management and ability. *R. C.*

THE NATURAL HISTORY OF MADAGASCAR.*

Hitherto, from various causes, more has been known of the animals of Madagascar than of the plants, and zoologists have been able to describe the character, composition, and relationship of the fauna, whereas we have been comparatively in the dark respecting the flora. The existence in gardens of such Madagascar plants as Ouvirandra fenestralis, Angræcum sesquipedale, and Ravenala madagascariensis has long excited the curiosity of botanists and gardeners, and many collectors have visited the country, with what result is the object of the present sketch to show. In the first place it may be useful to give some particulars of the

Area and Physical Geography.—The island of Madagascar is exceeded in size by only two other islands, namely, Australia and Borneo. It is about 1000 miles long, with an extreme width of 360, and an average width of more than 260 miles, which give an area of 250,000 square miles, or nearly four times that of England and Wales. It is separated from the east coast of Africa by a channel nearly 250 miles broad, and is situated almost entirely within the south tropical zone. A lofty granitic plateau, from 80 to 160 miles wide, and from 3000 to 5000 feet high, occupies its central portion, on which rise peaks and domes of basalt and granite to a height of nearly 9000 feet; and there are also numerous extinct volcanic cones and craters. This mountain mass runs north and south, sloping steeply to the east, on which side are many of the numerous rivers, all of which flow through short, deeply cut gorges, making their way to the plain by a succession of wooded cataracts. The falls of the Matinana, for instance, leap at a single bound a depth of 500 or 600 feet. A good deal of this central elevated portion is bare and somewhat dreary-looking country, consisting of rolling moor-like hills, covered principally with long grass, which gets very dry and brown by the end of the summer. The soil generally is a red clay; and the highest level anywhere reached by the forest is 6000 feet. In the Betsilo country there is some fine mountain scenery, and in the centre the Ankaratra Mountains rise to a height of 9000 feet within a short distance of the capital, which itself is situated at a height of 4000 feet above the level of the sea. There are tracks of rich black alluvial soil in some of the valleys, where Rice, the staple food of the inhabitants, is cultivated. A belt of primæval forest runs all round the island, descending to the sea-shore in the north-east, opposite the French island of St. Marie. It is substantially continuous for a length of upwards of 2000 miles, and the trees which compose it are imperfectly known. There is a vast extent of uninhabited country in the plains, where the soil is fertile, and there are wide tracts of land between the territory occupied by the different tribes in the hill country, as, for instance, what is called "No-man's Land," between Imerina and Betsileo, which are only peopled very thinly, or not at all. As scarcely any of it is desert, or rainless, it could doubtless support a large population, and there is probably nowhere else in the tropical zone such a wide extent of country so little interfered with, or where man has done less to modify the natural distribution of the plants and animals.

Climate.—Madagascar falls within the zone o regular periodical rains and winds; but there is no record of observations sufficient to give any precise idea of the climatal conditions of different parts of Madagascar, though enough is known to afford a general idea. In July, 1862, Dr. Meller made a trip from Tamatave, on the east coast, to Antananarivo, the capital, when the maximum shade temperature noted was 88° and the minimum 49°. The wet and warmer season lasts from November to April, when the monsoon wind blows from the north-west. At this time there is a heavy fall of rain, which sometimes continues incessantly for several days. The vegetation of the forests, the abundant epiphytes, the tree-mosses, the filmy Ferns, and the tendency in Ferns to viviparousness, furnish evidence of a humid climate. Dr. Parker, a resident in Madagascar, who has sent considerable collections of dried plants to Kew from the interior, writes to the effect that the flowering season of most plants in Madagascar, whether in the forest or out of it, is during the rainy season; but a very large majority do not commence till towards the end of December, whilst most of the grasses and sedges do not flower before the approach of the dry season.

Vegetation.—Towards the end of the last century Aubert du Petit-Thouars visited Madagascar and collected some 600 species of plants, whereof he regarded 500 as new; but he published only a portion of them. At a more recent period, Bojer and other Frenchmen made considerable collections, most of which have been lying unexamined in the herbaria at Paris. Subsequently the Englishmen, Telfair and Dr. Lyell, sent a few dried specimens to the late Sir William Hooker. Then followed the Rev. Mr. Ellis, who, we believe, was the first to introduce living plants of Ouvirandra fenestralis and Angræcum sesquipedale; but he studied the people more than the plants. Within the last few years several travellers and European residents in Madagascar have made considerable collections of dried plants, chiefly, however, in the elevated region of the interior; and at the present time English, French, and German botanists are engaged on the materials accumulated. Hitherto Dr. Baillon, who has in view a *Flora Madagascariensis*, has from time to time published the novelties he has unearthed in the early collections at Paris, amongst them a species of Adansonia. In this country Mr. Baker has published, and is publishing, a series of new plants from the collections made by Dr. Parker, the Rev. Mr. Baron, Mr. Kitching, Mrs. Pool, and Miss Gilpin. And under the title of *Reliquiæ Ruten-*

* Chiefly compiled from an essay on this subject, by J. G. Baker.

bergianæ various German botanists have united with Dr. Buchenau in making known the novelties collected by the unfortunate Dr. C. Rutenberg, who was murdered by his native attendants in 1878. Dr. Ascherson and others have likewise described some of the plants collected by the late J. M. Hildebrandt. Rutenberg's is a comparatively small collection, yet it contains some interesting new plants, notably Orchids, and a curious new genus of mosses, named Rutenbergia, by Geheeb and Hampe. The collection contained twenty Orchids, more than half of which have been described as new. Amongst the most remarkable is a species of Cynorchis, C. calanthoides, said to be epiphytal on a Pandanus, and a very beautiful red-flowered species. Phaius pulchellus is also described as an ornamental Orchid, having beautiful purple-red flowers in slender spikes about 2 feet long.

Turning again to Mr. Baker, he, in describing the general character of the flora, estimates that we have now definite knowledge of at least 2000 species of flowering plants growing wild in Madagascar; and considering how many novelties each new parcel from an unexplored district contains, and what a large proportion of the named and described species gathered by the French collectors we do not possess in England, and how rich the Fern flora of the island, which has been much better explored than the flowering plants, he thinks the number of the latter inhabiting the island may be between 4000 and 5000.

Though so much remains unknown, it is perfectly certain from what is known that Madagascar is not the centre of a peculiar flora in the same sense that it is of a peculiar fauna. The endemic element in the vegetation is not more conspicuous perhaps than it is in the floras of other tropical regions of the old world; and it consists of genera and species rather than natural orders. Further, although less is known of the vegetation of the tropical belt than of the central plateau, representatives of almost every characteristic tropical order of plants have been discovered. Broadly speaking, such families as are rare or not known to be represented in Madagascar are likewise rare or unrepresented in Tropical Africa. On the other hand, a few Asiatic types reach Madagascar that do not reach the African continent; of these Nepenthes is a noteworthy example. There is, however, one small order, the Chlænaceæ,* which appears to be restricted to the island. Including one undescribed genus it consists of six known genera and about ten species. This order is placed between the Dipterocarpeæ and the Malvaceæ, and the species are handsome erect or climbing shrubs or small trees. Rhodolæna altivola is a lofty climber bearing clusters of large purple flowers; and Sarcolæna is an elegant tree with showy flowers: little, however, is known of either of them.

W. B. Hemsley.

(*To be continued.*)

GALL MITES.

THE two illustrations we here give are representations of forms of galls familiar to most dwellers in the country, though the cause of their production is not generally known. Fig. 4, p. 13, shows a number of nail-like projections from the surface of the leaf of the Lime, at first green, but subsequently becoming deep red in colour. When cut open nothing is usually visible but a felted tangle of fine hairs, or the remains of such, so that many good observers have searched in vain for any trace of insect. If, however, the galls are examined when still green they may sometimes be found to contain swarms of extremely minute mites (Phytoptus tiliæ). We say sometimes, because we ourselves have never been able to detect the insect, nor was our late friend Andrew Murray more successful, the description which he gives in his *Economic Entomology*, p. 340, being taken from Dujardin.

It is difficult to estimate the amount of damage done by these creatures. Looking to the great abundance of the galls they make, and the little apparent check they give to the tree, we imagine they are not very formidable enemies. The case is different when the mites attack or take up their residence in the buds, as they do in the case of the Yew and of the Currant, and destroy the young nascent leaves; or in the Birch, where, as first pointed out by Miss E. Ormerod, the peculiar bird's-nest-like growths are due to gall mites.

The other illustration (fig. 3) shows similar productions on the leaves of the Maple, the surface of the leaf being here covered with small crimson pimples. Here again we must own we have never detected the mites; but that is doubtless because we did not look at the right time, or with sufficient perseverance. Other people have seen the mite, and named it Phytoptus myriadeum.



FIG. 3.—MAPLE LEAF AND GALL.

Florists' Flowers.

THE HOLLYHOCK.—Those who are fortunate enough to possess a clean stock of plants ought to be truly thankful, and they ought to try and keep the dreaded Hollyhock fungus from their gardens by being careful neither to purchase nor beg plants from a place where the pest has been seen; but it seems to be found also in a wild state. "W. G. S." tells us that in a certain district "all the wild Mallows were badly down with the Puccinia." Very bad news this for Hollyhock cultivators. Like the Vine disease, this of the Hollyhock must be stamped out by destroying the plants. Let them be chopped up into short lengths, and then they may be thrown into the stoke-hole fires.

Where there is a clean stock of plants they will now be growing freely, and no time should be lost in taking off any offshoots that will do to put in for cuttings; they soon form roots in a very gentle hotbed. On the strong side-growths there are usually an eye or two at the axils of the leaves near the stem. These must be put in the same way as Vine eyes. Most of the buds will produce flowers from the axils of the leaves; it is useless to put these in. The plants themselves must be kept growing by being well watered in dry weather, it is also of great importance to mulch the surface. I take it for granted that the ground has been deeply trenched and well manured previous to planting. See that the growing stems of the plants are made secure to the sticks; look over the previous fastenings, in case some of them should be too tight. It is still a good time to sow seeds of the Hollyhock, if they can be obtained. They may be sown in the open ground, on a piece of fine prepared soil; the plants to be pricked out as soon as they are ready, to be ultimately planted in rows, allowing 2 feet 6 inches—or, what is better, 3 feet apart—between the plants and rows; always bearing in mind that the Hollyhock is one of the grossest feeders, and delights in deep, rich, friable soil. *J. Douglas, Loxford Hall.*

GLOXINIAS AT CHELSEA.—A very fine and extensive collection of these, composed of named and seedling varieties, is now in flower at Messrs. James Veitch & Sons' nurseries, King's Road, Chelsea. The seedlings of the present year are both numerous and fine, so much so, indeed, that there is grave difficulty in selecting a group for naming. Messrs. Veitch & Sons are aiming at a new type, that is, flowers with short tubes bearing wider blossoms, and this they have to some extent succeeded in obtaining.

Whether it is something in the strain, or the result of careful cultivation, or a combination of both, but quite small plants in small pots are blooming with great freedom and very finely; plants in large 60-pots are carrying several flowers of excellent quality.

Among the named varieties are Garibaldi, rich bright crimson, very fine and showy; Cordelia, one of the pretty and novel maculated varieties, having numberless small bright purple spots; the lobes margined with white, with a slight nebulous spotting of the same colour; Fabiola, the throat slightly spotted, red ground, and pure white margin; Sang Gaulois, rich carmine shaded with crimson, very fine and striking; Phœbus, pale ground, slightly spotted with reddish-purple; Mdlle. Jeanne Murat, slightly spotted with purple, white throat, very fine; Cybele, white, with a ring of plum-purple round the pure white throat, very handsome and attractive; Crassifolia alba, pure white, very fine form, probably the best white in cultivation; Achille, throat and lobes stained and spotted with pucy-red, broad white margin, very fine; Vivid, purple throat and lobes, margined with pale bright blue, very fine and distinct; Ariadne, large open throat, spotted with purple, broad white margin, very slightly spotted with pale purple; Louis Van Houtte, rich purple, white margin, very fine; Miranda, pale throat, slightly spotted with red, very handsomely maculated; broad lilac-blue margin, very fine and distinct; and Brunette, rich maroon-purple, very fine. This is but a selection

* Mr. Baker states in his essay that two genera and two species of this order have been discovered in the adjacent regions of Tropical Africa: but this statement was founded on what, there is little doubt, is a clerical error in Kew Herbarium, as Mr. Baker himself now believes. The specimens in question were collected by John Forbes, who was attached to the expedition commanded by Captain W. Owen, in the capacity of collector for the Horticultural Society of London; and on the paper—not on separate labels—is written, "Mozambique, Forbes." It appears that the expedition touched at the Cape, at Delagoa Bay, and then on the west coast of Madagascar, in the Mozambique Channel, where doubtless he collected the two Chlænaceæ, as they are exactly like the other specimens from Madagascar. Moreover, the opposite coast of Africa has since been visited by numerous travellers, not one of whom has collected specimens of any member of the order.

from a large number of very fine varieties, but they serve to suggest a useful collection for exhibition or decorative purposes. It is sometimes laid to the charge of gardeners that they grow their Gloxinias badly; and it is a fact that it is only under exceptional circumstances that they are seen at shows in thoroughly good condition. There is no doubt that Gloxinias are seen to the best advantage when they can be grown in a low span-roofed house by themselves; but how few gardeners have sufficient glass at their command to enable them to do this; many of them have to manage their plants as best they can, and very often in a hot, dry house crowded with other things. It is not to be wondered at if plants grown under such conditions become affected with red-spider, and the foliage much disfigured in consequence. Some of the best specimens of Gloxinias ever seen—and they were plants fully 2 feet 6 inches across, and bearing on an average fifty flowers each—were started early into growth, grown on strongly in heat, and when the flower-buds were formed, gradually hardened off and bloomed in a cool house. These plants were not only perfect in foliage and bloom, but the cool treatment imparted to them a stiff and sturdy character, and they travelled to the place of exhibition without sustaining any harm. How different an appearance do some plants present to view when placed on the exhibition table—plants that have been brought on in a high temperature, and from this taken to the show tent, there to flag and look wretched. Such plants travel badly also, as they lack the robustness which plants treated in a cooler atmosphere attain. *R. D.*



Fig. 4.—THE "NAIL-GALL" ON THE LIME. (see p. 12.)

TUBEROUS-ROOTED BEGONIAS.

Any one who looked upon the splendid variety named after the Hon. and Rev. J. Townshend Boscawen, which Messrs. J. Laing & Co. exhibited at a recent meeting of the Royal Horticultural Society, could scarcely refrain from exclaiming that the limit of size in the flowers had come at last. It was so grandly fine in colour, so stout in texture, so perfect in form, that it seems scarcely possible to conceive an advance beyond it. Size is not always an advantage. The mind is apt to lay hold of a certain ideal flower, and when that is approximately reached it is thought that any further development in the way of size would degenerate into coarseness.

Probably the leap forward which Messrs. Laing & Co. have taken in the case of this fine variety brings us nearer to the time when named varieties of the tuberous-rooted Begonias will cease, and seedlings will be so generally fine as that it will be invidious, or at least superfluous, to name them separately. We could not resist this impression when looking over a very large batch of seedlings a few days ago at Messrs. Sutton & Sons' florists' flower seed grounds at Reading. Thousands of seedling plants were unfolding their first flowers, and a fine and striking high quality was characteristic of the whole. It is true the seed had been taken from flowers of the very best character, fertilised with care; but the result serves to show what may be done in the way of producing fine strains. In such a case the raiser feels he had many flowers worthy of being named; but the difficulty lies in making a selection among so many.

What is most required in the development of the tuberous-rooted Begonia is improvement in and additions to the white and yellow-flowered varieties. In the case of crimson, scarlet, magenta, rose, and pink shades, we have reached a point when something really fine and striking is required; the others are yet in the rear. Some are found saying that the popularity of this flower is already declining; but if the demand for plants and seeds may be taken as indicating its hold on the popular taste, the time of decline seems remote. Named varieties will, no doubt, appear but infrequently, but seedling raising will be general, as seedlings do so much better than propagated plants.

The Begonia seeds very freely, and the seeds germinate quickly and numerously. Seed sown in January and February in bottom-heat will soon furnish plants, and they come successively in the seed pans, as some seeds are more tardy than others in throwing up their seed leaves. Plants so raised grow into large size with care, and bloom abundantly the same summer.

Orchid Notes and Gleanings.

Work in the Houses.—The growths on some of the earliest started Dendrobiums will now be far advanced, and if the plants have been well exposed to the light in a buoyant atmosphere the growths should be short-jointed and pretty solid before the last leaf is forming on the bulbs. As soon as the plants arrive at this stage, the ripening process should be commenced. This will consist in a very gradual reduction of water to their roots, and an equally gradual exposure to more light, until by the middle or end of August the plants are capable of standing the full sun in a light airy house. In every case, before the plants are ripened, a good network of young roots should have been formed by the current season's growths. Later plants of this genus in full growth must be liberally treated at the root, and a moist atmosphere must be maintained around them, with a free circulation of air on all favourable occasions. The late-flowering D. moschatum will now soon be over, and the plant should be encouraged to start fresh growths at once, so as to get them well advanced before winter. It is a plant that likes a liberal root-run, and any that require more room at the root may be re-potted during the next two or three weeks. A soil consisting of two parts fibrous peat to one of sphagnum moss placed over liberal drainage, will suit it. D. clavatum will now be starting into growth, and should be re-potted or top-dressed, to assist in giving the plants a vigorous start. This is a very fine Dendrobe when well grown and thoroughly ripened, and when the plants are in this condition they yield fine heads of bloom. It grows freely in a light position in an ordinary stove, but it requires a long season of rest to induce it to flower freely. Many of the Cattleyas, as they go out of flower, will require attention to put them in order for a fresh start, and as cleanliness is an important point in the culture of these plants, they should first be carefully sponged over to rid them of dirt and insect pests, that may be lurking about them. If any of them show a disposition to start into growth as soon as their flowering is over, they should be encouraged by giving the plants a top-dressing of nice open material that will admit the air to pass through freely to the roots. Any that are well rooted and require a shift, may have the bottom of the old pot knocked out, and may then be moved, without disturbing their roots, into pots a size larger, sinking the rim of the old pot a little below the surface of the new one; the roots will soon travel over into the new feeding ground. It will now be necessary to keep a moist atmosphere amongst every class of Orchids, and the maximum temperatures should be steadily kept up, so as to get all the growth possible on the plants during the next three months, and see that every plant is in its proper element as to heat and moisture, otherwise the growths will get weakened, either from too much heat or from cold. *J. Roberts.*

Epidendrum bicornutum and Cattleya superbiens.—These two generally difficultly managed Orchids keep growing at the Pine-apple Nursery as freely as possible, seeming to thrive without any especial attention or particular regard to position, being similarly treated as to heat, air, light, and moisture with Thunia Bensoniæ, T. alba, T. Marshalliæ, and other similar heat-requiring species.

Vanda suavis Dublin var.—Dr. Paterson sends us from Bridge of Allan a magnificent spike of fifteen flowers of this grand variety. The flowers are unusually large, and the purple lip well marked.

Mormodes luxatum eburneum.—From Dr. Paterson also comes a spike of the very remarkable Mormodes luxatum, labelled Sir Trevor Lawrence's var. eburneum. The spike bore eighteen flowers all turned to one side, each flower measuring 3—4 inches in diameter. The sepals and petals are ivory-white marked with pale green veins; the column is marked with red spots, and the pure white spoon-shaped lip has a broad dark purple stripe on the inner surface. What makes these flowers specially remarkable is the fact that, while the ovary is generally untwisted, and the sepals and lateral petals in their natural position, the column and lip

are curiously twisted out of their natural position, the former being bent vertically downwards, and the lip so placed as to form a hood over the front of the column, the back part of the lip turned outwards, the concave upper surface with its central stripe directly facing the column. The plant is apparently a male, the pollen being well formed, the stigma less well developed. Dr. Paterson writes that one strong bulb has produced another spike like the one sent. The plant was carefully described, so far as the state of knowledge at that time permitted, by Dr. Lindley in the *Botanical Register*. See *Gard. Chron.* 1843, p. 575.

The Herbaceous Border.

Cnicus heterophyllus.—It has never been my good fortune to meet with this handsome Thistle wild, but I found it last year for sale in Mr. R. Parker's nursery, at Tooting, and as I seldom lose an opportunity of making the acquaintance of a native plant I brought one home. In a tolerably dry soil it is a very handsome garden plant. The large purple flowers are borne upright on stiff stalks, about 2 feet high, and the plant flowers freely, and is not in any way untidy. In strong damp soils it runs, but the heads do not come up thickly, and may easily be weeded out. It is a plant suitable for confining within an earthenware hoop—a plan I find to answer very well. *C. Wolley Dod, Erskine House, Llandudno, June* 26.

Hypochæris maculata.—Those who are interested in the cultivation of rare native plants would do well to try this very conspicuous Composite. It formerly grew wild at Matlock, and is said still to be found on the chalk of Cambridgeshire; but of late years I have seen it nowhere except at Llandudno, and in my garden. Last summer I sent a large quantity of seed to Mr. W. Thompson, of Ipswich, who proposed to distribute it at a trifling price, but I am sorry to hear that the gardening public do not appreciate it. For all that, it is a fine garden plant, its bold and large radical leaves, with blotches of black, and its light-coloured and very bright golden large flowers, make it ornamental. These flowers are borne on the wild plant not more than two or three on a stalk; but in my garden, from a single crown of leaves I have as many as ten stalks, each bearing an average of eight flowers and buds. It grows about 18 inches high, and as many through. The plant neither runs nor becomes troublesome by spreading seedlings. *C. Wolley Dod, Erskine House, Llandudno, June* 26.

Delphinium Bella Donna.—Among the many sorts of Delphinium now in existence this is one of the best. In habit and appearance it resembles the well-known D. formosum, but instead of the flowers being of the depth of colour of that general favourite, they are of an exquisitely shaded soft pale blue, and plants of it with large heads of bloom are strikingly grand, and produce a fine effect in a border. This and most other Delphiniums do best in deep light soil, where they can drive their roots well down, and when growing under those favourable conditions they continue to flower more or less freely the whole summer through. What prevents them blooming continuously during that season more than anything else is the bearing of seed, and therefore, unless this be wanted, the stems with the pods should be cut away as soon as the blooms fall, when the plants, being lightened of their load, will send up fresh shoots from the crowns. *J.S.*

Epilobium angustifolium.—This plant varies very much in character in certain soils and situations; a vigorous grower anywhere, it is especially so in a rich soil and humid climate, where, if not sheltered, it is liable to be injured by high winds or heavy rains. Of course this can be obviated by staking, but the plant is not improved in appearance by the operation. This and plants of similar habit would be best protected by plants of dwarfer growth, which would supply the necessary degree of shelter, or, failing this, if they are planted in a rather poor soil, the shoots are much shorter and less liable to injury. Where house decoration is carried out on an extensive scale, the long shoots of delicate pink flowers may be used with good effect in the embellishment of tall glasses.

The Flower Garden.

The Rose Garden.—Roses should now be advancing into the period of their greatest beauty, and although the weather at the early part of the season was very ungenial, the destructive Rose weevil commenced its ravages very early, and the temperature, altogether so full of sudden changes so trying to the young and tender vegetation, all intensified by that fearful and destructive gale; yet, on the whole, where a reasonable amount of care has been taken to make use of the best means we have at command to counteract those inimical influences, there would appear to be a very fair prospect of a good show. The bushes are healthy and strong, and are showing well for bloom, and where root-moisture and occasional applications of liquid-manure have been well attended to, they will now pay for the extra labour. Aphides have been very troublesome, and in the absence of heavy rains must be dislodged by forcible syringing. The season appears to have been very favourable for the development of the Rose weevil, for the destruction of which a careful look-out is still necessary; for, although so often examined, the cry is "Still they come!"—rolling up the leaves near the buds as fast as ever.

The Late Annuals.—The past week may have been usefully employed in planting-out the various accessories to the flower garden which remain after the great bulk of the pot plants are distributed, such as seedling Hollyhocks, single and double Dahlias, Thunias, and, more than all, the Sunflowers, which have lately advanced in public favour to the status of a fashionable plant, and are really very great additions to the back part of herbaceous borders, as also among shrubbery borders—and, indeed, in any open places where they are seen from a distance, and in which the effect produced is very much increased by repetition of the same form and colour at stated intervals. All these large-growing plants are liable to be affected by the winds, and should be provided with stakes early. This operation of staking is a most important one, as it extends through the whole system of flower-gardening more or less, and makes all the difference between neatness and untidyness. The stakes need not of necessity be clumsy and rough, but neatly trimmed, and a fundamental principle in their application is to keep them as much hidden by the foliage as possible.

Plantations.—The shrubberies and plantations will now require regulation, and where possible the hoe and rake should be kept at work constantly, to keep down the vast crop of weeds which too often accumulate during the busy bedding season; the surface also should as much as possible be left in a loose state; the shrubberies proper, being generally nearer to the dressed grounds, should have a trifle more attention paid to edging, mowing, and rolling, than is generally afforded to the more distant plantations. Many of the shrubs, too, are apt to get out of bounds and overcrowded, and the knife will be in constant requisition during the process of cleaning up. Conifers used as small ornamental plants mixed with choice shrubs will submit to a large amount of knife-work to keep them shapely and sizable. These remarks will apply also to the pleasure-grounds proper, which are tenanted, and very rightly so, by so many of those small-growing ornamental Coniferæ introduced of late years, and which, owing to the bright and beautiful yellow which they assume in the early summer, impart a cheerful and distinctive character to the arrangements for which they are admirably adapted; some few, indeed, may almost be considered as indispensable, such as Retinospora plumosa aurea, Biota elegantissima, and B. semperaurea. The Golden Yew, too, has been very bright this year. In wet seasons and strong lands it does not colour well; indeed, I am convinced that a thoroughly drained subsoil has more to do with the colouring matter for trees, both summer and autumn, than we generally consider. *John Cox, Redleaf.*

The Kitchen Garden.

NOTES ON VEGETABLES.

Tomato Trentham Early Fill-basket.—I have no hesitation in recommending this variety as being the most useful in cultivation. It is one of the earliest of Tomatos, and very free-bearing; the fruit is of good form, and the quality first-rate. I do not know any other variety either that is so continuously prolific. We grow our Tomatos in pots—a system of culture which has a tendency to cause a production of fruit in plenty for a short period, but not in succession; and yet the variety in question continues to bear wherever growth is made. This variety was raised at Trentham—Criterion, an American raised variety, being the seed-bearing parent, and Trophy the pollen parent. Now that the culture of Tomatos for profit is so universal it becomes a matter of considerable importance as to which is the best variety to select for this purpose. I have not tried Early Fill-basket out-of-doors, but I fancy it would be well adapted for market garden purposes. Certainly I do not know any variety to surpass it for pot-culture under glass. *J. Douglas, Loxford Hall.*

Early Peas.—As a second early Pea Day's Sunrise is sure to take a leading position, for sown side by side on the same day (January 16) with Advancer, the bulk of the pods are now (June 24) fit to gather, and are well filled with excellent, high-flavoured, sweet Peas, that are delicious when cooked. For market purposes I believe it to be unrivalled, as it not only has the good qualities alluded to above, but it bears with the greatest freedom, the haulm from top to bottom being laden with pods that come on rapidly after each other. Advancer, which resembles it closely in colour, height, and habit, is quite a week later, and is a good old Pea that cannot be spared yet, as it is one of the best, if not the best, early marrows, and a good hardy, free, and continuous-bearing sort that always does well. Dr. McLean is a good substitute for Veitch's, but the worst of the Doctor is that the Peas soon get old, and lose some of their quality, which is not the case with Veitch's Dwarf when grown in anything like a fair season. Stratagem promises to be a grand Pea, as a row with us has immense pods containing from seven to nine very large Peas in each; and it will be an early kind, too, as sown on January 24 some are now fit to pick. In habit and general appearance it looks like a dwarfed Telephone, which is one of the finest tall Peas in existence. Unfortunately our latest sown ones of this are crippled from the attacks of thrips, which have got into all the points of the haulm, and quite stopped its growth. These thrips are cruel pests during hot dry weather later on in the summer, but I have never known them to put in an appearance so early before. Can any one tell us how to destroy these insects speedily and safely without hurting the Peas? If so they would be doing a good service to publish the remedy, as thrips are often the main cause of the late summer crop failing. *J. Sheppard.*

Grapes and Vineries.

Keep the earliest house from which all the fruit is cut as advised in my last Calendar. Those started later, and in which the fruit is ripe, must now have an abundance of air when the weather is bright, and if the wood is well ripened fire-heat can be dispensed with, except there is a succession of cold wet days, when a little will be beneficial. Those houses where the fruit is colouring must have a good supply of warm air and less moisture in the atmosphere, damping down the paths and borders in the early part of the day, so that it will dry up before evening. Keep sufficient air on the back and front ventilators all night to keep the atmosphere from becoming stagnant, and at the same time do not let the Vines feel a cold draught. Keep a little fire-heat in the pipes night and day until they are coloured, and on bright days admit air very freely towards mid-day, and reduce it as the sun-heat declines towards evening. Those houses in which the fruit is stoned and taking their second swelling, will take liberal supplies of tepid manure-water at the roots and a moist growing atmosphere. Admit air on the back ventilators early in the day, and increase it as the temperature rises. Close early in the afternoon, and use fire-heat through

the night only to prevent the thermometer falling below 68°; if the house should be at a low temperature in the morning turn on a little fire-heat early—when the pipes are once warm, if the day is bright, it may be turned off again. Our latest house of Hamburghs is just finished thinning, and has had a good soaking of tepid manure-water on the inside border. If the weather is bright and fine no fire-heat will be required, but if the weather is dull and sunless use a little in the early part of the day. If the soil in the outside borders is poor, give the surface of the border a dressing with wood-ashes and guano; about 28 lb. of guano to a good-sized border will be safe. Put it on the borders previous to rain, when it will be washed down to the roots at once. If plenty of manure-water is available no other stimulants will be required. The earliest Muscats as they become ripe can have the temperature reduced steadily, and air given more freely, and water the borders with clear water when required. Later houses of Muscats that are stoning will require abundance of tepid water at the roots. Keep them still at a night temperature of 70°, with a rise of 10° by day. Keep the evaporating-pans filled with weak manure or guano-water, and damp the paths and borders with weak manure-water occasionally, as the ammonia given off is very beneficial to the foliage of Vines. Stop the laterals as they require it, and close the house early in the afternoon. Let the thermometer rise to 95° after closing with bright sunshine and plenty of moisture. Late varieties of Grapes can still be kept at a night temperature of 65° to 70°, with a rise of 10° by day. Give an abundance of moisture in the atmosphere on bright days, and much less when the days are cold and sunless. Close early in the afternoon, and let the thermometer run up to 90° at closing time, with sun-heat and plenty of moisture. Newly planted vineries will be better for plenty of heat and air, giving air early in the day and increasing it as the heat rises; they will be better watered with clear tepid water only the first year. Let them ramble about freely the first year, to fill the border with healthy roots. Pot Vines for early work next year must not be stood too closely together, but so as the sun and light can penetrate freely among them. Give plenty of tepid manure-water at the roots, and stop the laterals as they require it. Admit air early in the day, and close early in the afternoon with abundance of moisture. If red-spider appears in any of the houses, paint the pipes with sulphur when they are very hot, late in the evening, and keep the house close until morning, and repeat it every evening until it disappears. *Joshua Atkins, Lockinge Gardens, Wantage.*

The Pine Stove.

THE plants which showed fruit last October and November are now either ripe or the fruit has been cut, and the plants may all be cleared out to make room for the early batch of potted fruiting plants which, if not allotted their permanent quarters, require it without delay. We find this lot more serviceable than early spring started plants, either Queens or other varieties. Now that summer weather has set in give them plenty of heat by day, and they will swell rapidly in a high humid temperature. Staking should not be neglected as soon as the fruits are well set and the crowns are formed to admit of the raffia being placed around them. A little trouble in this respect is well repaid by having even, handsome fruit with symmetrical crowns. If staking is neglected the fruit and crowns lean to one side, and when allowed to get too large when pulled into a vertical position the stems become bent, which stops the proper swelling of the fruit. Now and through next month is a good time to start plants for autumn use; Charlotte Rothschilds and Smooth Cayennes are the best varieties for this purpose, and seldom disappoint, as they can be relied upon to swell up good fruit at any season of the year. The night temperatures may be kept at 76° up to 10 P.M., which may fall to 70° by 6 A.M. Close the houses early in the afternoon, when the temperatures may stand as high as 95° for a time after closing. Syringe the plants overhead every bright afternoon, and let the water fall on the front pipes so as to steam the glass, which will prevent the plants from scalding. If the afternoons are very bright, keep down the shading until 4 P.M. or 4.30 if necessary. Water fruiting plants with liquid manure, and let the strength be regulated according to the vigour of the plants. It is wise practice never to exceed a certain ratio of strength, as Pines, like other plants, can only take a proper quota. Succession plants should be ventilated according to the form of growth they are making; if a sturdy vigorous growth is noticeable then high temperature may be given them for the next two months, the same treatment as advised for fruiting plants, with this exception, the temperature should stand about 5° lower, that is, 90° maximum and 70° minimum. In the case of weak sappy growth, more ventilation is required, and the same conditions applied to correct this state of things as before advised. Water succession plants every alternate time with liquid manure, and the strength should be regulated according to the size of the plants and the number of roots. In continuation of my remarks in my last, respecting the planting-out system, I would say that this may be done in several ways; one is the planting of rootless suckers; pull off the lower leaves and trim them in the usual way, after drying the base of the sucker for a time. Then the sucker is put in the soil at a proper distance, from 22 to 24 inches each way, making the soil close and firm round them. Care must be taken not to break off the stems in the operation. Another mode, and a good one, is to have a good lot of sturdy rooted suckers in 7 and 8 inch pots: before knocking the plants out, take out trenches 2 feet apart to the depth of 8 inches, then slightly reduce the ball of the plants. Before planting disentangle the roots and spread them out around the plant; after this is done place the soil firmly round the collars of the plants; the soil should be well consolidated, but not puddled. In the Frogmore system—so called from its having been in practice there for many years, and producing fine fruit—the suckers were not potted, but planted into beds at once, first into sucker pits, and then transplanted into succession pits, and finally planted into the fruiting pits. In other respects the treatment is the same as above advised, with this exception, that a bed of leaves for bottom-heat under the soil was preferred to hot-water pipes. In classing the two systems together, those plants planted over leaves have this disadvantage, that in the space of eighteen months the leaves decompose, which causes the beds and plants to settle down, and although it is very slow and gradual, yet the moving of the roots breaks off some of the most vigorous. This is not the case with a bed of soil over hot-water pipes. *D. Wilson, Castle Hill, Devon.*

The Hardy Fruit Garden.

THE unusually low temperature that has prevailed during the greatest part of June, the deficiency of sunshine, and the sharp white frosts experienced on several mornings have been anything but favourable for the young growths of the more tender kinds of our so-called hardy fruits. Peaches and Nectarines have especially suffered, the fruits making little progress, and the foliage developing an unhealthy appearance, which only finer weather can rectify. Continue to nail and lay in all growths as they advance, using twigs of the Privet for the latter purpose, or those of any other shrub available that possesses the desirable elasticity, and are at the same time light, strong, and sufficiently durable. Finally, reduce the shoots in each tree to the lowest number that will properly furnish it with leaves, without necessitating their overlapping each other; and lay in all shoots as nearly as possible in the direction they are intended to assume after the removal of the fruiting wood. Check the grossness of rank growing shoots by constant attention to pinching, and the same operation will require to be performed upon any laterals that may be forming upon the growths previously stopped beyond the fruit-bearing shoots. Use every endeavour to keep the trees thoroughly free from all insect pests; as only by great care and a fine autumn can Peach and Nectarine trees be expected to perfect their wood this season after receiving such repeated checks. The low temperature may probably induce an attack of mildew, and it will be well to at once apply Ewing's Mildew Composition to check its ravages. A sudden change now to hot weather—which is certainly most desirable—would be likely to be followed by evidence of red-spider on the foliage, which in its present unsatisfactory state will be particularly liable to its presence when dry weather sets in; and, therefore, its appearance should be watched for and its destruction compassed with the needful attention. See to the removal of any undersized fruits, and those that are placed so near to nails as to be in danger of injury when taking their last swelling, removing the nails where it is desirable to save any fruits that are required to be retained. Buds may now be inserted of any new varieties that it may be considered advisable to test upon established trees; seedlings may also be thus speedily proved with little trouble or loss of wall space. Morello Cherries will require to have their growths laid in at once, if not previously completed; a portion of the growths at the extremities of the bearing shoots can be pinched back to prevent overcrowding, and see that no more shoots are retained than are necessary to furnish the wall; but it will be well to provide for leaving the growths more thickly than is desirable in the case of other fruit trees. Attend to the fastening of the advancing growths of all wall trees before they are endangered by wind, but it will be necessary to see that crookedness be not produced by their being fastened too near to the growing points. Continue to net Cherries, as recommended in a previous Calendar, as soon as any change of colour is perceived, securing them well to prevent any chance of the birds reaching this, apparently, their favourite fruit. Attend to the stopping and securing of the shoots of Vines on walls, and remove surplus bunches where present. The bearing laterals may be stopped two or three leaves beyond the bunches, and other growths must be kept within bounds, leaving no more growth of foliage than there is light and space for. The growths of Fig trees will now require to be looked to, and the points of all fruit-bearing shoots not required for extension should be pinched back to three leaves, which will throw more support into the fruits, and assist their swelling, and at the same time allow freer access for the sun to ripen them later on. Keep extension and other shoots regularly tied-in as they advance in growth, or the handsome foliage will be injured, and probably branches broken by the hold offered to the wind by the large leaves. The crops of Figs promise to be more plentiful than usual this season; indeed, it is a little singular to see good crops of Peaches, Nectarines, Apricots, and Figs, while the hardier Pears and Apples have perished with the cold during the setting period. Remove the nets from the earliest Strawberries as they are gathered to the later batches. Proceed with the laying-in of runners into pots as soon as possible if strong plants for early planting or for forcing are required. Use strong loam for the pots, which must be firmly filled to secure a good result, either for potting-on or planting-out, although lighter material made less firm may hasten the rooting of the young plants. The growths of Raspberries for autumn bearing should be firmly secured to stakes as they lengthen; let the ground be kept open and free from weeds by the frequent use of the hoe, and apply a dressing of fresh stable-manure as a mulch to the surface as opportunity offers. Attention to thinning and stopping, nailing and tying, cleaning trees from insects and preventing their ravages, and protecting and gathering fruits, are all urgent operations in this department at the present time, and it will be well to see that none of them be neglected at this busy season of the year. *Ralph Crossling, Castle Gardens, St. Fagan's.*

Peaches and Nectarines.

EARLY BEATRICE PEACH.—Connoisseurs in fruit growing are divided in opinion respecting the merits of this well-known early variety, but there is no room left to doubt its superiority as regards earliness. Cultivators who force very early complain that it is not suitable for forcing along with other kinds, owing to its being so much earlier, and there being some difficulty in treating ripe and unripe fruits according to their respective requirements; but grown in a cool orchard-house this difficulty—which is not a very formidable one, after all—disappears, and a variety that ripens in the same house with many others before the latter are stoned, must be—and is—a great advantage to amateurs with one Peach-house, to whom a dish of Peaches at the end of June, grown without fire-heat, is a luxury which could not otherwise be obtained. *W. H.*

JOHN GIBBONS PELARGONIUM.—Ever since vases and bedding-out have been the fashion the scarlet Pelargonium has been a favourite vase plant everywhere, for centres at least, and those who are fond of bright colours will find in the above variety one of the most vivid scarlets in cultivation, and one that is as free a bloomer as it is bright in colour.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY,	July 4	National Rose Society's Show at South Kensington
WEDNESDAY,	July 5	Royal Botanic Society's Summer Show. Flower Shows at Teddington, Nuneaton, Bagshot, and Ipswich.
THURSDAY,	July 6	Royal Horticultural Society of Ireland's Summer Show. Rose Shows at Canterbury, Oxford, Brockham, and Eltham.
FRIDAY,	July 7	Twickenham Horticultural Society's Show. Rose Show at Sutton, Surrey.
SATURDAY,	July 8	Alexandra Palace Rose Show. West Kent Rose Show.

IT may seem early to write of THE SEASON'S PROMISES, and yet not a few of them are already discounted. The Apple, Pear, and Plum crops, for example, are doomed. Here and there, as always, a crop of either may be found, but general failure is the rule. Early Potatos are also late, small, and a light crop. The season is too far gone to make it otherwise now. The tops are also in most cases out of proportion to the bottoms—the former promise well, the latter yield but little. The late crop also falls far below average quality. Neither is the season at all early — Strawberries, a big crop, being rather later than usual. The recent rains have proved highly favourable to this crop, causing them to swell freely, and to reach a good size. But the moisture has likewise brought its plague of slugs, which the birds reject, as they join with them in greedily devouring the finest Strawberries. Fruit trees on walls — such as Peaches, Nectarines, and Apricots—look fairly well, and mostly carry a fair crop. These fruits will prove specially welcome and valuable this season in the absence or great scarcity of Plums. Gooseberries and Currants of all sorts and colours are enormous crops; the former are so plentiful, and were so early, that they spoilt the trade in Rhubarb, and must have produced serious losses to those who grow the latter largely to satisfy the large demands for early spring or summer pies and puddings. Somehow it seems as if Rhubarb and Gooseberries could not run abreast in the kitchen. As soon as Gooseberries come in Rhubarb must go out, and yet the two are sufficiently distinct to make room for both.

We see a similar instance in the case of Asparagus and green Peas, though the fact of the latter superseding the former is fortunate for the Asparagus, for otherwise the latter would run the risk of being cut clean off right into the autumn, and the result would prove fatal to next year's supply. Apart from such views, however, Asparagus and Peas are so widely different in flavour and quality, that both might very well appear abreast at table. The season has been favourable for Asparagus—for the growing plants more than the edible crop; the cold winds and frequent frost nips checked the growth of the young shoots early in the season, and so husbanded the resources and reserved the finest eyes of the plants for making up into young shoots, and the production of vigorous eyes for next year. Seldom has Asparagus been more clean and vigorous than at the present time.

Peas, so far, have been rather late and scanty: the haulm is plentiful, but until the middle or end of June the flowers have not been numerous, nor the pods well filled. Later Peas are vigorous in growth, and, with warm weather, promise an abundant yield.

There are many complaints of the Carrot crop. The ground seems too cold for the seeds, and maggots and wireworms seem to have been abnormally active. Onions, on the contrary, look well, with rather too much top to the proportion of bulb among autumn-sown ones. The same peculiarities characterise Shallots and Garlic—the latter has more stem than has ever been observed before.

It has been a fine season for spring Cabbages. These are among the hardiest of all the crops of the garden, hence they were able to make good growth throughout the winter, and were earlier and larger than usual. Broccoli, too, nearly all escaped, and this green winter has been filled with choice greens of all kinds. The spring was also full of splendid Broccoli, which continued in season till caught up by the early Cauliflower, which promises to be also plentiful and of fine quality.

Recent rains have also been most favourable for the planting-out of the main supply of summer, autumn, and winter greens. Hence the prospect is an abundance of vegetables, which may do something to ameliorate the effects of a scarcity of some of our staple fruits. The growth, however, of the more tender vegetables in the open air, such as Runners, French Beans, Tomatos, Vegetable Marrows, ridge Cucumbers, &c., has been very slow up to the longest day. But these useful crops will probably pull up rapidly with the summer weather that mostly comes in with July.

Glancing at the floral department in the open air, spring flowers have hardly been up to the usual level of excellence. Two notable exceptions, however, must be made for Pæonies and Pansies. The former have been magnificent, and the latter have flowered perpetually for months, and are still in full bloom. Roses have been poor at first, but are now growing out of their lopsided deformities, and throwing up many very fine blooms, as the flower boxes at shows, the Rose farms of the trade, and the trees or bushes in private grounds abundantly testify, in these the very last days of June and first of July.

It will thus be seen that the performance is rather mixed, and does not tally very truly with the promise. The season of 1882 promised to be early—it is rather late. It promised to be fruitful—it is at least fully half barren. It promised to be warm—so far it has been cold. Insect pests, mildew, and destructive birds also abound; and already, and before the crop is half grown, there are reports of the Potato disease, which it is hoped the expected sunshine and genial warmth of July and August may sufficiently check.

The season so far has been more favourable to the farm than the garden. Though the east winds and cold nights rusted the Wheats, they have mostly grown out of it, and are now coming into bloom in a vigorous and healthy condition. Barleys have almost overtaken, and in some instances have shot past, the Wheats, and look well.

Mangels and Swedes are up and growing like weeds. The meadows are full of grass, and the mowers and the scythe are heard in all directions, with the muffled sound that denotes a fat swathe. All that is needed on the farm, as in the garden, are warmth and sunshine, to fatten, mature, and harvest the crops, which are, on the whole, more even and bountiful in the fields than in the gardens this year.

—— THE NATIONAL ROSE SOCIETY deserves the thanks of the community for the spirited aims it sets before itself, and the catholic way in which they are carried out. Among the latest of their publications is a catalogue of exhibition Roses, prepared by the committee of the Society. The principles upon which the catalogue is founded are:—1. To admit but very few Roses which are known to be of extremely delicate growth (why admit them at all?). 2. To insert those only among the newer varieties which have been grown so extensively as to allow of an accurate estimate to be formed of their value. 3. To class as synonymous those Roses which are similar in their flowers without regard to their foliage and habit of growth. This may be expedient, but it is utterly unscientific, and opposed to progress. The reply would probably be that the interest of exhibitors and judges was alone considered; but this raises the whole question whether exhibitions, as now conducted, are of any use beyond harmless pastime. If it be asserted that this is and should be the only aim of exhibitions, nothing more can be said; but from the point of view of intelligence, instruction, and the development of the highest beauty, the fewer hard and fast lines save those imposed by Nature herself, the better. Surely it would not detract from the beauty of a Rose to know why one is flat, another with recurved petals, another with a high centre, another with a depressed centre, and so on. These matters, and many like them, are ignored, as if they were of no interest from a practical point of view. That this is an error any one may judge who remembers that the reasons why some Roses open with difficulty are mostly the same as those which give rise to the differences before mentioned. Looking at the matter, moreover, from an arbitrary point of view only, all five of the "types," of which figures are given are as much "imbricated" as the one chosen as the type of that class. The catalogue contains a list of the best exhibition Roses under the heads of Hybrid Perpetuals, Teas, and Noisettes; and Bourbon, Souvenir de la Malmaison being the only Rose included under the latter heading. In addition to the names, the date of introduction, the raiser's name, the form and colour of flower, and the habit are given, with some incidental remarks. There is no question as to the utility of this list, and the committee are so deep in their sympathies that we look forward in future to very considerable extension of this catalogue, and a corresponding increase in its usefulness.

—— SEED CASE.—We direct the notice of our trade readers to the very important seed case tried before Mr. Justice DAY, reported in another column, and in which the defendant, Mr. REEVES, was sued by MM. VILMORIN for the price of Mignonette seed supplied; the defendant on his side presented a counter claim for damages incurred on account of having been supplied with inferior seed. The result was, that the defendant gained his case.

—— THE EDINBURGH ARBORETUM.—We learn that the Arboretum has now been made accessible to the public from the Botanic Garden, though we see from the public prints that some dissatisfaction is felt as to the tardy and scanty nature of the concession afforded. Representatives of about 2000 species have been presented to the Arboretum, which will be systematically planted among the already existing trees, which will serve not only as ornaments, but for purposes of shelter. We trust and believe that every effort will be made to make this collection as complete and well-ordered as possible under the circumstances. Proximity to the Botanic Gardens and libraries of Edinburgh will render the task at once easier to do, and more useful when done.

—— GOLDEN SPRUCE.—A correspondent kindly sends us from the Isle of Man shoots of the common Spruce of a rich golden colour. The colour, we are told, becomes duller as the growth ripens; but, judging from the specimen before us, this is the brightest and most highly coloured Golden Spruce we have seen. It is matter of common observation how very bright has been the colour of the Golden Retinosporas and other plants of similar character this spring.

—— CURIOSITIES OF GRAFTING.—M. CARRIÈRE records in a recent number of the *Revue Horticole* a case wherein he grafted a Jerusalem Artichoke on to the stem of the Sunflower. The method of procedure is not stated, but a curious result followed, viz., the formation of tubers on the stem of the Sunflower, no tubers being found below-ground, although several were found on the stem just above-ground. We trust M. CARRIÈRE will give us further particulars as to this interesting experiment. The figure does not show how the graft was effected, nor whether the tubers were formed on the stock both above and below the graft. M. CARRIÈRE also figures a graft of the Tomato on the stems of Solanum Dulcamara. Our readers will remember the analogous experiments of Mr. MAULE and Mr. ALEXANDER DEAN some years since.

—— A NEW MATERIAL FOR ROCKWORK.—Mr. W. H. LASCELLES writes, with reference to the materials required for constructing rockwork:—"What we want is something light, so as to be easily handled; porous, so as to hold water and soil; of an irregular shape, so as not to suggest waste build-

ing materials; that can be adapted to any circumstances, and fixed by any one; and not too expensive, or we shall not be able to afford it; and that can be produced in any quantity. Well, I have been pottering at the matter for some years, and I really think I have at last got the very thing, and I fancy the best way will be to produce it in blocks about a foot across and one-half the height, of an irregular conical shape. I have seven colours—black, brown, dull red, bright red, grey, dull yellow, and white; and I think I can sell these blocks, which will contain about half a cubic foot, at 6*d.* each. There will be a show of horticultural matters at the Agricultural Hall from July 24 to August 5, and I have engaged a space in the centre of the Hall, where I shall show, amongst other matters, the rockwork I speak of; and as it might be easily overlooked I have drawn your attention to it. Some samples I will also send to my place in the Poultry (No. 35), and some to my shop in Bunhill Row (No. 121), so that if your readers are interested in the matter, they will know where their curiosity can be gratified. If you have any taste for rockwork buy the raw material and see what you can do with it; if you do not like it, you can break it down and build it up again."

—— Cottagers' Special Prizes.—At the exhibition of a recently formed horticultural society in the environs of London, to be held in August, some odd articles will be given to the competing cottager exhibitors as special prizes, these articles having been placed at the disposal of the committee by some of the resident tradesmen. Thus, there are men's and children's boots, a spade and a digging-fork, a ham and a loin of mutton, a dress-piece, and a quantity of tea, plum-cakes, and similar useful and acceptable articles, all calculated to attract the attention of cottagers, and to invest the competitions with more than ordinary interest. Of course, special prizes in kind of this sort have nothing novel about them; they are really common, although not so common as could be desired, for whilst, as a rule, they possess greater pecuniary value than money prizes usually do, they are also guarantees that in no way can they be misapplied. But there is about the offering of prizes of this sort on the part of local tradespeople much that is socially pleasing. In the majority of cases in the rural districts, these tradespeople are chiefly dependent upon the working-classes for their livelihood; they constitute, in fact, the tradesmen's best and most reliable customers. To offer prizes of the nature above specified, therefore, shows some kindly feeling that cannot be too much encouraged. Then, amongst the many and varied efforts being made to win the working-classes of this country from a demoralising and besetting evil, cottage gardening holds no inferior place; indeed, many kindly disposed people who are not actuated by any great amount of enthusiasm for gardening give to cottage garden and other horticultural societies their active support, solely because of the social benefits that may be expected to result from them. Tradesmen have as large an interest as any can have in promoting amongst the rural working-classes temperate habits where drinking now largely prevails, because improved social habits would mean to them larger business and more solvent customers. Not least in relation to these special prizes do we find that they lead all sections of the public to take greater interest in the local exhibitions, and thus give active impetus to the real work of horticultural societies, viz., that of the promotion of good gardening in their respective districts.

—— Potato Prospects.—The announcement that the destructive Peronospora has already made itself very manifest in the western parts of the kingdom is calculated to bring alarm and dismay to the minds of many of our readers. Under what may be termed the ordinary conditions of its development, we usually get well into the advanced month of July ere a virulent form is assumed, but here are proofs of its existence earlier by from three to four weeks. The present appearance of the Potato breadths affords every reason for hope, because they look so well, but, as a rule, growth is late, and, not least important, the process of tubering is slow, the cool temperature and heavy rains having so far promoted top-growth at the expense of the tubers. Were dry settled weather now to interpose, there can be little doubt but that the Potato crop would presently be a heavy one; but of settled weather there seems at this moment to be no immediate prospect. We noted the other day when at Chiswick, that there the trial rows of new or seedling kinds presented a remarkably promising appearance, but the majority of the kinds are of that exceeding robust habit which so eminently characterises Magnum Bonum and others, and too plainly indicates very late maturing. If amongst any such even but one or two should prove to possess extra strong disease-resisting powers some gain will result; but



Fig. 5.—Mount Edgecumbe: view of the east front. (see p. 7.)

if all of these are destined to be but inanimate victims of the disease within a few weeks, and to leave behind them only an immature crop of rotten tubers, horticulture will rather have lost than gained by such an expenditure of well-intentioned but misdirected effort. Our raisers must, if they mean to do service to the world, give us early tubering kinds and plenty of early ripeners. Another desideratum is stout leafage, whether it be large or small. How tender is the foliage of many sorts may be seen where breadths are swept by the wind, and friction is caused. Equally desirable is it to have stout foliage to resist the attacks of the fungus as much as is possible. The long absence of heat and sunshine has but tended to make the foliage thin and tender, and hence far less fitted to withstand the fungus than is the case in warm seasons.

—— SINGULAR ACTION.—A case possessing very material interest, not only to all exhibitors of plants, but, indeed, to all gardeners, was heard last week in the Chelmsford County Court, by Dr. ABDY, the Judge, and which gravely concerned the reputation of a gardener who is not altogether unknown. The action was to obtain compensation for alleged wilful damage done to a specimen Phœnocoma prolifera Barnesii, belonging to a gentleman of the same town and exhibited at the local exhibition in July last. The damage appeared to have been done at the time of the removal of the plants from the show—one witness, the plaintiff's gardener, declaring that when he saw the plant previously it was in good condition, but fifteen minutes later it was found by him greatly mutilated; and it was further stated that none but the defendant had access to the tent in the interim, he being a member of the exhibition committee. The damage was laid at £2, which was recovered, the verdict being for the plaintiff, and an application for a new trial refused. The reports of the evidence given to hand are meagre, and we have no means of ascertaining how far an act, so unwonted in character, was or was not fairly chargeable to the person implicated. We are sure that ninety-nine plant exhibitors out of every hundred would hold, that any such act perpetrated from malicious motives, by a respectable gardener, was incredible. The defendant's case is, that the plant was permitted to fall by the plaintiff's own gardener, who handled it carelessly, and hence the damage. Whether this defence be true or not it sadly complicates the case, because it shows that there must have been on one side or the other some very hard swearing; and it is but a natural inference that the social relations of the two gardeners in question were not happy.

—— FERN-GROWING UNDER PLANT STAGES.—The constant and increasing demand for cut Ferns has caused gardeners to resort to many schemes which certainly redound to their credit, and which formerly would have been looked upon as impracticable. But the old axiom of "Try again" still holds good, and those who have the courage to try often enough seldom fail in the end. Successful Fern-growing is looked upon as no mean accomplishment in plant-growing, either when the plants are grown in pots or planted out rockwork in houses where staging is not used. But on a good bed of Ferns under a plant stage is not often seen anywhere, though it will no doubt be welcome information to many to know that they can be so grown for cutting purposes. At Streatham Hall, near Exeter, there is a fine bed of Ferns in one of the span-roofed Orchid-houses under the stage. They are growing freely, and are as healthy as possible, and have been in their present situation four years. The curious thing about their culture is that they are planted out in a bed of ordinary garden sand; and if such a supply of cut fronds can be obtained by such a simple mode of culture, it certainly would be a great relief to many who are hampered for room to follow the example. It should be stated that the house, although an Orchid-house, is not a shaded one, but a light structure, in which the plants are not too thickly set, and the Ferns, therefore, enjoy a fair degree of light, and are as green and healthy-looking as a bed of Parsley.

—— BRUGMANSIA KNIGHTII.—Those who have large conservatories to fill will find this a most useful and effective summer flowering plant, and a rapid grower. Its fine green leaves and pure white flowers of over a foot in length have a noble if not majestic appearance in large houses, where there is full room for their development. As pot-plants they are useful for grouping by the sides of staircases, with scarlet Fuchsias and such-like; but as mere conservatory ornaments, where there is room at all, they should be planted out. There is so much to be done under glass now-a-days that time cannot be afforded to grow plants in pots that succeed better planted out, unless there are sound reasons for doing so.

—— ADIANTUMS AS BASKET PLANTS.—There is nothing more difficult of accomplishment in the matter of beautifying lofty conservatories than to find means by which a given area may be so broken up as to give an artistic touch to that naked space which may be frequently seen between the fronds of tall Ferns and large Palm leaves and the glass roof. The groundwork may be pretty, and the body of the house well filled, but still something remains to be done to give the whole a finished appearance. The free-growing Tacsonias exoniensis and Van Volxemi are most useful for filling up this defect in large structures, and if at certain points large baskets of Adiantums are suspended from the roof a further touch of elegance will have been effected. The baskets should be in proportion to the size of the house, and well covered with luxuriant fronds, forming rich globes of green, which will give any ornamental structure a most pleasing and animated appearance.

—— GARDENERS' ROYAL BENEVOLENT INSTITUTION.—As we go to press the thirty-ninth anniversary festival of this Institution is being held at the "Albion," Aldersgate Street, under the Presidency of the Right Hon. the Lord MAYOR ("our gardening Lord Mayor," as he was happily styled by the Treasurer, Mr. WRENCH), supported on the right by M. le Comte de KERCHOVE, on the left by Dr. HOGG, and by many of the gardeners of England, amateur and professional. Our Belgian friends, and friends of the Institution, assembled in greater numbers than ever to do honour to an Institution which the Lord MAYOR described as being a charity remarkably well deserving of the attention of the gardeners of England, as well as of the owners of the parks, the woodlands, and the gardens of this great empire—the ladies and gentlemen who delight in gardening, as he himself did, as well as the mere diggers and delvers. A more enthusiastic Festival has never been held, and we believe the result will financially be more successful than any of its predecessors; but of this we shall be able to speak with more certainty in our next issue, when we shall return to the subject at greater length.

—— "OUR FOREIGN VISITORS."—We last week intimated that a party connected with the Belgian School of Horticulture, the Cercle d'Arboriculture, and of patrons of the pursuit for which that country is so justly celebrated, were coming over to see some of the principal market gardens and nurseries, with a few of the leading public and private gardens that lay within such distance of London as the stay permitted of their seeing. They were seventeen in number. On Monday they accepted Messrs. CANNELL's and Mr. LADDS' invitations to visit Swanley and Bexley Heath, special saloon carriages having been provided to convey the party from London to Swanley, where Mr. CANNELL's establishment is well known for the limitless quantities of soft-wooded plants which it contains, including all the popular kinds cultivated in the open air, and within the extensive ranges of glasshouses. These the visitors inspected closely, and were much pleased and interested with, as well as in the simple but efficient construction of the houses, all of which were attentively examined. After lunch, carriages were at hand to take the party, and other gentlemen who had come to meet them, on to Bexley Heath. Here they had an opportunity of seeing horticulture carried out under glass, under conditions differing widely from those of the general nurserymen. In place of a multiplicity of different things being attempted, a comparative few are grown, such as are required to most meet the demands of the British public, Covent Garden in particular. Roses, Gardenias, Stephanotis, Bouvardias, Camellias, Tuberoses, zonal Pelargoniums, Fuchsias, Cinerarias, and a few others are the chief things in the shape of flowers—with Grapes, Cucumbers, and Tomatos—that go to fill the 11 acres of houses which are here existent, and which are still being added to at a rate to almost stagger belief. The Vines with the immense crops they were carrying, and the long houses of Roses, seemed to be the things which most astonished the visitors, who here again attentively examined and inquired into the general method of cultivation, all the details of which Mr. LADDS fully explained. The roads chosen from Swanley to Bexley Heath, and the return to Swanley, were such as were best calculated to show fruit and vegetable cultivation largely combined, as it now is, with the farming of the district. A stroll through one of the most important of these farms formed part of the programme. After a long day, spent with mutual pleasure to the visitors and those who accompanied them, they returned to London. Mr. BAINES and Mr. CANNELL kindly acted as guides. On Tuesday the party visited the Pelargonium Society's exhibition, and were received at luncheon by the Council of the Royal Horticultural Society and the members of the Pelargonium Society, Lord ABERDARE presiding; Mr. MOORE, the President of the Pelargonium Society, occupying the vice-chair. Mr. BULL's exhibition of Orchids was afterwards inspected with astonishment, and the day was closed with a visit to the unique establishment of Messrs. VEITCH, who entertained the party at dinner. On Wednesday the party proceeded to Slough, where they were hospitably received by Mr. TURNER; and thence proceeded to Frogmore, where, by special desire of HER MAJESTY, Mr. JONES conducted the party over the establishment committed to his charge, and acquitted himself of his hospitable duties in a manner which elicited the warmest acknowledgment. Thence, by permission of His Grace the Duke of WESTMINSTER, the party proceeded to Cliveden, where Mr. FLEMING had so arranged as to afford a rare treat to his visitors. The Conifers at Dropmore were next inspected, the veteran Mr. FROST recounting the history of the giants over whose growth he has so long presided. Thence the party was conducted by way of Burnham Beeches to Slough and back to London, having had an excellent opportunity of seeing illustrative examples of British horticulture. On Thursday the party proceeded to visit the market gardens in the Twickenham and Mortlake districts, and were present at the banquet of the Gardeners' Royal Benevolent Institution in the evening, being received by the Lord MAYOR and other civic dignitaries. Friday is to be devoted to visiting various nurseries, and especially those of Mr. WILLIAMS and Mr. CUTBUSH; while on Saturday morning (by permission of Sir JOSEPH HOOKER) the Royal Gardens, Kew, Richmond, Sion (through the courtesy of the Duke of NORTHUMBERLAND) and Chiswick are to be visited. If the Belgian visitors feel as pleased with their trip as their English entertainers are with the opportunity of showing them hospitality and sympathy, all will go well.

—— THE WEATHER.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending June 26, issued by the Meteorological Office, London:—The weather has continued cold, dull, and showery, with occasional thunder and lightning. The temperature has been equal to the mean in "Scotland, E.," but in all other districts it has been below the normal value, the deficit in the south-western parts of the kingdom being 4°. The maxima, which occurred generally during the latter part of the period, were considerably higher in most places than those of last week, and ranged from 66° in "England, S.W.," to 76° in the "Midland Counties." The thermometer was lowest either on the 23d or 24th ult., when it fell to 40° in the south-west of England, 41° in the north of Ireland, and to between 42° and 45° elsewhere. The rainfall has been seven-tenths of an inch more than the mean in all districts. Bright sunshine shows a decrease in duration in nearly all places. The percentage was greatest (45) in "Ireland, S.," and least (26) over central England. Depressions observed:—An area of high pressure has held steadily over Scandinavia, and an area of comparatively high readings over France, while several small depressions have passed across our islands from the south or south-west. The wind, though subject to local variations in consequence of these disturbances, has been generally south-westerly in direction, and moderate or light in force.

—— GARDENING APPOINTMENT.—Mr. JOHN FRASER, for several years Foreman in the Gardens at Garbally, has been appointed Gardener to Viscount LISMORE, Shanbally Castle, Clogheen, Cahir, Co. Tipperary.

GORWAY.

There are few districts in the charming county of Devonshire where beautiful private gardens are more plentiful than the neighbourhood of Teignmouth, near to which Gorway stands conspicuous in its own grounds, which have been laid out with great taste and skill by Messrs. Lucombe, Pince & Co., of Exeter. This fine modern mansion and grounds are the property of John Whidbourne, Esq., who has not only founded a fine garden, but also keeps it in excellent order. Not a blade of grass nor a leaf is allowed out of place, nor is there a sickly plant or shrub to be found in the whole garden. The house stands upon the slope of a hill less than half a mile from Teignmouth, and the chief entrance is off the Dawlish and Teignmouth road. The drive to the house curves gently, and the irregular borders and groups of shrubs are of the choicest and most valuable kinds.

The place seems quite a home for Ilex Oaks, which are now very beautiful, clothed as they are with their pale green leaves, which are distinct in tone from that of most other trees and shrubs. The flowering shrubs consist of Pernettyas, Berberis, Veronicas, yellow Broom, Deutzia scabra, Weigelas; and variegated Acers are sparingly planted among evergreens. Acer polymorphum rubrum has a fine effect here, its rich red leaves having a peculiarly attractive effect under a ray of sunshine. By the way, this plant is quite equal to the American Liquidambar (which they do not appear to know in Devonshire) for giving changing effects under light and sunshine. A very attractive sight is created by planting one of those Acers in the centre of a group of shrubs thinly clad with foliage, which break up the sun's rays into myriads of threads, the action of which upon the leaves is strikingly beautiful. Viewed from underneath the leaves appear to be almost on fire, so intensely bright is their appearance. From the south terrace there is a splendid view of the sea and of the surrounding country; towards Babbicombe and the Torquay hills, the Ness, an immense peak rising up out of the sea beyond the river Teign, and the Ringmore Hills. Teignmouth is in a valley hidden by trees, and the Ness-house, a seaside seat of Lord Clifford's, of Chudleigh, peeps out from under the shadow of the peak from which it has taken its name. Further to the east there is a grand sea view to Portland. The boundary planting at this place we were much struck with, for, in addition to the usual irregular outline, an exquisite finish is given to the whole by the introduction of simple figures planted with shrubs abutting upon the main belt, and clumps of showy flowering shrubs dotted between these and the narrowest part of the belt have a very pretty effect from the terrace walk. The trees and shrubs upon the east and west sides are equally choice, but arranged in a different style, though with hardly less effect.

Opposite the south-west angle of the house there is a large Elm, and a view to Newton Abbot upon a clear day. The flower garden is west from the house—a sunk garden laid out in grass, and well protected upon the north side. The centre bed is a large oval planted with subtropicals, the remainder being made up of Pelargoniums with appropriate edgings, carpet beds, and others with a fine display of Violas, which are at present by far the brightest beds in the garden. Haldon Hills lie to the north-east, and are visible from this garden in clear weather. There are some wonderful specimens of Cupressus macrocarpa, which are beautifully furnished with young growths, and are probably more striking just now than at any other period of the year.

The shrubbery borders, too, are charming as regards formation and the style of planting. As an example a sloping border has a groundwork of Ivy, with groups and single plants of flowering shrubs, and an imposing background of Ilex Oaks, Conifers, and other ornamental trees. One group I noticed was composed of Escallonia macrantha and mock Oranges, with a margin of Kalmia latifolia, or tall Pernettyas shooting up at the back of a variegated Weigela, or there is a mass of the Gum Cistus looking out from between two evergreen shrubs, the whole border being edged with Veronica incana.

In the walled-in garden the hothouses, and, indeed, everything else, are in the very best style of the day. There is a large greenhouse filled with Azaleas, and a Peach range nearly the full length of the garden in divisions where there are superior crops of many kinds of Peaches and Nectarines. The range of vineries are of equal merit in all respects—better even as regards results. The Muscats are a splendid crop, not a few sensational bunches, but a general crop, consisting of bunches which are well formed, indeed, so handsome that they ought to be seen a distance from home. The remaining structures are filled with stove and greenhouse plants, the collection of Pelargoniums being the most noteworthy. The crops generally are highly satisfactory, and the local reputation the garden enjoys under Mr. Deadman's management is highly complimentary to his skill as a cultivator in every branch of his profession.

STRAWBERRY CULTURE.

The Strawberry is like most of our bush fruit, including the Gooseberry, indigenous to Britain, and, like the last-named, is also a most delicious and wholesome fruit; and, although undoubtedly a native of Britain, being found wild in woods, &c., in various parts of the country, it is nevertheless of somewhat wide geographical distribution, being also found in a wild condition in various Continental countries, as well as in North and South America. It has no doubt been long cultivated in the gardens of this country, although, until within a comparatively recent period, its culture has not been of the most rational character, having been mostly planted in beds some 4 or 5 feet wide, the individual plants generally somewhat crowded, and where they were for years allowed to struggle with each other for the means of existence, probably in imitation of the conditions in which the plants are found in their native woods and wilds. Almost the only artificial assistance extended to them was the doubtful one of mowing off their leaves early in the autumn, or soon after their period of fruiting had fairly passed over, and beds thus treated were generally allowed to remain during many years; furnishing crops annually, it is true, but annually decreasing in quantity as well as in quality, until they were considered as fairly worn out, when what little remained of them was generally dug into the soil.

This premature removal of the leaves must doubtless have been injurious in the highest degree to the plants, and could hardly have been compensated for by the annual surface-dressing of rich manure, which was generally applied to the beds, and which resulted, it must be admitted, in occasional heavy crops of tolerable fruit, which, as has been said, as a rule, grew less by degrees, &c.

It is hardly necessary to say that such practice as has been alluded to is now generally discontinued (unless it be in some few old and neglected gardens); and the Strawberry crop, whether in the open air, or under glass, is now, like most other crops, generally compelled to travel by something like "express," so that the production of early runners from established plants, are as much as possible encouraged, and these, by judicious and liberal treatment, are compelled to become fruit-bearing plants in less than nine months from their advent in the form of runners.

Strawberry plants are now generally grown in lines, at a distance of some 3 feet from each other, and at about half that distance from plant to plant. They will succeed in any ordinary good soil, but prefer one of a light, rich, loamy character, which should be trenched or deeply dug, and at the same time sufficiently enriched with manurial matters to sustain the plants for at least two years. The Strawberry may, of course, be increased by seed, and it is only by this means that new and improved varieties can be secured.

The usual mode of increase, however, is accomplished by the runners which spring from the stock of the old plants, their use being that of transporting the young plant to some distance from the stock, and to fresh soil, on which it is not slow to establish itself; and thus, as the old plants become worn out, and ultimately die, their place is taken by runners, or young plants, and extinction is for a time thus prevented. In order to obtain young plants for the formation of new plantations, as well as for the purpose of forcing, the soil between lines of established plants should, about the middle of the month of May, be loosened or forked up, and a line of 3-inch pots, filled with rich, light soil, should be sunk in the same to the level of their rims, and in the centre of each pot the joint of a runner should be placed, and this should be kept in position by a small peg, or even by placing a small stone upon it. The young plant will soon root freely into the fresh soil, and if the weather following this operation prove dry, the pots should be freely watered every evening, and as the primary object in view is to obtain strong young plants at as early a period of the season as possible, the young plants need not be severed from the parent plants until the small pots they are in are well filled with roots; and soon after this has been done, the weather and the soil being in proper condition, the plants intended to form a new plantation should be at once carefully planted out, while those intended for forcing should be transferred to their fruiting pots, which need not exceed 6 inches in diameter. The operation of planting out, as well as that of re-potting, should be performed in such a way as to avoid giving anything like a check to the plants, and should if possible be accomplished before the month of June has ended; while during the remainder of the summer the plants should have every necessary attention, in the way of watering, keeping clean, &c., and unless the season proves exceedingly unfavourable the planted-out plants, as well as those in pots, will generally be found strong enough to carry fair crops of the finest fruit—those planted-out in the open air at the usual season, in the following year, while the fruit of the plants in pots will ripen in accordance with the time they are started into growth. And these forced plants, if planted-out after the first crop of fruit has been gathered, will seldom fail to produce a most abundant crop in the season following. The produce of the planted-out plants will also be more abundant in the second season than in that of the first, although the individual fruits may be less fine. And such plantations may, if desired, be retained for any number of years, but the crops, as well as the quality of the fruit, will generally be found to deteriorate after the second season. In the forcing of the Strawberry plant it is of great importance to place the plants as near as possible to the glass, and to commence with a comparatively low temperature, which should of course be gradually increased as the season advances, and as the plants develope themselves. But, as a rule, the night temperature should not exceed 60° until the fruit has fairly set, nor should the day temperature be allowed to exceed 70° without air being admitted to the structure.

Some varieties of the Strawberry, more than others, are apt to produce unisexual flowers, which does not, however, prevent the production of fruit; in order, however, to prevent the same being defective or deformed in any way, or to prevent blooms running altogether "blind," as it is called, more particularly during early forcing, it is advisable to take advantage of fine days, or during intervals of sunshine, to distribute the pollen with a small brush or camel-hair pencil. When the fruit is fairly set, it may be found necessary to more or less thin it out, and in doing this all small or imperfectly formed fruits should be removed, and this will tend to render the remainder more fine; and as soon as this begins to colour or to approach a ripening condition, the trusses should be raised on twigs or small branches of any kind, or even neatly staked and tied up, so as to keep the fruit clean, by removing it from the surface of the soil, and to allow the air to circulate freely among the ripening berries. This gives also an attractive appearance to the plants, and is better than allowing the fruit to hang round the sides of the pots and in contact with them. Some have objected to this practice, contending that the natural position of the fruit of the Strawberry plant is upon the surface of the soil. There can, however, be little wrong in assisting or even improving upon Nature in this respect, and a Strawberry plant growing in a pot is, of course, in an artificial condition. It is also equally necessary to prevent the fruit of plants growing in the open air from resting upon the surface of the soil, which, if allowed to do so, however fine it may be, it is nevertheless almost sure to be rendered useless by having the grit from the soil washed upon it by heavy falls of rain. Various means have been resorted to as a remedy for this evil. What are known as Strawberry tiles have been invented and highly recommended, but from some cause (possibly their expense) they do not appear to have ever come into general use. The raising of the trusses of fruit from the surface of the soil upon twigs or small branches has also been suggested, and to some extent practised. But it increases the temptation which ripe fruit presents to the blackbird, &c., it also involves considerable trouble, and can hardly be recommended. Tanner's bark in the neighbourhood of towns or where this material can be readily obtained is very frequently used, with the desired effect for the purpose

of mulching the surface of the soil and preventing the same being washed upon the fruit. It has also the very desirable property of driving away slugs, snails, woodlice, and other troublesome pests, which are always sure to attack ripe fruit. clean straw of any kind may also be effectually used for the purpose; indeed it is quite possible that from the use of this material in early times, that this delicious fruit may have derived its designation of the straw berry. Another material, which is perhaps more extensively used for the purpose than any other, although by no means free from objections, but in most garden establishments it comes to hand readily, and is certainly not unsuited to the purpose in view—this is the short grass, or the mowings of the lawns, &c. But whether tiles, straw, or grass be used for the purpose, the soil between the lines of plants should previously have a good dressing of soot, gas lime, or even a slight sprinkling of salt, as any of these will have the effect of keeping away most of the insect pests which have been alluded to until such time, at least, as the fruit has been secured. But in addition to all that has been recommended, it will be necessary in country places, or wherever birds are prevalent, to protect the Strawberry plantations with nets, or wirework, as soon as the fruit approaches to a ripe condition.

Ripe Strawberries may, if desired, be had at a very early period of the year, even at Christmas, or soon after that time. But unless required for special occasions, and where expense is no object, such early forcing is seldom resorted to, as fruit produced thus early is necessarily more or less deficient in flavour or quality, and the result is seldom considered as worthy of the candle, but by commencing to force a portion of well-established plants with the commencent of the year, or during the early part of January, the fruit will be ripe early in March, and this will be succeeded by that of other plants started at a later period; and thus a supply of ripe fruit may be maintained until it comes in the open air, while the earliest forced plants may be planted out as soon as their fruit has been gathered, and they will generally furnish a more or less abundant autumnal supply of fruit, which will be supplemented by the alpine or late autumn fruiting kinds, and it will thus be seen that the Strawberry season can readily, if desired, be made to extend from the beginning of March until the end of October, or for a period of eight months. The early forced plants will also, if planted out in properly prepared soil, in addition to furnishing a second crop of fruit (which will not in any appreciable degree affect the crop of the following season), furnish what may even be found to be of greater importance, viz., a supply of healthy runners at an earlier period than such will be produced by established plants, and these should be laid in small pots, as has been directed for the purpose of forcing and planting out.

The varieties of the Strawberry are now exceedingly numerous, and some sorts are found to succeed better in certain soils and situations than in others; consequently, certain kinds are held in the highest estimation in some gardens, which are by no means favourites in others. For very early forcing, possibly the Black Prince and Vicomtesse Hericart de Thury are generally considered as the two best; while for a second, or general crop Keens' Seedling, although a very old variety, cannot be easily surpassed. Sir Joseph Paxton, either for the purpose of forcing or for open-air culture, is an excellent variety—the plant being very hardy, and comparatively early, the fruit solid and of the finest flavour, while it also travels and keeps well. Sir Charles Napier is also an excellent variety either for forcing or for outdoor culture; the fruit possesses a brisk pleasing flavour, which is much relished by some, and there is no variety which travels better, if, indeed, any carry so well. British Queen is of a somewhat tender constitution, but the fruit is remarkably high flavoured, either when forced or when produced in the open air. Where it succeeds it is unsurpassed by any other variety. Doctor Hogg is an excellent variety, resembling in flavour the British Queen, but is of a decidedly better constitution.

The Hautbois varieties are possibly less grown than was formerly the case, and they do not succeed well in some situations. Where they do succeed, however, they are well worthy of cultivation, as they generally bear freely, and the fruit is possessed of an exceedingly rich aromatic flavour, differing from that of all other varieties, and it never fails to be appreciated. Grove End Scarlet is not so extensively grown now as it deserves to be. The fruit, it is true, although generally abundant, is individually small, and of second-rate quality, but for the purpose of preserving it is still unequalled. *P. Grieve, Bury St. Edmunds.*

THE LANGPORT NURSERY.

The splendid display of Pyrethrums at the Royal Horticultural Society's recent summer show induced me to have a 50 mile run by train to Langport, in order to see these interesting plants, and I was more than repaid, as I there found 2 acres of Pyrethrums, some of which were most lovely. There were many very fine seedlings yet unnamed. Amongst the double varieties with names three struck me as being remarkably fine, viz., Captain Nares, bright crimson; Lady Derby, silvery flesh; and Princesse de Metternich, pure white. Four others were nearly as good, viz., Mont Blanc, white; Placida, peach; Solfaterre, cream; and Hobart Pasha, maroon. Besides these the following were also very beautiful:—Gaiety, Aurore, Boule de Neige, Bouquet Rose, Cleopatra, Delicatum, Endymion, Galopin, Gustave Hertz, Dante, Madlle. Patti, Mons. Duvivier, Niveum plenum, Progress, Versailles Defiance, Via lactea, Princess Charlotte, and Sylphide.

The collection of single Pyrethrums was quite as interesting as those of the double ones; the best to my thinking were:—Thomas Moore, Thetis, Caprius, Hebe, Helenor, Numenes, Pamphos, Silarus, Zouch, Titiens, Marionette, Albana, Pasquin, and Pænia. The fields of Gladiolus, for which Messrs. Kelway are so famous, must be a sight when seen in bloom never to be forgotten. There are 20 acres planted with these bulbs. Among the herbaceous plants was a magnificent show of Pæonies, the most striking being Carnea elegans, Alba sulphurea, Alice de Julvecourt, Isabelle Karlitzky, Faust, Lucrea, Madame Chaumy, Madame Serrat, Modeste, Triomphe de Paris, Mrs. Lowe, Whitleyi, and Mr. Lowe. The Chrysanthemum lacustre (a gigantic Marguerite-like plant) is a very fine border flower, and so is Dianthus Rev. H. D'Ombrain the Salvia. It has always surprised me to see the acres of Strawberries and Raspberries near London, but I was not prepared to see twenty acres of Gladioli: there might be plenty of customers for fruit, but where could purchasers be found for so many thousand bulbs? There were large beds of those wonderful varieties, Agrius, Agnes Mary, Beauty of England, Brennus, Dr. Hogg, Dr. Woodford, Dr. Woodman, Electra, Duchess of Edinburgh, Helenor, Hermanni, James Kelway, Lady Bridport, Lassia, Marcianus, Miss Solway, Mr. Derry, Mrs. Reynolds Hole, Pictum, President, Samuel Jennings, Sir Massey Lopes, Victory, Wonder, &c., and beds of seedlings without number.

The ten houses of Cucumbers, each containing a very choice variety (and all the blooms set by hand each morning, as I there learnt), was a sight to do a Cucumber grower good to look upon.

The three large houses full of herbaceous Calceolarias were a blaze of various colours, the habit was dwarf, the shape perfect, and the size large; there were no bad ones, and no crumpled flowers, and, what was very remarkable, there was no one colour that predominated. In three large houses were Cinerarias, but they were now out of flower. Other houses and pits were filled with vast numbers of Ferns, Gloxinias, Begonias, Epiphyllums, Fuchsias, Pelargoniums, and handsome foliaged plants. All the leading Chrysanthemums were there in great numbers, and in the gardens were thousands of herbaceous plants; the collections of Iris, Pansies, Violas, Phloxes, Pentstemons, single and double Dahlias (including a set of new single flowered ones which are now being sen out from this nursery), and other herbaceous and alpine plants were too numerous to mention. Two acres of that lovely Hyacinthus candicans when in bloom must be a marvellous sight; these, together with acre upon acre of agricultural plants (for seed) make up a whole, when added to tens of thousands of Tea Roses in pots, and acres of standard and dwarf Roses, that would well repay a visit to Langport, which is easily reached by railway, changing carriages at Durston near Bridgewater (on the Bristol and Exeter Railway). *E. J. Lowe.*

Statice Holfordii.—What charming plants these are for autumn flowering, and how scarce they appear to be growing in private gardens. You may travel over half a county without meeting with a decent collection. A poor plant or two, starved in an out-of-the-way corner! instead of healthy plants with leaves like young Cabbages. Possibly it does not occur to people that the same colour is not forthcoming in any other plant during the month of August, and, apart from this, plants in good health will continue to supply a few flower-spikes all the year round.

HOME CORRESPONDENCE.

Whitlavias.—Beautiful as the old kinds of these border annuals are, they are quite eclipsed by a new one Mr. Thompson has in his seed grounds at Ipswich, before which W. grandiflora and W. gentianoides, quite pale, so beautiful is the fresh-comer in the lovely blue shade of its flowers, which if not of the depth of the Gentians, is far richer and more pleasing to look at. The plants grow and spread freely, and bloom nearly the whole of the summer, and it requires no prophet to predict that these Whitlavias will be one of the greatest favourites among the many good things Mr. Thompson has already sent out. In the same grounds I was much struck with the great beauty and refined appearance of Castilleia indivisa, which is a half-hardy annual that grows about a foot high, and flowers at the terminal ends of the shoots, which bear lovely rich coloured leaf bracts of a crimson-scarlet shade that contrast well with the blossoms at their base, which are yellow. Unfortunately the plants are rather miffy doers, but for all that this Castelleia is deserving of every care and attention, as it is exceedingly bright and showy, and affords very choice bits for cutting. It has now been in commerce some years, but does not appear to be much known, as I have never yet seen it in gardens. Of Hyacinthus candicans Mr. Thompson has a large stock of bulbs raised from seed, which are in long beds, and stood the severe winter of 1880-81 quite unprotected, thus proving how hardy it is. Another plant that deserves special notice is Onosma taurica, a hardy perennial, which branches freely out from the ground, and bears at the ends of the drooping shoots long racemes of flowers of the rich yellow colour of Erica Cavendishii, but much larger and more swollen out in the middle. So fine and distinct is this Onosma that it should be in every herbaceous border, and if planted in sandy or peaty soil it will be found to do well. *J. Sheppard.*

Euonymus.—The Spindle tree is a well known plant, and is much used for the ornamentation of shrubberies, but, unfortunately, the variegated forms are too tender to endure hard winters except near the sea coast, or in favoured districts where frosts are not so severe. Some of them are so good, however, as to be quite deserving of greenhouse culture, and under glass their foliage comes much larger and better marked than it is ever seen in the open. One of the finest is E. japonicus aureo-marginatus, which is almost equal to some of the Crotons in its markings, so rich is the colour and so beautifully bright are the leaves. The best among the white variegated section is E. radicans albo-marginatus, which has much larger foliage than the preceding, and is altogether a most striking and exceedingly showy plant. For table decoration or the embellishment of rooms, these Euonymus are of great value, especially during winter, when they may quite take the place of Crotons, and be made to produce nearly equal effect. If used for table work, small standards are best, and these may be readily formed by rubbing or cutting out the buds up the stem till it reaches the height required, when by nipping out the point of the shoot, side branches will start at the top, and if these are again stopped they soon break and grow into nice neat little heads. For greenhouses and conservatories free pyramids are best—a shape which is partly natural to these charming Euonymus, and which they assume with but little assistance. All that is requisite to keep them in that form is to pinch back the head of any shoot that is taking too much of the lead, which will maintain the balance of growth by throwing the strength where more wanted. Large plants of the form and character of those referred to are very telling in association with Camellias and other heavy dark-leaved subjects, with which they show up in fine contrast, and help much to light up a place. To propagate these and other Euonymus, cuttings should be put in during the autumn and kept under handlights in a house or cold frame till the spring, when if subjected to slight heat, they soon root and become ready for potting or planting out in the open. This latter is an easy way of growing them on for winter, as they require less water and attention, and may be taken up and put into pots when wanted or stood in a cold frame and drawn on from there. *J. S.*

Judging and Showing Hardy Herbaceous and Alpine Cut Flowers.—Is the judging and showing of hardy herbaceous and alpine cut flowers rightly understood by either judges or exhibitors generally at the present time? I venture to answer, No. I think the errors in judgment which so often occur in connection with this class of plants and flowers arise solely from a misapprehension of the meaning of the terms which are used to designate the class. The Pansy, the Pink, and certain other subjects that florists have made their own, and given their name to as a general designation, are, it should be admitted, strictly herbaceous plants; but as they have by common consent been lifted out of that till recently despised category, and have a designation of their own, and are, moreover almost invariably honoured with classes devoted exclusively to themselves at flower shows, it is hardly fair that they should be allowed also to compete in a class which, by intention at least, is open only to their prototypes, yet this is allowed, and happens frequently, as I know to my cost. I will state my most recent experience in illustration of the preceding remarks. I competed at Leeds show on June 21 last, in class 53, which is described in the schedule in these terms—"Stand of eighteen bunches of hardy herbaceous and alpine flowers (distinct)." It is an express condition of the schedule (rule 10) that all flowers should be named correctly. Mine were named, and I believe correctly, and my stand comprised good bunches of the following:—Hoteia japonica, Lilium longiflorum, Lilium umbellatum, Delphinium formosum, Inula glandulosa Campanula Medium calycanthema, Pyrethrum roseum Undine, Pyrethrum roseo-purpureum, Iris hispanica var., Centranthus ruber, Thalictrum aquilegifolium, Armeria cephalotes rosea, Armeria plantaginea rubra, Campanula glomerata, Pæony La Brilliante, Papaver pulcherrimum, Betonica grandiflora, Allium Moly. With these I was placed 2d, while the 1st prize stand contained nothing that was named. I made no notes, but I may say that the bunches were made up of mixed flowers, the most conspicuous of which were as follows:—Two varieties Pyrethrum roseum (red and white); Lupinus polyphyllus, two varieties (blue and white); Centaurea montana, two varieties (blue and white); Iris germanica, five varieties, the dullest variety that could be named; Potentillas, two varieties; Pinks, seven varieties; Pansies, eight varieties in each bunch. If I am right in my position that florists' flowers should be excluded from such a class, there was clearly no course open to the judges but to disqualify this stand, to which, however, they awarded the 1st prize. I may here state that my purpose in rushing into print is, not to vent any ill feeling, but to obtain an expression of the opinion of such of your readers as take an interest in hardy herbaceous and alpine plants, with the view of disseminating a better understanding of what is understood by the phrase than the majority of judges and exhibitors appear to possess at the present time. *J. Faulkner.* [Did not Mr. Faulkner himself sin against the rule by showing Pyrethrums, which are as much florists' flowers as Pinks, and by miswriting the names of his plants? Ed.]

Strawberry Growing for Market.—I find that the chief favourite Strawberry among growers for market around Ipswich is John Powell, a sort which is very hardy and a most prolific bearer, and is one of the first in and the last out, as, unlike most others, the late lateral blossoms all set and swell, and produce perfect fruit. Another point in favour of John Powell, which is also a most important one, is that the fruit bears handling and carriage without the disfigurement most kinds are subject to, as it is not soft, but firm and well glazed, which saves it from smashing up in the way other sorts do. The next in general esteem is President, which is also a great cropper, and one that takes well with the public. The system adopted in growing them is to plant in beds of three rows at 2 feet apart, a yard between, which leaves sufficient room to walk amongst them for picking, and this is done by taking half of the beds from each side. To keep the fruit clean tan is used, a thick coating of which is laid over the ground, where it remains with fresh added as required till the beds are exhausted. Under the management of the best cultivators the land is never dug after planting, but simply cleaned by being hoed or hand-weeded when the runners are taken off, which is done immediately the fruit is gathered, when the plants are trimmed round, and the dead leaves taken away, so as to let in plenty of light and air to ripen the crowns. The beds are generally allowed to stand three years, by which time the plants are past their best, and flower and fruit with less freedom. In preparing the land for planting it is heavily manured and deeply dug, and then made firm by treading, as the more solid the ground is the more compact and fruitful the plants become. The runners are layered in pots, by doing which good well-rooted plants are obtained, and such that, when turned out, set to work at once, and are well established before winter begins. *J. S.*



Law Notes.

Vilmorin, Andrieux & Co. *v.* Reeves.—In this case, which came before Mr. Justice Day and a common jury at the Guildhall on Monday last, the question involved a somewhat interesting point to horticulturists and market gardeners. The plaintiffs were Messrs. Vilmorin, Andrieux & Co., seed merchants, of Paris, and they were represented by Mr. Kemp, Q.C., and Mr. Wilberforce. The defendant was Mr. Reeves, a florist and market gardener, carrying on business at Acton in Middlesex, and he was represented by Mr. Gore. It would appear from the facts proved upon the trial that the defendant Reeves had had many transactions in seeds and bulbs with the plaintiffs, and at the time of the transaction in question there was a balance of account owing to the plaintiffs. In or about April, 1877, the defendant Reeves ordered from the plaintiffs 5 lb. of Mignonette seed, called or known by the name of "Reseda odorata pyramidale grande fleur," and the material questions raised were whether the Mignonette supplied was the article ordered, or another of inferior sort, and whether, if it was the same sort, the plaintiffs were responsible for the loss sustained by the defendant in the cultivation of the Mignonette, which, if it was the same sort, must have deteriorated in quality, and which loss the defendant in his pleadings put at £300. The question of the state of the account for goods supplied by the plaintiffs to the defendants having been adjusted, and the onus being on the defendant, Reeves, to prove his damage, he was the first witness called. He gave evidence of the fact of the purchase and the cultivation of the seed in question, that the plants were grown on an average three in a pot, and that there were 136 lights, containing eight and a half dozen pots under each light, the cultivation involving the attention of special men for some considerable period. In the result it was discovered to be a very inferior kind of Mignonette—so inferior indeed as not to be worth the expense of carriage to market, and it was consequently useless to the defendant.

The defendant went on to say—Upon making this discovery I went over to Paris and had an interview with the plantiffs; in the month of August following I saw the manager of the plantiffs: I told him the loss I had sustained, I showed him the figures detailing the loss which had accrued to me by reason of the bad seed coming to hand. This conversation was with Mr. Posth. I told him that my loss was about £300; he replied that the contract was a French contract, and that the law of France protected him, and rendered him not liable for anything beyond the cost of the seed. I left him with this remark, "If that is so, I must put up with it, but I must try if I cannot do better." During the conversation I urged him (not being fond of law) to refer it to three persons in the trade of whom he should choose two, and I would choose a third. A good deal of correspondence subsequently occurred and endeavours were made to settle the matter. The plants when sold would fetch on an average 6*s.* a dozen, they would cost me about 4*s.* a dozen, leaving 2*s.* a dozen profit. I have claimed for 1000 plants, and I showed their agent that number of plants. It was altogether a different article to what it ought to have been. Cross-examined:—The cost price of the Mignonette for which I am claiming these damages was 16*s.* 7*d.* I have not paid the 16*s.* 7*d.* I was led to understand that the firm would compensate me. I did not get the compensation when I was in Paris. Mr. Posth did not tell me that they had sent the same seed that I had had before, but that they would not undertake that it would come up the same. I have had this particular kind of Mignonette from the plaintiffs for about four years. It is not within my experience that seed of this kind reverts back after a certain number of years to the original plant from which it came. I am not a seed grower. The seed in this instance appeared to me to be the same as the seed I have had before. I do not know either the wholesale or retail price of Mignonette seed. This Mignonette was ready for sale in the month of June. I am making to-day 6*s.* a dozen for Mignonette. I have no idea what price is got for the common Mignonette. In the trade it may be grown by mistake, but no one buys it. I produce samples of the two kinds of Mignonette. (The samples were here produced and examined by the learned Judge and jury.)

The defendant's foreman, Fenwick, was then called, and recollected the seed coming and being sown. He stated that he partly attended to the cultivation, but there was a special man employed for it. It turned out a very poor Mignonette, not like what Mr. Reeves usually grew. In cross-examination he said that Mr. Reeves was famed for selling good Mignonette.

Mr. Cornish was the next witness, and he stated that he was a member of a firm of florists, and that he recollected going to see the Mignonette in question; that it was the very worst Mignonette he had ever seen; that it was very rarely grown, and was what he called the "common garden Mignonette." To have taken the Mignonette to market would have been money out of pocket. In cross-examination he stated that he was not a seed grower, but merely bought and sold flowers. Mignonette varies in price and in quality.

Other witnesses were called who gave evidence to the same effect.

Mr. Charles Taielfer, a French advocate, was then called to speak to the law of France upon the subject.

Mr. Kemp opened the case on behalf of the plaintiffs, Messrs. Vilmorin, Andrieux & Co., and dwelt upon the hardship inflicted on his clients in having supplied seed, and not having been paid a farthing for it, but instead being threatened with a liability to pay some hundreds of pounds by way of damage.

Mr. Jules Posth, a member of the firm of Messrs. Vilmorin, Andrieux & Co., was then called, and stated that the plaintiffs were seed merchants, carrying on business in Paris; that they do not grow the seed themselves, but that they send the stock to the growers and have it grown for them, and during the course of the growth they send special servants to inspect the plants, and if they find any which are not true they are "rogued out" as it is termed, and of the seed which is harvested after the above process the public are supplied; that the first supply of this seed to Mr. Reeves in 1876 was from seed grown in the same manner, and by the same grower as the seed which was subsequently supplied in 1877, and which was the seed in question. He went on to say that they had no means of ascertaining from the look of the seed whether it was the same as was formerly supplied. What he was sure of was, that the seed supplied was what was ordered. Generally, after some years have elapsed, there is some degeneration in seeds; that the Mignonette in question was produced about four years ago, and that it was an improvement upon Reseda grandiflora, and had a tendency to go back to the original stock. The order in question was given in Paris, and he delivered the seed at the railway station there, and charged Mr. Reeves with a part of the freight, and, it being a French contract, by the law of France the plaintiffs (Messrs. V., A. & Co.) were not liable.

This will substantially indicate the nature of the dispute between the parties. After some more evidence called in support of the plaintiffs' case, the counsel for the parties addressed the jury, and the learned Judge proceeded to sum up, saying, that the only question which they (the jury) had to consider, was the counter-claim of the defendant against the plaintiffs for damages in respect of his loss of market, and loss of profit upon the seed supplied. One thing seemed to be pretty clear, which was, that the plant raised from the seed in question was certainly not the plant which either of the parties expected would be raised; that for some reason or other, whether from a mistake made by the servant of the vendors going to the wrong drawer or not, he did not know, but still the fact remained, which required some explanation from them. Evidence had been given tending to show that the produce from the seed became inferior after a number of years; he did not know whether that applied to all seeds or only to this particular kind of seed. The real question was whether the seed ordered had been supplied. As a matter of law, he would tell them that a person who buys a particular thing is entitled to have that particular thing, subject to the ordinary incidents of the commodity itself, if he might use the expression. By way of illustration, if a man was to go to a merchant for Wheat, the purchaser was not to be put off with seed which produced Oats.

At the conclusion of the summing-up, the jury retired, and after an absence of a quarter of an hour returned into Court and stated that they found a verdict for Mr. Reeves upon the counter-claim for damages for £75, and his Lordship gave judgment for that amount.

Berberis Darwinii as a Fruiting Plant.—Beautiful and ornamental as this well known shrub is when in flower, it is seldom if ever alluded to as a fruiting plant, in which state it is very pretty, over-hanging the sides of walks where the rich bloom of its berries, produced in countless numbers, is a very interesting sight. In Devonshire the cottagers preserve the berries when ripe, and a party of school children admitted to where there are plants in fruit will clear the bushes of every berry as eagerly as if they were black Currants. It should be stated that the plant is wonderfully fertile in Devonshire, every branch being weighed down with double clusters of berries, of from six to seven berries to each cluster. The most prolific variety of red or white Currant does not half come up to this Berberis as a fruiting plant, and if the preserve that is made from the berries is as wholesome as that of the former, it is strange that the fact has not been discovered before now.

Reports of Societies.

Royal Horticultural: *June* 27.—The meeting on Tuesday last was noteworthy on account of the exhibition of the Pelargonium Society, a detailed report of which follows, and by reason of the excellent display of vegetables which were brought in competition for the prizes offered by various seedsmen. The display was made in the long tent, and as the day was fine the number of visitors was considerable. The presence of a deputation from the Ghent School of Horticulture and the Cercle d'Arboriculture lent additional interest to the occasion. Our Belgian friends were desirous of seeing in the course of one short week as many representative features of English horticulture as could be seen in the time, and the programme for the week was devised to this end. The exhibition of the Pelargonium Society and the meetings of the committees afforded an opportunity for the Belgians not only to see the Pelargoniums, but to meet their English associates. Such is the reciprocal friendly feeling entertained that it is a real pleasure to welcome our Belgian friends, and to this end one part of the week's programme was designed to include a luncheon offered by the Council of the Royal Horticultural Society and the members of the Pelargonium Society to the Belgian visitors. At this luncheon Lord Aberdare, the President of the Royal Horticultural Society, took the chair, Mr. Moore, the President of the Pelargonium Society, occupying the vice-chair—a large number of English horticulturists attending to do honour to and renew friendly intimacy with their colleagues from over the sea.

Lord Aberdare, in his speech of welcome, appropriately drew attention to the many bonds, historical, political, commercial, and friendly, which tied the two countries together; while M. de Kerchove, the Governor of Hainault, in responding, alluded in grateful terms to the support rendered by England to Belgium in the crises of her history, and to the example of freedom and orderly self-government which this country had set to her ally. As there seemed to but one wish—that of evincing friendly feeling to our guests—the proceedings were of a very satisfactory character.

Scientific Committee.—Sir J. D. Hooker in the chair. This meeting was but thinly attended, and the objects exhibited were not numerous.

Diseased Hollyhock Seed.—Mr. W. G. Smith showed Hollyhock seeds, with an enlarged drawing, and reported the result of an examination of a large number of seeds, with a view to ascertain whether the disease was really capable of being planted with the seeds or not. Hollyhock "seeds," as sold by nurserymen, are, correctly, fruits or carpels, enfolding the seed; it was therefore to be expected that these carpels or "seeds" might be infected with the Puccinia malvacearum. The examination of the seeds proved this to be the case, for, though rare, Mr. Smith detected Puccinia pustules in three instances, and free Puccinia spores sheltered amongst the hairs of the cuticle in several others. More abundant than the Puccinia was the mycelium of the fungus named Cladosporium herbarum, said to be a sort of larval condition of Sphæria herbarum. Mr. Smith said he had seen this mycelium give rise to the large septate spores of Macrosporium brassicæ, a fungus common on decaying Cabbages (hence its name), but sometimes extremely common in diseased Potatos and other vegetable substances. Macrosporium cheiranthi and M. sarcinula are also believed to be forms of the same fungus. It is remarkable that the Puccinia and Cladosporium were growing in company on the Hollyhock stem exhibited by Mr. Berkeley at the last meeting. In reference to the Puccinia, Mr. Smith said, as the Hollyhock seeds were gathered last autumn the spores (like the seeds) were a year old or nearly so, and therefore were acting as resting-spores. As some young Hollyhock seedlings show the disease with their first leaves it seemed evident that the spores germinated in the ground at the same time with the seeds. This view of Puccinia seems to indicate that there is no actual necessity for an Æcidium condition of the fungus, as the Puccinia is capable of reproducing itself without an intervening Æcidium. This fact does not of course prove that a Puccinia is incapable of carrying on its existence in an Æcidium form, though further evidence appears to be desirable in that direction. Sound Hollyhock seeds are of an uniform cream colour, whilst diseased examples are more or less spotted with brownish black. In some instances fungus threads had penetrated the seed coats and reached the young cotyledons within. Mr. Smith stated that he had planted a number of seeds and would report the result. (See fig. 6, p. 23.)

Disease of Iris.—Mr. W. G. Smith reported that the Irises sent from Cambridge were attacked by Uredo iridis, the early condition of Puccinia truncata, a parasite which had hitherto been only noticed on Iris fœtidissima [and subsequently, as we learn when going to press, on I. pseudo-Acorus] in this country. As the fungus now appeared from year to year on the Cambridge Irises, it was clear, as in the Hollyhock disease, that the Puccinia could, and did, continue its existence without an intervening Æcidium condition on some plant of a different nature.

Hybrid Lily.—Mr. G. F. Wilson called attention to a hybrid Lily raised by him, as supposed between L. Washingtonianum and another species. (See *Gard. Chron.* 1881, vol. xv., p. 800.)

Malformed Campanula.—Mr. Boulger exhibited, on behalf of Mr. Gibbs, of Chelmsford, a flower of Campanula medium with an increased number of segments to the flower. The chief point of interest was, that the peculiarity in question has been reproduced in a seedling, the normal female parent of which had been impregnated with the pollen of a variety presenting the same characteristics as the seedling plant, showing that the peculiarity in question could be reproduced in the male line as well as in the female.

Sections of Wood.—Mr. Boulger also showed a series of thin sections of different woods made in various directions, and intended to illustrate the conformation of the wood in different trees. The specimens in question are very well adapted for teaching purposes.

Retinospora squarrosa.—Dr. Masters showed fruiting specimens of this, received from Mr. Meehan, of Philadelphia, and which confirmed the opinion that R. squarrosa was a "larval" form of R. pisifera.

Diseased Orange Leaves.—Dr. Masters showed leaves from an Orange tree with discolorations on the leaxes, attributed by the committee to faulty condition of the glass, producing "burning."

Plants Exhibited.—Mr. Laing exhibited a remarkable Begonia, in which the male flowers were prolified—not only median but also axillary prolification being represented in the same flower. Colonel Clarke showed flowers of Cereus hexagonus.

Floral Committee.—B. S. Williams, Esq., in the chair. There were not many new plants shown at this meeting, but amongst those staged were some of special merit. The Chairman contributed the largest number, including the new and rare Guatemalan Lycaste Deppei punctatissima, which has whitish-green sepals and petals covered with innumerable purple spots, and a yellow lip with radiating purple lines; Paphinia rugosa, a small-growing species, with large white flowers covered with red spots; Scuticaria Hadwenii, a rare Brazilian species, resembling S. Steelii, but more erect flowering; Croton Princess of Waldeck, a variety of the Disraeli type, but with stem and leaves, excepting the margins, of a deep orange-yellow colour; and the beautiful new rose-veined Amaryllis, Mrs. Garfield. From G. N. D. Wyatt, Esq., Lake House, Cheltenham (Mr. Simcoe, gr.), came a very large specimen of Sobralia macrantha, with thirteen flowers; a large healthy specimen about 4 feet in diameter, and well flowered, of Imantophyllum miniatum splendens, Cattleya superba splendens, with ten fine blooms; Bollea cœlestis, with half-a-dozen grand blossoms; Galeandra nivalis, with eight flowers; and Aërides Lobbii, with one ten-branched spike, the latter and the Bollea being singled out for the award of Cultural Commendations. From Mr. James, Castle Nursery, Norwood, came a well flowered mass of Odontoglossum cordatum aureum; a good Masdevallia Harryana splendens, the creamy-yellow Trichopilia picta, and the pretty little Masdevallia Vespertilio with two blooms. Mr. Salter, gr. to J. Southgate, Esq., had a plant of the handsome Pescatorea Dayana, with seven blooms, and cut flowers of the striking Oncidium macranthum, and O. macranthum hastiferum. Mr. Green, gr. to Sir Geo. Macleay, brought up a spike of fruit of the noble Gunnera scabra, measuring 2 feet in length aud 7 inches in diameter; also some pretty spotted varieties of garden Foxgloves. A very dark red-coloured variety of Mimulus cupreus came from Mr. J. Douglas, and Mr. Hudson, gr., Gunnersbury House, Acton, showed Gloxinia Mrs. Atkinson, a fine erect reticulated flower, with a broad dark violet-purple band round the throat of the flower. Mr. G. F. Wilson again showed his seedling Lilium Washingtonianum Scott Wilson. Mr. T. S. Ware contributed a pretty collection of cut flowers, including several varieties of the Martagon Lily, Ixias, Pinks, Carnations, Calochortus venustus, Dahlia glabrata and Thalia, Lathyrus grandiflora, &c. Mr. H. Bennett showed his fine hybrid Tea Roses Her Majesty, Earl of Pembroke, and Lady Mary Fitzwilliam, the latter a grand light-coloured flower, which received a First-class Certificate. Messrs. William Paul & Son again contributed blooms of Queen of Queens and Charles Lamb.

Mr. R. Dean, Ealing, contributed a set of fine blooms of duplex-flowered Canterbury Bells, and Messrs. James Carter & Co. showed the new Gaillardia picta var. Lorenziana, a very dwarf, dark, double-flowered Sweet William, and a dwarf, clear yellow Nasturtium, named Lady Bird. Mr. Stacey again showed his bluish-purple Pelargonium Lady Brooke, and received a Second-class Certificate.

The awards made were:—

First-class Certificates.

To Mr. B. S. Williams, for Paphinia rugosa.

To Mr. B. S. Williams, for Lycaste Deppei punctatissima.

To Mr. B. S. Williams, for Croton Princess of Waldeck.

To Mr. H. Bennett, for Rose Lady Mary Fitzwilliam.

To Mr. Hudson, for Gloxinia Mrs. Atkinson.

To Messrs. Carter & Co., for Gaillardia picta var. Lorenziana.

To Mr. Salter, for Pescatorea Dayana.

To Messrs. Vilmorin & Co., for Reseda odorata pyramidalis grandiflora.

Second-class Certificate.

To Mr. Stacey, for Pelargonium (decorative) Lady Brooke.

Fruit Committee.—Henry Webb, Esq., in the chair.—Nothing of particular interest came under the notice of this body to-day. A seedling Melon—Sir Garnet Wolseley—a nicely netted round fruit, and scarlet-fleshed, came from Mr. Mann, St. Vincent's, Grantham, ; an oval-shaped, scarlet-fleshed variety, named Premier, came from Mr. McIndoe, gr. Hutton Hall, Guisborough; and Green Bergamot, a small, green-fleshed sort, came from Mr. Coombes, gr. to Sir H. Meux, Sheen, but none of them passed the standard of merit. Seedling Peas were shown by Mr. Phillips, gr. to Captain Phillips, Meopham, Kent; and Mr. Hardy, Stour Valley, Bures; and the committee requested that both be sent to Chiswick for trial.

Special Prizes.

Messrs. Webber & Co.'s Fruit-packing Prizes.—Four gardeners competed for these valuable prizes, each one sending a box of Grapes, one of Peaches, and one of Strawberries. In each case the box was lined with moss faced with tissue-paper, and all had travelled well. In one case paper and wadding had been employed between each bunch, but such division is unnecessary. Mr. Webber declares that there is much less of rubbing and friction between berries than there is when some other substance is introduced. Of course, there must be contact with the moss and paper walls to the boxes, but if the shoulders are well fixed the friction is minimised. Moss, too, is strongly favoured for Peaches, as both cooler and softer; and, indeed, no fruit could have come from off a long journey better than did Mr. Coleman's fine Peaches, which were first wrapped in soft paper, and then well secured in clean picked moss, making a perfect nest for the fruit to lie in. With Strawberries, the best method would seem to be in flat, shallow boxes, in the bottom of which is placed a thin layer of clean, soft moss, and the fruit laid upon it evenly, with intersecting leaves. With respect to Grapes, it is to the market salesman of the first importance that when the lid and top packing of the box is removed the Grapes should be seen fully and to the best advantage; the box and its contents always having to change hands at once, without any of the fruit being disturbed. The great object of the prizes is to promote a better knowledge of correct fruit packing, and it is satisfactory to learn that decided improvement is being manifested. Mr. Coleman, of Eastnor Castle, took the 1st prize; Mr. Waterman, Preston Hall Gardens, who had a grand box of Strawberries in his lot, was 2d; and Mr. Eldridge, of Chesterford Park Gardens, Saffron Walden, was 3d.

Collections of Vegetables and Peas.—Rarely at this time of year have collections of vegetables of higher average merit been seen than were staged for the good prizes offered by the Messrs. Sutton & Sons, of Reading, for twelve kinds. There were twelve competitors, and those who have seen the exhibits which came from Wycombe Abbey gardens will not be surprised to learn that Mr. Miles was placed 1st, his collection presenting almost unusual excellence. He had some singularly beautiful Nantes Carrots, fine white Tripoli Onions, Snowball Turnips, Leviathan Broad Beans, Telegraph Peas, Model Cucumbers, Walcheren Cauliflowers, Canadian Wonder Dwarf Beans, Ashleaf Potatos, Pine-apple Beet, and Brown Cos and Cabbage Lettuces. The 2d prize was taken by Mr. Haines, gr. to Earl Radnor, Coleshill House, Highworth, in whose superb lot were fine Leviathan Beans, Early London Cauliflowers, Tender and True Cucumbers, Woodstock Kidney Potatos, Kingsholm Cos Lettuce, &c. Mr. Beckett, gr. to J. P. Currie, Esq., Sandown House, Esher, came 3d with also a very superior collection—Blonde de Berlin and Sutton's White Cos Lettuce, being very fine. Mr. W. Meads, gr. to Viscount Barrington, came 4th; Mr. Waite, of Glenshurst, Esher, was 5th; and Mr. Ward, Longford Castle, Salisbury, 6th.

There were thirteen lots of six kinds of vegetables staged in the competition for the prizes offered by Messrs. Webb & Sons, Wordsley, Stourbridge, and Mr. Miles, who was in fine form, was again placed 1st, his exhibits consisting of solid Walcheren Cauliflowers, White Naples Onions,

Snowball Turnips, Ashleaf Potatos, Nantes Carrots, and Stratagem Peas. Mr. Haines, too, came 2d again with capital exhibits, having good Early Munich Turnips, Naples Onions, Stratagem Peas, Woodstock Kidney Potatos, Nantes Carrots, and Canadian Wonder Dwarf Beans. Mr. Phillips, gr. to Captain Jackson, Meopham, Kent, was 3d; and Mr. Waite was 4th.

Prizes were offered by the Messrs. Jas. Carter & Co., High Holborn, for the best fifty pods each of their fine Peas Telegraph, Telephone, Stratagem, and Pride of the Market. The two first kinds, which are both tall growers, it was noticeable, were so similar in appearance that sometimes Telegraph was shown as the darkest form and sometimes was as light in colour as Telephone. The two dwarf kinds, though differing somewhat in habit, have pods that bear a remarkable resemblance. Those shown by Mr. Richardson, of Boston, and which were placed 1st, were superb samples well filled. Mr. Phillips, who came 2d, had some very fine pods, as also did Mr. Miles, who took the 3d prize; Mr. Marriott, Shirbeck, Boston, and Mr. McIndoe, gr. to Sir. J. W. Pease, Bart., Hutton Hall, Guisborough, were 4th and 5th respectively.

A fair number competed for the prizes offered by Messrs. Hooper & Co., Covent Garden. For the best twenty-five pods of Laxton's Earliest of All Pea the best dishes came from Mr. Marriott, and Mr. G. Williams, gr. to C. Liddell, Esq., Peasmarsh Place, Sussex. Owing to the marked uniformity of quality in this class the judging was difficult.

A very interesting collection of some thirty dishes of early kinds of Peas were sent by Messrs. Veitch & Sons from their Turnham Green trial grounds. All the kinds had the dates of their incoming appended, in most cases showing only a day's divergence, needing rather nice discrimination in arranging their order of earliness. Laxton's Earliest of All, Dickson's First and Best, and Emerald Gem were ready on June 12; Kentish Invicta, William I., and Dr. Hogg on the 13th; Garibaldi and Laxton's Alpha on the 15th; American Wonder, Sensation, and Unique on the 17th; on the 20th Sunrise, then Beck's Gem and Little Gem on the 21st, Dickson's Favourite on the 22d, with Taber's Perfection, Criterion, and Advancer; and on the 26th Telephone, Telegraph, Dean's Dwarf Marrow, Supreme, Essex Rival, and Bishop's Dwarf. It would be interesting to learn how far these dates accord with those at Chiswick.

The Pelargonium Society's Show.

If the Pelargonium Society cannot be complimented on having induced raisers to break out into any new and distinct paths in the way of hybrid crosses, they can take credit for encouraging growers to produce the various classes of Pelargoniums in fine and attractive form, and they have also made the Pelargonium Show one of the leading floral institutions of the year, and that a very attractive and interesting one. There is not nearly so much of sameness of character about it as one might suppose, as the various classes of Pelargoniums differ so widely in form and habit; and in bringing together as it does all the best varieties in cultivation it enables intending purchasers to make good selections, while the encouragement given to the introduction of new varieties brings growers and exhibitors into annual contact with the best of the novelties. If we were disposed to find fault, we should say the arrangement of the schedule of prizes is not a little confusing to an outsider, and it made the work of gathering up the details of the awards a tiresome and laborious one. Mr. Barron's invariable practice of putting on the prize cards as soon as the awards are made, might be adopted by the Society with great advantage. There was also an awkward mixing up of the stands of cut blooms, which did not tend to increase the effective arrangements, while it was confusing to reporters and visitors.

The show was greatly helped by large collections of Pelargoniums of many different characters, from the gardens of the Royal Horticultural Society at Chiswick; Messrs. H. Cannell & Sons, Swanley; Pearson & Sons, Chilwell; J. Catlin, Finchley; J. Saltmarsh & Sons, Chelmsford; and others: and the arrangement in the long tent was further varied by a group of stove and greenhouse plants from Mr. B. S. Williams, Holloway; Begonias, from Messrs. J. Laing & Co., Stanstead Park; pot Roses, from Messrs. Paul & Son, Cheshunt; cut Roses, from Messrs. W. Paul & Son, Waltham Cross; Pelargoniums, Violas, &c., from Messrs. H. Cannell & Sons, &c., and Pansies from Messrs. Downie & Laird.

The collections of cut blooms were especially fine, and it is a pity the various classes had not been a little more distributed, filling up the intervals with plants. But this is a mere matter of detail, of a not important character.

The schedule of prizes was divided into three sections, and of these section 2, which comprehended classes for specimen and semi-specimen plants, had most to do in making up the show. In the leading classes we had served up again the larger specimens one is accustomed to see at the spring and early summer shows, but the specimens were generally well done, and they greatly helped to make up attractive banks of colour. In the class for four ornamental Cape species of Pelargoniums there was, as usual, no competition, which is much to be regretted. In that for six specimen large-flowered Pelargoniums in pots not exceeding 8 inches in diameter Henry Little, Esq., Hillingdon (Mr. J. Wiggins, gr.), had very good large specimens of Sultana, Illuminator, Prince Leopold, Claribel, Setting Sun (Jackson), pale bright orange-salmon, very bright and free; and Victory. 2d, Mr. C. Turner, Royal Nursery, Slough, with smaller but nice fresh specimens of Prince Leopold, Claribel, Amethyst, very dark claret-purple, extra fine; Victory, very fine; Modesty, and Illuminator. 3d, F. Hunt, Esq., York Lodge, Stamford Hill (Mr. C. Hammond, gr.). The class for eighteen large-flowering show Pelargoniums was a very effective and interesting one, Messrs. Turner and Little making a good fight of it for the 1st prize. Mr. Little had the largest, but Mr. C. Turner the smaller and brighter plants, and their freshness and fine quality stood him in good stead. Mr. Turner was 1st, with Illuminator, Florence, Invincible, very fine; Ruth, deep pink, very pleasing; Martial, Magician, Ritualist, large and very fine; Victory, Amethyst, Joe, Sir W. Scott, The Baron, very fine; Fortitude, Rayon d'Or, rich orange-crimson, very fine; Countess, soft pink, very pleasing; Margaret, very fine; Royal Review, very fine; and Chivalrous. 2d, Mr. Little, with Hermit (Beck), Faust, Snowflake, a beautiful white variety; Emperor William, Prince Leopold, Dauntless, very fine shape; Gloriana (Beck), Ruth Little (Jackson), very bright and pleasing; Valiant, Fireball (Foster), very brilliant in colour; Claribel, Joe, Rosalind, Fortitude, very fine; Thebais (Beck), rich crimson, very striking; Sultana, Amethyst, very distinct and striking; and Formosa (Foster). 3d, F. Hunt, Esq.

The best six fancy varieties came from Mr. Turner. The specimens were of good size, fresh, and well bloomed; the sorts were Mrs. Pope, Mrs. Hart, Electra, Princess Teck, Lady Carington, very delicate and pretty; and Mr. Pottle, very fine; 2d, Mr. H. Little, with Mr. Graham, Lucy, Pilgrimage, and Mrs. A. Wigan, in pretty good condition, and two others almost too stale for show purposes.

In the class for six specimen decorative large-flowered Pelargoniums in 8-inch pots, Mr. Henry Little was 1st with Robina (Hayes), Duchesse de Morny, Harlequin (Hayes), Madame Thibaut (Lemoine), a very pretty variety spotted with carmine-pink; Duchess of Edinburgh, and Triomphe de St. Mande. 2d, Mr. C. Turner, with Digby Grand, Duchess of Edinburgh, Prince of Wales, Venus, Duchess of Bedford, and Triomphe de St. Mande. 3d, Mr. William Brown, Brent Nursery, Hendon, with Attractive, very bright crimson; Mermerus, T. A. Dickson, and Eclipse, all very good. These varieties of the decorative type make very attractive exhibition plants, as the colours are generally more striking than in the show type; and the combinations of colours are very pretty also. The class for eighteen varieties of decorative Pelargoniums made a charming little show in themselves. Here Mr. Little was 1st with nicely grown and flowered examples of Sir J. Outram, white, each petal spotted with dark, very fine; Marie Malet, Reamie (Jackson), rich orange salmon, very fine and striking; Robina (Hayes), Lady Isabel, pale lilac-purple, with slight rosy spot on the lower, and a dark blotch



Fig. 6.—Hollyhock seeds diseased. (see p. 22.)

A, Hollyhock "seed" (=carpel, or modified leaf containing the true seed), natural size. B, C, Line of transverse section through same.—D, Exposed sectional surface, natural size; the end of section at E is shown as enlarged 50 diameters at F, to show the back edge of the carpel with its hairs sheltering the spores of Puccinia Malvacearum. A group or small pustule (not half the size of a pin's head) is seen at G, and part of the folded cotyledons, within the seed at H.—K, Puccinia spores, underneath the epidermis of seed-carpel, enlarged 200 diameters.—L, Mycelium belonging to Cladosporium and Macrosporium.—M, Untainted seed.—N, O, P, Seeds tainted with fungi: twice natural size.

on the upper petals—very distinct in character; Improved Triomphe de St. Mande, a deep crimson-coloured variety, of a showy character; Volonté Nationale, white, with a circle of orange-pink spots, white throat and margin, very fine; Countess de Choisseuil, large white, very fine; Multiflora (Jackson), rich shaded carmine, dark top petals, very fine; Poiteau, a fine purple-flowered variety; Mrs. Potten (Laurence), white, with a slight red spot on the lower petals, black spot on upper petals, very pretty; Princess of Wales, Claude de Bucknolt, Bracelet, and Digby Grand, a remarkably good selection. 2d, Mr. C. Turner, with Kingston Beauty, John Hayes, bright salmon-pink flushed with orange, white throat, very fine; Delicata, delicate blush-purple, bright rose spots, dark blotch on top petals, very beautiful and distinct; Nellie Hayes, blush, with slight bright claret blotches; Lady Isabel, Dr. Masters, rich dark; Mr. Ashby, Rosy Morn, Miss Alice, Duchess of Bedford, Rosetta, bright lilac-pink, dark top petals, very pretty and distinct; and Decorator. 3d, Mr. W. Brown, with Mermerus, Reliance, Mermerus Improved, Eclipse, Robert Green, very bright crimson; T. A. Dickson, Vesuvius, rich scarlet, very fine; Harry Buck, Enchanter, very bright; Stentor, Attraction, rich bright red, very fine; and Romany Rye, all high-coloured varieties, raised at Hendon; Marie Lemoine, Duchess of Edinburgh, Volonté Nationale, and Starlight, white, with dark blotches, very pretty.

In the class for six specimen zonal Pelargoniums, Mr. J. Catlin, gr. to Mrs. Lermitte, sen., Finchley, staged as usual some of his large specimens: they were the Rev. Mr. Atkinson, rich crimson, with fully one hundred trusses of bloom; Fanny Catlin, salmon, very fine; Cymbeline, bright scarlet, very fine; Alice Burton, pink, and Fanny Thorpe—the last four all of Mr. Catlin's raising—and Ouida (Denny), cerise-scarlet. The first-named and Fanny Catlin were grandly grown and flowered, the others were a little wanting in habit though finely bloomed. 2d, Mr. Henry Little, with smaller but finely grown plants of Gathorne Hardy, Atala, and Ivanhoe, scarlet; Hetty and Mr. Patchett, cerise; and Olive Carr, pink. These were small, well grown, bushy plants, carrying from twelve to eighteen trusses of bloom. Mr. Catlin was also 1st with six double flowered zonals, growing these like his single varieties in the form of flatly trained specimens, and very fine indeed they were. The varieties were Gorgeous, with at least fifty fine trusses of bloom; Mons. Thibaut, with nearly one hundred trusses; Deputé Viox, fine dark crimson; Lively, Devotion, and Dauntless—a very good lot indeed. 2d, Mr. W. Meadmore, nurseryman, Romford, with Souvenir de Castile, Eugène Baudouin, Cassimir Pierre, Azim, Député Varroy, and M. Littre; much smaller plants, but nicely grown and bloomed. In the class for eighteen double flowered varieties Mr. Little was 1st with some nicely grown bushy specimens, very well bloomed, consisting of W. E. Gladstone, F. Raspail, Mons. G. Lowagie, J. C. Rodbard, and Gambetta, shades of scarlet; Grand Chancellor Faidherbe, Roi des Violets, Henry Cannell, and Aglaia, dark crimson and purple; Dr. Jacoby, M. A. Dupuis, and Barthelmy Hillaire, salmon, Urania, Jules Simon, Paul Bert, and Eugène Baudouin, pink and purple, were the leading varieties. 2d, Messrs. J. Saltmarsh & Sons, Chelmsford, whose leading sorts were Lord E. Cecil, Sultan, Le Phare, C. H. Wagner, Wonderful, Madame Thibaut, Lucie Lemoine, and Mrs. Arthur Lattey. 3d, Mr. W. Meadmore.

Specimen Ivy-leaved Pelargoniums made an excellent display, and were an excellent feature. Here Mr. Little was again 1st, with nicely-grown conical-shaped specimens of the following:—Gloire d'Orleans, Anna Pfitzer, Madame Emile Baltet, A. F. Barron, Mdlle. Jeanne Wonters, Monsieur Crousse, Sarah Bernhardt, all double-flowered; and Mrs. H. Cannell and Monsieur de Boringe, single. 2d, Messrs. H. Cannell & Sons; 3d, Mr. G. Duffield, Winchmore Hill.

Turning now to the classes for new types and varieties, it is to be regretted that there were no entries in some classes, and in others no awards were made, in consequence of the inferior quality of the subjects staged. In the classes for three and one hybrids of the Cape species, there was no entry, and though these classes are repeated year after year they bring no entries. In the class for three new large-flowered show Pelargoniums, Mr. C. Turner was 1st, with Zealot, bright orange, lower petals slightly veined with dark, rich dark top petals—very effective; Veteran, salmon-pink lower petals, flushed with orange, and having slight blotches of dark; large dark top petals; very free and fine form; and Royal Review, dark salmon-pink lower petals, with crimson pencillings; very fine dark top petals; large and free. No other exhibitor competed. In the class for one new large-flowered Pelargonium, Mr. Turner was again 1st with Cromwell (Foster), rich pale orange-scarlet lower petals, fine dark top petals, white throat, fine form, and highly effective. In this class Mr. Little staged Britomart (Beck), bright orange-crimson lower petals, dark top petals, free and showy. In the class for three new fancy Pelargoniums Mr. C. Turner was the only exhibitor, and was placed 1st with Flossie Thompson, rosy-pink, paling to pink on the margins, conspicuous white throat, very novel and distinct; Indian Chief, dark claret, marbled with crimson, salmony-maroon upper petals, conspicuous white throat; and Irene, blush lower petals, with slight bright rose spot, pink upper petals, with rosy blotch, very pretty and delicate. The class for one plant brought no competition.

In the class for three new large-flowered decorative Pelargoniums, Mr. H. Little was 1st with Aurora, pink lower petals, orange-pink upper petals, dark blotch, handsomely fringed flowers, very free, good habit; Brilliant (Luke), rich orange-scarlet, dark top petals, very bright and effective; and Rose Superb (Little), pale pinkish-rose lower petals, slight blotch on each petal, dark top petals, large, fine form, and very free. Mr. W. Brown staged Reliance, rose lower petals, with slight dark blotch, dark top petals; Herald, dull crimson blotched with dark on each petal; and Vesuvius, bright rosy scarlet, dark top petals, very free and effective, all raised by Mr. Brown. In the remaining eleven classes, for double-flowered zonals, Ivy-leaved, single zonals and hybrids, there was either no entry or the plants were not good enough to receive an award.

Class 18, for eighteen zonal Pelargoniums, single-flowered, was unfortunately omitted in its proper place. Here Mr. Little was again 1st with very nice bushy specimens of North Star, Leander, Guinea, Golden Glory, Aphrodite, Mrs. Bennett, Romeo, Irene, Rigoletto, Beatrice—shades of crimson; Advance and Maréchal McMahon—cerise and scarlet; Sophia Birkin, Evening Star, and Polly King—salmon; and Prima Donna, white. 2d, Mr. W. Meadmore, with Sir J. Moore, J. C. Musters, Gnome, Correggio, Mrs. Schwind, De Lesseps, Corsair, Titania, and Mrs. Pearson, as the best varieties. 3d, Mr. D. Martineau, Clapham Park.

In the cut flower classes there was an excellent display, the flowers being very fine generally. In the class for thirty-six bunches of large-flowered show Pelargoniums, three trusses in a bunch, Mr. C. Turner was the only exhibitor, staging a remarkably fine collection, which included Sister of Mercy, Invincible, Ritualist, Sensation, Claribel, Florence, Lord of the Isles, Statesman, Alice, Sunbeam, Virgin Queen, The Abbot, Royal Review, Princess of Prussia, Joe, Veteran, Illuminator, Martial, Margaret, Duke of Albany, Trojan, Vicar, Amethyst, Rayon d'Or, Daphne, Mountaineer, Monarch, Zealot, Nero, Fortitude, The Baron, Modesty, Countess, Claribel, Morning, and Red Gauntlet. This was a very fine representative collection indeed. In the class for twenty-four cut blooms Messrs. Saltmarsh & Son, Chelmsford, were 1st, with Claude, Prince Imperial, Illuminator, Emperor of Russia, a very dark and distinct variety; Rising Sun, Rob Roy, Lord of the Isles, Atalanta, Ruth, and Virgin Queen, as the leading varieties. 2d, Mr. W. Meadmore. In the class for twelve bunches, Mr. Henry Little was 1st, with excellent examples of Virgin Queen, Hermit, Troubadour, Formosa, Flirt, Setting Sun, Magnificent, Mrs. Potten, Britomart, The Bride, Magnet, and a seedling.

In the class for thirty-six varieties of zonal Pelargoniums, single varieties, Messrs. H. Cannell & Sons were placed 1st with an exceptionally fine collection, grown in their best style; and we have grouped them in their respective shades as far as it was possible to do so. Of shades of scarlet and crimson there were—Metis, Wheel of Fortune, Lunen, Lizzie Brooks, Mrs. Patchitt, Tom Bowling, Celia, General Grant, Atala, Mr. Goodwin, Dudu, Commander-in-Chief, Dr. Orton, Sunbeam, Beatrice, J. B. Miller, Future Fame, and Edward Smith. Pink—P. Bauer, Eurydice, E. V. Sanberry, &c. Salmon—Mrs. J. Gibson, Madame Colson, Ceres, President McMahon, Fanny Catlin, &c. In the class for twenty-four bunches of single zonals, Messrs. Saltmarsh & Son were 1st, the best flowers being Mr. Whiteley, Gathorne Hardy, Lizzie Brooks, Col. Seeley, H. W. Crichton, Wheel of Fortune, Lady Napier, Santley, Mr. Windsor, Fanny Catlin, Lady Emily, Olive Carr, Salmon Queen, Sophia Birken, &c.; Mr. W. Meadmore was 2d. With thirty-six double-flowered zonals, Messrs. H. Cannell & Sons were 1st, with a really splendid collection, comprising Cæsar Borgia, Colonel Flatters, Grand Chancellor Faidherbe, Charles Darwin, Representative Baudin, Aglaia, Magenta King, shades of purple-crimson and crimson; President Louis Simon, M. Gelein Lowage, F. V. Raspail, Mons. C. Routier, Gorgeous, Serjeant Flott, Gambetta, Lord E. Cecil, and Mr. W. E. Gladstone, shades of scarlet; Louis Porrier, J. P. Stahl, and Mons. Dupuis, salmon; Attraction, E. André, Sylvia, Emile de Girardin, Crœsus, Clara Pfitzer, and M. Littre, pink; La Niagara, Flacon de Neige, and Heroine, white. In the class for twenty-four varieties Messrs. Saltmarsh & Son were 1st, and Mr. W. Meadmore 2d, staging such varieties generally as those already named. There was a class for twelve varieties also. The class for twelve bunches of cut flowers of Ivy-leaved Pelargoniums was a very interesting one, and the collection from Messrs. Henry Cannell & Sons, to which the 1st prize was awarded, was very fine, as also a good representative of the leading varieties grown. They were Comtesse de Choisseuil, Rosa plena, Eurydice, Madame Galle, Viscount Cranbrook, Gloire d'Orleans, Madame Crousse, Stevenson, Konig Albert, Sarah Bernhardt, Countess, Comte Horace de Choisseuil, and Mr. Page. These were all, or nearly all, double-flowered varieties. Mr. J. George, Putney Heath, was 2d, with a collection of pretty single flowers, viz., Argus, Gem, Mr. J. George, Harry George, Progress, Nemesis, La France, Diadem, Bride, Mrs. Cannell, and seedlings.

Several First-class Certificates of Merit were awarded by a sub-committee of the Pelargonium Society, and included the following show varieties:—Diadem (Foster), clear orange-salmon lower petals, veined with maroon, ruby glossy dark top petals, white throat, very fine form, spare habit; Royal Review, orange-salmon lower petals, veined with orange-carmine, large dark top petals, white centre, finely formed pip and bold truss, very showy; and Morning, a very bright variety, lower petals orange-crimson, veined with dark, with dark top petals, a very fine and effective variety of the highest quality; all from Mr. C. Turner. To the following fancy Pelargoniums, viz., Flossie Thompson and Irene, already described, also from Mr. C. Turner. To the following decorative Pelargoniums of the large flowering class:—Princess of Wales, pale ground, veined and blotched with rosy-pink, a semi-double variety, coarse looking and rough in the truss, but not without some novelty of character: Mr. H. Little. Poiteau, a very fine purple variety, regularly blotched with dark, large and fine form, distinct and novel: Mr. H. Little. Comtesse de Choisseuil, white, or delicate blush-white, with slight rosy-purple blotches on the top petals, fine form, very free and pleasing: Mr. H. Little and Mr. C. Turner. Madame Marie Kneckt, pure white, with very slight rosy-lilac spots on the top petals, very free and fine: Mr. C. Turner. Vesuvius, very bright orange-scarlet lower and orange-crimson top petals, and dark spots, fine bold trusses, excellent habit, very free and effective: Mr. W. Brown. Little Pet, pale orange carmine, with dark top petals, small ill-formed flowers, very free, good habit: Mr. H. Little. Also to the following single zonal Pelargoniums:—Improved White Clipper, pure white, fine form, very free, excellent habit: Messrs. H. Cannell & Sons. Lynette (Denny), delicate bluish pink, large well formed pip, stout, distinct, and fine: Mr. J. Catlin. Edith Little (Pearson), soft delicate pink of a beautiful tone of colour, large and finely formed pip, and bold truss, extra fine: Messrs. Pearson & Son. Mrs. Gordon (Pearson) rich, bright pale scarlet, with conspicuous white eye, very fine pip and truss, extra fine quality: Messrs. Pearson & Son. To the following double zonals:—Lovely (Denny), pale ground flushed with salmon, large well formed flowers, dwarf and free: Mr. J. Catlin. Gambetta (Lemoine), fine, glowing rosy-scarlet, large, and very fine: Messrs. H. Cannell & Sons. Grand Chancellor Faidherbe, dark crimson, large, and full, fine bold pip and truss, very free: Messrs. H. Cannell & Sons. Urania (Pearson), rosy-pink, large, well-formed flowers, extra fine truss, good habit, and very free: Messrs. Pearson & Son. Aglaia (Pearson), crimson, shaded with purple, large, full flowers, and noble trusses: Messrs. Pearson & Son. Duchess of Albany, soft rosy-pink, large, bold flowers, fine trusses, good habit: Mr. J. George. To nosegay variety; Miss Blanche (George), pink, large trusses of finely-formed blooms, good habit, very free: Mr. J. George; and to Ivyleaf Comte Horace de Choisseuil (Lemoine), soft pinkish rose, semi-double, large and loose, very distinct in character: the Royal Horticultural Society.

Among the new show Pelargoniums sent by Mr. C. Turner the following promise well, though they did not obtain Certificates, viz., Veteran, Adventurer, Brilliant, very fine in colour; and Statesman.

Chiswick, Turnham Green, and District Horticultural: *June* 22.—The weather which so far has greeted the two exhibitions held in Chiswick Gardens under the auspices of this Society has well illustrated the variableness of our climate. Last year the show day proved to be one of the hottest of the season, this year it has so far proved to be one of the wettest. Still the persistent rainfall did not materially damp the ardour of the Society's local supporters, for the attendance was large, and in the evening, when the weather became fine and pleasant, there was quite a crowd of visitors. This year, with admirable discretion, the exhibition was held under a tent that, owing to the disestablishment of the monotonous oblong flower beds, was enabled to be erected on the lawn, and rarely has a more pleasing effect under a similar breadth of canvas been produced. With great judgment the sides were filled with decorative groups of plants, and also with the larger plants in various classes, the tables that ran the full length of the centre being occupied with smaller plants, cut flowers, and table decorations. Material help was given to the show by the trade, Mr. B. S. Williams, of Holloway, sending a fine group of choice plants of

that varied and interesting form which have so materially helped to make the Victoria Nurseries famous. Messrs. C. Lee & Sons, Hammersmith, had a truly charming group of dwarf pot Roses, finely grown and flowered. These were backed by a selection of standard ornamental shrubs, and faced with lines of the golden Ivy, Hedera arborea aurea, and the rich green-leaved Euonymus microphylla. Messrs. Osborn & Sons, of Fulham, sent a small but exceedingly interesting group of hardy plants, amongst which especially noticeable were the fine bluish-purple flowered Geranium platypetalum and the lovely Silene alpestris. Mr. Pestridge had on view thirteen boxes, each containing as many plants of his beautiful golden and silver tricolor Pelargoniums in as many varieties, all superbly coloured. Mr. R. Dean, Ealing, showed pans of new hybrid Musks, Mimulus moschatus grandiflorus, blooms of the same size as those on Harrison's Musk, but pure yellow; and and also a very dwarf kind of M. moschatus ruber, the flowers large and of a reddish-buff hue. Mr. Howell, of the Queen's Nursery, Hammersmith, sent a small group of golden-bronze Pelargoniums. From Gunnersbury Garden, Mr. Roberts sent a very effective group of flowering and foliage plants, including many of considerable interest. A small group came from Chiswick House Gardens, sent by Mr. May, and Mr. Harding, gr. to J. R. Starling, Esq., Gunnersbury, staged a huge group of Coleus of almost every known kind, presenting a useful study, but making a somewhat monotonous group.

The most important competition class was that for 100-feet groups, open to all, four very fine groups being arranged. The first place was worthily occupied by a fine collection most elegantly arranged by Mr. Brockham, manager to Messrs. Hooper & Co., Twickenham. A base or carpet of Maidenhair Fern charmingly lit up with flowering plants, from out of which arose Palms, Dracænas, Crotons, Liliums, &c., formed one of the most effective arrangements of this class we have yet seen, though ran hard by the pretty group stagedby Messrs. Fromow of Turnham Green—an arrangement that was singularly effective and pleasing. Mr. W. Brown, Richmond, was placed 3d, and an extra prize was given to Mr. Stevens of Putney, in whose group some fine Gloxinias were very prominent. The smaller groups, in which local gardeners only competed, were very good, but call for no further notice. The prizes fell to E. H. Watts, Esq., Devonhurst, Chiswick; J. Donaldson, Tower House, Chiswick; B. Hardy, Esq., and H. Pearks, Esq. — the two latter being placed equal 3d. The finest foliage plants came from Mr. Stevens, Messrs. Fromow coming 2d; whilst the Messrs. Hooper & Co. took the 1st place with six fine handsome Ferns; Mr. Brown coming 2d, and Messrs. Fromow 3d. The best single specimen plant in bloom was a good Clerodendron Balfourianum, from Mr. Greig, gr. to C. Bown, Esq., Endsleigh, Gunnersbury, but the foliage specimens were poor. The classes for Coleuses, Begonias, Gloxinias, and other popular show plants, were well filled, and included many good specimens; and there were some capitally coloured Caladiums from Mr. Pearks and Mr. Hardy. Mr. A. Wright, gr. to A. Watts, Esq., had six grand pyramidal masses, varying from 2 feet to 3 feet in height. From Mr. C. Turner, of Slough, came half-a-dozen boxes of rich coloured cut Roses, amongst which such good kinds as A. K. Williams, Marie Baumann, Boule de Neige, Countess of Rosebery, and La France, stood out prominent. Messrs. Osborn & Sons also had a good collection, whilst Messrs. Hooper & Co. sent fine Pæonies, &c. A box of cut Gloxinia flowers from Mr. Hardy was greatly admired. Table decorations were very good, Miss Beavan, of Gunnersbury, winning the handsome tea-pot presented by Mr. J. Aldous with three charmingly dressed stands; whilst Miss Laurence, of Hammersmith, was equally successful in the ladies' class for a single stand. Mr. A. F. Barron showed three stands, not for competition, that were greatly admired, one dressed solely with hardy garden flowers being truly charming. Mr. W. Brown had the best three bouquets. A remarkable competition took place amongst school children for bunches of wild flowers, about sixty being staged, but girls were largely in the majority. Only two persons competed for Messrs. Jas. Carter & Co.'s prizes for Peas, Mr. Richardson, of Boston, taking 1st place with fine examples, the same exhibitor taking 1st prize for six vegetables; whilst Mr. Coombes, gr. to Sir H. Meux, Sheen, took the 1st prize offered by Messrs. Sutton & Sons for six kinds of vegetables. Fruit was poor, and does not call for comment.

Rose Show at Brighton: *June* 22, 23, 24, *and* 26.—An exhibition of Roses, associated with groups of miscellaneous plants, and also of Ferns arranged for effect, took place in conjunction with the Royal Counties Agricultural Exhibition, this year held in Preston Park, Brighton. Being held somewhat earlier than Roses were in flower, and before the principal shows were on, the generality of the growers were not prepared, consequently there were fewer competitors than desirable, but what was deficient in quantity was made up in the quality of the principal collections present. For forty-eight varieties, three of each, Messrs. J. Mitchell & Sons, Piltdown Nurseries, Uckfield, Sussex, were 1st, with a grand lot of flowers, unusually strong, as these gentlemen generally are, in Tea varieties; amongst these were Marie van Houtte, Catherine Mermet, Devoniensis, Souvenir d'un Ami, Comtesse de Brie, Souvenir d'Elise Vardon, Duc de Magenta, and Celine Forestier. In the hybrid perpetuals were Mademoiselle Marie Rady, Princess Mary of Cambridge, Napoleon III., François Michelon, Marie Baumann, Mademoiselle Eugénie Verdier, La France, Exposition de Brie, Constantin, Tretiacoff, Monsieur Noman, and A. K. Williams, in beautiful condition. Twenty-four varieties, three blooms of each.—1st, Mrs. Wollard, Cooksbridge Nursery, having, amongst others, Marquise de Castellane, Mrs. Hassard, Duchesse de Valombrosa, and Baroness Rothschild, in fine order. Twelve Teas, or Noisettes, single blooms, distinct—Messrs. Mitchell were here again 1st, with a magnificent dozen; Duc de Magenta, Josephine Malton, Adam, Catherine Mermet, and Marie van Houtte being unusually fine. 2d, the Rev. R. C. Hales, who had Sombreuil, Souvenir de Paul Neron, Madame Bravy, and Marie van Houtte, in rich form. 3d, A. Slaughter, Esq., Steyning. Twenty-four yellows, single blooms, not less than twelve varieties.—With these Messrs. Mitchell were likewise 1st, their most noteworthy blooms being Maréchal Robert, Marie van Houtte, Jean Pernet, Perle des Jardins, Triomphe de Rennes, and Celine Forestier, in fine order. In the class of twenty-four varieties, single blooms, confined to amateurs and gentlemen's gardeners, Mr. Ridout, gr. to J. B. Haywood, Esq., Reigate, came in 1st, his best flowers being Marquise de Castellane, Marie Baumann, Madame Jamain, and Jean Liabaud. Twelve varieties, single blooms (amateurs). — 1st, Mr. Slaughter, Belle Lyonnaise, Général Jacqueminot, Etienne Levet, Mademoiselle Eugénie Verdier, and A. K. Williams being the most remarkable; 2d, Mr. Ridout. Twelve Teas or Noisettes, single blooms (amateurs).—Here 1st honours fell to Mr. Slaughter, Mr. Ridout coming in 2d.

In the class for miscellaneous groups of plants occupying a space not exceeding 250 feet, Mr. W. Balchin wase asily 1st, with a very tastefully arranged group, the outline and surface nicely relieved; the plants were alike suitable for the purpose and well put together. They consisted of the more elegant habited Palms, Dracænas, Aralias, Crotons, Ferns, and Caladiums, interspersed with single plants of Lilium eximeum, Tuberoses, and small coloured leaved subjects, edged with variegated Panicum and Isolepis gracilis; 2d, Mr. B. Maller. Group of Ferns.—With these Mr. McBean, Cooksbridge, was deservedly 1st, having a well shown lot, mostly consisting of different kinds of Adiantum, proving what can be done with little beyond the different sorts of this favourite family when the most is made of them. Mr. Balchin, who had a nicely arranged mixed group, was 2d. Mr. Balchin received an extra prize for a number of plants of his fine variety of Mignonette in excellent condition. Not the least merit in this distinct kind is the length of time it lasts even in a cut state, keeping, as we have proved, fresh in water for near upon a fortnight, and retaining its odour to the last.

Leeds Horticultural.—The nineteenth annual exhibition was held on June 21, 22, 23, in the Horticultural Gardens, and the show in itself was fully up to the average, but unfortunately, as usual, owing to the inclemency of the weather, it was anything but a financial success, the receipts falling off very considerably, even behind last year's. The competition for sixteen stove and greenhouse plants brought three competitors, and Mr. J. Cypher, of Cheltenham, was 1st, and Messrs. Cole & Sons 2d, both collections being very meritorious. The principal features of the exhibition were the groups of miscellaneous plants arranged for effect. There were several competitors, and all would do well to remember that the plants would be seen to greater advantage if not so crowded. Of Orchids there was only a fair display, being a long way behind those exhibited at York in the previous week. Pelargoniums were well shown both by Messrs. Lazenby and May, who took the prizes in the order named. Roses were only middling, but of Gloxinias there was a good display, the varieties, however, being very coarse. Table plants were fairly shown, as also were tuberous-rooted Begonias, and hardy herbaceous and alpine plants were also fairly represented.

Bouquets were well shown, some excellent ones being staged. Cut Roses were shown well both by Messrs. Paul and Cranston, who took the prizes in the order named in the open classes. Cut flowers of alpine and herbaceous plants, in groups of eighteen bunches, were done well, and contained some very showy examples; and the 1st prize for twelve bunches of cut stove and greenhouse flowers was easily won by Mr. Faulkner, of Liverpool, who staged a grand lot, well arranged.

The fruit was first-rate, some excellent examples of cultivation being shown in the various classes. The Grapes were well finished, far in advance of those seen last week at York. The collections were very meritorious, being clean and neatly put up. Messrs. R. Halliday & Co., of Manchester, exhibited their portable Cucumber and plant frames, for which they have received numerous Gold and Silver Medals at various exhibitions. These frames can be taken apart and put together in a few minutes, the fastenings being wedges. Mr. May, nurseryman and seedsman, Leeds, exhibited a miscellaneous stand of garden requisites, containing the principal necessaries for the horticultural department, which attracted much attention. The entire arrangement of the whole of the exhibition reflects great credit upon those whose responsibility was brought to task. (*From a Correspondent.*)

Chertsey and District Horticultural.—The seventeenth summer exhibition of this Society, of which G. F. Wilson, Esq., of Weybridge, is President, was held in the grounds of Oatlands Lodge, Weybridge, by the kind permission of Sir William Drake, K.C.B. Unfortunately for the interests of the Society and the comfort of the visitors, it began to rain as the judging commenced, and poured down heavily for the greater part of the afternoon. The show, however, was kept open next day, when the weather was more favourable. As usual the productions were of a high order of merit, the fruit being better than usual. Mr. Geo. Cornhill, gr. to E. Pettit, Esq., Oatlands Park, was the most successful exhibitor of stove and greenhouse fine-foliage and flowering plants, and also of Ferns; amongst the foliage plants Bonapartea juncea, Croton interruptus, and Pandanus Veitchii were very fine, whilst among flowering plants he had a remarkably fine seedling form of Anthurium Scherzerianum and Begonia Weltoniensis, which is grown well here and exhibited, as a specimen flowering plant. Amongst the Ferns exhibited by Mr. Cornhill was a remarkably fine plant of Platycerium grande. Mr. Geo. Povey, gr. to A. Gillespie, Esq., also of Oatlands Park, exhibited fine Caladiums—Meyerbeer and Prince Albert Edward were the best; this exhibitor also had the best flowering Begonias, a nice lot; and was also 1st for twelve small plants for the table. Mr. Povey and Mr. J. W. Reed, gr. to C. A. Ledward, Esq., Oatlands Park, took 1st prize for well grown Fuschias—Avalanche and Wave of Life were the best. Mr. A. Millican, gr. to Mrs. A. Cobbet, Walton-on-Thames, had the best British Ferns, amongst them a fine Osmunda regalis and a large mass of the Killarney Fern. Mr. Taylor, gr. to James McIntosh, Esq., Duneevan, Oatlands Park, was the only exhibitor of six Lilies, but they well deserved the 1st prize. He had the clear yellow L. Parryi, L. dalmaticum, L. Martagon, L. Washingtonianum rubescens, L. parvum, and L. longiflorum, forming a distinct and pretty group. G. F. Wilson, Esq., of Weybridge, exhibited cut Lilies, for which he received a well deserved label of commendation. As stated before, fruit was very good. Mr. Taylor showing the best. He gained 1st prizes with excellent Buckland Sweetwater and Black Hamburgh Grapes, also for a fine dish of British Queen Strawberrries. For a collection of fruit he was also placed 1st, although Mr. W. Sutton, gr. to J. J. Sassoon, Esq., Ashley Park, Walton, was scarcely inferior to him with a very good collection, which comprised an excellent Queen Pine; Mr. Taylor being strong in black and white Grapes. Mr. S. Millican had the best scarlet Melon, and Mr. J. Sparrow, gr. to the Rev. S. Bramwell, Chertsey, the best green-fleshed. Mr. S. Frankes, gr. to J. W. Wilson, Esq., J.P., Oatlands Park, gained 1st prize for a good dish of Sulhamstead Peaches, Mr. Sparrow being 1st for Nectarines: both classes were rather poorly represented. Cut flowers, bouquets, and vases of flowers made an interesting exhibition. The vegetable tent was well filled with excellent productions both from gardeners and cottagers, and, as usual, the tent set apart for groups of plants was a centre of interest, but limited space forbids further notice of this excellent exhibition.

Obituary.

WITH great regret we have to record the death, on Sunday, June 25, of Mr. ROBERT ARTHUR OSBORN, of Fulham, only surviving son of the late Thomas and Martha Osborn. For a long time past it has been painfully evident to Mr. Osborn's many personal friends that his life was not to be a long one, but it was scarcely anticipated that his end would come so soon. In the spring he went to Hastings, and only left there about June 16, at his own wish, for Tunbridge Wells, where he gradually became worse, and died on Sunday evening, of consumption, aged twenty-eight years. He was the last male representative of a family who had won universal esteem, and was himself greatly liked. He was buried at Brompton Cemetery on Thursday morning, the anniversary of the Gardeners' Royal Benevolent Institution, of which he was a member of the committee, and of which his father and uncle before him had been life-long supporters.

—— We regret to record the death, on June 20, at Spring Grove, Biddulph, aged fifty-three years, of Mr. JOHN SHERRATT, for many years gardener to James Bateman, Esq., at Biddulph Grange, and subsequently senior partner of the firm of Sherratt & Pointon, of the Knypersley Nursery, Biddulph. Mr. Bateman writes to us—"I am sure you will accord me space for a brief notice of the late Mr. John Sherratt, who, either in my father's service or my own, was connected with the gardens at Knypersley Hall for nearly forty years. My first introduction to my future gardener was in this wise:—We were beating (*circa*, 1840) some coverts when a few stray pellets from a random gun struck the leg of poor Sherratt—then a lad of about nine years old—and though no serious harm had been done, there was a lusty squall, which ceased the moment some silver salve, from more than one quarter, had been lodged in the little fellow's hand. Many years later, and long after he had risen to be head gardener, he recalled the circumstance to my recollection, describing at the same time his sensations. The sting of the shot, he said, was very sharp, and he quite thought it was all over with him, but somehow the first half-crown cured the pain, and when two more followed he felt as if he should like to be shot like that every day of his life! But he had been reserved for better things. Soon after the accident he was put into the gardens—the great object of his young ambition—where, as

one of Mr. Dean's staff, he took most kindly to his work. Even from the commencement, a portion of his weekly wages was set apart by his special desire, and left to accumulate until, with a little aid from headquarters, it sufficed to purchase certain horticultural books, which were carefully studied and thoroughly mastered. His steadiness and integrity were unimpeachable, and by the time he reached the age of twenty-one he bore the highest character of any man about the place. Nevertheless, it must be confessed, we were all somewhat surprised when—Mr. Dean, his chief, being obliged to leave suddenly—young Sherratt applied for the post. Fortunately it was decided to give him a trial, and from the day he took the reins everything seemed to prosper in his hands. For twenty years I never had a fault to find with him. After a while the faithful servant became the trusted friend, and so continued to the day of his death, which occurred suddenly from heart disease on Tuesday week, at the comparatively early age of fifty-three. Bletia Sherrattiana, a very distinct species which I named after him, will recal his memory to Orchid growers. About ten years ago, when—having disposed of Knypersley to its present owner, Mr. Heath—I left the neighbourhood, Mr. Sherratt purchased a few acres of ground, pleasantly situated near Biddulph Church, which he laid out as a nursery with an extensive range of glass—not forgetting two or three Orchid houses—and a very comfortable residence for himself. Here, having taken his foreman into partnership, an extensive business was carried on under the firm of Sherratt & Pointon, Knypersley Nursery, Biddulph, which I trust may long continue to flourish."

—— We are sorry to have to record the death of RICHARD BARTON DODGSON, Esq., of Beardwood, Blackburn, on June 13, aged fifty-eight years. Mr. Dodgson was one of the most amiable of men, and also one of the most hospitable gentlemen to all lovers of horticulture who paid a visit to his establishment. Whether they were gardeners, nurserymen, or people of his own position in life, always a most kind and hearty welcome was accorded them. We feel sure that all who knew Mr. Dodgson will be grieved to hear of his decease, and also to know that he had been a great sufferer. Although he has been confined to his bedroom for some time past he has always taken a lively interest in his plants, and also in procuring any good Orchids in order to keep up his collection. When unable to go to his houses, he would have the plants or flowers brought to his bedroom so that he could talk with his gardener about them. Our exhibitions have been very much enhanced by the fine Orchids that have been brought from Beardwood to Manchester and other shows, where Mr. Dodgson has exhibited for many years, and obtained the highest honours. His name will always be remembered by those who knew him, and by the Orchids, especially Cattleyas, that are named in his honour.



STATE OF THE WEATHER AT BLACKHEATH, LONDON.

FOR THE WEEK ENDING WEDNESDAY, JUNE 28, 1882.

MONTH AND DAY.	BAROMETER.		TEMPERATURE OF THE AIR.					HYGROMETRICAL DEDUCTIONS FROM GLAISHER'S TABLES 6TH EDITION.		WIND.	RAINFALL.
	Mean Reading Reduced to 32° Fahr.	Departure from Average of 18 years.	Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years	Dew Point.	Degree of Humidity. Sat. = 100.	Average Direction.	
June	In.	In.	°	°	°	°	°	°	°		In.
22	29.60	—0.20	63.0	51.0	12.0	55.2	— 5.2	53.0	94	S.S.E.: E.S.E.	0.03
23	29.75	—0.06	66.5	47.5	19.0	55.5	— 5.2	46.6	72	S.W.: S.S.W.	0.00
24	29.79	—0.02	71.0	51.0	20.0	59.0	— 1.9	52.2	78	S.E.: S.S.E.	0.32
25	29.86	+0.04	70.2	53.0	17.2	58.7	— 2.4	52.3	79	S.W.: S.S.W.	0.13
26	29.83	+0.01	68.5	50.5	18.0	58.0	— 3.2	51.0	78	S.: S.S.E.	0.06
27	29.94	+0.12	74.0	51.0	23.0	60.4	— 0.9	48.4	64	W.	0.00
28	30.01	+0.20	70.0	54.5	15.5	61.3	— 0.0	47.0	59	S.W.: WSW	0.00
Mean	29.83	+0.01	69.0	51.2	17.8	58.3	— 2.7	50.1	75	S.S.E.: S.S.W.	0.54

June 22.—Rain in early morning; dull and overcast day, occasional light rain. Fine night.
— 23.—A very fine bright day till 2 P.M., then fine, but overcast and dull. Fine night.
— 24.—A fine day, overcast at times; steady rain from 9 P.M.
— 25.—A cloudy wet morning. Fine from 10 A.M.; deep blue sky. Fine night.
— 26.—A very fine bright morning, sun shining brightly, showers of rain occasionally. Fine night.
— 27.—A very fine bright day, alternately clear and cloudy. Fine night.
— 28.—Fine but overcast till 3 P.M., then fine and bright. Fine warm night.

LONDON: *Atmospheric Pressure.*—During the week ending June 24, the reading of the barometer at the level of the sea decreased from 29.94 inches at the beginning of the week to 29.64 inches by midnight on the 18th, increased to 29.96 inches by midnight on the 19th, decreased to 29.90 inches by 9 A.M. on the 20th, and increased to 29.96 inches by midnight the same day, decreased to 29.76 inches by 3 P.M. on the 22d, increased to 30 inches by 9 A.M. on the 24th, and was 29.95 inches at the end of the week.

The mean reading for the week at the level of the sea was 29.86 inches, being 0.12 inch lower than last week, and 0.12 inch below the average of the week.

Temperature.—The highest temperature in the shade in the week was 71°, on the 24th. On the 18th the highest temperature was 61°.8. The mean of the seven high day temperatures was 61°.3.

The lowest temperature in the shade in the week was 47°.5 on the 23d; on the 21st the lowest temperature was 51°.5. The mean of the seven lowest temperatures was 49°.7.

The greatest range of temperature in one day was 20°, on the 20th and 24th; the smallest was 12°, on the 22d. The mean of the seven daily ranges was 16°.6.

The mean temperatures were, on the 18th, 54°.1; on the 19th, 55°.5; on the 20th, 58°.3; on the 21st, 57°.3; on the 22d, 55°.2; on the 23d, 55°.5; and on the 24th, 59°; and these were all below their averages by 5°.4, 4°.2, 1°.6, 2°.8, 5°.2, 5°.2, and 1°.9 respectively.

The mean temperature of the air for the week was 56°.4, being 4° higher than last week, and 3°.8 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo, placed in the full rays of the sun, was 135°, on the 24th; the highest on the 22d was 76°. The mean of the seven daily readings was 109°.9.

The lowest reading of a minimum thermometer with its bulb placed on grass and fully exposed to the sky was 38°.5, on the 23d. The mean of the seven readings was 44°.6.

Rain.—Rain fell on four days, to the amount of 0.60 inch, of which 0.32 inch fell on the 24th.

ENGLAND: *Temperature.*—During the week ending June 24 the highest temperatures were 74°.8 at Cambridge, 74° at Sunderland, and 71°.7 at Nottingham. The highest temperature at Bolton was 63°.5, at Bristol 64°.5, and at Truro 66°. The general mean was 69°.1.

The lowest temperatures in the week were 40° at Sunderland, 42° at Hull, and 43° at Truro. The lowest temperature at Plymouth was 51°, at Bradford 49°.2, and at Blackheath 47°.5. The general mean was 45°.9.

The greatest ranges of temperature in the week were 34° at Sunderland, 29° at Hull, and 27°.8 at Cambridge. The least ranges were 15°.8 at Plymouth, 18°.4 at Bolton, and 18°.7 at Bradford. The general mean was 23°.2.

The mean of the seven high day temperatures was highest at Cambridge, 70°.2, at Brighton 67°.8, and at Sunderland 67°.4; and was lowest at Bolton, 59°.5, at Liverpool 61°.6, and at Bristol and Bradford 62°.2. The general mean was 64°.7.

The mean of the seven lowest night temperatures was highest at Plymouth, 52°.9, at Brighton 51°.3, and at Truro and Leeds 50°.6; and was lowest at Wolverhampton, 46°.4, and at Bolton and Sunderland 46°.8. The general mean was 49°.2.

The mean daily range was greatest at Cambridge, 20°.8, at Sunderland 20°.6, and at Nottingham 18°.9; and was least at Plymouth, 10°.5, at Bradford 11°.8, and at Liverpool 11°.9. The general mean was 15°.5.

The mean temperature for the week was highest at Cambridge, 58°, at Brighton 57°.7, and at Plymouth and Blackheath 56°.4; and was lowest at Bolton, 51°.3, at Wolverhampton 53°, and at Bristol 53°.7. The general mean was 55°.1.

Rain.—The largest falls were 2.02 inches at Bolton, 1.98 inch at Bradford, and 1.78 inch at Sheffield. The least falls were 0.52 inch at Brighton, 0.60 inch at Blackheath, and 0.73 inch at Cambridge. The The general mean fall was 1.19 inch. The average number of days was five and a half, but it fell on seven at Bolton. Thunderstorms occurred at Cambridge on the 18th, at Liverpool on the 23d and 24th, and at Hull on the 23d.

SCOTLAND: *Temperature.*—During the week ending June 24 the highest temperature was 71° at Dundee; at Aberdeen the highest temperature was 62°.3. The general mean was 66°.3.

The lowest temperature in the week was 42°, at Paisley; at Edinburgh the lowest temperature was 47°.6. The general mean was 44°.9.

The mean temperature for the week was highest at Dundee, 56°.8; and lowest at Greenock, 54°. The general mean was 55°.2.

Rain.—The largest fall was 1.61 inch, at Greenock; the smallest fall was 0.75 inch, at Paisley. The general mean fall was 1.18 inch.

JAMES GLAISHER, F.R.S.

Answers to Correspondents.

BAROMETER: *H. H.* In principle your plan is correct, but in practice it is not trustworthy.

CLIMBERS: *J. A., Loughton.* The following ten climbers are all free-growing, and would succeed well in a conservatory that "is not heated except in severe or damp weather." We presume, however, that frost is excluded:—Acacia dealbata, Bignonia jasminoides, Clematis indivisa lobata, Habrothamnus elegans, Lapageria rosea and alba, Passiflora cœrulea, Chorozema Chandleri, Cobea scandens, and Mandevilla suaveolens. We have not included the Tacsonias in this list, having proved that a little warmth is more congenial to their welfare. Those previously named will all be found to do well as climbing subjects for the columns and arches as described by an "Old Subscriber." For planting in the beds of a conservatory with Camellias and a Tree Fern the following plants would be about the best:—Acacias Drummondi and armata, Choisya ternata, Cytissus racemosus, Desfontainea spinosa, Grevillea Preissii, Hedychium coronarium or Gardnerianum, Sparmannia africana, Rhododendrons Countess of Haddington, and Nuttalli. The foregoing ten plants might with advantage be used for their flowering qualities, and the following ten for the beauty of their foliage—viz., Agnostus sinuatus, Aspidistra lurida variegata, Coprosma Baneriana variegata, Dracænas (green-leaved kinds in variety), Eurya latifolia variegata, Lomatia ferruginea, Phormium tenax and variegata, Aralia Sieboldii variegata, Yuccas of sorts, and Ophiopogon jaburan fol. var.

CORYANTHES MACRANTHA: *J. R., Demerara.* Yes; the plant figured was C. elegantissima. The correction was made in a subsequent number, which you have apparently not seen.

DELPHINIUM: *H. McMillan.*—Your new Delphinium is a first-rate novelty, the spikes being of fine size, and the flowers of a rich porcelain-blue colour, that is very effective.

INSECTS: *F. W. and H. S.* The minute insects sent as very detrimental to hardy Ferns and in fernery is one of the field bugs (Bryocoris Pterides). Repeated fumigation and subsequent syringings of the plants are the best remedies against its attacks. *I. O. W.*—*G. J.* The insects on your Potato leaves are the larvæ of the common ladybird, which feed on plant-lice, and should be encouraged. *I. O. W.*

NAMES OF PLANTS: *J. Garaway & Co.* A Composite allied to our common wild Chamomile, but we cannot tell the name from the seeds only.—*C. W.* Phlomis fruticosa.—*Hannaford & Sons.* 1, Chrysanthemum coronarium; 2, C. segetum.—*A. X. Z.* The Yellow Sultan (Centaurea suaveolens).—*D. Brodie.* Not in a recognisable condition.—*W. C. & Co.* Not recognisable; specimens insufficient.—*C. J. N.* Send again when in fruit, and say if thorny. It is a Cratægus.—*G. G. G.* Reseda alba.—*Camjee.* Chysis Chelsoni.—*C. E. Broome.* 1, Sedum Lydium; 2, S. cymbidium.—*W. F. Gunn.* 1, Bromus sterilis; 2 and 3, B. erectus; 4, Festuca myurus.—*B. H. Brocksbank.* It looks like Lathyrus Drummondii, but we cannot tell without perfect specimens.—*G. S.* 1, Selaginella serpens; 2, S. viticulosa; 3, S. Galeottii.—*B. B.* Stenactis speciosa.

TOWN GARDEN: *W. Thomas.* The plan does not show the levels, or the size of the shrubs; hence it does not show what is practically the case—that the outlet in question is screened from view quite sufficiently, and that from no one point can the entire length of walks be seen. On the other hand, almost the whole of the lawn can be seen, thus giving an effect of broad space within really narrow limits.

Letters relating to ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the Publisher, and* not *to the Editor.*

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CATALOGUE RECEIVED.

SEGERS & Co., Lisse, near Haarlem—Trade List of Dutch Bulbs, &c.

COMMUNICATIONS RECEIVED.—W. B.—C. W. D.—C. H. B.—F.—W. L.—W. T.—E. Mertens.—J. S.—A. N.—J. C—J. C. & Co.—B. S. W.—W. M. W. (anticipated).—J. Broome (next week).—R. McL.—D. D.—R. P.—Thorne.—J. D.—W. T. T. D. (next week).—W. B.—J. H. M.—T. J.—J. B. & Co.—J. McG.—T. C.—H. C.—H. L.—T. B.—A. D.—E. G. L.—T. S.

Markets.

COVENT GARDEN, June 29.

All classes of goods have met a ready sale at last week's lower quotations. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Cherries, ½-sieve	6	6-11 6	Lemons, per 100	5 0- 7 0	
Currants, Black, per ½-sieve	6	0- 6 6	Melons, each	2 0- 4 0	
— Red, per ½-sieve	5	0- ..	Peaches, per dozen	6	0-12 0
Figs, per dozen	6	0- ..	Pine-apples, St. Michael's, each	4	0-10 0
Gooseberry, green, ½-sieve	2	6- 3 0	— English, per lb.	4	0- 5 0
Grapes, per lb.	1	6- 4 0	Raspberries, per lb.	0	4- 0 6
			Strawberries, per lb.	0	6- 1 0

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, per doz.	3	0- 6 0	Garlic, per lb.	1	0- ..
Asparagus, English, natural, per bun.	5	0- ..	Herbs, per bunch	0	2- 0 4
— Fr. Nat, bun.	1	6- 6 0	Horse Radish, bund.	4	0- ..
— Sprue, per bund.	1	0- ..	Lettuces, Cabbage, per score	1	6- ..
Beans, French, English grown, p. 100	1	6- 2 6	Mint, green, bunch	0	4- ..
Beet, per doz.	1	0- ..	Mushrooms, p. baskt.	1	6- 2 0
Cabbages, per doz.	1	0- 2 0	Onions, per bushel	6	0- 7 0
Carrots, per bunch	0	4- 0 6	— Spring, per bun.	0	6- ..
— French, per bun.	1	0- ..	Parsley, per bunch	0	4- ..
Cauliflowers, English, dozen	3	0- 6 0	Peas, per qt.	2	6- ..
Celery, per bundle	1	6- ..	Radishes, per doz.	1	6- ..
Cucumbers, each	0	6- 1 0	Rhubarb, per bundle	0	6- ..
Endive, per doz.	2	6- ..	Small salading, pun.	0	4- ..
			Spinach, per bushel	2	6- ..
			Tomatos, Fr., doz.	2	0- ..

Potatos.—Kidneys, foreign, 9*s.*; do., English, 10*s.*; Rounds, 8*s.* per cwt.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 blooms	0	2- 0 4	Marguerites, 12 bun.	4	0- 6 0
Arum Lilies, per doz.	4	0- 6 0	Mignonette, 12 bun.	6	0- 8 0
Bouvardias, per bun.	1	0- 1 6	Pansies, 12 bunches	1	6- 3 0
Calceolaria, 12 bun.	6	0-12 0	Pelargoniums, 12 spr.	0	9- 1 0
Campanula, 12 bun.	6	0-18 0	— zonal, 12 sprays	0	4- 0 9
Carnations, 12 blms.	1	0- 2 0	Pinks, 12 bunches	2	0- 6 0
Cornflower, 12 bun.	2	0- 4 0	Primula, double, per bunch	1	0- 1 6
Day Lily, 12 bun.	10	0-12 0	Pyrethrum, 12 bun.	3	0- 9 0
Eucharis, per doz.	4	0- 6 0	Rhodanthe, 12 bun.	9	0-12 0
Fuchsias, 12 bunches	6	0- 8 0	Roses (indoor), per dozen	1	0- 3 0
Gardenias, 12 blms.	3	0- 8 0	— (outdoor), doz.	0	6- 1 0
Gladioli, 12 bun.	6	0-12 0	— Coloured, doz.	1	0- 2 0
Heliotropes, 12 sp.	0	6- 1 0	— Moss, 12 bun.	9	0-15 0
Iris, 12 bunches	6	0-12 0	Spiræa, 12 bunches	0	0-12 0
Lapageria, white, 12 blooms	4	0- 6 0	Stephanotis, 12 spr.	3	0- 6 0
— red, 12 blooms	1	0- 3 0	Stocks, 12 bunches	4	0- 9 0
Lilium longiflorum, 12 blooms	5	0- 6 0	Tropæolum, 12 bun.	1	0- 2 0
Lilium candidum, 12 blooms	2	0- 3 0	Wallflowers, 12 bun.	4	0- 6 0

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldii, doz.	18	0-42 0	Ferns, in var., dozen	4	0-18 0
Arbor-vitæ (golden), per dozen	6	0-18 0	Ficus elastica, each	1	6- 7 0
— (common), dozen	6	0-12 0	Foliage Plants, various, each	2	0-10 6
Bedding Plants, doz.	1	6- 3 0	Fuchsias, per dozen	6	0-12 0
Begonias, per doz.	6	0-12 0	Gloxinea, per dozen	12	0-18 0
Calceolaria, doz.	6	0-12 0	Heliotrope, per doz.	4	0- 9 0
— herbaceous, doz.	9	0-18 0	Hydrangea, doz.	9	0-12 0
Crassula, or Kalosanthes, per dozen	18	0-24 0	— paniculata, doz.	18	0-48 0
Cyperus, per dozen	6	0-12 0	Lilium, in var., doz.	30	0-60 0
Dracæna terminalis	30	0-60 0	Marguerite Daisy, per dozen	9	0-18 0
— viridis, per doz.	12	0-24 0	Myrtles, per doz.	6	0-12 0
Erica ventricosa, doz.	18	0-30 0	Palms in variety, each	2	6-21 0
— Cavendishi, doz.	24	0-36 0	Pelargoniums, doz.	9	0-24 0
Euonymus, various, per dozen	6	0-18 0	— scarlet, per doz.	4	0- 9 0
Evergreens, in var., per dozen	6	0-24 0	Rhodanthes, doz.	6	0-12 0
			Spiræa, per dozen	9	0-18 0

SEEDS.

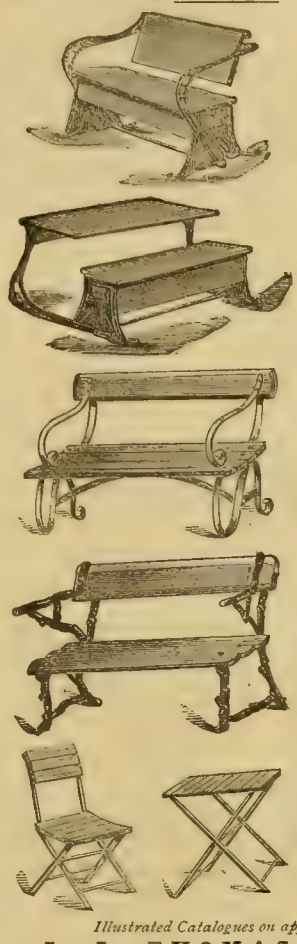
LONDON: *June* 28.—The seed market to-day was most thinly attended, and the business doing was almost *nil*. Trifolium, although offered very low, fails to find buyers. There is a good inquiry for old feeding Tares. Mustard and Rape seed are unchanged in value. The letters to hand from America continue to speak badly of the prospects for red Clover seed. In Canary seed a substantial advance has been established. Linseed is quiet. For blue Peas there is an improved sale. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

POTATOS.

The Borough and Spitalfields markets reports state that there was a fair demand, and supplies adequate. Quotations:—Old Victorias, 130*s.* to 140*s.* per ton; New Jersey Kidneys, 12*s.* per cwt.; ditto round, 9*s.*; ditto Cherbourg flukes, 12*s.*; ditto round, 8*s.* 6*d.* per cwt. —The imports into London last week were as follows: —100 tons 10,265 packages from Jersey, 90 tons St. Malo, 11 packages Boulogne, 2960 cases 614 boxes Cherbourg, 156 packages 25 sacks Malta, 416 boxes 400 cases Barfleur, 742 baskets Rotterdam, 541 baskets St. Nazaire, 57 cases Cadiz, and 36 chests from Hamburgh.

Government Stock.—Consols closed on Monday at 99½ to 99⅝ for both delivery and the account. Tuesday's figures were, for delivery, 99½ to 99⅝, and 99 15/16 to 99 11/16 for the account. The final quotations on Wednesday were, 99⅝ to 99½ for both delivery and account. On Thursday Consols closed finally ⅛ better for delivery, and 3/16 higher for the account. The above transactions are ex div.

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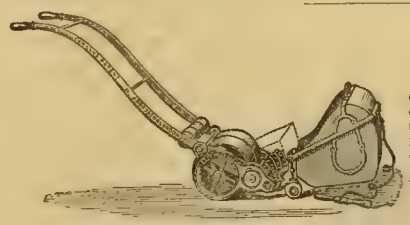
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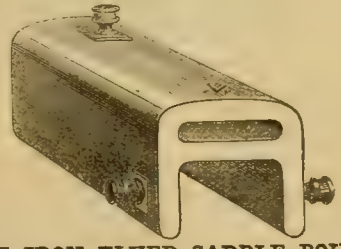
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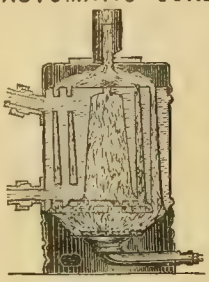
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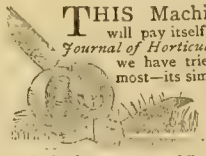
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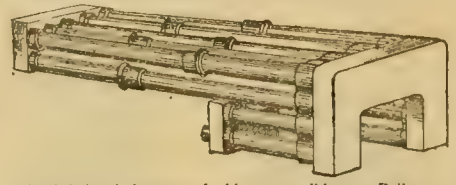


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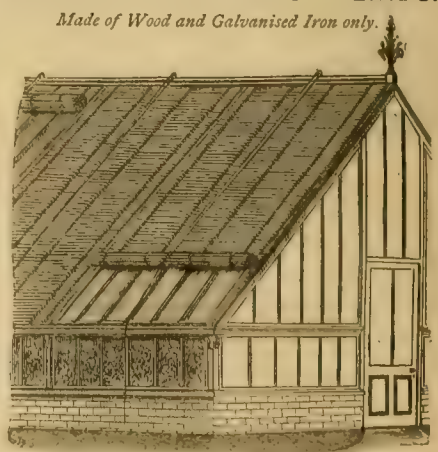
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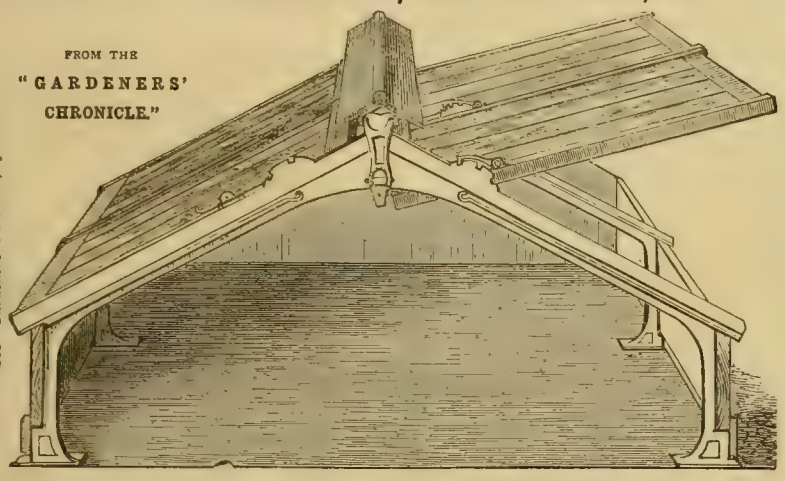
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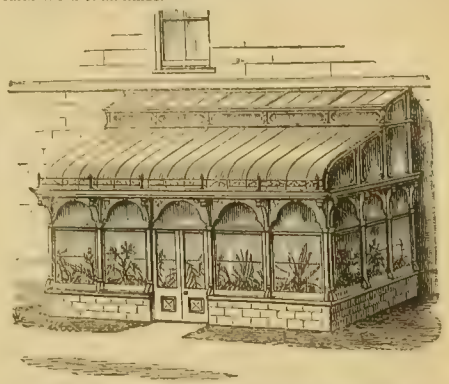
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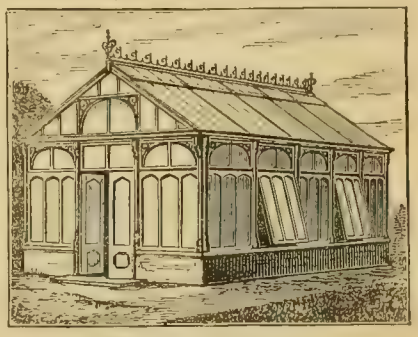
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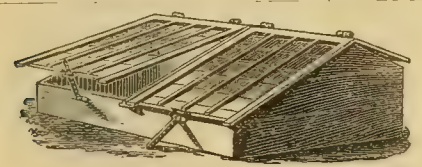
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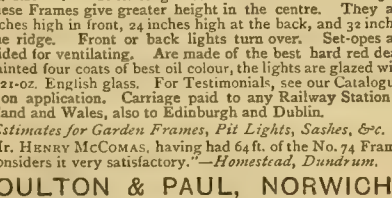
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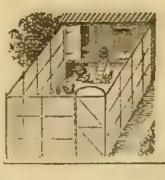
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THE

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BUDDENBORG BROTHERS, BULB GROWERS, Hillegom, near Haarlem, Holland, are now booking orders for the above. Prices will be given on application.

CALCEOLARIA "CLOTH of GOLD" (Rapley's) — Awarded First-class Certificates Royal Horticultural Society and Royal Botanic Society. New Seed. Price per packet, 3s. 6d. and 5s., free by post.
JOHN LAING AND CO., Seedsmen, Forest Hill, S.E.

A. M. C. JONGKINDT CONINCK, Dedemsvaart, near Zwolle, Netherlands, begs to call attention to his large stock of HOME-GROWN CHIONODOXA LUCILIÆ. Wholesale Trade LIST of HARDY BULBS and FLOWER ROOTS gratis on application.

To the Trade Only.
TEA ROSES, on own roots, extra strong, out of 4½-inch pots, £2 per 100, for cash.
MAIRIS AND CO., Weston-in-Gordano, Bristol.

BULL'S choice PRIMULAS (alba and rosea), Herbaceous CALCEOLARIAS and choicest CINERARIAS.—150,000 of the above at 1s. 4d. per dozen; 7s. per 100; 60s. per 1000, all good, strong, and healthy. Terms cash with all orders.
T. FLETCHER AND SON, Florists, &c., Chesterfield.

Bulbs from Holland and Plants from Ghent.
WATSON AND SCULL, HORTICULTURAL AGENTS, 90, Lower Thames Street, London, E.C., trust that their Friends, as heretofore, when ordering this season will direct them to be sent to their care, thus securing speed and the usual low charges.

WHITE CLOVE PINK "MRS. SINKINS," the largest, finest, and earliest known, per dozen, 100, or 1000, strong plants. Also CINERARIAS, PRIMULAS, first-class strains; BOUVARDIA, double; White Flowering TOBACCO, per dozen or 100. Prices on application.—W. WEALE, Taplow, Bucks.

LAPAGERIA ALBA, well-rooted plants, 10s. 6d., 15s. and 21s. A few extra specimens, size and price on application.
LAPAGERIA RUBRA, superb, 7s. 6d., 10s. 6d. and 15s. A few extra-sized specimens, size and prices on application.
W. HOWARD, Southgate, N.

WINTER FLOWERS, the best Autumn and Winter Flowering ZONALS, double and single, strong plants in 60's or free by post from 3s. per dozen. List on application.—KIRK ALLEN AND CO., The Rosery, Fen Drayton, near St. Ives, Hunts.

STRAWBERRY RUNNERS. — Strong, healthy, and well-rooted, from all the best market varieties. Sample and Price LIST post-free. Manual on Strawberry Culture, 6d.
W. LOVEL AND SON, Strawberry Growers, Driffield.

CABBAGE PLANTS.—Enfield Market, Brussels Sprouts, Green Curled Kale, Thousand-headed Kale, Drumhead Savoys, and Robinson's Champion Drumhead. Fine plants. Prices moderate. Apply to
T. DAVIES, Tangley, Guildford, Surrey.

CAULIFLOWER, BRUSSELS SPROUT PLANTS.
VEITCH'S AUTUMN GIANT, 3s. 6d. per 1000.
BRUSSELS SPROUTS, 3s. per 1000.
Packages 3d. per 1000 extra. Order of
R. BATH, Crayford; or J. BATH, 34, Wellington Street, Covent Garden, W.C.

Araucaria excelsa.
WANTED, extra sized plants of the above-named ARAUCARIA; no objection if a little unsightly. Size and price may be sent to
L., *Gardeners' Chronicle* Office, 41, Wellington Street, W.C.

WANTED, Quarter or Half Specimen STATICE or LAPAGERIA, for early September blooming. Price and size.
WM. TROUGHTON, Seedsman, Preston.

WANTED, Queen PINES, Fine PEACHES and NECTARINES, also M. Niel ROSES, EUCHARIS, &c.
WISE AND RIDES, Fruit and Flower Salesmen, Covent Garden, W.C.

SUTTONS' GRASS SEEDS.
For all Soils and Purposes.

SUTTONS' GRASS SEEDS.
For Lawns.

SUTTONS' GRASS SEEDS.
For Tennis Grounds.

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For Croquet Grounds.

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SUTTONS' LAWN SEEDS.
Special Gold Medal, Melbourne, 1880-81.

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Prize Medal, Paris, 1878.

SUTTONS' PAMPHLET ON LAWNS.
How to Make and Improve Them. Gratis and post-free on application.

SUTTON AND SONS,
THE QUEEN'S SEEDSMEN,
And by Special Warrant to the Prince of Wales,
READING, BERKS.

CUT ROSE BLOOMS and BUDS, of very fine quality, H.P. and Teas, 6s. 6d. per 100. Package free. Cash with order.
W. CAUDWELL, F.R.H.S., The Ivies, Wantage.

Azaleas, Camellias, Palms, Roses, &c.
C. VUYLSTEKE, NURSERYMAN, Loochristi, near Ghent, Belgium. Wholesale CATALOGUE may be had free of Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, London, E.C.
N.B. Plants grown specially for English Trade.

10,000 Vicomtesse H. de Thury Strawberry (true).
W. JACKSON AND CO., Nurseries, Bedale, can supply this excellent STRAWBERRY for present planting, the best for all soils and all seasons, 5s. per 100; trade, £2 per 1000. Order at once.

To the Trade only.
E. H. KRELAGE AND SON, NURSERYMEN, SEEDSMEN, and FLORISTS, Haarlem, Holland. The Wholesale CATALOGUE (No. 358A) of Dutch Flower Roots and Miscellaneous Bulbous and Tuberous-rooted Plants for 1882-83 is now ready, and may be had free on prepaid application, by Nurserymen, Florists and Seedsmen.

To the Trade.
SINGLE DAHLIAS.—About 10 good distinct varieties, strong plants, 8s. per doz., 50s. per 100. No white included.
HOOPER AND CO., Covent Garden, London, W.C.

Valuable Imported Orchids.—Special List, No. 59.
THE NEW PLANT AND BULB COMPANY beg to inform their Friends that the above NEW LIST is just published, and will be sent post-free on application. Lion Walk, Colchester.

CREEPERS for WALLS, TRELLISES, &c., in great variety. See Descriptive LIST. Most of these plants being in pots, may be moved now.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Hyacinths, Tulips, Crocus, Lilies, &c.
C. G. VAN TUBERGEN, JUN., Haarlem, Holland.—Wholesale CATALOGUE now ready, and may be had free on application to
Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, London, E.C.

Tea Roses.
THE LIVERPOOL HORTICULTURAL COMPANY (JOHN COWAN), Limited, The Vineyard and Nurseries, Garston, near Liverpool, have a splendid stock of TEA ROSES in all the leading varieties.
LIST free. Price to the Trade on application.
Also a large stock of GRAPE VINES.

CALCEOLARIA KAYII (See *Gard. Chron.* for June 24, p. 828), 4s. per dozen; GOLDEN GEM, 3s. per dozen. Free on rail. Usual discount to the Trade.
GEORGE HOLMES, Florist, York.

Calceolaria and Gloxinia.—First Prize Strain.
W. GRIFFIN begs to announce that he has still a limited quantity of the above to dispose of, and will forward post-free, at 1s. 6d. and 2s. 6d. per packet.
Gothic Cottage, Charles Street, Sydenham, S.E.

Vines for Summer Planting.
THOMAS METHVEN AND SONS beg to intimate that their Stock of above, which comprises all varieties worthy of cultivation, is now in fine order for present planting.
Leith Walk Nurseries, Edinburgh.

6000 Grape Vines.
THE LIVERPOOL HORTICULTURAL COMPANY (JOHN COWAN), Limited, The Vineyard and Nurseries, Garston, near Liverpool, have a splendid stock of VINES, grown from eyes this year, suitable for present planting.
CATALOGUE free. The Trade supplied.
Also a large stock of TEA ROSES.

SALES BY AUCTION.

Lycaste Skinneri.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King's Street, Covent Garden, W.C. on TUESDAY, July 11, at half-past 12 o'Clock precisely, by order of Messrs. Hugh Low & Co., a grand lot of imported plants of LYCASTE SKINNERI, just to hand by R.M.S. *Para;* ODONTOGLOSSUM LUTEA PURPUREUM; semi-established plants of CATTLEYA DOWIANA, and other choice ORCHIDS. Also a collection of established DENDROBES, including Wardianum, Devonianum, Falconeri, chrysanthum, infundibulum, crepidatum, &c.; twenty-five fine plants of ANTHURIUM SCHERZERIANUM ALBUM; a large importation of KENTIA SEEDS, comprising Fosteriana, gracilis, and canterburyana; 1 5 lb. of ARAUCARIA IMBRICATA SEEDS; a consignment of TODEAS, ORCHID BASKETS, &c.

On view morning of Sale, and Catalogues had.

Thursday Next, July 13.

MR. J. C. STEVENS has received instructions from Mr. F. Sander to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, July 13, at half-past 12 o'Clock precisely, valuable imported ORCHIDS, including Oncidium varicosum Rogersii, Lycaste Skinneri, Vanda Hookeri, Odontoglossum luteo purpureum, Cypripedium Stonei, Oncidium Weltoni, Pescatorea Sanderiana, new species; Oncidium Krameri, Oncidium cheirophorum, &c.

On view morning of Sale, and Catalogues had.

A Bargain.

TO BE DISPOSED OF, at a great sacrifice, an excellent NURSERY and SEED BUSINESS.—Apply to Messrs. HURST AND SON, Seed Merchants, 152, Houndsditch, London, E.

TO BE DISPOSED OF, a Small NURSERY GROUND, well situated on the high road between London and Brighton. Started 3 years ago. Propagating Houses. Owner having no time to attend to it.—Apply for particulars to Messrs. PROTHEROE AND MORRIS, 8, New Broad St., E.C.—(5686.)

FLORIST and NURSERYMAN'S BUSINESS. Suburbs. Ninety years' lease, at low ground rent. Profits £500 per year. Constant employment for 10 men. Price £900. Part can remain if required. Very profitable investment. Cards of

BIGGS AND CO., 5, Wilton Road (facing Victoria Station), S.W.

NURSERY TO LET.—Small Stock by valuation. Excellent opportunity for practical man with £200. Good terms can be made.

X. A., *Gardeners' Chronicle* Office, W.C.

PROTHEROE AND MORRIS, HORTICULTURAL, MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 8, New Broad Street, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

Primulas - Primulas—Primulas.

Thirteenth Year of Distribution.

WILLIAMS' superb strain, 1*s.* 6*d.* per doz., 10*s.* per 100. CINERARIAS same price. Package and carriage free.

The above are quite equal to those I have sent out in previous years. Cash with order.

JOHN STEVENS, The Nurseries, Coventry.

Roses in Bloom.

WM. PAUL AND SON beg respectfully to announce that their ROSES are now finely in bloom. The collection includes all the best Novelties as well as Seedlings of their own raising. Visitors by railway can enter the nurseries from the platform of the Waltham station, Great Eastern Railway, about half-an-hour's ride from London.

Paul's Nurseries, Waltham Cross, N.

AGERATUM, COUNTESS OF STAIR.—Special offer to clear out for cash. Strong plants 5*s.* per 100, 40*s.* per 1000.

J. L. WATSON, Manor Road Nursery, Gravesend.

NEW GOLDEN BEDDING PANSY, KING OF YELLOWS—the largest, freest, and brightest of all golden-yellow Pansies; strong plants, 1*s.* each, 9*s.* per dozen.

PANSY THOS. GRANGER, rich glowing Crimson, 5*s.* per dozen.

PANSY SUNBURST, fine Red, 16*s.* per 100, 3*s.* per dozen. Fine collection of all leading sorts.

RODGER, McCLELLAND AND CO., Nurserymen, &c. Newry.

Mushroom Spawn.

OSBORN AND SONS desire to call the attention of all Growers of Mushrooms to their celebrated Spawn, which with ordinary care is certain to produce most satisfactory results. Copies of testimonials will be found in the Seed CATALOGUE for 1882, which will be sent post-free to all applicants. Price 5*s.* per bushel, package extra. Trade price upon application.

The Fulham Nursery, London, S.W.

Bulbs—Bulbs—Bulbs.

SEGERS AND CO., BULB GROWERS, Lisse, near Haarlem, Holland, are now booking orders for Dutch Bulbs of every description. They advise their customers to send orders for them as soon as possible in their own advantage.

CATALOGUES may be had free on application. No Auction Sales or Retail Trade supplied, but the Wholesale only.

☞ Please observe name and address.

Christmas Roses.

ANTONY RIEMSCHNEIDER, Brandenburg-on-Havel, Germany, begs to offer HELLEBORUS NIGER, extra strong clumps at 100*s.* per 1000.

All orders should be addressed to

Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, London, E.C.

FOR SALE, strong plants, Sandringham Dwarf White and Red CELERY, BROCCOLI, BRUSSELS SPROUTS, SCOTCH KALE, SAVOY, and the well-known Fulham CABBAGE. GLOBE ARTICHOKES and HERB ROOTS of every description, at very low prices. Also SEAKALE SEED for coming season.

H. THORNTON AND CO., Dancer's Nurseries, Fulham, S.W.

DANIELS' CHOICE SEEDS,

FOR PRESENT SOWING.

Post or Carriage Free at Prices Quoted.

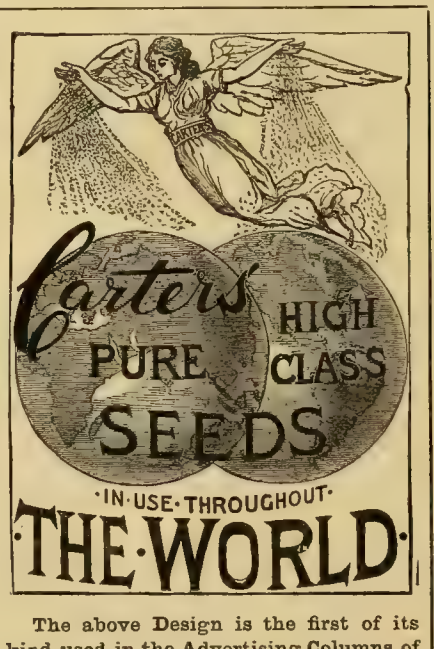
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DANIELS' DEFIANCE CABBAGE.—The most magnificent variety ever sent out, weight 12 lb. to 15 lb., remarkably early, short-legged, and compact, and of the most delicious Marrow flavour. Should be in every garden. .. .. .. Per packet 1*s.* 6*d.*	*s. d.* 3 6

From Rev. E. P. CAMBRIDGE, *Warmwell Rectory, July 21.*—"Daniels' Defiance Cabbage has turned out the finest and most delicate flavoured I have ever eaten."

ONION—Daniel's Golden Rocca, magnificent variety, equal to the finest imported onions, per pkt. 1*s.* 6*d.* ..	..
„ Daniels' Giant Rocca (true), splendid variety, frequently weighing 2 to 3 lb. each	1 0
„ Large Red Tripoli	1 0
„ „ White	0 8
„ White Lisbon	0 6
„ „ Spanish	0 6
„ New Queen	1 4
LETTUCE—Black-seed Bath Cos	1 0
„ Wheeler's Tom Thumb	1 6
„ Hardy Hammersmith	1 0
PARSLEY—Daniels' Queen .. .. Per packet, 1*s.*	..
TURNIP—Daniels' Improved Snowball	0 6

Special quotations for larger quantities on application.

DANIELS BROS.,
Royal Norfolk Seed Establishment, Norwich.



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THE QUEEN'S SEEDSMEN, (Seedsmen by Royal Command to) H.R.H. THE PRINCE of WALES

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Best Time to Sow Now, for Early Flowering in Spring.

PANSIES.—Assortment of 18 splendid varieties, containing each one packet, 3*s.* 6*d.*; assortment of 12 fine varieties, containing each one packet, 1*s.* 3*d.*; splendid mixed, per pound 36*s.*, per ounce 3*s.* Carefully saved only from exhibition flowers, 1000 seeds 2*s.* 6*d.*, per packet 6*d.* My collection of Pansies gained the 1st Prize at the Exhibition at Magdeburg. Price LIST forwarded gratis and post-free on application.

FRED. ROEMER, Seed Grower, Quedlinburg, Germany.

MEIN'S No. 1 CABBAGE.—The earliest, the largest, the finest in existence. Should be grown by all Market Gardeners. A correspondent writes, under date June 12, 1882:—"I have cut Cabbages since April 20 from the Seed you sent me last year, and have an abundance of them left, averaging from 4 to 6 lb. in weight."

Price 1*s.* per ounce (post-free).

Special price per pound on application.

STUART AND MEIN, Kelso, N.B.

Exhibition Plants.

W. G. CALDWELL AND SONS have the following selected SPECIMEN PLANTS to offer, many of which are well known at Liverpool, Manchester, and other large Shows, having taken many First Prizes. All are in excellent condition, and fit for competition this season:—

ERICA CAVENDISHII, 5 feet by 5 feet through, splendid specimens, well set with bloom.

ERICA TRICOLOR SPECIOSA, 4 feet by 4 feet through, well set with bloom; many other varieties of Ericas in all sizes.

ALLAMANDAS, APHELEXIS, BOUGAINVILLEAS, CLERODENDRONS, COCOS, CROTONS, CYCAS, GLEICHENIAS, LATANIAS, RONDELETIAS, SEAFORTHIAS, STEPHANOTIS, SWAINSONIAS, VINCAS, &c.

Prices, names, and sizes on application.

The Nurseries, Knutsford.

Tuberous Begonias.

JOHN LAING AND CO.'S Gold Medal Collection is unrivalled. They have now in cultivation 100,000 Begonias, which present to the public an unprecedented floral display of single and double flowers. A visit is solicited (Catford Bridge Station, South-Eastern Railway).

Prices, 12*s.* to 60*s.* per dozen.

CATALOGUES on application. Address

JOHN LAING AND CO., Forest Hill, S.E.

EIGHTY THOUSAND CLEMATIS, in Pots, of all the finest double and single varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple) for climbing and bedding, from 12*s.* to 24*s.* per dozen, strong plants.

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RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Novelty.

GRAND NEW BEDDING PLANT.

LOBELIA ANDREW HOLMES.—First-class Certificate, Leeds Horticultural Society. Unsolicited Testimonial enclosed with remittance:—

"*The Grove, Catton, near Norwich, June 7,* 1882.

"MR. GEORGE HOLMES,—I am obliged by your promptness, and regarding the Lobelia I am most agreeably surprised and pleased. To my thinking it is the most beautiful variety I have ever seen. I shall keep them for stock, and if unsuccessful in doing so I must apply again to you, as I should like to bed-out another year with it.—Yours, T. J. C. R."

Price 1*s.* each; 9*s.* per dozen; 60*s.* per 100. The usual discount to the Trade.

GEORGE HOLMES, Florist, York.

CHEAP OFFER TO THE TRADE.

ORCHIDS, just received direct.

AERIDES QUINQUEVULNERUM, healthy imported plants, at 90*s.* per dozen.

SACCOLABIUM CURVIFOLIUM, healthy imported plants, at 60*s.* per dozen.

PALMS in store pots.

ARECA LUTESCENS, strong seedlings, at 20*s.* per 100 plants.

LATANIA BORBONICA, strong seedlings, at 6*s.* per 100 plants.

COCOS PLUMOSA, strong seedlings, at 10*s.* per 100 plants.

Immediate orders are solicited. Address,

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Extra Strong

CABBAGE, BROCCOLI, CELERY, and various other plants for present planting.

Early Oxheart, Enfield Market, Nonpareil, Robinson's Champion Drumhead CABBAGE and Drumhead SAVOY (the above will be found very useful for filling up gaps in Mangel), 3*s.* per 1000. Dwarf Green Curled SAVOYS. BRUSSELS SPROUTS, Green Curled Scotch and other KALES, 3*s.* per 1000. Veitch's Autumn Giant CAULIFLOWER, Veitch's Self-protecting BROCCOLI, 5*s.* per 1000. Carter's Champion, Cattell's Eclipse, Early White, Brimstone, Purple and White Sprouting BROCCOLI, 5*s.* per 1000. Red and White CELERY, 5*s.* per 1000. The above are unusually strong, healthy, and well-rooted plants. To be had in any quantity, delivered free on rail, or 1000 (for a small garden) of the above for 5*s.* Cash or reference with order from unknown correspondents.

W. VIRGO, Wonersh Nurseries, Guildford.

NEW ROSES of 1882, in pots.—Vendors' Selection, 30*s.* per dozen; Purchaser's, 36*s.* per dozen. The above comprise all the best English and French-raised Hybrid Perpetuals, Perpetual Polyantha, Teas, Hybrid Teas, and Perpetual Moss.

ROSES of 1881, of above-named classes, 18*s.* to 24*s.* per dozen, in pots.

CHOICE ROSES.—Tea-scented, Hybrid Tea, Noisette, China, and Bourbon, 18*s.* to 24*s.* per dozen, strong plants in pots.

Descriptive LIST on application.

RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

NOTE PRICES.—Strong good plants for present planting.—Early CABBAGE, SAVOY, Green Curled and Variegated KALE, Brussels SPROUTS, COUVE TRONCHUDA, Red Pickling CABBAGE, Hardy Green and Rosette COLEWORT, 3*s.* 6*d.* per 1000, 60*s.* per 20,000, very fine. Veitch's Autumn Giant, Walcheren, and Snow's Winter White CAULIFLOWER, 9*d.* per 100, 7*s.* per 1000, 30*s.* for 5000. Early, Medium, Late White, and Purple Sprouting BROCCOLI, 6*d.* per 100, 4*s.* 6*d.* per 1000, £4 for 20,000 CELERY, White and Red, 7*d.* per 100, 5*s.* per 1000. Cash or banker's reference with order.—EDW. LEIGH, Wrotham Farm, Dunfold, Godalming.

CARNATION BLOOMS.—CARNATIONS. The Trade may be regularly supplied with the above on liberal terms. Particulars upon application.

THOS. S. WARE, Hale Farm Nurseries, Tottenham, London.

EARLY CABBAGE SEED.—The best and earliest sort is MYATT'S EARLY OFFENHAM.—For price, apply to

F. AND C. MYATT, Offenham, Evesham.

Strawberry Plants.—In consequence of

H. CANNELL AND SONS being located in the midst of hundreds of acres of the above (runners are this year unusually fine and early), they would be pleased to quote price for any quantity and any sorts.

Swanley Kent.

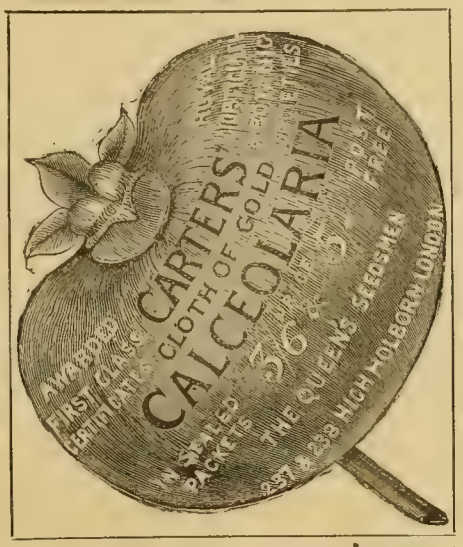
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OF
FLORISTS' FLOWERS,
From Noted and Magnificent Strains,
Which can be recommended with the greatest confidence.
DESCRIPTIVE LIST ON APPLICATION.
RICHARD SMITH & CO.,
SEED MERCHANTS AND NURSERYMEN,
WORCESTER

Ferns a Speciality.
EXOTIC AND BRITISH FERNS
IN great number and variety, suitable for Stove and Greenhouse cultivation, for Outdoor Ferneries and other purposes.
Intending Purchasers before buying elsewhere should send for our SPECIAL LIST of CHEAP FERNS, which will be forwarded free on application.
W AND J. BIRKENHEAD, Fern Nursery, Sale, near Manchester.

CRANSTON'S NURSERY and SEED CO.'S
SPRING CATALOGUE
(Free on application) contains a List of all the
NEW FRENCH and ENGLISH ROSES,
TEA-SCENTED and NOISETTE ROSES
In great variety, now ready for planting out
STANDARD TEA-SCENTED and NOISETTE ROSES,
Established in Pots;
HYBRID PERPETUAL ROSES
For Greeenhouse Culture;
BEDDING and HERBACEOUS PLANTS
Of all the Leading Varieties;
CLEMATIS, DAHLIAS, &c.
KING'S ACRE, near Hereford.—May, 1882.

CHEAP CLEARANCE OFFER.
FUCHSIAS, in variety, choice, 4*s.* per 100.
GERANIUMS, Mrs. Pollock, 15*s.* per 100. } from single
,, McMahon, 14*s.* per 100. } pots.
,, Pink, Rose and Scarlet, 7*s.* per 100. }
,, Variegated Bijou, 8*s* per 100.
BOUVARDIAS, in variety, 18*s.* per 100.
,, Alfred Neuner, nicely established, 10*s.* per dozen.
VERONICA ALPINUS, 10*s.* per 100.
PANSIES, Great Eastern, 8*s.* per 100.
PRIMULAS, alba and rosea, Bull's choice, 7*s.* per 100, 60*s.* per 1000.
Package free. Cash must accompany all orders.
T. FLETCHER AND SON, Florists, &c., Chesterfield.

CAULIFLOWER, BRUSSELS SPROUT PLANTS.
VEITCH'S AUTUMN GIANT, 3*s.* 6*d.* per 1000.
BRUSSELS SPROUTS, 3*s.* per 1000.
Packages 3*d.* per 1000 extra. Order of
R. BATH, Crayford; or J. BATH, 34, Wellington Street, Covent Garden, W.C.



NOTICE.
SELLING OFF OF NURSERY STOCK.
EWING & CO.,
EATON, near NORWICH.
Great Reduction in Price for Cash Payments, viz.,
15 per Cent. for Cash before delivery.
10 per Cent. for Cash within One Month of date of invoice.
5 per Cent. for Cash within Three Months of date of invoice.
After Three Months no discount can be allowed.

In addition to their immense Outdoor Stock of ROSES; FRUIT TREES, Bushes and Roots; ORNAMENTAL TREES and SHRUBS, they have ready for immediate Sale a very extensive Stock of New and Scarce ROSES in Pots; Tea and Noisette ROSES in Pots; CLEMATISES of best Old and New Varieties, in Pots; Variegated and Choice Green-leaved IVIES, in Pots; AMPELOPSIS VEITCHII, and many other Hardy CLIMBING and CREEPING PLANTS, in Pots, &c.

N.B. Cut Roses, &c., can be supplied at cheap rates, carefully packed for travelling long distances.

A slight extra charge must in most cases be made for packing. Where cash in payment of goods is sent *with the order*, the amount for *package* may be forwarded in stamps *after* despatch of goods.

N.B. Post-office Orders should be made payable to EWING AND CO., at Eaton, near Norwich. Cheques cross "GURNEY AND CO., Norwich.

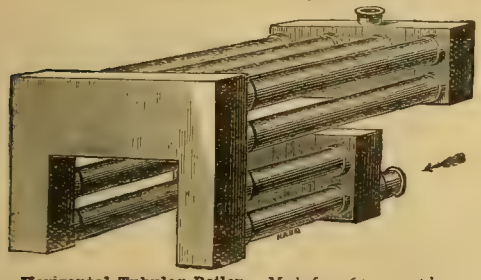
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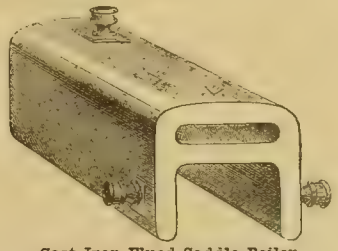
GARDEN REQUISITES.
COCOA-NUT FIBRE REFUSE.
4*d.* per bushel; 100 for 25*s.*; truck (loose, about 2 tons), 40*s.*; 4-bushel bags, 4*d.* each.
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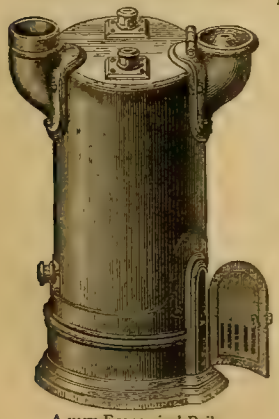
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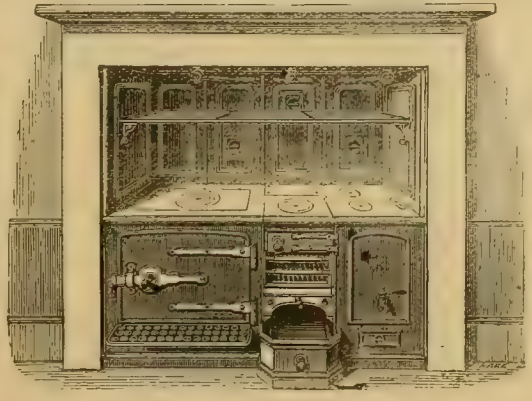
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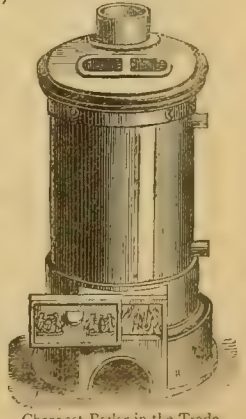




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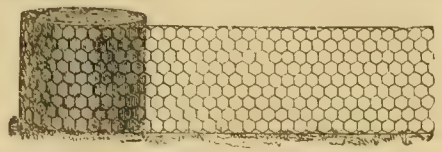
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THE

Gardeners' Chronicle.

SATURDAY, JULY 8, 1882.

ROSE PARTIES.

THESE are now being held every day, all day long, and far into the night. They are as delightful as feasting on ambrosia, climbing the delectable mountains, or any other ecstatic, poetical, or practical pleasure. And yet a good deal depends on when as well as where and how they are held. For example, Rose parties at noonday are apt to be hot, dusty, exhausting, even in the open; and under canvas sweltering and melting beyond our powers of comfortable endurance. And few sights are more depressing and less exhilarating than hundreds of drooping Roses, and rank after rank of faded boxes at mid-day. But Roses at break of day—a dewy one—are simply divine—so full of beauty, freshness, and fragrance, as to fill and satisfy and soothe our every sense of pleasure. Roses by moonlight, too, are something so different in colour and even form as to appear altogether new and different flowers. The perfume, too, is fuller, richer, sweeter; and, perhaps, to enjoy Roses to the full, it would be well at times to meet them in the gloaming or by moonlight alone. The rosarian among his Roses, beneath the sweet pale light of the silent moon, could not fail to form a happy party. The very stillness of the night adds a new charm to the half revealed, half concealed beauty of Roses.

It has been said with much truth that the glory of most of the greatest works of art lies hidden more deeply in their concealments than in their revelations. It seems a sacrilege to the severest lover of Roses to set them up or expose them to the mid-day sun's broad glare till every petal is unfolded to the full, and their eyes are forced to open more or less widely. Better far to admire them under a subdued light, and under conditions of development that reveal a reserve of beauty and of material yet to be unfolded. Rose parties are mostly too large and too massy. Some of the most delightful ever enjoyed by the writer have been days among the Roses in Rose nurseries or on Rose farms; but no sooner does one come upon whole breaks of Charles Lefebvre, Marie Baumann, La France, Duke of Edinburgh, Beauty of Waltham, or such an old favourite, never to be hoped to be superseded—Coupe de Hebé—than one wishes to be alone with them. Would that the mere sayings or babble of rosarians could be hushed for the nonce, that the purity and fulness of beauty of such and hundreds of other glorious Roses could steal into and satisfy the heart and head. Such parties, instructive and delightful as they are, are often far too technical and professional for pleasure. The jargon of names, differing opinions on colours, substances, forms, constitutions—all useful and instructive in their way—jar one's sense of the true and beautiful so richly and profusely illustrated in our gardens and fields of Roses. No doubt such Rose parties deepen our knowledge of our favourites, and heighten the regard of rosarians for each other; but of real pleasure, smaller parties and fewer

Roses may yield the richer harvest. Rose shows are doubtless necessary in the present condition of society—as many otherwise could hardly either know or learn to love Roses that they must be tolerated, and improved, if possible; but as to any pleasure they afford it seems very much akin to dram-drinking. Rosarians themselves seldom appear to less advantage than at great Rose shows. Flushed with victory, or—shall we write it?—soured if even for the nonce by defeat, they are not half so full to overflowing with sweetness and light, as when at home among their Roses; while it is pitiable to behold the general public struggling with one another under leaking canvas in June or July, to get a peep of lines of Rose blossoms drooping, fallen, or wholly gone, as they mostly are on the second day. The majority of these, under present arrangements, have the gratification of seeing where the good Roses have been. Of all Rose parties, the flower show ones are the most unsatisfactory and miserable. Now to enjoy Roses, we must have them at or in the house. One good Rose in the hand, the garden, the house, is worth a hundred—a thousand—any number under canvas, or in the grounds of the nurseryman. Thanks, however, to the skill, energy and competition of the latter Roses are now brought within reach of the poorest. Not only are trade prices fair and moderate, but the wholesale clearance sales held in most provincial towns every winter enable good Roses to be purchased at the price of a pint of beer. Not only so, but wild Briers grow in every hedgerow, and in most localities they may be had for the digging up, or bought for a penny a-piece. The art of budding is taught through the press, in and out of season, the lesson has also been pretty widely learned. In most neighbourhoods maidens and matrons, youths, old men, and even boys, can bud Roses. Almost every village, too, has its more skilful budder, who buds Roses for the pleasure or the local fame, which is very considerable, which it brings him or her—for not a few of the most expert local budders are found among the fair sex, and among the most delightful of Rose parties the budding party might not seldom take the blue ribbon. One more Rose party deserves special notice, in that this often proves the most pleasant and the cheapest, as it ought to be the most common, of all. In giving social or dinner parties use Roses alone for decoration whilst these are in season. It seems a reflection on the completeness and perfectness of the Rose to use other flowers with it. The other flowers—no matter what—lose much and suffer loss in comparison.

The Rose is not only strong enough and sweet enough to stand alone, but fair play to other flowers demands that it should do so. The greatest source of weakness in modern floral decorations is indiscriminate and excessive mixtures. A first and powerful step may now be taken to simplify, as well as strengthen, our floral decorations by giving Rose dinners and Rose parties in this the height of our somewhat late and uneven Rose season—no flower but the Rose to be admitted on such occasions.

Rhodanthes and Acroclíniums.—It is scarcely possible to advance too much in praise of these beautiful annuals. There are now to be seen in Messrs. James Veitch & Sons' trial grounds at Chiswick, which were formerly a part of Glendinning's old nursery, some patches of each of the above, the seeds of which were sown in the open ground. They grew freely, have reached a uniform height, and, blooming with abundance, form cheering patches of colour. No doubt the light and free soil in which they are growing suits them admirably. The varieties of Rhodanthes are maculata, alba, and atrosanguinea; and there are also the rose-coloured and white varieties of Acroclinium. Because it is generally the practice to sow seeds of these in heat and transplant them to the open ground, it may be stated that seeds sown with care in the open ground succeed well, and the practice is one to be commended.

THE POTATO DISEASE.*

Simultaneously with the appearance, in a somewhat vigorous form, of the Potato disease, comes to us also a pamphlet written by Mr. J. L. Jensen, of the Bureau Ceres in Copenhagen, and entitled "*How to Overcome the Potato Disease.*" Certainly no book, though it be small and perhaps a little prosy, could come at a more seasonable time, for, judging by present appearances, it is needful that we should endeavour to overcome the disease, or otherwise that dreaded visitation may overcome our Potato crops. As the disease has been with us some thirty-seven years, and very many more essays and treatises respecting it, its operations and its cure, have been written, it is not only difficult to say anything new, but it is certain that what has been written has so far been productive of but little amelioration.

Mr. Jensen tells us in his pamphlet much that we knew before, and indeed we are not sure whether the main subject or theory of his book is not one that has in the past been sometimes dilated upon, so that if it be a sound theory we have to deplore that teachers in the field of Potato literature, long before Mr. Jensen, have written in vain, and that we have been enduring heavy losses from year to year simply because we have refrained from putting this theory into practice. Now this primary subject or theory of the pamphlet is termed "protective earthing," and, indeed, to explain it tersely, it means the heaping up of a thick ridge of soil upon the newly forming tubers on one side only, and not in earthing up equally on both sides and generally imperfectly as we are in the habit of doing. It is but fair to Mr. Jensen to say that if he is a little prolix he is neither dull nor uninteresting. Still farther, he does not beyond his own particular theory propound anything that can in any way be termed impracticable. There is nothing in the book that is empirical; and, indeed, so far from that being the case, he here and there deals with some popular absurdities, as we have done in these columns from time to time, and clearly shows that they have no tangible basis. Thus, the oft-quoted theory of degeneration of sorts with age meets with no acceptance from him. Neither do many of the imagined specifics, put forth with so much assurance by some of the witnesses whose evidence, given before the Parliamentary Committee upon the Potato disease, which sat in 1880, was immediately regarded as gospel.

It is important and interesting to note that, whilst the author treats of his subject from an eminently practical and cultural point of view, he also deals chiefly with culture so far north as Denmark, and necessarily in a country the average temperature of which is lower than our own. It would therefore appear that he has to fight the disease under even more disadvantageous conditions than we do; still, if the disease may be expected there to be of a more severe form, yet it is later in its appearance than with us, for Mr. Jensen mentions that last year it was first seen in the vicinity of Elsinore about August 14, which date is at least five weeks later than it developed itself here, and is quite seven weeks later than is its appearance with us this year. Of course, the Danes plant later than we do, but the end of April is mentioned as the customary planting time; and if the early growth of the tops be at all identical with what takes place here during May and June, it is evident that in Denmark the plants have a far better start of the disease than ours have.

Now, Mr. Jensen bases his plan of protective moulding upon the assumption that the chief agent in producing disease in the young tubers is the rain, which, washing the myriads of fungus spores that have lodged upon the leaves and stems of the plants into the soil, and especially in and around the basin usually formed in earthing, brings them at once into active contact with the tubers, upon which they proceed to operate. That there is very much that is reasonable in this proposition there can be little doubt; but it puts aside almost entirely the generally received theory, that the fungus operates chiefly through the leaves and stems, and from these passes direct into the newly formed tubers. And as far as we have been enabled fully to grasp the points in the pamphlet, we have not found any suggestion that such natural operation can be in any way combated by the high moulding.

Again, we know in this country from sad experience that there is another if less active agent than rain, yet more potent certainly in its operations, and that is found in thick white mists and heavy dews. Just recently we have had visitations of this pest following upon hot close days; and just as now we find the complaint of the early appearance of the disease rapidly increasing after these white mists have been with us, so also have we in past years had very largely the same experience. Rains may wash the minute spores from off the leaves, but the white dews, instead of washing them away, do, in covering the entire plant in a moist vapour, but serve to render the passive spores fearfully active; indeed, it has in our experience been no uncommon phenomenon to find Potato leafage that seems healthy and clean over night to be but one mass of blackened spots the next morning, and in two or three days further absolutely destroyed. That the great destruction amongst the tubers which followed must have arisen from the fact that the disease or fungoid spores passed through the internal structure of the plant into the tubers is evident, no rain having followed to wash them into the soil. Accepting the generally understood theory, that the spores are spread through the air at a certain period of the year—which as we have shown seems to be much later in Denmark than with us—Mr. Jensen seems to hold that these spores are destructive only and active only when passing from the air into the soil. As to this we fear it is not yet clear whether soil that has been heavily charged with spores for several years previously may still not be as full of them at this same critical season as the air itself, and if such be the case it would hold that there would be many of them several inches below the surface as well as on it. Though not contending against such an assimilation, Mr. Jensen would doubtless hold that his tables of results as published prove that such cannot be the case because these tables show disease affecting crops grown with shallow and flat moulding to the extent of over 30 per cent., whilst the same sorts in adjoining rows high moulded show the disease only to the extent of 1, 2, and 3 per cent. Abiding therefore by the profound philosophy conveyed in the ancient proverb that the proof of the pudding is in the eating, so must we, accepting Mr. Jensen's returns, admit that these prove beyond doubt the immense value which high moulding really possesses.

Though the descriptive matter in the book which relates to protective moulding is of a somewhat elaborate kind, yet we can sum up for for the benefit of our readers the outline of the operation in a few words. The first part of it consists in earthing-up moderately, but leaving on either side of the plant stems a flat ledge. The next earthing is not done till about the ordinary time of the appearance of the disease, or at the moment of its first discovery, because it seems to be an important part in the plan that the tubers shall as far as possible be approaching maturity before the additional earthing is given. In any case, however, the high moulding must be done the moment the disease appears. This is performed by depressing the haulm towards the sun, and drawing up the soil in the furrow—which should first be well pulverised—on to the roots, and partially on to the stems, so that whilst the tops are kept depressed at an angle of 45° or thereabouts the earth covers the new tubers to a depth of not less than 4 inches, and forms on the north side of the ridge a deep sharp slope. What rain may thenceforth fall will in so doing either wash the fungus spores into the furrows, or if to any extent on to the ridges the extra thickness of soil will prevent their reaching the tubers. Mr. Jensen thinks 30 inches width between the rows sufficient. Judging by the growth many kinds make in this country we should think that the 30 inches would often need to be extended to 40 inches, and in the case of such tall-haulmed kinds as Reading Hero, for instance, 50 inches would be none too wide an interval. Over breadths of moderate dimensions the earthing may be done with a hoe, but for large ones Mr. Jensen has patented a reversible plough or horse moulder. The author does not contend that this style of earthing promotes size or increases the yield; that is beside the question, which is one solely relating to checking the operations of the disease.

One matter that presents itself to us as distinctly novel is dwelt upon by the writer with considerable emphasis. He terms disease not seen at lifting time but developed afterwards as "after sickness," and attributes much of it to the lifting of the tender-skinned tubers whilst the haulm is yet partially green

* *How to Overcome the Potato Disease, by a Simple and Easily Performed Method of Cultivation.* By J. L. Jensen, Director of the Bureau Ceres in Copenhagen. (Edinburgh and Glasgow: John Menzies & Co.)

and impregnated with the disease spores. These said spores falling from the tops, and lying on the soil at once impregnate the tubers, and the result is disease and decay in a few days. How many growers are there who, having lifted their earlier crops under similar conditions, and when apparently sound, have found them within a week or two after storing to be fearfully diseased? Mr. Jensen holds that this is but the result of premature lifting whilst the disease spores are yet active, and strongly recommends that in no case should the tubers be lifted until from two to three weeks have elapsed from the time of the clearing off of the haulm, or of its complete decay. There is so much of practical earnestness about the author, that it is not possible to withhold from him the tribute of respect which both he and his suggestions merit. He asks that they may be put into practice and tested, and so far we think, before any one who has not tested his plan offers adverse criticism, they should do so, because now is exactly the time at which the protective moulding should be performed.

Unwilling to preach what we have not practised, we have high moulded, just as suggested by Mr. Jensen, a 50-feet row of Woodstock Kidney, a variety that is peculiarly susceptible to the disease, while two other rows of similar length are left moulded in the ordinary way. It is but fair that the test should be applied to kinds that are most readily affected, because it is just those which we have most need to protect. The operation should be carried out with care and discrimination, and should not be overdone. Less than 4 inches of soil over the tubers will not be protective. More than that thickness may be objectionable, as necessitating the covering of the plant-stems too largely. However done, a sharp well-defined ridge should be formed, so that rain is, as far as possible, thrown into the furrows and not on to the tubers.

MOUNT EDGECUMBE.

(Concluded from p. 7.)

The Spring Garden is enclosed with an evergreen hedge; spring flowers are, of course, mostly over, but there are Tea and Noisette Roses (standards) of extraordinary size, luxuriantly clothed with foliage and clusters of flower-buds, and a splendid "standard specimen" of Chimonanthus fragrans planted in the centre of a bed of Lilies of the Valley. There is a range of unequal span plant-houses here filled with a collection of choice foliage and flowering plants, consisting of Palms, Dracænas, Pandanus Veitchii and utilis, Aralias, Anthuriums, and flowering Begonias; and upon the north side another house is erected for growing Ferns, a good collection grown for cutting and furnishing purposes, as also Lycopods and mosses.

The English Garden is chiefly remarkable for its collection of ancient trees—Conifers and Palms. By the way, the latter are the finest in this country out-of-doors. There is a large specimen of the Madeira Holly, a non-prickly variety; noble samples of Cupressus Lindleyana alba, Cryptomeria japonica, four large Cork trees, and an immense Cedar of Lebanon. This Cedar is 33 yards in diameter. There are also aged trees of Catalpa syringifolia, and Magnolias of sorts, a unique specimen of Thuyopsis dolabrata variegata, Photinia serrulata, Osmanthus aureo variegatus, Salisburia adiantifolia, Cupressus sinensis overrun with Honeysuckle, and a red Cedar over 300 years old. The Palms (Chamærops excelsa) are nearly 15 feet high, and are very interesting at present, the male and female plants being both in flower and in fruit. The situation is altogether of the most favourable nature, for while the garden is well sheltered it is at the same time fully open to light and sunshine. Those, therefore, who would succeed in cultivating such plants out-of-doors should take note that warmth and shelter are two indispensable elements, for while the plants are perfectly hardy, and will live and grow a little in most situations, they only attain their full development when they enjoy the conditions above mentioned.

The Hardy Fernery contains a large collection of Ferns, which are well disposed in rockwork—not a pile of stones with pockets between, but a neatly designed rock garden. The groundwork is composed of Ivies, and in addition to the Ferns the garden is ornamented with fountains, statuary, and marble urns from Rome.

The French Garden, as the title signifies, is laid out in French style, with a lake or pond in the centre, surrounded with arches of Roses, Jasmines, and Honeysuckles. In the pond there are Richardias thriving well as aquatics, and accompanied by the beautiful Nymphæas lutea and alba. Old Fuchsias, too, are very pretty here, and Hemerocallis flava, a very popular plant in this part of the country, as it should be everywhere. There is a monument erected in this garden to the memory of Lady Sophia Mount Edgecumbe, the grandmother of the present Earl, and also one to Timothei Brett, bearing date 1791. It is an attractive garden, possessing much variety, and a lightness of touch bordering upon the artistic. The air, too, is fragrant with the scent of mock Oranges; there are, indeed, so many hues, and so many delicate forms and shades, that the eye never wearies roaming over so much that is pleasing and natural.

The Battery Garden runs close by the edge of the sea, from which it is divided by a beautiful hedge of evergreen Oaks, about 5 feet through. The battery consists of twenty-one guns, which are fired off upon the occasion of Royal visits to the Mount. The anchoring place is called Baron Pool, from which there is a splendid view of the slope leading to the house and the Block House, which was erected in the time of Queen Elizabeth. When the Spanish Armada swept by here, the Duke of Medina Sidonia, looking upon this charming spot, selected it as his own share of the spoil. But the Duke, though discriminating in judgment, was wrong in his calculations, which, as every one knows, were never realised. Escallonia macrantha flowers profusely as a bush by the brink of the sea, and there is a good view of Drake's Island from Milton's Temple, where Thomson, the poet, composed the following lines on the spot—

"On either hand,
Like a long wintry forest, groves of masts
Shot up their spires the bellying sheet between,
Possess'd the breezy void, the sooty hulk
Steered sluggish on the splendid barge along,
Row'd regular to harmony around.
The boat light skimming stretched its oary wings,
While deep the various voice of fervent toil
From bank to bank increased, whence, ribb'd with oak
To bear the British thunder black and bold,
The roaring vessel rush'd into the main."

There are several glasshouses in this part of the grounds, for cultivating Ferns and other plants of an ornamental character. In one I noticed the night-flowering Cereus, good specimens of the Garland Flower (Hedychium), Euphorbias, and other winter flowering subjects. Two houses are filled with Azaleas, and the number of bedding plants required is over 40,000.

The Orangery is the last of the series of ornamental gardens within the radius of the dressed grounds. The garden is divided into four quarters, with a fountain in its centre stocked with Lilies and other aquatics. There is a large flower-bed in the centre of each quarter, and the Orange trees, which are growing in immense tubs, are dotted round each quarter. The plants are in magnificent health, and are well furnished with fruits, indeed the whole collection, irrespective of variety, is remarkable for the quantities of fruits borne upon each plant. If any exception can be made, it must be awarded to the beautiful bushes of the Myrtle-leaved Orange, which are particularly ornamental; many of the taller growing kinds are close upon 20 feet high. The Laurel hedge which encloses the garden is 15 feet high, and the massive steps and balustrades ascending to the higher grounds are ornamented with figures of Apollo, Venus de Medici, and Ariosto, the Italian poet. There are also Agaves, and a splendid specimen of Nerium Oleander among the Oranges, but perhaps the most remarkable plant in the whole garden, not even excepting the Nerium, is the specimen, of the Norfolk Island Pine, Araucaria excelsa. The Orange-house where the plants are wintered is 100 feet long and 50 feet wide—a noble house devoted to a noble purpose.

The Kitchen and Fruit Gardens are the most interesting and probably the most strangely constructed gardening feature at Mount Edgecumbe. They are situated where no one would expect to find a garden—in a kind of gulley between two slopes which rise at either side to a considerable elevation above the Tamar. The garden entrance is ornamented with castellated round towers covered with a large Ivy plant measuring 2 feet in circumference at its base, I am not acquainted with any mathematical figure that would accurately describe the form of this garden, but the nearest approach to it would be an irregular parallelogram (if such a thing existed) rounded at one end. The whole 7 acres in extent is enclosed by strong brick walls, and there is a carriage drive round the garden, which is furnished upon the high side with Roses of all kinds, which grow and flower freely. About the centre of the garden (the gulley) there is another enclosure of brick walls with cross walls equidistant, making in all five divisions. The cross walls are not even straight, each wall has one elbow more or less deep, which gives the garden a quaint appearance from the higher ground. In short the garden may be described as having "walls within walls" and their immense thickness indicates that they were heated at one time, but such is not the case now. Nor indeed can it be said that they are favourably situated from a cultural point of view, nor is the soil of a specially favourable character; still the average results obtained are fully satisfactory, and the crops this season promise to be unusually abundant and good. Vegetables and fruits—Apples excepted—are beyond the average, and of course in the glass department the weather is not permitted to have any influence against the production of plants, fruits, and flowers, of which there is abundance and more. In the several ranges of vineries good crops have either been cut or are progressing towards maturity, and the late crops are very fine indeed; along with them a good supply of Roses is grown for winter. The plants are trained against the back wall, of such kinds as Gloire de Dijon, Isabella Sprunt, Devoniensis, and others. The Peach crops in several houses are also excellent as regards appearance and quantity, and the same may be said of Figs and other fruits, which are equally well grown. The plant houses contain good collections of Orchids, foliage and flowering plants, Ferns, mosses—in fine, more or less of everything that is beautiful or useful in a private garden.

Of Orchids there is a fine batch of Stanhopeas, and of winter flowering subjects a plant of Euphorbia jacquiniflora measuring 6 inches in circumference at its base. Where there is so much material to write about in a garden so extensive and spread over so many broad acres it would be difficult even to touch upon every topic of interest much less to dilate upon it. But this much may be said in conclusion, that the general condition of the place does credit to Mr. Brighton, who has been head gardener at Mount Edgecumbe for a period exceeding thirty years.

ROYAL HORTICULTURAL SOCIETY.

The following circular has been issued to the Fellows of the Royal Horticultural Society:—"In their circular to the Fellows of March 27 last, the Council stated they were endeavouring to enter into negotiations with the Commissioners for the Exhibition of 1851 with the object of effecting an arrangement which would be in strict accordance with the trust upon which the Commissioners hold their property, mutually advantageous to the Commissioners and the Society and beneficial to the public. With this view the Council proposed that a joint committee of the two corporations should be formed to consider their future relations. This proposal was accepted by the Commissioners, but the committee which has been appointed to give effect to it has not yet met, as it was found necessary, before such a meeting could be usefully held, to settle terms between the Society and the executive committee of the Great International Fisheries Exhibition, 1883, to whom the Commissioners had granted the use of part of the South Kensington Gardens for the purposes of their exhibition, reserving for themselves that portion known as the ante-garden, of which they intend to resume possession. The Council are happy to report that the friendly spirit in which the executive committee met them has enabled them to make a satisfactory working agreement with the Fisheries, which, whether the ulterior negotiations with the Commissioners are successful or not, secures to the Society, subject to the user required by the Fisheries, the ornamental part of the gardens which lies to the north of the circular basins, until the end of the year 1883. The Council are not in a position to anticipate the result of these negotiations, but they believe the Commissioners wish to act liberally towards the Society, and they have no reason to anticipate that its connection with South Kensington will cease after 1883. As some further time must elapse before the negotiations with the Commissioners can be completed, the Council think it right to issue the foregoing statement for the information of the Fellows."

New Garden Plants.

SELAGINELLA GRANDIS, *n. sp.*

Stem erect from a creeping, rooting base, as thick as a straw, 6 to 12 inches high, obscurely tetragonal, compressed, clothed with ovate-acuminate, serrulated leaves, the lateral ones becoming longer upwards, and merging into the larger leaves of the fronds. Fronds (fig. 8, p. 41) triangular-ovate, recurved, of a clear grass-green above, paler beneath, 8 to 10 inches long, dichotomously branched with numerous (twelve or more) successive furcations, the principal branches about seven, the ultimate ones about 4½ lines wide. Leaves (fig. 7 L, and magnified 10 diameters in the centre of the cut below) close-set, spreading, fixed at the posterior angles of the quadrangular rachis, oblong, subfalcate, unequal at the base, where the anterior side is larger, rounded, and prominently ciliate, the rest of the margin entire, distinctly one-nerved, the nerve prominent beneath; smaller intermediate leaves ovate, cuspidate, serrulate, carinate, investing the two anterior angles of the elevated rachis, the base decurrent on the outer side. Amenta (fig. 7, upper left-hand figure) usually in pairs, terminating the ultimate branches, slender, 1—1½ inch long, tetragonal, the bracts (fig. 7, BR) ovate-acuminate, carinate, with a dark green keel, the margins serrulate.—Habitat: Borneo.

Under the provisional name of S. platyphylla, which does not well apply to it, the leaves not being specially broad, an award of a First-class Certificate was made to this new Bornean Club-moss at the meeting of the Floral Committee on May 23. The award was thoroughly well merited, for we do not know a more striking or more beautiful plant of its class. It is, we believe, entirely in the hands of Messrs. Veitch & Sons, of Chelsea, for whom it was specially collected in Borneo by Mr. Curtis.

Bold and at the same time not ungraceful in habit it at once arrests attention by its grass-green colour, and by the breadth of its ramifications, which measure more than half an inch across in the more matured parts of the frond. The leaves are also very closely set, so that there is no interval between, and this very much heightens the effect due to the breadth of the branches, giving them a remarkably leafy appearance. Messrs. Veitch's specimen plant, grand and noble as it is, does not seem to have yet reached its full development, as every successive frond grows taller and larger, but as it is becoming fertile it has probably nearly reached the limits of its extension. When fringed by the elegant tail-like spikelets, which are freely formed at the tip of every shoot, the plant will be still more winning in character than at the time when it captivated the sedate members of the Floral Committee, who very wisely paid it the honour which was justly its due.

We learn that Messrs. Veitch have been very successful in propagating this novelty, so that it is probable that lovers of the beautiful genus Selaginella will not have greatly to exercise their patience before they will be able to acquire it. *T. Moore.* [In the subjoined illustration (fig. 7) the upper left-hand figure shows a fruiting branch (natural size) and a fragment magnified ten times; L. represents the leaves; BR. the bracts; SP. the spore-case. To the left of the centre a section lengthwise through the fruiting spike is shown, MAC. representing the macrosporanges, MIC. the microsporanges; these two organs, with their bracts, are shown, magnified twenty times, quite in the centre; below them is a portion of the sterile branch, magnified ten times. To the right is a macrospore shown as enlarged 160 times. Four of these macrospores occur in each macrosporange, and each produces a female prothallium, a portion of which is shown, magnified, to the extreme right, and showing the archegonium (ARCH.), or female organ, with the oospore (OOSP.), or embryo plant, at the base. The microspores (MIC.), which are much smaller and more numerous, occupy the cavity of the microsporange, and produce male prothallia with antheridia, the latter containing antherozoids, which impregnate the oospore as the pollen impregnates the germinal vesicle of the ovule. To the right, at the base, is shown a cross section of the stem magnified forty times.]

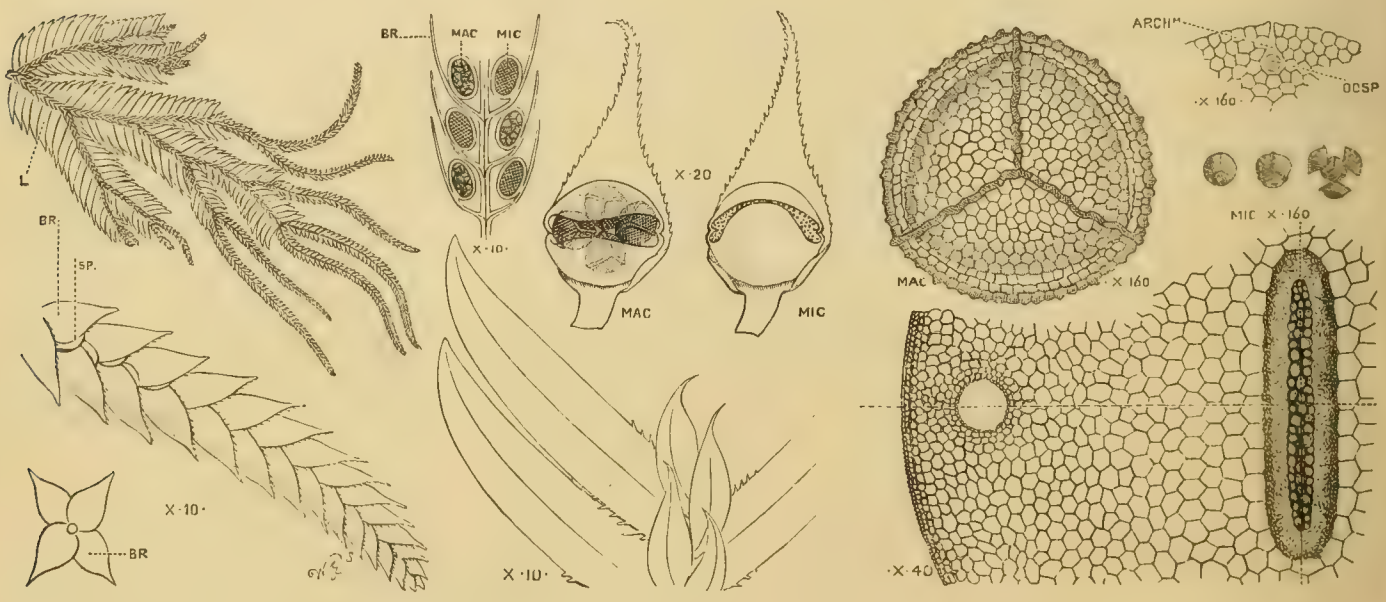


Fig. 7.—Selaginella grandis. (for details see text.)

Odontoglossum crinitum, *Rchb. f.**

The first proof of sympathy I received from Mr. B. Roezl was this: a Hamburgh traveller came to me bringing a very large card box, that might have served before for a fine lady's dress, but which was now filled with rich dried specimens of New Granadan Orchids. I felt very much struck by an Odontoglossum in the way of Odontoglossum odoratum of Dr. Lindley, but racemose, striped and blotched, having the lip covered with numerous filiform processes, as if bearded. The same plant reappeared but once more. Two one-sided dense panicles were presented me by poor G. Wallis. Now I have at last obtained a very fine fresh raceme. The plant, which I have never seen, is said to have bulbs in the way of Odontoglossum crispum, but round. The leaves are said to be erect and narrow.

It was kindly sent me by Mr. Jos. Broome, Wood Lawn, Palatine Road, Didsbury, Manchester, who has had the rare pleasure of flowering, no doubt for the first time in Europe, a new Odontoglossum, which is none of those mule-like things, but a most distinct species, not even comparable to any one previously known. *H. G. Rchb. f.*

Saccolabium Hendersonianum, *Rchb. f.*

A raceme at hand, kindly sent by Mr. W. Lee, Leatherhead, proves that this species is susceptible of a grand improvement. The curious prasine peduncle is covered with numerous flowers which have the light purple of Rodriguezia secunda, while the compressed white lips, reduced to nearly nothing but spurs, stand as so many signs of exclamation. At each side of the base of the column stands a queer blackish-purple callus running to the petal. I am afraid this rare Borneese plant will always be a peculiar rarity. I had it from Messrs. Henderson and Bull. It is said to have been first introduced by Mr. S. Low nearly twenty years ago. *H. G. Rchb. f.*

Odontoglossum astranthum, *Rchb. f.*

This rare species has once more appeared in the collection of Mr. O. Schneider, Cromwell Range, Wilmslow Road, Fallowfield, near Manchester. The fine inflorescence just now to hand has very much brown colour on the disc of the lip. The plant is very chaste indeed in its colours. The star-like flowers are whitish-greenish-sulphur, with sepia-brown streaks and blotches, and it is only the base of the column that is decidedly orange, with a few reddish-purple spots. The largest flowers I ever obtained came from Mr. H. Salt. A sketch in colours made in Ecuador by Dr. Krause, and kindly sent by Messrs. Backhouse, shows a white lip, with red blotches. I candidly confess that I have not had a very satisfactory experience with many of these sketches, and the origin of the discrepancies may not so often be attributed to the difference of insolation, &c., as to the poverty of colours at the disposal of the traveller. My wild-grown specimens are from Messrs. Wallis, Dr. Krause, and C. Klaboch, one of the numerous Roezlian nephews. *H. G. Rchb. f.*

Aërides expansum et var. Leoniæ (Aërides falcatum expansum, *supra*).

I had obtained exceedingly homœopathic materials from Messrs. Veitch, who have much improved now by sending two glorious inflorescences and a leaf of this grand thing. I feel now more inclined to regard it as a proper species. From laws of nomenclature it has to keep its name—expansum.

The leaves are broader than in falcatum, and light green. Its long inflorescence has its spur free of the lip, greater, greenish, internally green, with transverse bars.

* *Odontoglossum crinitum*, Rchb. f., in *Garcke Linnæa*, xli., p. 2 (1876).—"Pseudobulbo Odontoglossi crispi; foliis angustis erectis;" racemo seu panicula densa secunda; bracteis triangulis acutis ovaria pedicellata longe non æquantibus; sepalis tepalisque lanceis acuminatis, labelli hypochilio brevi utrinque oblongo erecto humili, epichilio triangulo lobulato nunc crispulo lacero seu denticulato acuminato, toto disco ligulis filiformibus, nunc ramosulis barbato; columnæ clavatæ auriculis dolabriformibus.—Rchb. f., *Xenia Orchidacea*, ii., tab. 191, iii., 46, p. 207. Nova Granada. Roezl! Wallis! *H. G. Rchb. f.*

The middle lacinia has two contiguous keels at its base, no middle tubercle, no prolongation of keels. The base of column has a triangular fovea with quite sharp borders. This plant has acute and well reflexed side laciniæ to the lip.

There is a very fine variety, where those laciniæ are blunt retuse, even dolabriform (!). This I had from Messrs. Maule & Sons, of Bristol, who sent a fine photograph, a leaf, and a homœopathic specimen of two single flowers, probably to give evidence how much they loved their plant. I call this variety Leoniæ in honour of i's discoverer, Mrs. Leonie Allan Goss, who neatly dried wild flowers—quite single ones, perhaps — for some just-mentioned reasons, and which I obtained through my indefatigable correspondent, Mr. Ross. *H. G. Reichb. f.*

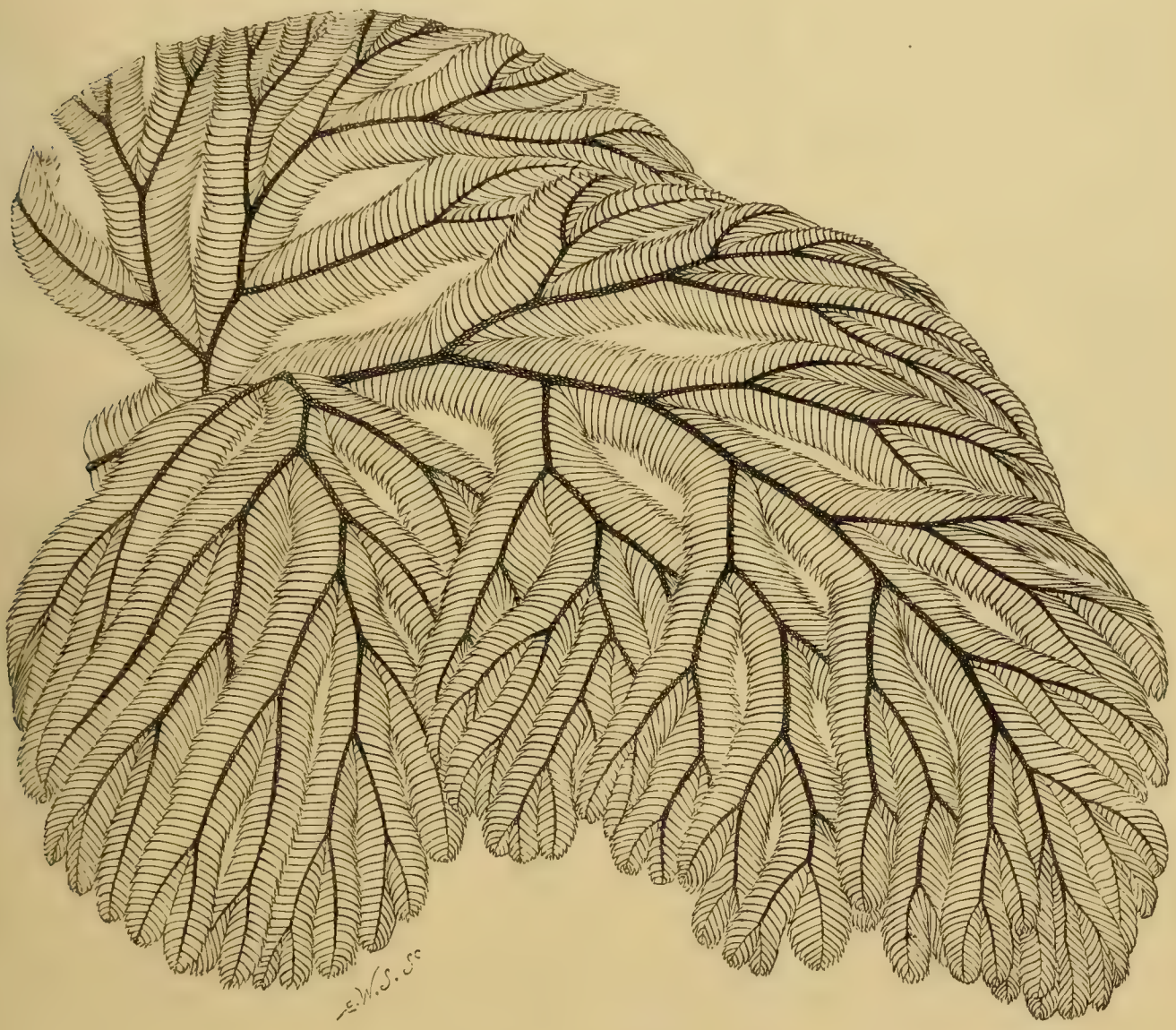


Fig. 8.—Selaginella grandis, Moore. (see p. 40.)

A TRIAL OF MIGNONETTES.

This was much needed, and Mr. Barron did well when he gathered together and sowed in pots in the spring at the Chiswick Gardens all the samples—nearly fifty in number—under different names, that he could obtain, both from home and foreign growers. They were all treated with that care bestowed on trials at Chiswick, and they came in well together, and Mr. Barron has not only had them under view at Chiswick, arranged for inspection in one of the plant-houses, but he has also taken them to one of the meetings at South Kensington, and showed them there publicly. They served as an admirable illustration of the fact that new Mignonettes, so-called, have increased with wonderful rapidity of late, and they conveyed this useful item of instruction, that out of the somewhat numerous list of names, appropriate and inappropriate, given to these so-called new Mignonettes, only some three or four can lay satisfactory claim to be considered both distinct and good. The Mignonette does not admit of much variation of character, and any difference arises more in the colour of the bunch of stamens which protrude themselves from among the many petalled flowers. In the habit of growth there is a little variation also—some having large and more robust looking leaves than others; some are tall, while some are dwarf; some are compact in growth, while some have a thin and lanky habit. Much depends, however, on careful selection, and it is by selection that new or fine types are obtained.

We may start by taking Parson's White, which is one of the oldest and best known of the named varieties, as a thoroughly good type of the large-flowered sweet-scented Mignonette. He who can lay hands on a good stock of this, and will select it for himself, will have a Mignonette hard to beat for all purposes. Carter's New White is similar to Parson's, and may be set down as a good selection. Hemsley's Giant White is a strong grower, perhaps the strongest of all, fine in habit and quality, but, as compared with the others, generally a little late in flowering. This is, all round, the best white Mignonette in the Chiswick trial. The earliest in the group is Vilmorin's odorata grandiflora, which may perhaps be taken as a fair representative of the large flowering Mignonette, small in the size of the flowers, but very free. Carter's Pyramidal Bouquet is a good type of the ordinary flowering Mignonette. New Dwarf Compact is a dwarf useful Mignonette, large flowered, and very free. Garaway's Giant White is a very fine white Mignonette, like Parson's, with large flowers, but of delicate habit. A stock of Parson's White, from Messrs. Veitch & Sons, gave this form in its best character. Miles' Hybrid Spiral Mignonette (though why it should be termed "Hybrid" is not clearly apparent) is a dwarf white Mignonette of an upright growth, with long symmetrical spikes of bloom; and the habit of growth is not so branching as some: it is a compact grower, the spikes of bloom are larger than in the others. The seed of this variety came from several quarters; but the same fidelity to published character was observed in all. The foregoing may be taken as representative of the white-flowered Mignonette.

The red-flowered Mignonettes are numerous enough also. Carter's Crimson Giant has a little more of crimson than is usually seen in the red Mignonettes, but it is of poor character as seen here. A variety from Messrs. E. G. Henderson & Son, under the name of Gigantea pyramidalis, is a very strong growing and somewhat distinct Mignonette; but not quite equal in quality to one or two others. Pyramidalis gigantea, from Messrs. Barr & Sugden, is the best red, a very distinct, large-flowered type, fine spikes, and a good

grower. Giant Red Pyramidal, from Messrs. Veitch & Sons, is a counterpart of the foregoing Giant Red; Pyramidalis gigantea, Tall Pyramidal, Pyramidalis multiflora compacta, and Odorata pyramidalis grandiflora, represent the changes rung upon one name, and they are all Giant Red, if we may take that as a variety of a large-flowering Mignonette, but a little inferior to Messrs. Barr & Sugden's form.

Dwarf Compact is a very useful type of Mignonette when true to character. It is rather red-flowered than white, with a dwarf, even growth, compact in character, and well adapted for pots. The Dwarf Pyraminal Bouquet is a rather taller form, and looser in growth than the Dwarf Compact. A sample of New Hybrid Tree Mignonette, from Messrs. Carter & Co. demonstrated its hybrid character in a remarkable manner: it is a thoroughly mixed lot.

The Golden Queen is a very distinct and satisfactory Mignonette, with clear golden instead of red flowers. This type, samples of which have been received from several seed firms, was uniformly good. It is a variety of fairly good, robust habit, and throws fine spikes of bloom.

There are in the Chiswick collection four varieties that are distinct in character, and all well worthy of cultivation, supposing they can be had true to the character they display at Chiswick, viz:—the Golden Queen, Odorata pyramidata grandiflora, as the best red; a sample from Messrs. Vilmorin & Co. was especially noticeable, Hemsley's Giant White as the best white, and Miles' Spiral as the best for pots.

Mignonette, when sown in the open ground, is often spoiled by being sown too thickly in poor soil. Mignonette is a very free growing plant, and if proper space is allowed it will make a vigorous branching growth, and produce a great succession of flowers. But that it should do this, there must be good soil. We starve Mignonette much more than we cultivate it. Let it have but generous soil, and it will be unsparing in its effective floral service, yielding bloom abundantly, and from the fine pores of its scented flowers exhaling a rich and sweet perfume, scarcely inferior to that furnished by any other hardy garden flower. *R. D.*

NORMAN COURT.

PICTURESQUELY situated on the crown of a hill, on the confines of Wilts and Hants, in the midst of a beautifully wooded and undulating park—with Dean Hill on one side, whence panoramic views of great extent and beauty are obtained, and Bentley Wood on the other—is Norman Court, the commodious residence of William Baring, Esq. The ground around the mansion is diversified by Nature in beautiful irregularity of hill and dale, of verdant pastures and venerable woods. Various trees, of great size and beauty, present themselves on every point of view. The Cedar of Lebanon, Beech, and Elm, distinguish themselves above the rest. There are several approaches to the Court, the most imposing one, perhaps, being that from Dean Station on the Salisbury and Southampton line of railway, and about 8 miles from the Wiltshire city. The first part of the drive, which is 2 miles long, and up hill and down dale, is rendered delightful, not only by reason of the charming peeps of woodland scenery which are obtained, but also on account of the wild Rose and Honeysuckle flowers which abound in the well-kept Thorn hedges which flank the drive on either side, and scent the atmosphere with their perfume; and further on, the carriage drive, which terminates in a grand avenue of majestic Beeches, is enlivened by patches of Foxglove, which, though lacking in variety and profusion the spring display of Primroses, Forget-me-Nots, and other wild flowers for which the immediate neighbourhood of the drive is famed, are, nevertheless, when contrasted with the groundwork of Fern, and luxuriant and delicately tinted foliage of the adjacent trees and shrubs, very effective, and add not a little to the beauty of the place.

The Court, in the Norman style, is a fine handsome building, partaking of the form of a parallelogram, and its external appearance forecasts very faithfully that of the interior, where paintings by eminent masters drape the walls of the spacious dining and drawing-room, library, entrance, &c.

Adjoining the west front and connected with the interior of the mansion by a glass corridor, in which are caged a variety of English and foreign songsters, is a nice conservatory which, like the corridor, is gay with an assortment of foliage and flowering plants, which, together with the trailing flowering shoots of Tacsonias, Trachelospermum jasminoides, Plumbago capensis, &c., embellish the roof and supporting-pillars of this elegant house; and the masses of green and variegated Fern luxuriating in recesses in the walls, complete a pretty picture when viewed either from the steps leading thereto from the terrace or from the dining-room, which immediately communicates with it, and whence a pretty vista of Bentley Wood over the tree tops in the intervening valley is obtained. And on the green sward, which in the near distance, and bounded on the right by fine specimens of trained Magnolias, forms the foreground of this interesting picture of sylvan scenery, are some examples of carpet and other bedding, the figures being neatly designed and the colours judiciously arranged. Especially effective are mixed beds of blue Viola and Dactylis glomerata, fol. var.

When I say that a large supply of both plants and cut flowers are at all times of the year in demand for decorating the rooms, &c., at Norman Court, which is nearly a mile up hill from the forcing and plant houses in the kitchen garden, your readers will readily understand the necessity of having houses for supplying these demands as well as those of the conservatory in close proximity to, but not immediately in view of, the mansion; and in these (a stove, fernery, and Violet pit), Mr. F. Thomson, Mr. Baring's head gardener, has a clean well grown lot of plants, which in variety and character are admirably suited for house and table decoration.

The flower garden, which is immediately opposite the east front of the mansion, is square and sunk, with steps descending thereto from the terrace, and geometrically laid out; and judging from the way in which the colours are arranged, the display a couple of months hence must be a pleasing one. The pleasure grounds, which nearly surround the Court, and are contiguous to the flower garden, are extensive and contain some nice coniferous plants, including some good specimens of Yew (Taxus baccata) about 10 feet high, and from 15 to 20 feet through, and several dwarf specimens of the golden Arbor-vitæ (Thuya aurea), shown here and there on the beautiful lawn, which to the tread is like velvet, form a pretty and striking contrast to the adjacent trees and shrubs, some of which are grown for the beauty of their leaves and graceful habit, others on account of their flowers, and others for all three combined. Not the least attractive feature in the grounds is the "grey walk," which extends round the bottom of the declivity on which they stand, and between which and the park it forms a boundary, and commanding as it does nice peeps of woodland scenery—

> "In all its many turns disclose
> Some fresher beauty varying round;"

here a deep ravine with Ferns, &c., luxurating in wild profusion along its rugged sides and bottom, there fantastically rooted trees, and everywhere evidence of the handiwork of Nature.

Proceeding southward, we come to the kitchen garden in three divisions, and, as already hinted, nearly a mile from the Court. It is situate on the slope of the hill on the summit of which the mansion stands, commencing at the bottom, and extending a couple of hundred yards northward, in which direction the ground rises rather sharply, and covers an area of 5 acres, including the space occupied by the numerous forcing and plant-houses, pits, fruit-rooms, Mushroom-houses, young men's apartments, &c., and which, running east and west in front, and to the right and left of Mr. Thomson's picturesque cottage, are situate in terrace fashion, commencing at the bottom with the pits, and finishing higher up with the lean-tos and spans. The soil in this garden, which is well and judiciously cropped, is stiff, rather inclining to brick-clay, with a chalky and marly subsoil; a condition of soil which, though it involves more labour than is necessary for the working of the same acreage of lighter land, is, owing to the scarcity of water (a feature conspicuous by its absence in the Norman Court landscape), together with the sloping situation of the ground and its retentive nature, under the circumstances fortunate for the cultivators, especially during a dry summer. Before leaving the kitchen garden, which, like every other department, bears evidence of skilful management, I may add that planted in it are good batches of Richardia æthiopica, and other useful winter and spring flowering plants, and which in September will be potted up and taken into cold houses, where they can have plenty of ventilation.

FRUIT-HOUSES.—In a line with, and west of, Mr. Thomson's cottage are two good Peach-houses, with the trees—Royal George, Noblesse, Barrington, Elruge Nectarines, &c.—in fine condition, and carrying good crops of large-sized fruit, some ripe, finely coloured, and others approaching maturity. Leaving the Peach-houses, in front of which is a good display of seedling Carnations, including some fine darks, and descending the central walk from the gardener's cottage, the walls of which on either side the porch are covered with climbing Roses of the Maréchal Niel and Fortune's Yellow varieties, and which have made a fine show earlier in the season, we enter a range of vineries (iron and glass) in two divisions, the first containing nice bunches of Madresfield Court and Muscat of Alexandria, which promise to finish well; while growing in a mixture of peat and loam in 14 inch pots and standing—trained, if you like—against the back wall of this house are a few finely flowered specimens of the Nerium Oleander, with many of the individual blooms measuring 4 or 5 inches in diameter. The plants are three years old, were planted out in the middle of June, 1881, and potted up in September, and placed in their present position to ripen their wood and subsequently flower. The Vines in the second division of this range, which are finishing nice compact bunches of Black Hamburghs, Mr. Thomson found affected with mealy-bug, but through scraping the Vines when at rest and dressing them with Gishurst Compound, he has succeeded in eradicating this formidable pest. No. 4 is a late vinery, at the back (north) of which is a capital Cucumber-house, heavily cropped and the plants in fine condition; the Vines in this house, which include Trebbiano, Gros Colmar, Black Alicante, and Lady Downe's, were taken up and re-planted two years ago, and are now, under the circumstances, carrying good crops of average sized bunches.

Adjoining and communicating with this range is a span plant-house in two divisions; in the first, an intermediate-house, are a nice lot of half-specimen Azaleas completing their growth, together with Begonias in variety, Gardenias (nice young plants), Tea Roses, several splendid bulbs of Pancratium fragrans, &c.; and in the second, greenhouse flowering plants, and a fine clean well-flowered lot they are too, and where all are good it is difficult to particularise any further than remarking that they include Pelargoniums, Begonias, Fuchsias, Calceolarias (nearly over), and Amaryllis, in varieties. Also fine healthy plants of the Souvenir de la Malmaison Carnation, Statice profusa (well deserving of the adjective), Kalosanthes coccinea (specimen plants), and a finely flowered plant of Catherine Mermet Rose, trained against the division glass of the two houses and in fine condition. Immediately in front of this range are several rows of good heated pits, in which are flourishing, in various stages of growth, Melons and Pine-apples, Pancratiums, and Eucharis plants (plunged to the rims of the pots in a nice bottom-heat to cause them to throw up their flower-spikes), Poinsettias, &c.

Returning to the central walk already referred to, and on either side of which, in variety, are standard, half-standard, and dwarf Roses, which, together with a display of herbaceous and other plants, have a pretty effect when viewed from the bottom or top of the walk, we pass through an arch, and turning to the left, find ourselves in the Fig-house, the tree from which the first crop of fruit had been picked at the time of our visit (June 17), being in good condition; and immediately in front of this house is a pit, containing a good batch of Coleus and Bouvardias in variety, the latter being planted out to ensure a more free growth in the plants, which will be potted-up for winter flowering a few months hence.

HARDY FRUIT.—Plums, a heavy crop; Peaches and Nectarines under average, while Apricots are a good average; Apples and Pears a rather light crop, and the same may be said of bush fruit, which, like the foregoing kinds, are grown in the kitchen garden. In conclusion, I may be allowed to remark that the condition of each and every department in these fine gardens amply demonstrates the fact of their being presided over by a practical and energetic man, and one who evidently belongs to the modern school of practitioners. *Tourist.*

PAPAVER NUDICAULE.—This is one of those useful border plants that is well worth growing in every collection. It succeeds well near the sea coast, and in a soil and climate where it is at home its flower-stems are over a foot long and its broad yellow flowers are scented strong enough to commend it to the notice of ladies.

HARDY PLANTS IN THE EDINBURGH BOTANIC GARDEN.

Perhaps at no time of year does this garden look better than early in June. The foliage has still its spring freshness, and many flowering shrubs are in blossom, including the later varieties of Rhododendron, and a beautiful display of Ghent Azaleas, varying in colour from pale yellow to deep orange and scarlet. Each year proves more clearly the taste with which the late Mr. MacNab arranged the grouping of trees and large shrubs, and especially the judicious use he made of Conifers of various kinds and sizes, which add much variety to both tints and outlines. This, with the lay of the ground and the views of Edinburgh, Arthur's Seat, &c., to be seen from various places, gives to these gardens a peculiar beauty. Several improvements have been made even within the last year. In the piece of ground formerly containing a collection of plants arranged according to the Linnean system Mr. Sadler has made a flower garden (in grass) which will be a good example of the use of hardy flowers as "bedding plants," and of the fact that many hardy flowers are far more effective when grown in masses than when planted singly. Amongst others are beds of Delphinium Belladonna, Spiræa palmata, Japanese Anemone, Heaths, Aubrietias, double Potentillas, Veronica salicornioides, and other New Zealand Veronicas, also Gentiana gelida, which makes a beautiful bed later in the season.

Another illustration of the good effect of masses of some hardy plants is to be seen in a sheltered part of the grounds, near the arboretum, in which various early spring bulbs are grown. Beds of Scilla of various kinds, of the blue form of Triteleia uniflora, and amongst later flowering bulbs, Montbretia Pottsii, different kinds of Camassia, Lilium polyphyllum and L. monadelphum—the latter, now in full blossom, is a beautiful pale yellow Lily. This being a sort of "reserve ground," the effect is, of course, less striking than it would be were these groups of plants seen in the more picturesque parts of the garden. A curious Allium-like plant is now in blossom—Nectaroscordum bulgaricum. It is over 3 feet high, and there s a large quantity of honey at the base of the cup-shaped flower. This plant is more curious than pretty.

Aponogeton distachyon flowers profusely in the pond. The hardiness of this flower was discovered here many years ago by plants being thrown out accidentally. It was uninjured even during the winter of 1880-81. Near this pond a new bog bed has been made; it is nearly 100 feet long by 5 feet wide, and promises to be one of the most interesting parts of the garden. Already it contains about 150 kinds of plants, and the vigorous growth of many of them shows how soon bog plants reward the trouble of giving them the treatment they like, even if, in many cases, they can be grown with fair success without a bog. The following Osmundas are doing well:—O. regalis and O. regalis crispa, O. Claytoniana, O. cinnamomea, O. virginica (perhaps a synonym), and O. palustris. Primula Stuartii, P. sikkimensis, P. Parryi, P. rosea, and P. farinosa, with its pretty white and bright purple varieties, are evidently most at home in a bog; as are the following kinds amongst the Saxifrages grown here—S. aquatica, S. aizoides and S. aizoides autumnalis, S. a. stellaris, S. flagellaris, S. diversifolia from Sikkim (the foliage of which is unlike any other Saxifrage grown in these gardens, varied though the foliage of Saxifrages is), and the Californian S. peltata.

Some of the plants now in blossom in this bog bed are Darlingtonia californica, Anthericum (Chrysobactron) Hookeri, Clintonia Andrewsiana, deep red; Orchis latifolia and O. maculata alba, Diphylleia cymosa, 2 or 3 feet high, with curious peltate leaves having two deep lobes, the flowers white and rather small; and an Australian species of Veronica like the British V. beccabunga or Brooklime.

In the frames, and in small beds near them, there are some rare and beautiful alpines. Amongst those in blossom now are Aciphylla squarrosa, Calceolaria Kellyana, Edraianthus caricinus, Gentiana ornata, Lewisia rediviva, Orchis hircina, Linaria orgianifolia, Helianthemum piloselloides, a very small variety, Meconopsis aculeata, sometimes perennial, about 1 foot high; Polemonium humile, Pentstemon Menziesia, Primula floribunda, Anemone multifida, from the Rocky Mountains, rare but not very pretty; Delphinium nudicaule, fine from seed; and a hybrid raised by Mr. MacNab, between D. cashmerianum and D. nudicaule, the blossoms of an intermediate shade, rather dull, between red and purple.

Various good plants are in blossom in the rock garden. Aubrietias are in full beauty. The best are A. Hendersoni, A. Bougainvillea, and some very fine new varieties raised by Mr. Lindsay, seedlings of A. spathulata, and also of A. Hendersoni. Saxifrages of the Cotyledon section, with their large panicles of white flowers, are at their best just now; S. intacta farinosa, also a crustaceous kind, with white flowers spotted with red, on stems a few inches high, is very good. Dianthus alpinus, and D. suavis, like D. cæsius in habit, but deeper in colour. D. neglectus, and the curious hybrid raised here between D. alpinus and D. barbatus, are some of the earlier flowering alpine Pinks. This last is a taller kind than the others, some of its flowers being bright rose, and others white, on the same stem. Genista pilosa, a creeping kind, is one of the best plants for rockwork, G. sagittalis, a large plant of which is now coming into blossom, is good for the wilder parts of it. Amongst other pea-flowers, Hedysarum obscurum, deep pink, Vicia argentea, white veined with purple, and the still prettier Oxytropis Halleri, are all better worth growing than Trifolium alpinum, which is also in blossom. Hippocrepis helvetica is a pretty and very dwarf yellow flower, and so is the still smaller H. comosa. Erinus hispanicus evidently prefers chinks between stones, and Arenaria balearica also does well here, growing over stones. Potentilla lupinoides is a very dwarf kind with bright golden blossoms; it should not be grown in shade. Pentstemon humilis, 6 or 8 inches high, is far prettier than the equally dwarf blue P. procerus, also in blossom. Polemonium humile is like a very dwarf form of P. cœruleum, and is a good rock plant, as is Arenaria laricifolia and also Galium rubrum, with bright red flowers, not yet out, and good foliage. Onosma taurica, Senecio speciosa—the latter not quite hardy here in winter—and Chamæbatia foliolosa with white Strawberry-like flowers and Fern-like leaves of singular beauty, are worth growing amongst the choicest alpines. Many of the common kinds of rock plants are some of the most effective, including Saponaria ocymoides, Dryas octopetala, Rock Roses, Menziesia polifolia and its varieties, Lithospermum prostratum (always in blossom), and Veronica rupestris. Other good kinds of Veronicas in blossom in the rock garden are V. carnosula (commonly grown as V. buxifolia, or V. pinguifolia), V. Lyalli, which is another New Zealand species, having white flowers marked with purple, the flower-stems but a few inches high.

Camassia esculenta major is fine; C. tardiflora, with smaller foliage, has fewer flowers on the spike. Hyacinthus amethystinus is a beautiful shade of blue. Smilacina racemosa, over 2 feet high, in habit somewhat resembles Solomon's Seal, but has white Spiræa-like flowers in racemes at the point of the stem. Helonias (Xerophyllum) asphodeloides has grassy foliage, and spikes of small white flowers very like the golden ones of Anthericum Hookeri. It is a plant well worth growing. Vella Pseudo-Cytisus is a curious shrubby Crucifer, and Swertia speciosa from Sikkim, a Gentianaceous plant, about 3 feet high, with brownish cupped flowers, in thick clusters at intervals round the stem, is one of the newest flowers in the rock garden. It is rather like Gentiana lutea in habit. Another Sikkim plant now in blossom is Enkianthus himalayensis, a shrubby, Ericaceous plant, with foliage somewhat like a small Rhododendron, and drooping, bell-shaped flowers of a peculiar light red colour, and striped. Arum palæstinum is over 1 foot high, with dark flowers growing in a stiff group in the centre of the plant. Erodium manescavi is almost always in blossom, and is a good plant for either rockery or border. Geranium cinereum is also worth growing. Anemone alpina, with large white flowers, now almost out of blossom, grows most luxuriantly; one plant, with finely-cut leaves about 1 foot across, is 4 feet in diameter, and about 2½ feet high.

The effect of Thuya aurea, and other golden Conifers, and of Cordyline australis (the latter not hardy here in exceptionally severe winters) in the rock garden is very good. The pockets, in each of which generally but one kind of plant is grown, must be very convenient in a large botanical collection. They would be too formal for a small rock garden, but this formality is almost lost in the great variety of outline in the large and beautiful rock garden. *C. M. Owen.*

[The publication of this article has been unavoidably delayed.]

SALTRAM.

This ancient mansion, the property of the Earl of Morley, lies 4½ miles north-east of Plymouth, and barely a mile from the village of Plympton and the railway station bearing the same name upon the Great Western railway line. It is one of the most beautiful of Devonshire seats, and is famous for its scenery and the changing beauty of its landscapes. The house, a stately building, stands upon the summit of a sloping lawn, and was built in the reign of George II. The interior of the building is richly fitted up, and contains a large collection of works of art. The beautiful Laura, which is fed by the Plym, is one of the great attractions of Saltram. The bridge, built by Mr. Rendell in 1824-27, at the expense of the Earl of Morley, is also a very conspicuous object. It consists of five elliptical arches of cast-iron, springing from abutments and piers of stone. The centre arch is 100 feet span, the adjoining arches 95 feet, and the side arches 81 feet.

A pleasant way of reaching Saltram is by water. At Oreston the limestone cliffs rise to an extraordinary height, and there is a cave in the quarries 20 feet long, 10 feet high, 70 feet wide, and 35 feet below the ground, which contains quite a museum of the fossil bones and teeth of elephants, hyænas, and other beasts of prey. The flower garden is upon the south side of the house, and is surrounded by a series of low ornamental chainwork suspended from upright supports about 2½ feet in height and densely draped with Ivy. There is a pond in the centre of the garden. There are some aged specimens of the Mulberry tree, propped up with great care, to be seen here, and an "Orange grove" containing a large collection of Orange trees in tubs, and in excellent health. This grove is well sheltered upon all sides, and has a fine pond in its centre, in which will be found the yellow and white Nymphæas and other aquatics.

The park is richly wooded, and the drives to Longbridge, Underwood, and Plympton are very picturesque, and are margined by healthy leafage in various stages of development and of different hues. From a high eminence you look down upon a Copper Beech of striking colour surrounded by Cedars, Chestnut or Larch, or you catch a glimpse of a clump of flowering shrubs in a valley through vistas of trees which are clothed with graceful branches of luxuriant green. The garden is enclosed by ancient-looking walls, and is in five divisions, and about 7 acres in extent. Taking the cross-walls into calculation there is something like a mile of wall in all. The principal entrance walk of the garden has two borders on the right and left planted with a useful collection of herbaceous plants; and Magnolias and Wistarias, remarkable for both age and size, are trained against a portion of the south wall which is not covered in with glass.

In the framing ground there is a large pond of Nymphæas, and several glasshouses for growing Peaches and Cucumbers. The latter is a marvellous crop of Tender and True, some of which have been cut 28 inches in length. The house is not an extra large one, and yet over 100 fruits a week have been regularly cut since March 9 last. The fruits are literally hanging in clusters, and are wonderfully well shaped considering the weight of the crop. In the same house Tomatos are grown in a back border—a variety called General Grant, which has been directly imported from America and has the merit of being a free cropper under the reverse of favourable conditions.

The early Cucumber-house is a still greater wonder: cutting commenced about Christmas last and the plants are still as green as Leeks, and fruiting as freely as if they had only been recently planted. A top-dressing 2 inches in depth is given to the roots every fortnight, consisting of turfy loam, road scrapings, Mushroom dung, and rotten leaf-mould; and besides ordinary attention in other ways nothing else is done which can in any way account for the continuation of such excellent results. The first house of Grapes is nearly cut, and a very good sample they are for the time of year. The second house, also Hamburghs, are a very fair crop, and three other houses are still better. Four years ago these Vines were, to use a hackneyed phrase, "pumped out," and Mr. Stoneman cut them all back, and the experiment has proved eminently successful, for better crops generally and better prospects of fertility hereafter need not be wished for. The Vines are in a thoroughly clean, healthy, fruitful state, with that degree of vigour about

them which is essential in the finishing off of high-class Grapes. Flowering and foliage plants are well grown by Mr. Stoneman, who is a veteran cultivator and whose management of this extensive garden in all its departments is highly creditable to himself as it must be satisfatory to his employer.

MARKET GARDENING IN WEST MIDDLESEX.

PROBABLY the most prosaic of the outings allotted to the Belgian visitors was that on June 29 to some of our London market gardens, and having regard to the rich feast afforded them on previous days, the outing to Windsor and its neighbourhood especially, it can easily be imagined that fruit orchards, monstrously alike, and Cabbage gardens of boundless extent, would not prove exceedingly attractive; added to which the heat of the day was exhausting. The party assembled at Twickenham, and proceeded direct to Mr. W. Poupart's large vegetable growing establishment at the Marsh Farm, where are cultivated in huge breadths Celery, Cauliflowers, Lettuces, Seakale, Cabbages, and many other vegetables. From the homestead runs into the field gardens a 20-inch tramway, covering with its branches perhaps a mile in length, and though necessitating a heavy outlay at the first it has proved most remunerative by reason of the great saving of horse and manual labour which has resulted. Mr. Poupart is famous for his Celery, of which, following Lettuces, Cauliflowers, &c., about 15 acres are planted. It is a red kind and a famous stock. Cauliflowers are superb models of size, firmness, and whiteness; Lettuces large and solid; and indeed the products are all of the finest order. About 90 acres of ground are under this kind of cultivation, whilst the orchards, in which there is on bush trees a heavy crop and on the top trees a moderate crop, are of large extent. The visitors were much struck by the simple plan by which Seakale, Asparagus, &c., are forced in beds heated by hot-water pipes, running beneath in an open chamber. Also the large breadths of the Grove and Scarlet Strawberry so much in demand for preserving; and with the large beds of spring flowers—bulbs especially—in all directions, beneath the trees, now going to rest. It was evident, however, that market gardening with us is not of such a high order as it is in Belgium, for there, where the system of *la petite culture* prevails so largely, it more closely resembles what may be seen in good private kitchen gardens. Our system, on the other hand, might not improperly be termed field market culture; and probably, having regard to the demands made upon it, is perhaps the only system that could satisfy the requirements of the London market. Thus a little farther out from the metropolis, Peas, Potatos, and many members of the Brassica family, are grown in extents of 20 acres and more in all directions, and Strawberries and other fruit in breadths of almost equal dimensions. In truth, London market gardening, so called, is more truly market farming. By no means an uninteresting feature in Mr. Poupart's system of vegetable culture is seen in the assistance of sewage irrigation as employed by him. The filtration works for the disposal of the sewage of Twickenham adjoins his vegetable grounds, and from thence, whenever needed, is obtained an abundant supply of raw, though strained, sewage. This, flowing from the pumping station direct into trenches which intersect the field, is not poured over the crops, but soaks through and saturates the soil to within from 6 to 9 inches of the surface, and always maintains an equable moisture even in the hottest weather. It is not assumed that the sewage is eminently nutritive—probably it does not contain more than 10 per cent. of plant food—but it is fertilising, because it creates in its abundant moisture the elements of good productiveness.

The visitors with us were struck by the fact, that although the weather was close and oppressive, no unpleasant smell, or, indeed, perfume of any kind, was perceptible. Within the works, which were visited, was seen the sewage passing through filter beds of sand, shingle, larger stones, and then coke, until it emerged an effluent water almost as clear and pure as found in an ordinary stream. The sediment or sludge of which the proportion to liquid is small, is run out into a bay composed of screened ashes, and when dry is carted out by Mr. Poupart at the trifling cost of 1*s.* per load.

After partaking of the host's liberal hospitality, the party proceeded through the orchard to Messrs. Hawkins & Bennett's plant growing establishment close by, and were evidently much impressed with the immense numbers of Vesuvius, Master Christine, Madame Vaucher, Madame Thibaut, and other Pelargoniums, and also by the superb growth shown by their beds of Victoria Lily of the Valley—accepting also four of Col. Stuart Wortley's fine photographs of this superb Convallaria. The small but singularly interesting nursery of the Messrs. Hooper & Co., of which Mr. Bruckhaus is the able manager, was also inspected, and the fine collections of hardy plants greatly admired. Thence to the Railway Hotel, Richmond, to partake of a thoroughly enjoyed luncheon. If owing to the heat and their somewhat exhausted condition the visitors preferred to throw over other market fields and to visit the Richmond Flower Show close by, and to which they had been cordially invited by the committee, it will excite no surprise. Not the least was it pleasant to hear the frequent expressions of pleasure by which they showed their appreciation of the beautiful plants, fruit, and flowers exhibited.

RHODODENDRON TRIFLORUM.

THIS is one of the species discovered by Sir Joseph Hooker in Sikkim, in his memorable expedition, and figured by him in his *Rhododendrons of Sikkim Himalaya*, tab. xix. (1849). Our illustration (fig. 9) was taken from a specimen kindly communicated by Mr. Mangles, who, as in so many other similar cases, has shown how, under suitable cultivation, the size and beauty of the flowers may be enhanced. The species is of shrubby habit, 4—6 feet high, with broadly lanceolate shortly stalked leaves, glaucous beneath, but thickly set with disc-like ferruginous scales. The flowers are in umbels, the corollas greenish-yellow, with a funnel-shaped tube and a 5-lobed limb, the lobes narrow, oblong obtuse, with wide sinuses between. We are not aware whether this species has been successfully cultivated in the open air.

FLOWERS IN SEASON.

LIGUSTRUM QUIHOUI.—Mr. Smith sends us from the nursery of Messrs. Rodger, McLelland & Co., of Newry, flowering sprays of the Chinese Ligustrum Quihoui, so named in compliment to M. Quihou, of the Jardin d'Acclimatation, Paris. As we hope shortly to publish an illustration we defer further comment.

MIMULUS PRIMULOIDES.—A charming little plant to grow in a bog in association with Anagallis tenella, Wahlenbergia hederacea, and the like. The slender thread-like purplish stems creep along the surface of the ground like a Strawberry runner, and here and there give off ascending leaf-shoots with alternating pairs of small subsessile ovate acute entire or denticulate leaves, each ½ to ¾ inch long by about ¼ inch wide, three-nerved, with numerous long silky viscid hairs on the under-surface, glabrous beneath. The reddish flower-stalks are axillary, leafless, about 1½ inch long, terminated by a solitary yellow flower about ½ inch across, surrounded at the base by a close angular funnel-shaped reddish calyx. Mr. Smith tells us he grows it in a situation where it constantly receives the overflow from a sunk tub. If allowed to get dry it dies.

MIMULUS ROEZLII is another miniature species, with minute, oblong, somewhat coarsely and remotely toothed leaves, and relatively large yellow flowers, surrounded by a funnel-shaped prismatically angled greenish calyx sprinkled with red dots. Both are Californian species.

DEUTZIAS.—From Messrs. Cripps' nurseries come cut specimens of Deutzia scabra with lanceolate leaves rounded at the base, and racemose clusters of white flowers. D. crenata Sieboldii has lanceolate leaves tapering towards the base, obscurely crenate, and with a panicled inflorescence of pure white flowers. D. crenata flore-pleno has panicles of pendulous double flowers, the outward segments of which are rosy-lilac. It is a form of great beauty. D. candidissima is a lovely free-flowering variety, with broadly lanceolate, somewhat fleshy leaves, finely serrate, studded, as usual, with stellate scales, but these are so small as to be nearly inconspicuous to the naked eye. The shoots are slender, glabrous, and cinnamon-brown in colour. The erect many-flowered panicles are hairy. The individual flowers, each about half an inch across, with a funnel-shaped calyx enclosing a sheaf of very numerous snowy-white petals. These beautiful shrubs seem to be flowering very freely this season. To the microscopist they present a special attraction in the minute siliceous star-like hairs by which they are beset.

FUCHSIA CORALLINA.—Standards of this free-growing variety are very pretty ornaments for high conservatories where dwarf plants are of little or no use. Good large heads, upon stems about 9 feet high, are about the mark for a lofty house, where you can look under them and enjoy their full beauty and graceful habit. It makes a capital stock for grafting such drooping kinds as Mrs. Marshall upon, or any other drooping kind, which look well among the green leaves of Palms and Fern fronds.

PHILESIA BUXIFOLIA.—We are accustomed to see this occasionally in flower in the conservatory, but have never seen such fine sprays as some sent us from Messrs. Cripps' nursery, Tunbridge Wells. The linear lance-shaped leaves are of a deep green above, glaucous on the under surface, the trumpet-shaped flowers 3 inches in length, and of a lovely rose-pink colour. Mr. Dartnall informs us that the plant from which these fine specimens were taken measures 2 feet high and 3½ feet through, and is growing in an unheated pit, where it has been standing for several years.

RUBUS ODORATUS, WHITE-FLOWERED VARIETY.—In this species the stem is destitute of spines, which, from the erect habit of the plant, are not needed as supports. The leaves are cordate roundish, with 3—5 shallow lobes 6—8 inches across, deep green and bullate above, paler beneath. The leaf-stalks are nearly as long as the leaf itself, beset, especially near the upper part, with rather long red gland-tipped hairs, and provided at the base with oblong acute leaves and sepals, each about half an inch in length. The inflorescence is a loose few-flowered panicled cyme with slender leafless branches. The individual flowers measure nearly 2 inches across, the fine pure white crumpled petals being surrounded externally by fine oblong green sepals, each prolonged into a long slender point. The plant is a native of America, the North-eastern United States, and is an old inhabitant of our gardens, where its hardy constitution and showy flowers render it acceptable in shrubberies and copses. The white variety here alluded to is not so commonly met with as the species with reddish flowers.

RUBUS FRUTICOSUS ALBA PLENA.—Only one of the common Brambles as to specific identity, but its large panicles of double white flowers render it extremely attractive. For covering a rootery, a rough trelliswork, or other similar situation, this would be as effective as any Rose, and it has the advantage of being as hardy as a Bramble. From Mr. Dartnall.

RUBUS HOOSAC.—Under this name of Hoosac (?), Mr. Dartnall sends us a specimen of an erect Bramble, with a few small recurved prickles, especially on the under-surface of the midrib, and with trifoliolate leaves, the segments of which are broadly ovate dentate, softly downy segments. The flowers are in close panicles, small, white. The species is unknown to us.

RUBUS LACINIATUS.—A handsome Bramble, with strong recurved prickles and palmately divided leaves, the five primary segments, each shortly stalked, and often 3—5-lobed, the ultimate segments oblong acute, dark green above, softly downy beneath. Flowers 1¼ inch in diameter, in terminal many flowered leafy panicles, the somewhat leafy sepals deflexed, the petals pinkish, oblong, 3-lobed, surrounding a tuft of stamens, the centre of the flower being occupied by a raised tuft of styles. The fruit of this variety is large and juicy, so that not only on account of its bold foliage and pretty flowers, but also for its fruit, it is worth a place in the wild garden.

VIBURNUM JAPONICUM.—This charming variety may now be seen in full beauty in the rock-garden at Winslade, Devonshire, the flower-heads

being of immense size, and very striking in appearance. It is the finest of the Guelder Roses, and the most tender. The plant in question sustained considerable injury from the severe frosts of 1880-81, but is fast recovering its wonted health and luxuriance. It is planted in a sheltered situation, where it enjoys plenty of light—conditions that are absolutely indispensable in its cultivation.

BORONIA ELATIOR. — A plant so ornamental in habit and character as this Boronia should have admirers wherever there is a garden containing a single plant-house. When the young shoots appear so natural above a rich profusion of its rosy-purple bells, the plant makes a charming object for the dinner-table or sitting-room. Lately we saw a plant sporting from the original colour, having the bells beautifully striped, and this is the second time, as we learn, that the plant has so behaved. It will be interesting to watch when and how it will revert to the original colour.

HEDYSARUM CORONARIUM. — There can be no excuse for naked borders anywhere so long as there are such plants as this, so easily obtained and so simple to cultivate. It is a striking object in the back row of a hardy border, grows from 3 to 4 feet high, and in a rich soil even higher. Its leaves are very ornamental, and its Pea-like flowers, of a reddish hue, are freely produced during the present month.

HERACLEUM GIGANTEUM.—This is one of those giant plants the beauty of which, in its proper place, is striking in the extreme. No one would think of planting it in a shrubbery bed or border, but in woods, or at a distance from the margins of woodland walks—or, better still, at the base of some craggy precipice—shooting its massive white heads above a variety of underwood, it has an imposing appearance. In the neighbourhood of Torquay it developes into an enormous size, and in one old-fashioned garden it is planted upon a steep slope, where it is partly surrounded and overhung by trees. In this situation it has a telling effect. It also looks well by the side of a stream, planted among trees which do not form too dense a covering to exclude the light or sunshine from casting an occasional silver ray upon the massive flower-heads, which are very bright under a ray of sunshine.

FUCHSIA MACROPHYLLA.—Hardy plants, notably Fuchsias, are now inquired after by high and low, rich and poor, and the older the variety is the more it appears to be prized. Some fancy vigorous-growing kinds, bearing large flowers, others prefer that which is more chaste than striking; and of the latter the old macrophylla, with its beautiful little cup-shaped bells, will be found one of the prettiest of old-fashioned Fuchsias.

DIANTHUS BARBATUS FLORE-PLENO. — Those who love their gardens, and cultivate them as a recreation, often mistake the class of plants upon which to try their hands. As in all other branches, so in gardening people who have a natural bent for growing plants from seeds or cuttings should begin with simple things at first. But the reverse of things is the case, and we often find enthusiasts inquiring about plants that are difficult to cultivate before they have mastered the art of growing the commonest of plants. The Dianthus family are among the showiest of flowers that every one may undertake to cultivate with a certainty of succeeding. A very good display may be obtained from a packet of seeds; but there are some named varieties of such exceptional merit that it is worth while to obtain a few of them, even where there is only a limited collection of hardy plants. The variety under notice is a dark crimson—a dwarf grower, and altogether a most striking thing, either as a cut flower or as an attractive plant for the hardy border.



FIG. 9.—RHODODENDRON TRIFLORUM. (SEE P. 44)

THE COTTAGE.

THE term "cottage" as applied to residences is so comprehensive in its scope as to convey but a vague idea generally of the size of houses which go by that name unless details are given which in many cases would hardly be in keeping with the title. In the present case, however, a peculiar interest attaches to The Cottage of which I am about to write, because it is beautified by a fine garden, which contains a collection of specimen plants second to none in England. The Cottage is situated on the Topsham road, a short distance from Exeter, and is the property of J. Lawless, Esq. It is a fine substantial dwelling, standing in its own grounds, and is approached by a winding well-kept avenue. The house is ornamented with pillars, which are festooned with Roses and other creepers, the former of which are flowering in great profusion. Good views of the surrounding country are obtained from all sides of the house, including the Haldon hills, and the belvederes at Haldon House (Lord Haldon's seat, about four miles off), and Powderham Castle. The pleasure-grounds are planted with the usual variety of Conifers and flowering shrubs, all of which are growing with the vigour characteristic of this fine climate. The river Exe flows past the bottom of the grounds. But the journey was undertaken to see the collection of specimen plants, which are famous all over the South and West of England. Mr. George Cole ("one of the Manchester Coles"), who comes of a race of plant-growers

who are well known both North and South, has grown the plants so rapidly into exhibition form that he is looked upon as being invincible except by such noted cultivators as Messrs. Tudgey and Cypher.

In a north aspect, protected by a few loose sashes overhead, are some splendid Ericas, which are being retarded in order to bring them into flower next August for exhibition. These comprise Erica æmula, E. pulcherrima, E. Jacksoni, E. Hartnelli, E. Fairrieana, and a magnificent specimen of E. Marnockiana over 5 feet through, and smothered with flower-buds. This is a unique specimen of its kind, and has no equal in England. Among these plants I noticed a pretty specimen of Boronia elatior with the points of its young shoots well thrown up above a profusion of its lovely red flowers. Surely such a plant as this would make a gem for a sitting-room, grown in suitable sized pots. In another corner of the garden may be seen a specimen of Erica Cavendishii lately exhibited at Plymouth, and in a glass shed in a northern aspect a fine example of Dicksonia antarctica. The plant has a stem over 10 feet high, and a spread of fronds over 15 feet through. A place is excavated for the tub, in which the plant is grown about 3 or 4 feet below the level of the floor; and even under this treatment, which cannot be called extravagant, the fronds are well developed and remarkably healthy in appearance.

In the Croton-house, which is somewhat deficient of light upon one side, the finest specimens are elevated upon three-legged stools about 4 feet high—a capital device under the circumstances. The largest plants consist of Croton variegatus (facetiously called Jumbo), about 4 feet high and 6 feet through, C. Disraeli, 3 feet high and 4 feet across, and a fine sample of C. undulatus over 5 feet through, and beautifully coloured. Allamandas, also grand specimens, have broken well, and are growing freely. The sorts are grandiflora, Hendersoni, and nobilis. The shoots are trained to wires close to the roof, and when the flowers are set the shoots will be tied down to the trellis. Dipladenias are grown in the same way, and are equally vigorous and healthy. Other notable plants are Stephanotis floribunda, a magnificent specimen of Alocasia intermedia 5 to 6 feet through, and having fine healthy roots trailing over the surface of the compost in the pot.

These are, of course, the principal specimens, no reference being made to ordinary-sized plants, of which there are many coming forward. The Ferns are also good, and the collection, though not an extensive one, consists of many good plants. Davallia Mooreana is 7 feet through, Nephrolepis davalloides furcans is one of the very finest to be found anywhere, and among the Gleichenias there are several very good specimens. But gardening readers have a weakness for quotations in figures, and I will therefore give the dimensions of a few of the largest plants. These will be found in the span-roofed fernery and plant stove. The largest Gleichenias are rupestris glaucescens and Mendelli—the latter a perfect specimen, and nearly 7 feet in diameter. There are also specimens of Bougainvillea glabra, Anthurium Scherzerianum, Clerodendron Balfourianum, Rondeletia speciosa, and Nepenthes, the best of these being Rafflesiana and Hookerii. And of other miscellaneous subjects there are healthy pans of Selaginella umbrosa, africana, and Lyallii; Davallia bullata, and Franciscea calycina major. The stock of Ixoras is proportionally large, and good accordingly. Mr. Cole is second to none in the cultivation of these plants, and he is no believer in bottom-heat. His plants are a living example—and better cannot be found anywhere—of what can be done in plant growing without bottom-heat. But, as all good plant growers know, Ixoras must be grown in a sharp heat; in other words, a high temperature, which tells severely upon the plant grower who trains, waters, and otherwise attends to them during their season of growth. This collection and the Dipladenias may be included, for both are grown together, as well as a young stock of Crotons, and finer examples of plant growing are rarely seen. The Ixoras are composed of all the best kinds, including Ixora coccinea, I. amboynensis, I. Coleii, Prince of Orange, and Fraseri. Dipladenias are setting their flowers—some, indeed, are fully out, and flowers of the well known variety amabilis are 5 inches across. The other varieties grown are Brearleyana, amœna, and splendens—plants of the latter being 3 to 4 feet through. It is a strange thing that when people take to growing specimens every hole and corner is filled with them. The conservatory at this place probably contains as many specimen plants as are to be found at a great many places altogether. Erica tricolor Wilsoni is 5 to 6 feet through, and E. affinis and Aphelexis purpurea are nearly as large; and the general stock consists of Eriostemon intermedia, Epacris onosmæflora, Darwinia tulipifera, Epacris Eclipse, and other plants, making altogether a fine show for the season.

The garden throughout is full of interest and beauty, no branch of gardening being forgotten; for although Mr. Lawless is a keen exhibitor, and specimen plants are the leading horticultural features, no other department of the garden is allowed to suffer in consequence. The cultivation of fruits and flowers, and general out-of-door gardening, whether it be the growth of shrubs or trees, or of flowers hardy or exotic, or the more substantial necessaries required for domestic uses, are grown with the same care, zeal, and intelligence as the more valuable specimen plants.

FORESTRY.

Protecting Ornamental Trees from Horses, &c.—We are well accustomed to hear about destruction and means of protecting trees from hares and rabbits, but very little is said, however much is felt, about the destruction and injury done to trees in pasture fields, parks, and hedgerows by horses, young cattle, and even sheep.

If very young trees are injured, or even totally destroyed, they may be replaced by others, which soon fill their places equally well, but with advanced and old trees the circumstances are materially different, and injury or loss in their case is nothing short of a general calamity. There are many ways of protecting large, old, ornamental park trees, and some of the methods are both effective and tasteful, while of other methods the less said the better. Believing my own experience in these matters must coincide with that of others, I shall not revert to failures or systems of tree protection that have failed to answer the purpose, but as briefly and plainly as I possibly can describe what I find to answer the purpose remarkably well.

Where fields in which trees are growing are under a rotation of cropping it is often impracticable (from the great expense) to fence and protect every tree against injury from horses by any of the methods in common use, most of which cost at least 5*s.* per tree.

The forester often receives only a few hours' previous notice from a farmer or home farm manager that the horses are to be, or perhaps already are in the park or field in which some hundreds of fine ornamental trees are growing. It is no easy matter to protect them in time with the ordinary staff of men and appliances at command. By the method, however, which I now extensively employ there is little difficulty in meeting and overcoming all these obstacles. My plan and means of protection are simply these. I procure a piece of common wire netting, strongly made, galvanised, and 1½ inch mesh. The girth of the tree is taken, and a piece of netting cut off sufficient to go round it and overlap a few inches. This is put on at the base of the tree and secured to the ground with pieces of No. 4 wire, made in the form of long staples, and higher up on the stem another piece of netting is put on, the lower edges of which are tied to the upper edges of the first put on piece, and so on, piece by piece, till the stem is covered, but seldom more than three pieces of 30-inch netting are required to go the desired height, for even horses will seldom bark a tree at 8 feet from the ground.

Of course, all the limbs and strong branches within reach of the animals must in like manner be covered with the netting. The netting is easily cut into pieces to suit the growth of the different trees, and so easily put on (unless small branches are in the way) that an ordinary workman will easily encase twenty to thirty trees in a day. There is no need of putting on the netting quite tight, but room should be left for the expanding of the tree by growth, and when the tree does ultimately outgrow its coat of mail the tying requires only to be slackened without taking off the netting, and the whole thing is right again for a number of years. *C. Y. Michie, Cullen House, Banff, July* 1.

Begonia Weltoniensis.—It is only necessary to remind owners of small gardens that this most useful variety is still unsurpassed for beginners who are not experts in plant growing, and that it will grow as freely as a common Pelargonium. It will make a basket plant, a specimen for the conservatory, or it will flower in the open garden for months without intermission.

Notices of Books.

Insect Variety: Its Propagation and Distribution, &c. By A. H. Swinton. London: Cassell, Petter, Galpin & Co. 8vo; pp. 1—323, with plates.

Our readers must not be misled by the title of this book; it is not a treatise on economic entomology from a gardener's point of view. The author aims at substantiating the theory of "natural selection" from its entomological bearings. He has brought together a multitude of important observations, many original, others secondhand: but the whole is obscured by extravagant attempts at rhapsodical literary production. It is a book that requires treating in the manner employed by an anatomist when he desires to obtain a skeleton, or by a chemical analyst in search of a given substance in a mass of extraneous matter. Those of our readers who care to take the trouble may extract much sound information from it, and some of them may also derive much amusement from the author's style. The misprints in the rendering of names, especially of persons, are very extraordinary, and frequently of such a nature that the blame cannot reasonably rest with the compositors.

The author is undoubtedly possessed of genius; but it has gone wrong for the want of scientific training, and from a fatal straining at originality.

Orchid Notes and Gleanings.

Mr. Dorman's Orchids.—There are now in flower in this well-managed collection of Orchids at Sydenham some really fine species and varieties, the Cattleya-house being very gay with the rich and varied colours of the Cattleyas and Lælias. That grand old species, Lælia purpurata, is represented by a variety with the darkest coloured labellum I have ever seen in this species; it is quite a rich maroon with a purplish-crimson tinge. Of Cattleya Mendelii there are numerous fine forms, some with very richly-coloured labellums, others paler. A variety named Alexandræ is delicately beautiful; the sepals and petals are pure white, with a pale-coloured lip. There is also a good form of Lælia elegans in flower, the sepals and petals pure white. This species usually flowers later than the time of the metropolitan exhibitions, and is not often seen at them. C. Warneri is also in flower, as also is a good form of C. gigas; and suspended in baskets near the roof, the tips of the leaves quite close to the glass, C. Dowiana is showing its flowering-sheaths. To flower this and C. gigas well let the plants be near the glass, and they should receive as much light as possible.

In another house the most attractive Orchid at present is a charming plant of Angræcum falcatum. This really pretty species succeeds best in a cooler house than most of the others; it is in the house where the Odontoglossum vexillarium made such a grand display a month ago. The flowers are very fragrant, of small size, and of the purest white. There are also a number of Cypripediums in flower, amongst them C. Swanianum is very distinct and a good exhibition variety. C. Lawrenceanum, as it is seen here, stands in the front rank; the broadly-ovate dorsal sepal is the most striking part of the flower; it is white with numerous purplish lines, which run nearly to the edge, leaving a white margin: this species ought to be in every collection. C. selligerum, also in flower, is very handsome. In the cool house, as usual, there are many fine forms of Odontoglossum crispum—one with the form of flower that is seen in C. crispum, but the colour and markings of O. Pescatorei. Epidendrum vitellinum majus makes a good display—one variety is of remarkable form and size. Oncidium macranthum forms a noble and distinct feature at this time; there is also a form of this with very large flowers. Odontoglossum Dormanianum, a very pretty species of the O. blandum type, is now in flower. It is sufficiently distinct to receive a specific name, and will be grown in select collections. *J. D.*

Orchid Blooms in the Conservatory.—It is a healthy sign, and a good omen of the future, to find gardeners breaking away from the old methods of grouping plants in conservatories. The centres of

houses filled with Camellias, Palms, Orange trees, and other tall growing plants, surrounded by a few flowering ones, and side stages filled with motley groups, are familiar sights to everybody. Good, and in many instances striking masses, are made in this way, but there is little of art in the idea from beginning to end. If the grouping of plants for effect at our great exhibitions will ultimately result in an improved method of conservatory arrangement the effort put forth in that direction will not have been made in vain. Already numerous cases are springing up in remote parts of the country, where an improved style of conservatory embellishment is being worked out upon lines which are a decided step in advance of the old system of arrangement. Palms, Ferns, and flowering plants, may now be found grouped or dotted about in a groundwork of living moss, with the pots plunged out of sight, on a larger or smaller scale, in conservatories where there is room to attempt something like an artistic arrangement. Orchids, too, will come in for the purpose by cutting the flower-spikes and inserting them in bottles filled with water, which may be plunged in the carpet of moss. Cattleyas, Lælias, and such-like, will last three weeks in this way, and their presence in the conservatory, disposed of in the manner suggested, must be a source of enjoyment to lovers of rare flowers.

The Kitchen Garden.

About the middle of the current month make a sowing of Parsley—Lee's Matchless Curled is a good variety—in a warm border, and where a portion of it can be afforded a little protection during the presence of frost or snow, so as to be able to obtain a daily supply of fresh Parsley for garnishing, &c., irrespective of adverse weather. If the ground destined for this purpose is not vacant at the time the seed should be sown there need be no embarrassment experienced on that account, as a small patch of it (a square yard or two), sown at the proper time, and the necessary number of seedling plants subsequently transplanted in rows 12 or 15 inches apart and 6 or 7 inches from plant to plant in the rows, as soon as the former are large enough to handle and the ground is ready, will answer the purpose quite as well as if the seed had been sown in drills in the ordinary way and the plants subsequently thinned out the distance above indicated in the rows, and respecting which full directions were given in your number for May 27, p. 706.

Celery Planting, &c.—The main plantings should be made as soon as the ground is available for the trenches to be got out in the way described in former Calendars, and planted in the manner there detailed. The earlier planting will now require to be earthed up by having a little of the soil from the ridges on either side of the plants cut down with the spade, and then with the hand placed around the plants, taking care in doing so that the soil does not get into the hearts of the plants. But before this operation is proceeded with the plants should have a few of the outside leaves, with any suckers that may happen to have sprung from the crown, removed. Celery being a moisture-loving vegetable, the plants will require to be frequently watered at the roots in the absence of rain; and Peas—late sowings of which should be sticked and mulched with rotten dung as soon as the haulms are high enough—and other crops will also need seeing to in this direction. Shallots and Garlic bulbs should be taken up as soon as they have completed their growth, and be stored away in an airy loft when dry.

The Mushroom House.—Any spent beds which are still in this structure should be removed forthwith, the house be lime-washed, and woodlice, which are sure to be present in the old beds, destroyed by pouring boiling water over them, which is the most effectual remedial measure for dealing with these troublesome pests. Horse-droppings should now be got in readiness for the formation of fresh beds for the winter supply. In preparing the droppings care should be taken to see that the substance and ammonia of the same are not wasted in the process of drying. The droppings should be spread out thinly in a dry shed, but not exposed to the sun, and be turned over for a few days until sufficiently dry to prevent rapid fermentation ensuing; and when the droppings have become moderately dry, not parched up, they will be in a fit state for taking into the Mushroom-house. There they should be allowed to remain, and be turned over for a few days, as the droppings will undergo another fermenting process in the house before being beaten down, which should be done as firmly as possible, and a test-stick or two put in the bed. One good-sized bed will be enough at a time; and when the heat, which should be ascertained by a ground thermometer, has declined to 70° the spawn, which should be broken into pieces about the size of bantams' eggs, may be inserted under the surface of the bed 6 or 7 inches apart, and a little fresh droppings spread over it; and when it has been ascertained that the heat in the bed is not likely to rise above 70° it can be covered over in the usual way with maiden soil, which should be beaten firmly together with the back of the spade; and in order to do this the soil should be sufficiently moist at the time of putting it on the bed to yield to the pressure of the spade. *H. W. Ward, Longford Castle, Wilts.*

NOTES ON VEGETABLES.

A Hardy Cauliflower.—What promises to be a most useful variety of Cauliflower, and a distinct one, may now be seen in good condition at Winslade, Exeter, in the garden of Joshua Dickson, Esq., under the care of Mr. Craggs, the gardener. Mr. Craggs claims for this variety that it is perfectly hardy in any winter, however severe, having planted it out along with Cabbages for several consecutive winters, including the last very severe one. The Early London and Dwarf Erfurt, according to Mr. Cragg, melt away by the side of this variety in severe weather, and as it succeeds the late Broccolis its history is surely worth inquiring into. If the variety behaves everywhere as it is said to do at Winslade, the majority of gardeners will be glad to make its acquaintance as soon as possible. As seen at Winslade it is not a vigorous grower, and the heads are of moderate size, well-formed, solid, and apparently of first-rate quality.

Late Tomatos.—Few crops pay better than Tomatos late in the season, which bring as high a price, and do not cost half the trouble, that early spring crops do. Amateurs and inexperienced persons err by planting Tomatos upon open walls too late in the season, and in too rich composts. Planting upon open walls after the end of May, or beginning of June, is simply labour thrown away upon a fruitless object. But plants potted up now, or even a month later, will grow stubby out-of-doors until the autumn, when they may be taken indoors, and given the protection of glass in an early vinery, where the leaves are dropped. They will be found a most profitable and useful crop.

Plants and their Culture.

Stoves.—Beyond the general routine in this department, there should not be anything very pressing just at present. Keep a sharp eye after insect pests of all kinds. Dracænas are oftentimes attacked by thrips of a kind peculiar almost to this class of plants. They will be found congregated in companies, as it were. Constant attention to sponging the leaves carefully with a weak insecticide will be the best remedy. Green and black fly will both attack the young leaves just about to unfold; for this a camel's-hair brush is as good as anything with which to remove them, to avoid damaging the young growths. Black thrips will also spread apace on Crotons and Ixoras. Free use of the syringe will quickly check them; sponging may be resorted to in bad cases; I find, however, that they do not relish the "bag of soot" remedy. Epiphyllums that have completed a good growth will now be all the better prepared for next autumn's flowering, if they can be given a good amount of sunshine and kept somewhat drier at the root. Keep the stock of Poinsettias from becoming drawn; an airy house will suit them best. If fires have to be dispensed with for a little while during this month, it will be well, in order to avoid an excess of moisture, to leave a crack of air on all night, and not to damp down after the afternoon shutting up. This will the better avoid any danger that might arise of the tender foliage of some plants being scalded.

Greenhouse.—Where a collection of hard-wooded Cape and New Holland plants are grown there will just now be plenty to do. Any that are past their best in regard to flowers should be gone over, and have the faded ones removed. If the crop of bloom has been heavy the sooner this is done after they are past their best the greater will be the relief to the plant. Some of the Ericas push forth young growth from the centre of the flower truss; in removing the latter be careful not to injure the former. Some of the more dense-growing kinds, such as the ventricosa Cavendishii and varieties of tricolor are liable to be attacked a little later on with mildew. If not closely watched during damp close weather this parasite will quickly disfigure the young tender growths. Syringing with sulphur and water or dusting with the same remedy will soon check it. Pimeleas should have all the old flower-trusses picked off, and may be spurred-in with a knife moderately to keep the plants shapely. These and Hedaromas may be syringed after the decline of the sun during hot weather. Red-spider is liable to attack both of these classes of plants. Dracophyllums should have the flower-spikes removed back to where the young growth is seen pushing through, while those of the Aphelexis ought to be broken out where they push forth from the side of the growth; this will keep the plants from becoming unsightly with small pieces of dead wood. In the case of Leschenaultias frequent pinching may be resorted to between now and the autumn, to keep the plants bushy. This operation may also be performed in some of the more straggling Boronias. Polygalas that have grown leggy may safely be cut hard back; it will, however, be at the cost of next season's bloom. Any of the aforenamed plants that have become exhausted should be gone over and repotted into pots a size larger; if they are in the largest size, slight reduction in the ball may in most cases be safely made. This should, however, be done with a sharp knife, not torn away with a stick, as is oftentimes the case. In the potting of young, vigorous stuff pots two sizes larger may safely be used. All of these plants will do well in about the same sort of soil—viz., the very best peat, sound and fibrous—in which the Heather can be traced as having once thrived. If the peat is somewhat soft a few pieces of charcoal or small broken crocks will be of great service in keeping the same sweet. Use the best of silver sand liberally, and keep the plants under cover, if possible, till the roots have taken hold of the new soil. Before potting thoroughly saturate any balls of those plants that may be on the dry side. Late blooming plants of such New Holland stuff as Croweas and Phœnocomas will be gay for some time to come. In the case of the latter, if the flowers should not now be wanted on the plant, they will do excellent service if cut and dried for the next winter. Pleromas that are knotting for flower will be benefited by occasional doses of manure-water in a weak state. *James Hudson, Gunnersbury, July 4.*

Peaches and Nectarines.

The second house will by this time be cleared of fruit, and may now be treated according to the directions given for the early house in my last Calendar. The fruit in the third house will be ripening fast, and syringing may now cease until the fruit is gathered; keep a drier atmosphere, with a free circulation by night as well as by day: a very little fire-heat will be required to keep up the desired temperature. Succession-houses will require close attention, as some of the most forward fruit will have completed the stoning process; tie-in the young shoots close, stopping lateral terminal shoots and spurs at the base of the fruit. Get the fruit well up above the foliage by the means already mentioned, namely, by placing short pieces of ceiling lath from wire to wire underneath the fruit. Pull off any deformed or small ones that are not likely to make fine fruit; give liberal supplies of manure-water, just taking the chill off it, and still use the syringe very freely to keep down red-spider. Late houses may be kept as cool as possible by throwing the ventilators open to the fullest extent; give them a thorough soaking at the roots with clear manure-water according to their requirements. *J. Wallis, Keele Gardens, July 4.*

APPOINTMENTS FOR THE ENSUING WEEK.

Tuesday,	July 11	Royal Horticultural Society: Meeting of Fruit and Floral Committees, at 11 A.M.; Scientific Committee, at 1 P.M.: Promenade Show. Rose Show at Christleton, Cheshire.
Wednesday,	July 12	Ealing, Acton, and Hanwell Flower Show. Rose Show at Cardiff. Flower Show at Yorktown, Surrey. Woodford Horticultural Society's Show.
Thursday,	July 13	Salterhebble and District Rose Show.
Friday,	July 14	Rose Show at Old Trafford, Manchester (two days).
Saturday,	July 15	Birkenhead Rose Show.

THE last week of June and the early days of July have been this year, as indeed in general, the busiest days in the horticultural world as far as exhibitions are concerned. There has been a perfect surfeit of exhibitions all over the country, and it is worth considering whether the advantage to horticulture, in a broad sense, is at all commensurate with the labour and expense involved. Local interests, the interests of provincial societies, of nurserymen and of enthusiastic amateurs, are no doubt and very legitimately served by these exhibitions; but to our thinking the primary and the main object of these exhibitions should be the advancement of horticulture in general. Is this object attained? Apart from the encouragement given to certain classes of plants and certain classes of individuals, and the general stimulus given to garden pursuits—facts which cannot be gainsayed—what progress is secured by exhibitions under the present system? How much better are we now than we were last year, or five years ago? Has any new system of cultivation better than the old been brought to the front at any of these exhibitions? Has any new development taken place? Has anything really been done to secure a knowledge of and the diffusion of the best varieties among the classes to whom such knowledge would be most beneficial? Are the cottagers and the allotment gardeners put in possession of the best varieties for their purposes? If not, then these exhibitions have, in at least so much, failed in their proper duties.

It is quite impossible to allude to a tithe of the exhibitions that have taken place; some only can be alluded to. Foremost among them we would allude to the special exhibitions of the Pelargonium and of the National Rose Societies. Without at all undervaluing the importance of these special societies, we have always felt strongly that they should be affiliated to the Royal Horticultural Society, and that they would gain in dignity and importance by such a union, while the old Society would be correspondingly strengthened and not dismembered. At present the cost of subscriptions to these minor societies is a serious matter, and leads to the enquiry whether one general subscription should not suffice for all, if proper means were taken to ensure a sufficient supply of subscribers.

We are glad to see that both the Pelargonium Society and the National Rose Society have held their meetings at Kensington this year, and have thus helped to consolidate the sorely-tried Society, the parent of them all. While both exhibitions were in a high degree creditable to the specialists, they lent support to a society whose aims should be catholic and all-embracing, but which may well leave the carrying out of executive details to younger bodies less hampered with restrictions of all kinds. The Rose show in particular was of unusual excellence, and this remark, we believe, applies *mutatis mutandis* to the various Rose shows throughout the kingdom, although the cold nights that we have recently experienced have somewhat impaired the rich coloration and the symmetry of the queen of flowers. Rose shows, except to the enthusiasts, are about the most monotonous things of their kind that exist, the exquisite symmetry and the sensuous gradations of colour of the Rose being in a large degree lost by the almost sacrilegious way in which it is thought necessary to exhibit Roses. Without entering further into this question now, and without ignoring the exigencies of judging between competing classes, which to some extent compel the adoption of the horrible system in vogue, at least for judging purposes, we may call attention to the Rose show at the Mansion House on June 30, where, if there was nothing specially remarkable in the Roses individually, the general effect resulting from Mr. J. F. Johnston's artistic grouping was beautiful in a high degree. Of course, in this case, the effect was enhanced by the noble room in which the flowers were shown, and by the surroundings. The indications afforded as to what a Rose show might be, should be noted by those who have the conducting of such exhibitions.

The Strawberry *fête* at Chiswick, on July 1, and the Calico Garden Party at Old Trafford, Manchester, on June 24, show also what may be done, from a popular point of view, to bring home to the public the *agréments* of horticulture. The exhibition at the Crystal Palace, on July 1, and at the Regent's Park on July 6, do not call for special comment, though both were good.

The dinner of the Gardeners' Royal Benevolent Institution was noteworthy from the home thrusts given by the Lord Mayor, whose remarks on the comparatively limited support given by garden proprietors and gardeners to the Society were much to the point, though unfortunately marred by diffuseness of speech. That such a Society should have to depend so largely on the resources furnished by an annual City dinner, marked by dreariness and wearisome platitudes, is not a pleasant thing to dwell upon, but as the financial result has been successful criticism is in a measure disarmed.

Another very gratifying incident of the period we are passing in review has been the visit of a deputation from the Belgian School of Horticulture and the "Cercle d'Arboriculture" of Belgium. These gentlemen were desirous of seeing within the space of a week as much as they could of every department of British horticulture as practised in the vicinity of London. Arrangements were made to this end, and certainly there was no lack of variety offered for the inspection of our visitors. The Pelargonium Society, the exhibition of the Richmond Horticultural Society, the fruit gardens of Kent, the market gardens of Twickenham, the Royal Gardens at Frogmore, the parks of Cliveden, Dropmore and Sion, the national establishments of Kew, and of the Royal Horticultural Society at Chiswick, were all visited in addition to the principal nurseries round London. Hospitality, both public and private, was not wanting, and every effort was made to show the Belgians that the hospitality always so warmly manifested towards British horticulturists visiting Belgium is appreciated, and that their kindly feeling towards us is heartily reciprocated. As there were "chiels amang them taking notes," we may expect in due time to know what impression was made upon our *confrères* by what they saw. Unfortunately we could not show them a properly equipped, well organised school of horticulture such as they represented, but we doubt not that if we were found wanting in some particulars there were others which we may confidently leave to the appreciation of our visitors.

—— Mr. Bull's Aroid House.—While one of Mr. Bull's houses has for weeks past offered a truly magnificent display of flowering Orchids, another has been devoted more especially to a group of Aroids. We give an illustration of one end of this house (fig. 10), showing the singularly bold effect produced by fine specimens of Anthurium Veitchii and other noble-leaved species uprising from a carpet of Anthurium Scherzerianum, whose scarlet spathes contrasted well with the deep green of the larger species. To break up the formality, Ferns, dwarf Palms, Tillandsias, &c., were judiciously interspersed in the foreground, the whole forming a group massive in outline and superb in colouring.

—— Messrs. Barr & Son.—The partnership subsisting between Mr. Peter Barr (the managing partner) and Miss Fanny Pryor, under the style and title of Barr & Sugden, having ceased, Mr. Barr has commenced business under the style and title of Barr & Son. Besides successfully working up an extensive seed business, Mr. Barr has rendered good service to horticulture by industriously collecting and cultivating various classes of plants—as the Lilies, Daffodils, Christmas Roses, &c.; and we heartily wish our old friend and neighbour success in his new undertaking. The headquarters of the new firm is still located in King Street, Covent Garden.

—— Gardeners' Royal Benevolent Institution.—We are requested to state that the subscription cards in connection with the present year's collection in aid of the Augmentation Fund, are expected to be ready on or about the 17th inst.

—— Hardy Flowers.—No such varied and enormous collection of hardy flowers has been before exhibited at any one time as was so effectively arranged by Messrs. Barr & Son in the conservatory at South Kensington on Tuesday last; the effort was indeed gigantic, and presented striking evidence of the immense resources in the floral way which this firm have at their disposal. Covering the whole of a table 70 feet in length and some 6 feet in width, and overflowing on to the floor on the opposite side in many groups, the collection presented features of singular interest, and strove hard to attract some of that admiration which visitors had come to bestow so lavishly on the Roses. Of Liliums there were very fine kinds, white, pink, rose, scarlet, and many coloured Clove Carnations; white and red Spiræas, the beautiful Alstrœmeria aurea, the yellow Arum Richardia hastata; the singularly beautiful Calochortus venustus, Œnothera speciosa, white, and Fraseri, yellow. The elegant blue Thistle, Eryngium amethystinum, Coreopsis lanceolata, bright yellow; Millas in variety, including the new Bloomeriana, pale yellow; Ixias in great variety, longiflora, monadelpha, rosea, maculata, very charming; and Ruby, dwarf, in colour reddish-crimson. The many kinds of Gladiolus, of the ramosus section, were singularly beautiful and hardy; these force so well, and are so extremely effective in clumps in pots, that it is marvellous they are not universally grown. Then there were Pæonies in variety, Pyrethrums, giant Thrifts, numerous bunches of the lovely yellow Sweet Sultan, and blue varieties of the Centaureas, Orchis maculata, Lythrum roseum superbum, Sweet Peas in variety, and, indeed, hardy flowers innumerable. The group was effectively dressed with Ferns and other plants in pots, and constituted quite an exhibition in itself. Though much smaller, yet full of interest and beauty, was the charming group of hardy flowers set up by Mr. T. S. Ware, of Tottenham, for it included some two dozen kinds of Lilies, amongst which stood prominent a fine head of giganteum, and not least interesting was a pure white form of Brownii, perhaps the stoutest and most gracefully formed of all the trumpet Lilies. There were also charming Spiræas, Irises in variety, Milla serrata plena, pure white; that elegant white Gladiolus, The Bride; and many other beautiful flowers for which the Hale Farm Nurseries are so famous.

—— The Veitch Memorial Prizes.—These annual offerings on the part of the Trustees of the James Veitch Memorial Fund, for meritorious products in plants and fruits, were competed for at Richmond on the 29th ult., but, having regard to the value of the prizes—£5 each, allied to memorial medals—the competition was moderate, if not unsatisfactory. If the trustees are not bound to the form of the prizes, certainly they will do well to consider whether it would not be advisable to re-arrange them so that two prizes may be given in each class. The certainty that only one prize can be won but tends to keep from out the competitions many meritorious subjects. The plant class, which was for single specimens of stove or greenhouse plants in flower, brought but five exhibits, and all exceedingly moderate. The favoured plant was a huge, rotund, but entirely over-bloomed, Erica tricolor dumosa, out of which all colour and freshness had long been taken by the necessity of keeping it shaded to preserve it. It would have proved a very weak element in any collection. This was shown by Mr. Hinnell, gr. to F. A. Davis, Esq., Surbiton. The most striking and effective plant was a good Bougain-

villea glabra, exhibited by Mr. Bates, gr. to J. C. Meek, Esq., Poulett Lodge, Twickenham. The Grape class, which was for two bunches, black, any kind, was brought out from mediocrity by the superb exhibits of Mr. Hudson, of Gunnersbury House, and of Mr. Wildsmith, gr. to Viscount Eversley, Heckfield Place. Mr. Hudson got the coveted prize with some superb Madresfield Court Grapes, bunches of good size, and having huge berries. Finer have perhaps never been seen of this Grape, but still not thoroughly finished, wanting yet a few weeks to complete colouring. Mr. Wildsmith had splendid Black Hamburghs, the bunches much heavier than those which gained the prize, the berries fine, jet-black, and perfect in bloom and finish. The judges, we learn, felt some difficulty in dealing with these exhibits; and in finally making the award, felt it but just to give Mr. Wildsmith's Grapes very high commendation.

—— Hedychium Gardnerianum.—Among old-fashioned plants there are few more esteemed by ladies than the Hedychium, or Garland-flower as it is commonly called. Apart from its merit as a flowering plant, it well deserves a place among foliage collections, especially where there is much house-furnishing to be done. Its long stems and drooping leaves, if not striking in colour, are certainly noble in habit and appearance, and it has the further merit of standing rough usage better than most other plants of the foliage type. But it is as a flowering plant that it is most appreciated, and those who are not acquainted with it can have no idea of the charm posessed by an established plant in flower. The long flower-spikes are thickly set with yellow Orchid-like flowers, with a long pistil of a reddish-brown tinge in the centre of each flower, which is both peculiar and interesting, to say nothing of its being scented, for which reason it is so much prized by ladies.

—— Disease of Iris.—Mr. W. G. Smith writes to inform us that, since the last meeting of the Scientific Committee of the Royal Horticultural Society, he has received from Mr. R. I. Lynch, of Cambridge, leaves of Iris Pseud-acorus badly infected with the fungus (Puccinia truncata) in its perfect condition. This is, we believe, the first record of this Iris being affected, and the first observation of Puccinia on Iris this year. We shall shortly illustrate the subject, and in the meantime we advise growers of choice Irises to look to their plants. An early symptom is the presence of yellowish-brown stains on the leaves, then little brown scattered pustules the size of a large pin's head, followed by black pustules of a larger size.

—— Arundo Donax variegata.—Few plants are better adapted for the summer embellishment of large conservatories than this bright and graceful foliaged plant. Among Tree Ferns, Camellias and Orange



Fig. 10.—A group of Aroids at Mr. Bull's establishment. (see p. 48)

trees, its tall stems, so beautifully clothed with drooping variegated leaves, has a very distinct effect, and supplies a neutral tone of colour that is by no means common in plants of tall growth that are suitable for grouping with evergreen bushy plants.

—— Spot in Plants.—Mr. T. Moore pointed out to us in the Chelsea Gardens that many of the plants were disfigured by brown spots, as if they had been scorched. The first notion was that it was the effect of the storm of April 29, but he assured us that the leaves were similarly affected before the gale which was so destructive to tender foliage. This morning (May 29) a box has been received from Mr. Wolley Dod, containing specimens of Cypripedium spectabile and Orchis conspicua in a similar condition. In both there is certainly a fungus, but not, as was conjectured, allied to that which occurs in the Lily disease. In Orchis conopsea there is an obscure Phoma with abundant spores, too obscure to make it worth while to give it a name, for after all it is probably an imperfect state of some Sphæria. At any rate, it is not recorded amongst the too abundant European and American species. In both we find a Septoria with cylindrical spores, which, like the Phoma, is unrecorded, and to which the same remark applies. *M. J. B.*

—— Wall Plants at Pine-apple Nursery.—A bare wall in the immediate vicinity of a dwelling or garden, be it either of brick or stone, is usually more of an eyesore than an ornament, walls mostly having a much better appearance when hidden by some one or other of the different plants suitable for clothing them. Leaving out of calculation the unlimited extent of ugly walls where nothing is done to cover them; it must be confessed that where an attempt is made in this direction it is far from being always satisfactory, especially in the choice of plants suitable for the purpose. Ivy stands out far in advance of all others where an evergreen covering is required, and those who have had an opportunity of seeing what a beautiful object may be made of an unsightly wall by a judicious selection of the most varied forms and colours that the Ivy family affords cannot fail to remark how much more it is possible to accomplish with the different kinds of this plant alone than is generally done. In the immediate neighbourhood of towns, with the constant presence of soot and dust, wall plants, like other vegetation, suffer, and it is here that careful selection of the plants employed becomes necessary. At the Pine-apple Nursery there is a wall running the entire length of the grounds, on which Messrs. Henderson have planted a selection of evergreen and deciduous subjects, that not only exemplify how well they are adapted for wall covering, but also show their ability to thrive where the atmosphere is to a considerable extent charged with smoke. Conspicuous amongst the plants on this wall that are quite at home are Jasminum revolutum, nearly evergreen; J. officinale fol. aureis, the bright coloured foliage of which is very effective amongst green-leaved things; J. odoratissimum, Ceanothus divaricatus, the Nepaulese Indigofera Dosua, Rubus laciniatus, the best of the genus; the golden-leaved form of Weigela rosea, very effective as seen here whilst the leaves are young; the red-leaved Peach, the old Banksian Rose, the purple Rosa rugosa, worth growing, if only for its handsome foliage; Ampelopsis japonica, the highest coloured in its leaves of all the Virginian creepers; Euonymus radicans major, a stronger grower than the type; Gum Cistus, Bridgesia spicata, a seldom seen evergreen climber with spikes of greenish flowers, that at one time used to be grown in heat; Vitis heterophylla variegata, the very distinct Ivy, Hedera conglomerata, and an immense leaved variety in the way of H. dentata, but a better clinger than that fine kind, fastening itself to the wall better, and equally hardy and distinct.

—— Smith's Scarlet Pelargonium.—For covering walls, trelliswork, pillars, &c., in lofty greenhouses and conservatories, this Pelargonium, though one of the oldest, is still one of the best. It is a rapid as well as a vigorous grower, producing abundance of healthy green leaves, and a profusion of flowers during the greater part of the year. It is essentially an amateur's variety.

—— Lastrea Filix-mas cristata.—People who have much to do with cut flowers know something of the difficulty of keeping up a supply of cut fronds, especially during the growing season, when the fronds really last but a few hours until they are withered up. We were reminded of this fact only a few days ago, when in the neighbourhood of Torquay, where we saw a large breadth of this lovely crested variety, which is specially grown for cutting purposes, and which is so rigid in habit, and so hardy, that it will last several days in a cut state without requiring to be renewed.

—— Orchard-houses in Sections.—The reason why many orchard-houses are not productive is, because they are too narrow and badly ventilated. Given a brick wall covered with fruit trees—say Peaches, Plums, and Nectarines, which do not bear regularly—the wall is covered in with what is called a Peach-case or orchard-house. It probably opens at the top by machinery, or, perhaps, air is admitted by "traps" in the back wall, and there are little wooden ventilators which open singly close to the ground by which air is admitted at the front of the house. How will the poor trees fare now that the weather may be expected to grow hot? These houses cost as much—some of them more—than wider houses better ventilated. A good method of erecting orchard-houses on the lean-to principle is to have the roof opening all the way in sections of about 4 feet in width, which may be opened, as the exigencies of the case may require, from an inch to a foot or more. By this plan the blossoming period may be retarded in the spring by keeping the ventilators fully open, and gentle volumes of pure air may be simultaneously admitted to all parts of the house, and in the autumn the trees may be kept perfectly cool; in short, the principle is commendable, viewed from every practical standpoint, and is worthy the consideration of all who contemplate the erection of this class of houses.

—— Echites boliviensis.—As a plant of general merit and usefulness it would be hard to name a rival that succeeds so well under very ordinary treatment. It is classed as a stove-plant, but will grow and flower well in an intermediate temperature. Amateurs, and small growers who have not heat enough for Dipladenias and Allamandas, may undertake the cultivation of this plant with every hope of success. The flowers are white with an orange throat, and besides being a very desirable creeper, it flowers profusely in small pots when less than a foot high, so that it is suitable for growing in a small way for dotting about, or for front lines, as it is for training as a creeper. The one thing important in its cultivation is that it must have plenty of light.

—— Adamia versicolor.—This is a plant which is at once both pretty and interesting. There are few plants, indeed, which possess greater attractions for those who are fond of scrutinising the works of Nature. One of its large flower-trusses in the bud state has a certain fascination about it which seems peculiarly its own. It flowers somewhat after the habit of the Hydrangea, and has buds of white and rosy-blue, the former so tiny as to look like little white beads among the larger buds of blue or blueish purple. It makes a capital conservatory plant at this season, and is easily cultivated into good-sized plants from the cuttings.

—— Aloysia citriodora.—This universal favourite is so easily cultivated and so useful for a variety of decorative purposes that gardeners and amateurs might with advantage bestow upon it a little more cultural attention of a simple kind—simple, because in nineteen cases out of twenty the plant is ruined by coddling. It is hardy, or nearly so, and this fact should reveal to any one that warmth and a close atmosphere must be fatal to its well-being. There is no plant in existence more sought after by ladies for cutting purposes, and there is really no reason why suitable plants should not be grown for sitting-rooms of any size, which would be much prized during the summer months. Propagated from cuttings in a gentle heat, they may be speedily grown into bushy little plants, but they are most useful the second season for the purposes indicated. Well cut back, and brought forward gently in an unheated frame, and ultimately turned out-of-doors in a partially shaded aspect, the leaves come beautifully green and highly scented; and in addition, if confined to small pots, they produce spikes of light lilac flowers, which are by no means insignificant. If protection from heavy rains be desirable, this can be done by tilting sashes above them, but leaving full scope for healthy air to play among them, which will insure their perfect hardihood and adaptibility for indoor work. But why grow plants in pots for cutting when they do equally well or better planted out, and when they may be used for clothing the naked stems of Roses against walls, where their perfume will be agreeable from the open windows? Planted out now they will establish themselves in their quarters before winter, and if the shoots are well ripened, little danger need be apprehended from a few degrees of frost.

—— Lagerstrœmia indica.—The display of flowers which this plant is capable of yielding under a proper system of cultivation is now practically exemplified in the fine garden of Joshua Dickson, Esq., Winslade, near Exeter, where there are plants flowering over 8 feet high and as much across, literally laden with a glowing mass of rich rosy-pink flowers, produced in long panicles, something after the manner of Hydrangea paniculata grandiflora, but much more graceful-looking, because the flowers are not so closely packed together upon the flower-stem. Plunged in a border in the conservatory, under the broad leaves of Palms or Fern fronds, the effect is magnificent—probably there is no other plant coming into flower at this season to equal it for general decorative purposes. Cold treatment does not suit the plant in the growing state. It may be started in a cold Heath-house or greenhouse, and afterwards shifted into a Croton-house, where it will get plenty of heat and sunshine—these are the only conditions under which it will flower freely. Of course the removal to the conservatory, when the plant is in flower, is understood as a matter of course. Plants that have nearly done flowering, if partially cut-back and removed to a north aspect, out-of-doors, to rest for a month or so, and then introduced to a gentle heat and brought forward as recommended, will flower again a second time during the autumn, when they will be no less welcome than they are now. The above is a brief summary of Mr. Cragg's cultural treatment, and certainly the results are highly creditable in the case of a plant that is considered somewhat difficult to cultivate.

—— Thymus serpyllum var. lanuginosus.—For a carpet-bed at this season nothing can surpass this lovely little Thyme, which covers the ground with a green and white carpet which is extremely chaste and beautiful. It may not be lasting enough for a permanent bed, but why should we not have isolated beds of foliage and flowers as well as large designs and masses? If more attention were given in this direction there might be many a pretty flower-bed to look at when it is impossible to have a whole garden of flowers.

—— A New Public Park for Bristol.—Sir Greville Smythe, Bart., the popular owner of Ashton Court, Clifton, Bristol, has generously presented to the people of Bristol a piece of land to the extent of 21½ acres, to be devoted to the purposes of a public park. This will be a great boon to the residents of Bedminster, and also to the people residing in the Hot Wells. For years past the Bedminster people have, with the permission of Sir Greville, freely used these grounds without let or hindrance. On Saturday and Sunday afternoons and evenings, especially when fine weather tempted the people forth, crowds of persons would gather here, seeking relief from the close and murky atmosphere of the city. Sir Greville Smythe tolerated a good deal of trespassing rather than interfere with the harmless enjoyment of the people, and his kindly tolerance has terminated in a gift to the people of the very spot which many of them had already instinctively selected. The ground is very picturesquely situated, and commands views of the most charming scenery in the most attractive part of Clifton. The Suspension Bridge, Leigh Woods, St. Vincent's Rocks, Royal York Crescent, Ashton Court, help to constitute a most delightful sort of panorama. The ground is prettily wooded, chiefly by Elm trees, while its undulating character adds materially to its attractiveness, and gives rare scope for the exercise of the skill and genius of the landscape gardener. Owing to time being required for certain tenancies to run out, some little time must elapse before the ground is formally handed over to the city.

—— Tradescantia virginica.—Those who are fond of hues of blue in garden flowers should grow this fine hardy perennial. There are several blue varieties, one or two with larger and deeper blue flowers. One, named Azureus, is singularly fine, with large and very richly coloured flowers of great beauty. There is a double variety with deep violet flowers, but it is scarcely so handsome as the single form. Other varieties, varying in colour, have been produced from seed, but they all fall below the rich blue flowers in point of effect. The white variety is novel, because the flowers have violet bearded stamens, which are in remarkable contrast to the white segments. One good quality in this Tradescantia is, that the plant will grow in almost any soil, doing as well in a wet clay as in one of a dry loose nature. It is another of those fine plants that are in danger of becoming less cultivated from various causes.

—— The Darwin Memorial.—At a meeting of the executive committee of the Darwin Memorial Fund, held on June 30 at the Royal Society's rooms, Burlington House, it was announced that the total subscriptions already promised or received amounted to £2487 13s. It was decided that the Memorial should take the form of a marble statue, and a sub-committee was appointed to make the necessary arrangements. It was agreed to ask the Trustees of the British Museum for permission to place the statue in the large hall of the British Museum (Natural History), South Kensington. The sub-committee consists of the following:—Mr. W. Bowman, Sir J. D. Hooker, Professor Huxley, Mr. C. T. Newton, and Sir F. Pollock, with the Chairman, Mr. W. Spottiswoode, Pres. R.S.; the Treasurer, Mr. John Evans, Treas. R.S.; and the Hon. Secretaries, Professor Bonney and Mr. P. Edward Dove.

—— Euonymus elegantissima variegata.—This beautiful variety appears to be hardy in Devonshire. It is the best of the silver-leaved kinds, and when well up in colour it makes a lovely ornament upon a green closely-shaven lawn. We saw a low bush of it in a Devonshire garden a few days ago, where we thought it looked even prettier than we had ever seen it in pots. The bush, or group—we do not know which—was over 3 feet across, and filled in a triangular corner in grass so chastely that we thought we had never before seen a more simple and pleasing effect.

—— Golden Yews at the Knap Hill Nurseries.—If any one would see and realise something of the value of the Golden Yew as a decorative plant, they could not do better than pay a visit to the Knap Hill Nurseries just now. There is, scattered all over these extensive nurseries, a marvellous wealth of hardy trees and plants, and among these the forms of the Golden Yew are a conspicuous feature. It is not too much to say there are thousands of them, some 8 feet in height, many of them so finely coloured as to appear covered with burnished gold. The large majority of these brilliantly coloured Yews are seedlings, and they have been obtained by planting the Irish Yew among the golden varieties. The first break occurred from the original form, elegantissima, when used as a pollen parent, but since then the seedling golden types raised from it have been so employed. Adpressa and erecta have also been used as seed parents. The seedling forms grow more freely than elegantissima, some seedlings twelve years of age are already 6 feet in height. Some of the seedlings are handsomely frosted with silver, thus giving a welcome variety; and not only do the seedling variegated forms grow more freely than the old type, but they do not burn as that does, and they also produce berries. They vary also in their habit of growth: some take an erect form and grow closely and in a compact way, others are more branching and bushy; and a batch of seedlings when they have attained the size show much variation in this respect.

—— Bad News for Port Wine Drinkers.—Official papers state that the pest of the Phylloxera vastatrix, which had manifested itself in the Douro Vines in a virulent form, has invaded the districts of Leiria and Santarem; and it is anticipated that ere long the whole country, as far as the Algarve, will be infested with this insect. The treatment of the Vines with sulphate [ide] of carbon has not proved effectual, so much so, that in the Douro the cultivation of Tobacco is going to be tried with the permission of the Government. Moreover, in spite of the conventions entered into by Portugal, and the regulations issued, the action of the authorities with regard to the Phylloxera is marked by very great apathy. It is stated that the Botanical Garden at Coimbra has long been infested with the Phylloxera.

—— Proposed Carnation and Picotee Show at Oxford.—It has been proposed to hold a Carnation and Picotee Show at Oxford, in connection with the Exhibition of the Royal Oxfordshire Horticultural Society, on August 2, the show to be regarded as supplementary to that of the National Carnation and Picotee Society, which takes place at South Kensington on July 25. We understand that Mr. E. S. Dodwell has been requested to make the necessary arrangements for carrying out this proposal, which has our hearty concurrence, as it will provide, in consequence of the later date, a more favourable meeting ground for Northern and Southern growers than the meeting at Kensington will do. To provide the necessary prizes it is suggested that the two above-named Societies should each vote ten guineas towards a fund to be raised for that purpose, and that the remainder, about a similar sum, shall be raised by special subscription—say one-half from friends of the Oxford Society, and one-half from friends of the National Society. We cannot doubt the needful aid will be forthcoming, and we are heartily glad that Mr. Dodwell's health and strength have been so much recruited by his residence in the country that he is able to undertake the supervision of the arrangements. Several donations have been already promised, and a schedule of prizes has been issued.

—— Phacelia campanularia.—Mr. Thompson, of Ipswich, sends specimens of the new Phacelia referred to in Mr. Sheppard's note in a recent number, under the name of Whitlavia. It is the P. campanularia of Dr. Gray—Whitlavia, Eutoca, Cosmanthus being now all merged in the older genus, and retained only as sectional names. The flower is of an intense gentian-blue with a white oblong spot at the base of each sinus of the limb, most of the blossoms being twice as broad as in the old Whitlavia grandiflora, but with a shorter tube, which seems more pelviform than campanulate. It succeeds extremely well in the open border, where it forms a spreading branched tuft, nearly a foot across, and from 6 to 8 inches high. It commences flowering while yet small, and continues in blossom some weeks. The leaves are on long, broad, channelled stalks, the blades roundish oblong, crenately toothed, and slightly downy. The flowers are in loose 1-sided racemes, each about three-quarters of an inch long, and supported by a calyx of five linear segments.

—— The Weather.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending July 3, issued by the Meteorological Office, London:—The weather has been much drier and finer than of late, though a few thunderstorms were experienced in different parts of the kingdom, accompanied in some places by rather heavy rain. Temperature has been a little above the mean over Ireland, the "Midland Counties," and in "Scotland, E.," and about equal to the average in "England, N.E." and "England, S.," but elsewhere it has been slightly below. The maxima were higher than those recently observed, and ranged from 73° in "England, N.W." to 77° over central and southern England, as well as in the north of Ireland. The minima, which were recorded on June 27th in Ireland, and on July 1 at most of the English stations, varied from 41° in "Ireland, N." to 45° in "England, E.," "Scotland, W.," and "Ireland, S." The rainfall has been a little more than the mean in the east of Scotland, the north-east of England, and north of Ireland, but in most other districts the fall was less than the mean. In "England, E." and "England, S." there was almost a complete absence of rain. Bright sunshine shows an increase in all except the Irish districts and "England, S.W.," the percentages ranging from 50 in "England, N.W." to 32 in "Ireland, W." Depressions observed:—The barometer has been higher and more uniform over our islands than for some time past. The winds have been generally very light in force and variable in direction. At the close of the period, however, owing to the advance of a depression from the Atlantic, the barometer was falling decidedly in the west and north, and the wind had shifted to the westward or southward on all our coasts.

—— Gardening Appointments. — Mr. J. Rickards, late Gardener to J. E. Severn, Esq., M.P., Wallop, near Shrewsbury, has been engaged as Gardener to C. G. Lefroy, Esq., Wellesbourne Hall, Warwick.—Mr. William Hardy, late Foreman to Mr. Mann, St. Vincent's, Grantham, Lincolnshire, has been engaged as Gardener to George Orr Wilson, Esq., Dunardugh, Blackrock, Co. Dublin, Ireland.

PARIS NOTES.

The effects of the terrible frost of December, 1879, are still felt in many places in France. Trees that were injured severely and had seemed to recover since, are now dying. This has been especially the case with Cedrus Libani and Taxodium distichum.

The French Government cannot be complimented on its quickness. We understand that jurymen of the International Exhibition of 1878 will soon receive the printed accounts of their debates. What earthly use that will be is left to be discovered; everything relating to horticulture has been published by the horticultural papers, and when the same documents come from the Ministry we doubt whether anybody will even look at them.

The love for Orchids seems to be growing pretty fast in France; we think that the new journal entirely devoted to this class of plants, *L'Orchidophile*, under the able management of M. Godefroy-Lebeuf, of Argenteuil, and the Comte Du Buysson, has done much towards this. M. le Comte Du Buysson has written the best French book on Orchids. People with only two or three houses are now having a few Orchids, while in large places new houses are being built for the same. A new house for the reception of cool Orchids has just been finished at Ferrières; it is built on the most improved principles, and is the first of this class in France. Water-tanks run under the stages full of rain-water; the stages themselves are watertight, and the watering of the paths, &c., is done mechanically, merely by turning a tap. The shading also is well understood. The canvas is not against the glass, but a few inches from it, allowing the air to pass between. In the same establishment a large range of houses is being built to receive Azaleas and flowering stuff.

We understand that the Ville de Paris will establish soon a School of Horticulture at Villepreux (Seine et Oise). It will be a regular boarding school, where young children without parents (street Arabs) will be taken care of by the town and brought up to the gardening profession.

The Société d'Horticulture de France announces that an autumnal show will take place from October 10 to 15 next in the Pavillon de la Ville de Paris, where the last show was held. It will be especially a fruit and vegetable show.

The flowering of the Vanda teres has been most successful again this year at Ferrières; nearly 700 blooms have been cut and used for furnishing. This has proved a most useful Orchid, flowering as it does at a time when there are few others. They are planted out at the entrance of a span-roofed house, and it is a sight worth looking at when in bloom.

THE NATURAL HISTORY OF MADAGASCAR.

(*Concluded from p.* 12.)

The endemic type that most strikes the traveller is the Banana-like Ravenala madagascariensis* or Urania speciosa (figured in *Gardeners' Chronicle*, p. 19 vol. iv.). Among endemic types not previously mentioned are — Colvillea racemosa, a gorgeous arboreous Cæsalpinea having compoundly pinnate leaves and large yellow and red flowers borne in dense racemes 1 foot to 18 inches in length (*Bot. Mag.*, t. 3325, 3326); Tachiadenus carinatus, a showy Gentianea with purple-blue flowers (*Bot. Mag.*, t. 5094); Mascarenhasia Curnowiana, an elegant and beautiful Apocynea, with rosy-carmine flowers, lately introduced by Messrs. Low; Dypsis madagascariensis, a small pinnate-leaved Palm, now in cultivation, &c. Among the novelties recently described by Mr. Baker is the genus Kitchingia, which is allied to Bryophyllum, and of which several species have been discovered. Altogether about 700 genera are known to occur on the island, and of these about eighty are endemic. Most of them are monotypic, and none of them is represented by more than about half-a-dozen species.

The Vegetation of the Central Hill Country.—This is much better known than that of

* This would appear to be a very ancient type, for its only congener inhabits the northern part of South America. No member of the allied South African genus Strelitzia has hitherto been detected in Madagascar.

the forest belt or even the coast flora; and the endemic element is mainly specific. Its affinities are with the flora of the Cape and of the mountains of Central Africa. Mr. Baker summarises it in the following words:—"There are many curious cases of affinity between the flora of the hill-country of Central Madagascar and those of the Cape and the mountains of Central Africa. Many of the groups and genera characteristic of the Cape flora are represented in Central Madagascar, as they are in the mountains of Abyssinia, Angola, and Guinea, and the Zambesi country by species closely allied to, but not absolutely with those of their headquarters. At the Cape there are upwards of 500 Heaths; in Central Madagascar there are about a dozen species—one of Ericinella and the rest of Philippia. The Selagineæ are represented by a single endemic species, Selago muralis, which grows upon the walls of the royal palace in Antananarivo. The Aloes are represented in Madagascar by Aloe Sahundra and A. leptocaulon; the Cape Irideæ by species of Aristea, Geissorhiza, and Gladiolus; the Proteaceæ by Faurea and Dilobeia; the special Cape Ferns by Mohria caffrorum, Cheilanthes hirta, Pellæa Calomelanos, and P. hastata; the Cape saprophytic Scrophularineæ by Alectra melampyroides, and Harveya obtusifolia; the Cape Orchids by species of Disa and Satyrium; and the Cape Thymelaceæ by species of Dais and Lasiosiphon. Other characteristically Cape genera, represented by one or two endemic species in Central Madagascar are Phylica, Anthospermum, Diclis, Chironia, Halleria, and Streptocarpus. There are a few curious cases in which characteristically temperate species reach Central Madagascar, or a Madagascar species reappears at the Cape and amongst the Central African mountains. Among the vascular Cryptogams of Central Madagascar are Asplenium Trichomanes, Nephrodium Filix-mas, Aspidium aculeatum, Pteris aquilina and P. cretica, Lycopodium complanatum and L. clavatum; Asplenium Mannii reappears in the Cameroons and Zambesi-land. The only Madagascar Violet (Viola Zongia = V. eminensis = V. abyssinica) only occurs elsewhere at 7000 feet above the sea-level in the Cameroons, at 10,000 feet above sea-level at Fernando Po, and in the mountains of Abyssinia. The only Madagascar Geranium (G. eminense = G. compar = G. simense, &c.) has the same range. The only Madagascar Drosera reappears at the Cape and in the mountains of Angola and Guinea. Agauria salicifolia, an Ericacea, is common to the mountains of Madagascar, Mauritius, Bourbon, and the Cameroons; and has lately been found on the high plateaux round Lake Nyassa. Caucalis melantha occurs only in Central Madagascar; in Abyssinia at an elevation of 9000 feet; in the Cameroons at 7000—8000 feet; at Fernando at 7000 feet." From the foregoing extract it will be seen that there is a distinct affinity between the mountain floras of Madagascar and the continent of Africa.

Animal Life.—The zoology of Madagascar, as already hinted, presents many remarkable and peculiar features. Though the fauna is not insular in character to the extent of being destitute of mammals, yet the island has so long been an island that the mammals as well as the other families are very different from those of the neighbouring continent. As Mr. Wallace points out, Madagascar is the preserve of a fauna that has almost died out in other parts of the world. Africa, he says, is now most prominently characterised by its monkeys, apes, baboons; by its lions, leopards, and hyænas; by its zebras, rhinoceroses, elephants, buffalos, giraffes, and numerous species of antelopes; but not one of these animals, or anything like them, exists in Madagascar. Nor are the tigers, bears, tapirs, deer, and numerous squirrels of Asia represented. Nevertheless Madagascar possesses no less than sixty-six species of mammals. The most important are the lemurs, consisting of six genera and thirty-three species. This group of lowly organised and very ancient creatures still exists scattered over a wide area; but they are nowhere so abundant as in Madagascar. The Insectivora are represented by about a dozen species, consisting of one shrew, and five genera of a peculiar family, Centetidæ, which family exists nowhere else on the globe except in Cuba and Hayti. The Carnivora are represented by a peculiar cat-like animal, forming a distinct family, and having no allies in any part of the globe; and eight civets belonging to four genera. The Rodents consist of four rats and mice of peculiar genera. And lastly, there is a river hog of the African genus, Potamochærus, which, as well as a small extinct ("sub-fossil") hippopotamus, Mr. Wallace suggests, may have reached the island from Africa by way of the Comoros, without any actual land connection.

Concerning the Reptilia, Mr. Wallace says:—"The large and universally distributed family of Colubrine snakes is represented in Madagascar, not by African or Asiatic genera, but by two American genera—Philodryas and Heterodon, and by Herpetodryas, a genus found in America and China. The other genera are all peculiar, and belong mostly to widespread tropical families; but two families, Lycodontidæ and Viperidæ, both abundant in Africa and the Eastern tropics, are absent. Lizards are mostly represented by peculiar genera of African or tropical families."

Coming to the birds, we learn from the same source that about 100 species of land birds are known from the island of Madagascar, whereof all except four or five are not known to exist elsewhere, and about half of the species belong to peculiar genera. For further particulars the reader should look into Mr. Wallace's fascinating book. *W. B. Hemsley.*

LIST OF GARDEN ORCHIDS.

(*Continued from p. 799, vol. xvi.*)

24. Latouria, Blume, *Rumphia*, iv., p. 41, t. 195 and 199 *c*.—Labellum horizontally expanded at the base into two auricles, embracing the column, and connate behind the column. Pollinia 2. Only one species, L. spectabilis, is known, and this imperfectly. It is a native of New Guinea, and it is a very handsome and striking plant and well worth looking after.

** Scapes leafless; pseudobulbs 1 or 2-leaved, on a distinct rhizome, crowded or distant.

25. Bulbophyllum, Thouars, *Orch. Isles Afr.*, p. and t. 3; *Ic.*, t. 93 to 110.—Racemes long or spike-like, very rarely 1-flowered or subumbellate. Sepals usually nearly equal and free. Labellum jointed to the foot of the column. Species about 150, for the greater part inhabiting the tropical regions of Africa and Asia; a very few South America and Australia, and one only New Zealand.

In the number and size of the flowers of the various species this is a polymorphous genus, yet a natural one for the majority of the species. It is not easily divided into well defined sections. The following sections are mainly founded on the inflorescence, and are more or less connected by intermediate species, several of which have been raised to the rank of distinct genera.

Sect. 1. *Sestochilos.*—Flowers (in the genus) large or very large, solitary, on peduncles or scapes that are furnished at the base with a number of sheathing scales, or naked. Pseudobulbs 1-leaved in most of the species. Lateral teeth of the column short; anther large: ex. B. macranthum and B. Lobbii.

Sect. 2. *Leopardina.*—Peduncles short, loosely 2 or 3-flowered, more rarely 1-flowered; flowers rather large. Sepals broad, spreading. Petals much smaller. Column scarcely produced in teeth in front: ex. B. psittacoglossum and B. Dayanum.

Sect. 3. *Elegantes.*—Peduncles or scapes slender, loosely several-flowered, or occasionally 1-flowered. Column produced in prominent teeth or arms. Pseudobulbs 1-leaved: ex. B. oculatum and B. vittatum.

Sect. 4. *Racemosæ.*—Scape elongated, clothed with sheaths; flowers racemose, usually numerous, shortly pedicellate, small or medium. Angles of the column produced into prominent teeth or arms, and sometimes furnished with one tooth below each arm. Pseudobulbs 1-leaved, or in some, chiefly African, 2-leaved: ex. B. neilgherrense, B. pavimentatum and B. cocoinum.

Sect. 5. *Umbellatæ.*—Scapes furnished with several or many sheaths, often tall; flowers medium or rather large on rather long pedicels, crowded in spurious umbels or heads at the tip of the scape, almost like Cirrhopetalum, but the sepals are all spreading and only slightly unequal: ex. B. umbellatum.

Sect. 6. *Brachystachyæ.*—Slender creeping herbs, having small 1-leaved pseudobulbs; flowers small, few, on rather long pedicels at the tip of the scape, or shortly and loosely racemose or capitate. Sepals slenderly acuminate: ex. B. repens.

Sect. 7. *Oxysepala.*—Stems or rhizomes lengthened, prostrate, branched, with many sheaths; pseudobulbs small or minute, 1-leaved. Scapes short or very short, slender, few-flowered, often scarcely protruding from the sheaths. Flowers small, having very acuminate sepals. Column having long arms: ex. B. Shepherdi.

The following names of proposed genera are here included under Bulbophyllum:—Gersinia, Diphyes, Tribrachium, Anisopetalum, Sestochilos, Taurostalix, Ione, Epicranthes, Didactyle, Xiphizusa, Bolbophyllaria, Lyræa, Sarcopodium § 2, Cochlia, Odontostylis, Malachadenia, and Oxysepalum:—

1. B. adenopetalum, Lindl., *Bot. Reg.* 1842, Misc., n. 95; *Gard. Chron.* 1843, p. 23.—Singapore. Cultivated by Loddiges. Near B. cocoinum. Flowers yellowish, slightly sweet-scented.
2. B. alopecurum, Rchb. f., *Gard. Chron.*, n.s., xiv., p. 70.—Birma. Sent to Messrs. Low by their collector, Mr. Curnow. Flowered in 1880. Of botanical interest only.
3. B. amplebracteatum, Teijsm. et Binnend, *Bot. Nat. Tijdschr.* xxiv., reprint, p. 3.—Ceram. Cultivated at Buitenzorg in 1866.
4. B. angustifolium, Lindl., *Gen. and Sp. Orch. Pl.*, p. 57; Miq., *Fl. Nederl. Ind.*, iii., p. 649. *Diphyes angustifolia*, Blume, *Bijdr. tot Fl. Nederl. Ind.*, p. 314.—Java. Cultivated at Buitenzorg in 1866.
5. B. aurantiacum, F. Muell., *Fragm. Austr.*, iii., p. 39; Benth., *Fl. Austr.*, vi., p. 288.—Australia. Cultivated at Kew in 1870.
6. B. auricomum, Lindl., *Gen. and Sp. Orch.*, p. 50.—India. Cultivated at Buitenzorg in 1866. Hort. Kew.
7. B. balæniceps, Rchb. f., *Hamb. Gartenz.*, xix., p. 280. — Philippines (?). Cultivated by Consul Schiller at Hamburgh, in 1863. This has curious solitary flowers, about 2 inches long, resembling in shape a whale's head.
8. B. barbigerum, Lindl., *Bot. Reg.*, t. 1942; *Bot. Mag.*, t. 5288.—Sierra Leone. Introduced by Messrs. Loddiges, with whom it first flowered in 1836. A singular Orchid, having green and crimson sepals, and a narrow yellow labellum, with a terminal brush of long crimson hairs.
9. B. Beccarii, Rchb. f., *Gard. Chron.*, n.s., xi., p. 41, and xiv., pp. 326, 525; *Bot. Mag.*, t. 6567.—Borneo. Originally discovered in 1853 by Mr. Thos. Lobb, who, however, only collected leaves; and rediscovered a few years ago by Professor Beccari, who also succeeded in introducing it alive. This singular Orchid enjoys the distinction of having the most stinking inflorescence that has ever yet come under the nose of botanist or gardener. It has a very stout rhizome, bearing leaves as much as 2 feet long and 1½ broad, and massive clusters of small yellow and purple flowers. Hort. Kew.
10. B. Berenicis, Rchb. f., *Gard. Chron.*, n.s., xiv., p. 588.—Native country not recorded. Flowered by Sir C. W. Strickland in 1880. Allied to B. caudata. "A delightful microscopic wonder, bearing miniature inflorescences like those of Cirrhopetalum Medusæ."
11. B. biflorum, Teijsm. et Binnend, *Nederl. Kruidk. Archief*, iii., p. 397.—Java. Cultivated in the Buitenzorg Garden in 1866.
12. B. blepharistes, Richb. f., *Flora*, 1872, p. 278.—Cultivated by Mr. Day. Remarkable in having the lateral sepals connate to the top. Hort. Kew.
13. B. Bowringianum, Rchb. f., *Gard. Chron.*, n.s., xv., p. 814.—India. Imported from Assam and cultivated by Mr. J. C. Bowring, Forest Farm, Windsor. Allied to B. khasyanum.
14. B. bracteolatum, Lindl. *Bot. Reg.* 1838, t. 57. *Bolbophyllaria bracteolata*, Rchb. f., *Bot. Zeit.* 1852, p. 934.—Demerara. Imported by Messrs. Loddiges, with whom it flowered in 1837. The leaves of this species are only about 2 inches long, but it produces a fleshy, cylindrical, or spindle-shaped, pendent scape, 5 or 6 inches long, on which the small flowers are sessile or partially embedded. Flowers beautifully variegated with flesh-colour, yellow, red, and violet.
15. B. caespitosum, Thouars, *Orch. Afr.*, t. 103.—Bourbon. Cultivated by Prince Demidoff at San Donato, about 1858.
16. B. calamarium, Lindl. *Bot. Reg.* 1843, Misc., n. 109; *Bot. Mag.* t. 4088.—Sierra Leone. Imported by Colonel Fielding. A pretty species, having a slender scape, 12—18 inches high, bearing a spike of flowers about 4 inches long. The latter are yellow and purple; labellum deeply and elegantly fringed. Hort. Kew.
17. B. capillipes, Parish and Rchb. f., *Trans. Linn. Soc.*, xxx., p. 150.—Moulmein. Introduced by Mr. Parish, and cultivated at Kew in 1872.
18. B. capitatum, Lindl., *Gen. et Sp. Orch. Pl.*, p. 56; Miq., *Fl. Nederl. Ind.*, iii., p. 649. *Diphyes capitata*, Blume, *Bijdr. tot Fl. Nederl. Ind*, p. 314.—Java. Cultivated at Buitenzorg in 1866.
19. B. Careyanum, Spreng., *Syst. Veg.*, iii., p. 732; *Bot. Mag.*, t. 4166. *Anisopetalum Careyanum*, Hook, *Exot. Fl.*, t. 149. *Tribrachia purpurea*, Lindl., *Coll. Bot.*, p. 41.—India. Originally introduced by Dr. Carey, who sent it to the Botanic Garden at Liverpool, where it flowered in 1824. It has large leaves and pseudobulbs for the genus, and the small yellow, purple-spotted flowers are

borne in a dense cluster arising from beneath, and shorter than the pseudobulbs. Hort. Kew.

20. B. CERNUUM, Lindl., *Gen. and Sp. Orch. Pl.*, p. 48; Miq., *Fl. Nederl. Ind.*, iii., p. 646. *Diphyes cernua*, Blume, *Bidjr. tot Fl. Nederl. Ind.*, p. 318.—Java. Cultivated at Buitenzorg in 1866.
21. B. CHEIRI, Lindl., *Bot. Reg.* 1844, Misc., n. 66; *Walp. Ann.*, vi., p. 246.—Manilla. Cultivated by Messrs. Loddiges.
22. B. CHLOROGLOSSUM, Rchb. f. and Warming, *Gard. Chron.* 18, 1, p. 1194.—Brazil. Found at Lagoa Santa by Dr. E. Warming, and flowered by A. D. Berrington. Near B. recurvum.
23. B. CILIATUM, Lindl., *Gen. and Sp. Orch. Pl.*, p. 48; Miq., *Fl. Nederl. Ind.*, iii., p. 646. *Diphyes ciliata*, Blume, *Bijdr. tot Fl. Nederl. Ind.*, p. 317.—Java. Cultivated in the Botanic Garden at Buitenzorg in 1866.
24. B. CLANDESTINUM, Lindl., *Bot. Reg.* 1841, Misc., n. 166; *Walp. Ann.*, vi., p. 248.—Singapore. Imported and cultivated by Messrs. Loddiges. Habit of Polypodium piloselloides; flowers minute, green.
25. B. COCOINUM, Bateman, *Bot. Reg.*, t. 1964; *Walp. Ann.*, vi., p. 255.—Sierre Leone. Imported by Loddiges, with whom it flowered in 1835. Flowers narrow, pink and white, in a slender, erect raceme; the specific name is in allusion to the scent of the flowers being like that of the Cocoa-nut. Hort. Kew.
26. B. COMPRESSUM, Teijsm. et Binnend, *Bot. Nat. Tijdschr.* xxiv., reprint, p. 3.—Sumatra. Cultivated in the Buitenzorg Botanic Garden in 1866.
27. B. CROCEUM, Lindl., *Gen. and Sp. Orch. Pl.*, p. 87; Miq., *Fl. Nederl. Ind.*, iii., p. 649. *Diphyes crocea*, Blume, *Bijdr. tot Fl. Nederl. Ind.*, p. 313.—Java. Cultivated at Buitenzorg in 1866.
28. B. CUPREUM, Hook., *Bot. Mag.*, t. 5316, not of Lindl., according to Rchb. f.—Arracan. Flowered at Kew in 1861. Very near B. Careyanum; flowers coppery-yellow, with a purple or crimson labellum. Hort. Kew.
29. B. DAYANUM, Rchb. f., *Gard. Chron.* 1865, p. 434; *Xenia*, ii., p. 128, t. 144; *Refug. Bot.*, ii., t. 115; *Bot. Mag.*, t. 6119; *Fl. des Serres*, t. 2236 (copied from *Bot. Mag.*); *Gard. Chron.* 1865, p. 434, and n.s., vi., p. 227.—Moulmein? Introduced by Messrs. Low, and subsequently by Mr. Parish. Flowers of moderate size, clustered on short pedicels at the base of the pseudobulbs. Sepals fringed with long hairs, yellowish-green, spotted with purple-red; petals and labellum nearly wholly red, or almost crimson in the *Bot. Mag.* figure. In the *Xenia* figure the ground colour is a dark green, and the petals are violet. Hort. Kew.
("B. DELITESCENS," Hort. Kew, is a name of which I can find no publication.)
30. B. FLAVESCENS, Lindl., *Gen. and Sp. Orch. Pl.*, p. 54; Miq., *Fl. Nederl. Ind.*, iii., p. 649. *Diphyes flavescens*, Blume, *Bijdr. tot Fl. Nederl. Ind.*, p. 313.—Java. Cultivated at Buitenzorg in 1866.
31. B. FLAVIDUM, Lindl., *Bot. Reg.* 1840, Misc., n. 195; *Walp. Ann.*, vi., p. 257.—Sierra Leone. Imported and flowered by Messrs. Loddiges. Flowers small, pale yellow.
32. B. FUSCUM, Lindl., *Bot. Reg.* 1839, Misc., n. 5; *Walp. Ann.*, vi., p. 256.—Sierra Leone. Imported by Messrs. Loddiges. Flowers deep dull chocolate, remarkable for the beauty of their anatomical structure.
33. B. GIBBOSUM, Lindl., *Gen. and Sp. Orch. Pl.*, p. 54; Miq., *Fl. Nederl. Ind.*, iii., p. 648. *Diphyes gibbosa*, Blume, *Bijdr. tot Fl. Nederl. Ind.*, p. 312, t. 66.—Java. Buitenzorg Botanic Garden, 1866.
34. B. GRACILE, Lindl., *Gen. and Sp. Orch. Pl.*, p. 50; Miq., *Fl. Nederl. Ind.*, iii., p. 647. *Diphyes gracilis*, Blume, *Bijdr. tot Fl. Nederl. Ind.*, p. 319.—Java. Cultivated at Buitenzorg in 1866.

To be continued.)

HALDON HOUSE,

THE seat of Lord Haldon, enjoys the distinction of a commanding situation overlooking a vast tract of country which is famous even in Devonshire for picturesque grandeur and natural beauties of superlative merit and attractiveness. The distance from Exeter is about 4 miles, and the mansion occupies a position about half-way up a hill which is said to be 7 miles in length and 3 in width. The house was originally built by Sir George Chudleigh, Bart., at whose decease it became the property of Sir John Chichester, by his marriage with the second daughter of the deceased baronet. Sir John afterwards sold the property to Mrs. Anne Basset, and after being owned by two or three other proprietors, the estate ultimately became the property of Sir Robert Palk, the direct ancestor of the present noble owner. The Palk family is a very ancient one in Devonshire, and was connected by marriage with the families of Darnley and Lisburne as far back as the year 1789. Haldon is historically one of the best modern houses in Devonshire, being executed after the model of Buckingham Palace in St. James' Park. The house was built of brick, which Sir Robert Palk covered with Rawlingson's patent stucco, which gives it the appearance of a freestone structure. Sir Robert also added largely to the estate and plantations by enclosing some hundreds of acres from Haldon by permission obtained by Act of Parliament. There are some fine marble busts in niches in the arcade, of Europe, Asia, Africa, and America. The parti-coloured floor in the hall, of red and yellow wood, was brought by Sir Robert Palk from the East Indies, and was taken from the French at one of the sieges.

The Belvedere is a mile from the house, and stands on one of the loftiest eminences in the country. It was erected by Sir Robert Palk in remembrance of his friend General Lawrence, under whom he served, and is a triangular building with round towers at the corners. On the ground floor is a statue representing General Lawrence, which rests on a round black marble pedestal. An inscription was sent for this monument to Sir Robert Palk by his Highness the Nabob Wallajah, and is of a highly complimentary character. The views from here are picturesque and charming in the extreme. To the east there is Blackdown and the Quantock Hills, and to the north-west the highlands of Okehampton. To the south there are Brentor, the English Channel, the cliffs of Beer and Seaton, and the Isle of Portland. The principal drive to the house takes the visitor to the east front, where the two wings of the building extend a considerable length from the centre, forming three sides of a square. There are permanent Portugal Laurels planted in grass by the two wings of the house, and a circle in grass, surrounded by a broad sweep of gravel, is a safe arrangement for the carriage traffic to and from the mansion. The trees in view by the drive consist chiefly of large Oaks—of which there are many remarkable specimens—and also Conifers which, however, are not so striking at present as the gorgeous display of Rhododendrons, which are planted in natural groups close to the drive, not in stiff lines, or at equal distances from the range, but irregularly, which is a comfort to see in place of trimmed Laurel hedges, or belts cut as flat as a pancake.

By the way, there ought to be an Act of Parliament passed for Devonshire against cutting Laurels as underwood into formal slopes and banks, and as there are no "mathematical feats of skill" carried on at Haldon, I am at liberty to make this remark, and to offer a suggestion. Laurels are only fit to be planted as underwood, for the simple reason that they are weeds in the climate. Why therefore not cut them low down, and let them grow naturally? Plant Foxgloves, Antirrhinums, Silene, &c., among them, and you have a woodland scene at once, pleasing to the eye and of regal beauty. The green shoots of the Laurels, mixed with the tall Foxgloves and delicate Silene, is an art treasure that one never tires looking at. Viewed from a distance, say on a sloping bank overhung by Beech branches waved to and fro by a gentle breeze, the effect is peculiarly soft to the eye, and strikes the fancy as being the most natural and pleasing way of clothing such places. But I must not digress. The pleasure grounds are entered by a gate close to the east front, where there are fine Conifers and other trees, herbaceous plants and rockwork. The conservatory faces the rock garden. I have never seen an entrance to a pleasure garden more truly beautiful. Upon the right of the curving walk leading to the conservatory there is a group of herbaceous plants, having a striking background composed of Berberis Fortunei, vigorous growing plants of Hemerocallis flava, Spiræa aruncus, lavender coloured Iris, Polemonium cœruleum, and Geum coccineum fl.-pl. The rockwork upon the opposite side is surmounted with medium sized plants of Althæa frutex, Hemerocallis flava, scarlet Fuchsias, Chrysanthemum fructicosum, and Corydalis lutea, which makes a capital groundwork for rockeries. There is only the top of a stone visible here and there, and even these are half-hidden by our old friend Saxifraga crassifolia, which thrives as well perched upon a sandstone rock as in any other compost or situation. A large oval bed is filled with the two autumn-flowering Anemones, A. Honorine Jobert and A. purpurea, intermixed with Lilium candidum, and edged with Anemone coronaria, a very simple but effective arrangement. The front wall of the Camellia-house is literally covered with healthy foliage and flowers. Of these, Lamarque Rose carries off the Palm, and is well shown off by Escallonia macrantha, which supplies that striking tone of glossy green and flowers which contrast with the large full-blown white Roses. Jasmines, Banksian Roses, and Clematis, also furnish their share of beauty, and the finishing touch is given by a showy border of hardy plants in flower. It is not often one sees so much floral beauty within the same space, but flowers are not considered all in all, for in close contiguity may be seen the Weeping Ash, or a veteran Scotch Fir clad with Ivy, or a notable specimen of the Judas tree growing in its own way as usual, or groups of Hawthorns; and, still more remarkable, grand clumps of Aucubas and groups of Roses; then, by way of variety, a bed of Anemones and Lobelia fulgens intermixed with Lilium candidum. The inmates of the conservatory comprise a fine example of Maréchal Niel Rose trained underneath the roof, and a massive bank of Camellias, which completely cover the back wall. The remaining occupants of the house are pot plants, and of these there is a splendid show of Calceolarias and tuberous-rooted Begonias, the former of which are exceptionally well grown, having healthy foliage as well as fine flowers. A short way from the conservatory there is another floral feast in store for the visitor in Lady Haldon's garden. This garden is simply a continuation of the grounds, but fills in an angle close to the chapel, upon which side the wall is covered with Ampelopsis and Roses, and having a broad band of white Pinks at its base. The collection of hardy plants is of the most select types, and consists of good beds of Fuchsias and Carnations, Gladiolus, and Lilies in variety, Chrysanthemum fructicosum, Geum coccineum fl.-pl., Polemoniums, Anchusa italica, Pæonies, Funkias, Iris, Hemerocallis, Alliums, Geraniums of sorts, Sedums and many others. In view of this garden there is a large specimen of the deciduous Cypress, and a still more remarkable one of the eagle's-claw Acer, and several specimens of the Ilex Oak of unusual size and luxuriance of growth. Among other noteworthy trees may be mentioned Pinus insignis, Cryptomeria japonica, Arbutus Andrachne and Arbutus Unedo, measuring 6 feet 9 inches in girth at a couple of feet from its base.

The flower garden is upon the west side, where the view in the direction of the Belvedere is varied and picturesque. The garden is gay with spring flowers and some showy beds of the Gum Cistus. But the peeps into the park are sweetly pretty, and the eye irresistibly wanders there into a valley where there are glowing clumps of Rhododendrons, or through vistas of trees to a higher eminence where there are groups of evergreen Oaks and groves of Cedar trees, reminding one, as a friend said to me, of an Italian scene in picturesqueness and healthy luxuriance. A stream flows through the valley, but is hardly perceptible for the moment, for a brighter sight is now in view. We are close upon the American garden, and the beds of hybrid and other Rhododendrons, the yellow Berberis vulgaris, the clumps of Kalmia latifolia and rosea, and a variety of white Andromeda are more striking by far than any stream or river that ever flowed even of crystal clearness. But a huge mass of various colours in groups or clumps would be but a tame affair after all were it not for the concomitant beauty and lustre shed upon them by nobler objects—by rare trees of sylvan beauty and graceful habit, such as the lovely Pinus excelsa and Abies Morinda, fine Silver Firs and Wellingtonias, Abies cephalonica and Parsonsiana, rare Tulip trees and Cedars, from the dark green of Lebanon to the drooping grey boughs of Cedrus Deodara.

One bed in the garden is very pretty, with a centre of Eucalyptus globulus, and carpeted with Myosotis. The golden Thuyas are also effective, and in contrast to these an Oak stump is covered with Ivy or Clematis Jackmanni, or there are large specimens of Quercus glabra or samples of the Cork tree, or Cryptomeria japonica. In addition to these there are remarkable specimens of Abies nobilis glauca, Abies Menziesii, and a dense growing variety of Cupressus Lawsoniana. The source of the stream to which reference has been made is now traced to its rise, or at all events to where it appears to have its origin. It is a pond margined by hardy Ferns and overhung by trees, among them two nice samples of the variegated Tulip tree. There must be a constant supply of water to

feed this pond, for there is a continual stream of water flowing from it, which feeds a series of smaller ponds, between which the watercourse is margined by a variety of plants suitable to the situation. The pond itself is alive with the beautiful Aponogeton distachyon, the flower-heads appearing in swarms upon the surface of the water. The best view of these is obtained from the little bridge which spans the watercourse. Following the course of the stream the plants in great variety are dotted about irregularly. I have never before seen the common white Spiræa flower so profusely out-of-doors as it does by the brink of this stream. Bushes of Escallonia macrantha are alive with their charming blossoms. This plant is all in all in Devonshire; would that it were so everywhere. The coniferous element is introduced by way of supplying their well-known bright tints; Retinospora nana compacta is a gem, rather formal but still showy, and sparingly used it certainly has its merit in consequence of the distinct tone it supplies in the way of colour. The common Iris is planted abundantly, so also is the Royal Fern, Osmunda regalis. At the waterfalls, which I was pleased to note are not too numerous, these Ferns have a fine effect when their massive fronds nearly meet across the stream and the clear water trickles underneath them. But the grandest plant of all for this purpose is Gunnera scabra, which bears immense leaves, and is quite hardy in Devonshire, except that a slight protection is given to the crown of the plant in winter. Pernettyas, too, make pretty little bushes, and the Gum Cistus, although an untidy growing plant, is quite at home by the brink of a stream. As a piece of natural beauty, however, nothing compares with a clump of Osmunda regalis entwined with a broad band of the Marsh Marigold, and a little group of China Roses about 2 or 3 feet distant from them. Vincas are also useful, especially for planting by the sides of the waterfalls in company with the common yellow Iris and hardy Ferns of different varieties. At the termination of the stream, which empties itself into another large pond, there is a good example of ornamental planting, in groups of Pines, hybrid Rhododendrons, Guelder Roses, and other showy flowering shrubs.

The visitor who will explore this fine garden thoroughly must now retrace his steps, and pass under a bridge almost hidden with Ivy and hardy Ferns—the way to the fruit and kitchen gardens. Upon the way several bold clumps of Ghent Azaleas are passed, and one or two specimens of Cupressus Lambertiana and a spreading Douglas Fir. A belt of evergreen Oaks shelters the garden upon the north side, and hardy Ferns are well established underneath them. There are three divisions of fruit and vegetable garden, in one of which there are peculiar undulations which are covered with fine Strawberry crops, amongst them a goodly quantity of Hautbois and alpines, which are much appreciated by Lord and Lady Haldon. The main walk of the garden is bordered with hardy flowers, of which Tradescantia virginica, Geum coccineum fl.-pl., Veronica amethystina, Mimulus, Spiræas, Lychnis, Aquilegias and Papaver orientale, appeared to be the most effective and useful.

Having referred at considerable length to the natural beauties and general arrangement and management of this representative garden establishment, it now remains to notice the culture of plants and fruits under glass without entering into details. The Vines are especially creditable, the crops of Grapes both early and late being much better than average in quality and quantity. The early house of Hamburghs are coloured black as Sloes, and beautifully hammered bunches that would do credit to the cultivator upon any table in the kingdom. Muscats are also a good crop of large well-formed bunches, and late houses promise to be equally fine. The forced Pines, Peaches, Cherries, Strawberries, Melons and Cucumbers, are such excellent crops, that any amount of praise might be bestowed upon the care, skill, and judgment, which has produced such satisfactory results, without saying a word too much. In the plant department equal judgment is shown in the cultivation, whether it be stove or greenhouse plants, Ferns, or ordinary stock for house decoration. Success in early forcing is the great point at the present day in private establishments, and Mr. Geeson, under whose management the above returns are obtained, seems to have thoroughly mastered the knotty points in forcing, which enables him to make safe calculations both as to time and results.

Home Correspondence.

The Electric Light.—Dr. Siemens has very properly pointed out the defects of the experiments on growing plants under the electric light at the Exhibition last year in Paris. As I saw these experiments early in September, and again in October, it may perhaps interest your readers if I record a few rough notes I made at the time. If I remember rightly, the experiments were in three sets:—1, in which the plants were continuously exposed to the electric light; 2, in which the plants were exposed to daylight during the day outside the building, and to the electric light at night; 3, in which the plants were exposed to the electric light during the day alone. When I saw the experiments first they had been going on about ten days. There was, I think, no very appreciable difference in the results of the three sets. All the plants with soft or membranous leaves had suffered. I noted:—Lilac, nearly leafless; Rose, La France, leafless; Canna, cut down; Flax, moribund; Chrysanthemum, do.; Barley, yellow; Pelargonium, nearly leafless; on the other hand, the thick-leaved plants, such as Aralia japonica, Ficus elastica, Aspidistra, Camellia, and Rhododendrons, had a healthy appearance. Maize alone of plants of the former category seemed at all to flourish. I have no doubt that Dr. Siemens is correct in attributing the injured health of the plants to the nitrous compounds produced by the oxidation of atmospheric nitrogen in contact with the electric arc—a phenomenon which, as is well known, takes place even under ordinary conditions during a thunderstorm, though the resulting products are no doubt vastly more diluted than they were in the atmosphere at Paris. In point of fact, the plants used for decorative purposes in different parts of the building exhibited the same unhealthy symptoms as those in the small conservatory. The heat of the atmosphere when I saw the latter—namely, 70° Fahrenheit—would intensify the injury to many of the plants. When I visited the collection later on, the difference was not so great as I had anticipated; the Flax was dead, and the collection had evidently been thinned out; but the Roses and Pelargoniums had put out new leaves, and looked rather better. The appearance of set No. 2 seemed to me on the whole more healthy than that of the others, which may be attributed simply to the fact that they had the advantage of daily exposure to fresh air. The healthier appearance of the thick-leaved plants throughout the experiments is a fact of precisely the same significance as the well-known tolerance of the particular kinds selected for the atmospheric conditions of ordinary dwelling rooms. The theoretical possibility of imitating, by artificial means, the effect of solar radiation on plant-life has been demonstrated again and again. In obtaining experimental results on a large scale there seems to me absolutely no difficulty except the question of cost. I see no reason why, say, Cucumbers, should not be grown with electric light alone, if proper precautions are taken to exclude the nitrous gases and prevent scorching. The only question is, whether the result will justify the expenditure even to the wealthy. Dr. Siemens speaks of the importance of excluding the ultra-violet rays. That they are positively injurious to plants supplied with an adequate amount of light of lower degree of refrangibility has, I think, not been demonstrated, though no doubt these rays are filtered off to a great extent from sunlight by the aqueous vapour present in the atmosphere. Any positive results in this direction would undoubtedly be of the greatest interest. *W. T. Thiselton Dyer.*

Nymphæa rosea.—Has it been noticed that the rosy variety (?) of Nymphæa alba has leaves markedly different in shape from those of the white variety? In the former the leaf as it lies on the water forms an almost complete circle, the portions near the stalk being so much enlarged that they overlap, while in the latter there is a considerable space between the two sides of the aperture. Does not this give the former some claim to be considered, not a variety, but a species? *Alex. Nesbitt.*

Dianthuses.—Among the many varieties of these none are more showy or valuable for cutting from than Dianthus striatus multiflorus and D. Mariepare, beds of which I saw in Messrs. Gilbert's nursery at Ipswich the other day that were masses of bloom. The flowers are semi-double, and resemble very large Sweet Williams, but are not nearly so closely packed on the stems, which branch out freely, thus giving the heads a light and pleasing appearance, and rendering them just the thing for dressing in vases or working up in bouquets. The first-named is a pink striped kind, and the other pure white, the former having the better constitution of the two, but in suitable soils both grow freely and strike readily from cuttings in the ordinary way. Although by no means new these Dianthuses are not widely known, for if they were they would be more cultivated, as they are among the most useful things any one can have in a border. In the same grounds Pyrethrums have been grand, but the recent heavy rains had marred their beauty, as the flowers, being so large and double, must of necessity suffer damage from continuance of wet. Those that showed up the best are Captain Nares, the blooms of which are a fine full rose, Roi d'Italie, large deep red; Amethyst, light rose; and Madame Billiard, a soft creamy-white. On a warm sunny border overhanging a low wall the old rock Roses (Helianthemums) were most brilliant, and showed strikingly how well adapted they are for positions of that kind where they can trail and spread at their will. *J. Sheppard.*

Curiosities of Grafting.—The paragraph headed as above, in your impression of July 1, reminds me of a successful experiment which I made some twenty years since, and which I think is of sufficient importance to be again brought before the lovers of conservatory climbers. Having at that time a Passiflora edulis covering a large portion of the back glass work of a warm house, I conceived the idea of working (by inarching) a few varieties of showy Passion-flowers and Tacsonia upon it, for the sake of variety. Consequently I procured the necessary growing shoots of the current year, and at once performed the operation of inarching them upon the P. edulis, allowing the end of each scion to dip into a phial of water, suspended for the purpose. When the operation was completed a garden mat was suspended at a short distance in front of the plant, as a shade, and this was kept moist by heavy syringings. The number of scions inarched was about ten or twelve, all of which grew and flourished until the following winter, when, owing to some accident to the stem, the old plant died. Had not this happened, I doubtless should have had, in the following spring, Passifloras, and Tacsonias of all colours mingling upon the same plant. *H. H.* [We have often urged the budding or grafting of various Passifloras and Tacsonias on a hardy stock. Ed.]

Gigantic Wallflower.—I have growing in my garden, in front of one of the Orchid-houses, a Wallflower plant of the German strain. It bears two spikes, which have attained the extraordinary height of 7 feet, and are still flourishing at the points. The plant is loaded with seed. After it is done flowering, and the seed ripe, I purpose sending the whole plant to the Botanical Society of Edinburgh. Have any of your numerous readers ever seen or heard of such a tall Wallflower? *Alex. Paterson, M.D., Fernfield, Bridge of Allan, July 5.*

Dene Holes (*vide Gardeners' Chronicle* No. 443, p. 836).—A long and careful paper on this subject, by Mr. Spurrell, has been lately published in Nos. 152, 153 of the *Archæological Journal*. The writer, while admitting that they may have been excavated for many purposes, seems to think that their chief use was to serve as granaries. Pliny, in his *Natural History*, says that the Britons dug pits like wells, 100 feet deep, in order to procure chalk and that they manured their land with it. *Alex. Nesbitt.*

Conservatory Decoration.—The writer of the article at p. 6 has done good service in calling attention to this subject; such structures are too often crammed during the summer months with common flowering stuff—that should be plentiful enough in the borders outside—which forms no relief to the strict patterns of carpet bedding, or the too often blending of glaring colours—scarlet, yellow, and purple; and it is truly refreshing on a tropical day to be ushered into such a scene (subtropical) as Mr. Hudson has depicted in his arrangement. Conservatories are too often erected as architects' additions to hide some unsightly corner, and are, therefore, from their position, elevation, and decoration by means of glass of various hues, wholly unfit for plants, as is too apparent from their debilitated appearance after a few weeks' residence in such places. Conservatories without so much staging are preferable during the summer months, when plenty of air can be admitted, but during the winter staging round the outside is preferable for small winter and spring flowering stuff. The best conservatory I have had the pleasure of having anything to do with was the one at Sundridge Park, built by Ormson, and furnished some few years previous to my acquaintance with it by Mr. Wills. There massive Tree Ferns

and noble Seaforthias occupied the centre beds with an undergrowth of Palms, Ferns, Dracænas, Grevilleas, Araucarias, Aralias, and other subjects introduced according to the season, plunged in vacant places; the stage round the outside was kept gay with flowering stuff, intermingled with Ferns, Cyperus, Dracænas, Marantas, Alocasias, Caladiums, and the Artillery plant, which is a useful subject for decorative purposes. Climbers and pillar plants were represented by Roses, Tacsonias, Lapageria rosea and alba, Bougainvilleas, Plumbago capensis, Tecoma jasminoides, Kennedya, Begonia fuchsioides, and the rambling Cobea scandens variegata. Two others worthy a place are Bignonia grandiflora and B. Cherire; and when "up aloft" attending the climbers was the time to admire such a scene: looking down on the massive heads of Cyatheas and Dicksonias suggested the desirability of erecting a gallery to such a structure. *George Potts, jun., Surbiton Hill, July 4.*

Peziza vesiculosa.—A remarkable growth of this fungus occurred in my garden last week, amongst the Potatos after a day's rain. Hundreds of specimens sprang up on both sides of the rows throughout one entire plot, the cups being divided one from the other by only a few inches. I attribute their appearance to the use of imperfectly rotted stable manure at the time the Potatos were planted, and I feel somewhat curious to know what effect the abundant mycelium of the Peziza will have upon the Potatos. Such a series of specimens was highly instructive as regards the variation in the prolongation of the base in the form of a stem, which in several instances was very marked, resembling P. perlata, Fr., and (2) in the character of the exterior, which, in numerous instances, was not furfuraceous, but perfectly glabrous, having the appearance of being smeared with mucus, such as is left in the trail of a slug. Besides these variations, I noted that some of the older specimens resembled published figures of P. repanda, Wahl., in the expanded and deflexed mode of growth. *W. Phillips.*

Herbaceous Plants.—There are two native plants which seem to me to deserve a place in the border allotted to this class of plants, one is Epilobium angustifolium, the French Willow herb. To see this plant at its best it should not be allowed to grow in a dense mass, as it will do if left to itself, but plants should be set singly; these will grow in very elegant pyramidal forms, with a tall spike of flowers in the centre, and numerous lateral branches. The other is the Iris fœtidissima. The flower is by no means despicable, but the plant is very ornamental in the winter, as it retains its green leaves, and the seed pods open and display beautifully coral-coloured seeds, which remain on the plant during the whole winter. At that season, when there is so little colour in the garden, they produce an excellent effect, and they can be introduced very effectively into table decorations. A very beautiful non-native plant is the large rose-coloured Cistus, which grows abundantly on the hills near Nice and elsewhere. The flowers are 2 inches in diameter, and are of a beautiful rather pale rose, and are produced abundantly for several weeks. It is tolerably hardy, but will do best when planted with shelter to the north, nd is sometimes killed by very severe frost. *Alex. Nesbitt.*

Reports of Societies.

National Rose Society's Show at South Kensington: *July 5.*—The National Rose Society and the Royal Horticultural Society are both to be congratulated on the success of the show on Tuesday last, which for extent and the general excellence of the flowers staged, surpassed any of its predecessors. Both of the arcades were well filled—the western by nurserymen, the eastern by amateurs; while in the conservatory were many miscellaneous collections, as well as the flowers competing in open classes. The Roses shown in either of the arcades would have constituted quite a fine show in themselves, and combined were a really representative display of the highest class. The total number of entries was 430, ranging from five in the leading nurserymen's class to twenty in the smaller ones for amateurs. It was an admirable arrangement, and productive of the best results, that both the nurserymen's and amateurs' classes were divided into divisions, by which exhibitors in one division were unable to compete in the others, so that small growers had their chance as well as the large ones.

Nurserymen's Classes.—In the class for seventy-two single trusses, which brought out five competitors, and a first-rate lot of blooms all round, Mr. B. R. Cant, of Colchester, came in 1st, his best examples of grand blooms, large, clear, and bright in colour, being of Souvenir d'Elise Vardon, a flower of remarkable size and great purity; Baroness Rothschild, Etienne Levet, Alfred Colomb, Exposition de Brie, Ch. Lefebvre, Madame Ducher, Madame Lacharme, Countess of Oxford, Marquise de Mortemart, Duke of Edinburgh, Countess of Rosebery, Antoine Ducher, Souvenir d'un Ami, Marie Rady, Madame C. Wood, Marie Baumann, Rubens, Madame Marie Finger, Marchioness of Exeter, Ville de Lyon, Gloire de Vitry, A. K. Williams, John S. Mill, Clothilde Roland, La Havre, Ed. Morren, Louis van Houtte, John Hoppper, Marquise de Castellane, and Madame Eugène Verdier. 2d, The Cranston Nursery Co., Hereford, with a bright and clean lot, including extra fine flowers of A. K. Williams, Exposition de Brie, Etienne Levet, Duke of Edinburgh, Dr. Andry, Marie Rady, Lord Macaulay, Beauty of Waltham, Marie Baumann, Mons. E. Y. Teas, La Duchesse de Morny, Horace Vernet, Countess of Oxford, Madame C. Wood, La Havre, Countess of Rosebery, Sir Garnet Wolseley, Margaret Brassac, and Marquise de Castellane. 3d, Messrs. Paul and Son, Cheshunt; and 4th, Messrs. Curtis, Sandford & Co., Torquay, both having fine blooms of many of the sorts above named. Messrs. Paul & Son threw their strength into the class for thirty-six trebles, and came off first best, their stands including large and fine quality blooms of Capt. Christy, Etienne Levet, Marie Baumann, Niphetos, Paul Jamain, La Duchesse de Morny, Horace Vernet, A. K. Williams, Alfred Colomb, Madame Lacharme, Senateur Vaisse, Marie Finger, Mons. E. Y. Teas, Charles Darwin, Dr. Andry, La Havre, Countess of Oxford, and Beauty of Waltham. 2d, and very close up, Mr. B. R. Cant, with extra fine flowers of La Havre, Annie Laxton, John Hopper, Mons. E. Y. Teas, Souvenir d'Elise, Alfred Colomb, Horace Vernet, Duke of Edinburgh, and Captain Christy. 3d, the Cranston Nursery Co.; and 4th, Mr. Turner, Slough. In class 3, which was for twenty-four trebles, the Torquay Roses would not be denied, and Mr. Cant was placed 2d, and the Cranston Nursery Co. 3rd; Messrs. Curtis, Sandford & Co. having superb trios of Maréchal Niel, Marie Baumann, Marie Rady, Marie Verdier, Mons. E. Y. Teas, Alfred Colomb, La Duchesse de Morny, Madame Victor Verdier, A. K. Williams, Comtesse de Serenye, and Camille de Rohan. For eighteen Teas or Noisettes—a very good class—Mr. G. Prince, of Oxford, came in 1st, showing, amongst other good examples, grand blooms of Alba rosea, Amazone, Maréchal Niel, Souvenir d'Elise Vardon, Madame Marie van Houtte, Adam, Mons. Furtado, Souvenir d'un Ami, and Rubens; 2d, Messrs. Mitchell & Son, Piltdown Nursery, Uckfield, with charming blooms of Marie van Houtte, Rubens, Comtesse Nadaillac, Anna Olivier, Souvenir d'Elise Vardon, and Devoniensis; 3d, Mr. B. R. Cant, and 4th, Messrs. Paul & Son, both in good form.

The next four classes were confined to exhibitors not competing in any of the preceding ones, and which brought out many growers who would not otherwise have any chance of getting an award, and all the prizes were very closely contested. For forty-eight singles, the highest award went to Mr. Frank Cant, Mile End Nurseries, Colchester, for a very good lot indeed, especially good being his examples of Marguerite de St. Amand, Mdlle. Marie Rady, Général-Jacqueminot, Anne Laxton, Horace Vernet, Niphetos, A. K. Williams, Duke of Wallington, La Havre, and Madame Crapelet. 2d, Mr. James Walters, Mount Radford Nursery, Exeter, with a clean and bright lot of blooms, but mostly small. 3d, Messrs. G. Bunyard & Co., Maidstone; and 4th, Messrs. Davison & Co., White Cross, Hereford. For eighteen trebles, Mr. James Walters came in 1st, with larger blooms all round than in his previously-mentioned stands, and the dark coloured varieties remarkable for their vivid brightness. Here Mr. F. Cant was 2d, Messrs. Davison & Co. 3d, and Mr. G. Cooling, Bath, 4th. In the class for twenty-four singles, Messrs. John Laing & Co., Forest Hill, came to the front with a very even lot of uniformly good quality; Messrs. Kinmont & Kidd, of Canterbury, being a fairly good 2d; Mr. Walker, Thame, 3d. The Tea and Noisette class (twelve blooms) was a very good one, many very beautiful blooms being staged. Here a new exhibitor, Mr. J. Mattock, New Heddington, Oxford, took the 1st prize with a very pretty lot, including Jean Pernet, Catherine Mermet, Souvenir d'Elise, Niphetos, Devoniensis, and Comtesse Nadaillac; the second best came from Mr. W. Farren, of Cambridge; Messrs G. Bunyard & Co. coming in 3d, and Messrs. R. Veitch & Co., Exeter, 4th, all very good indeed.

Amateurs' Classes.—The premier class was that for thirty-six kinds, single blooms, to the first prize in which was added an elegant challenge trophy given by the trade growers and supposed to be worth sixty guineas. This can be held by the winner for a year only. Last year it was taken by Mr. Baker, but this time it fell to E. R. Whitwell, Esq., Barton Hall, Darlington, who, departing from old traditions, set up his blooms, not in the usual bank of moss, but well elevated on a floor of purplish black velvet, and very charming they looked. Whether the innovation was quite the correct thing or not, any departure from the monotonous stereotyped form of setting the flowers up cannot but be welcome. In this stand were capital blooms of Dr. Andry, that superb irrepressible rose A. K. Williams, Mons. Noman, Madame Lacharme, Marquise de Castellane, May Quennell, and Marie Rady. A. J. Waterlow, Esq., Great Dood, Reigate, who was 2d, had Mrs. Laxton, Comtesse de Choiseuil, John Stuart Mill, and Annie Wood in good form; C. Davies, Esq., the Grammar School, Aynhoe, Banbury, came 3d, having in his boxes exquisite Thomas Mills, La France, and Beauty of Waltham; W. Harrington, Esq., Corbets Tey, Romford, was placed 4th. There was a strong contest for honours in the class for twenty-four blooms, J. B. Haywood, Esq., coming 1st with a fine lot. He had specially good Marie Rady, Mrs. Laxton, Duchess of Bedford, A. K. Williams, La France, and Dupuy Jamain. Second came Miss Penrice, Witton House, Norwich, in whose stand were excellent blooms of Ferdinand de Lesseps, Beauty of Westerham, Marguerite Brassac, and Madame Marie Cointet. Mr. C. Davies was 3d. The next class was for twelve kinds, in trusses of three blooms, and here the 1st prize went to G. P. Hawtrey, Esq., Aldin House, Surrey, in whose boxes were good Thomas Mills, Charles Lefebvre, Alfred Colomb, Mons. E. Y. Teas, &c. Mr. Davies was 2d, and Mr. C. Cuthill, Chapel Croft, Doncaster, was 3d. In these latter stands were fine flowers of Baroness de Rothschild, Exposition de Brie, Marquise de Castellane, Madame Gabriel Luizet, and Annie Wood. The last class in this division was for twelve Teas or Noisettes, single trusses, in which Mr. Waterton was placed 1st, Mr. Cuthill 2d, and Mr. Harrington 3d, with Mr. T. B. Hall, Rockferry, Cheshire, and Mr. C. Davies equal 4th. In this class were charming blooms of Jean Ducher, Alba rosea, Souvenir de Madame Pernet, Madame Hippolyte Jamain, the charming Madame Lambard, Niphetos, Perle des Jardins, and Marie van Houtte. In the next division, and in the class for twenty-four single blooms, Mr. Baker, now of Holmfels, Reigate, came 1st, having a fine lot of blooms, inclusive of Etienne Levet, Anne Wood, Marie Baumann, Louis van Houtte, and Charles Darwin. The Rev. H. A. Barners, Harstead Rectory, Ipswich, was 2d, having very good blooms of Duke of Wellington, François Michelon, Alfred Colomb, and Star of Waltham, amongst his best flowers. Mr. T. Hobbs, Lower Easton, Bristol, was 3d, and the Rev. J. H. Pemberton, Havering-atte-Bower, Romford, 4th. Then came a class for eighteen blooms, the 1st prize being a piece of plate presented by an amateur. This was won by Mr. A. Slaughter, Jarvis Villa, Steyning, who had a superb lot of flowers that were fresh and striking. In this box Marie Baumann, A. K. Williams, Alfred Colomb, E. Y. Teas, Marie Rady, Madame Lambard, and Reynolds Hole were specially good. The Rev. E. L. Fellowes, Wimpole Rectory, Royston, was 2d, with some brilliant flowers; Mr. Alfred Evans, Oxford, 3d, and Mr. J. Sarjant, Reigate, and the Rev. J. H. Pemberton equal 4th. There was a big competition in the class for twelve single blooms, Mr. Mately, Church House, Rainham, Herts, coming 1st with certainly a weak lot of flowers. Mr. Gray, gr. to Lord Stanhope, Chevering Park, Sevenoaks, being placed 2d, with a charming set of blooms. The Rev. H. H. Biron, Harbledown, Canterbury, came 3d, and the Rev. Mr. Fellowes and Mr. Sarjant were equal 4ths. The last class in this division was for nine Teas or Noisettes, single blooms, Mr. Baker taking the 1st prize, the Rev. Mr. Birin the 2d; Mr. Slaughter was 3d, and Mr. Mately 4th. In this class were good blooms of Madame Lambard, Marie van Houtte, Perle des Jardins, and Jean Ducher. The last of the amateurs division began with a class for twelve single blooms, in which E. M. Bethune, Esq., Denne Park, Horsham, was 1st; Mr. Mately, Macklands, Rainham, 2d; Mr. J. Burton, Peterborough, 3d; and the Rev. J. Roberts, Scole, Norfolk, 4th. This was throughout a capital class. The next class, for nine blooms, was for a fresh lot of competitors, and here Mr. G. Mount, Harbledown, Canterbury, was 1st; Mr. E. Wilkins, Lyndhurst, Sutton, 2d; the Rev. A. Foster-Melliar, Tostock, Bury St. Edmunds, 3d; and the Rev. A. Cheales, Bockham Vicarage, Surrey, 4th. Then came a class for six blooms, in which F. Burnside, Esq., Farningham, Kent, was 1st; E. Mawley, Esq., Croydon, 2d; Mr. J. Burrell, Heighampton, Darlington, was 3d; and Mr. W. Narroway, 4th. Finally with six Teas and Noisettes, open to all exhibitors in the division, Mr. G. Mount came 1st with beautiful blooms of Souvenir d'un Ami, Jean Ducher, Souvenir d'Elise, Catherine Mermet, Marie van Houtte and Souvenir de Paul Néron; the Rev. Mr. Roberts was 2d, having in his box a charming bloom of Comtesse

Risa du Parc; Mr. Mately came 3d, and Mr. Mawley 4th. One of the most remarkable blooms shown in the amateurs' section was a rosy-red flower much splashed and flaked with white. This was labelled "a sport" only, but from what kind was not stated. If this form could be perpetuated, it would prove an effective and a distinctive kind.

OPEN CLASSES.—In this section were included the New Roses, and the classes for Roses of various colours. For twelve new varieties not in commerce previous to 1879, Messrs. Paul & Son were 1st with good blooms of George Moreau, bright red; R. N. G. Baker, red; Souvenir de Madame Alfred Vy, deep red; Ed. André, red; G. Baker, lake, shaded with cerise; Catherine Soupert, white, shaded with rose; Madame Isaac Perriere peach; Madame Ducher, red, shaded with purple; Ferdinand Chaffolte, dark red; Countess of Rosebery, carmine-rose; Jules Finger, salmon-pink; and Rosieriste Jacobs, bright red, shaded with dark crimson. 2d, Messrs. Curtis, Sandford & Co., with, amongst others, Mrs. Jowitt, bright crimson; Rosieriste Jacobs, Mons. Thouvenal, Masterpiece, rosy-crimson; and Mons. Alfred Leaveau. 3d, Messrs. Cranston & Co. The winners in a class of seven competitors with a dozen blooms of any yellow Rose were, 1st, Mr. G. Prince, with Jean Ducher; 2d, Mr. B. R. Cant, with Marie van Houtte; 3d, Messrs Curtis, Sandford & Co., with Maréchal Niel, small, but very rich in colour. Amongst ten lots of white Roses the Cranston Nursery Co. were 1st with Madame Lacharme, extra fine; 2d, Mr. B. R. Cant, with Devoniensis; 3d, Messrs. Jefferies & Co., Cirencester, with Madame Lacharme. The prizes for the best crimson Roses went to Mr. James Walters, for a splendid dozen of Marie Baumann, Mr. B. R. Cant being 2d with A. K. Williams, very bright; Mr. John Sargant, Reigate, 3d, with Alfred Colomb, very bright and full; and Messrs. Curtis, Sandford & Co. 4th with Marie Baumann. There were fourteen competitors in this class, all showing the sorts named above but one, who had Général Jacqueminot. Seventeen competed in the class for twelve blooms of any Rose, in which Messrs. Paul & Son came in 1st with Captain Christy, large, clean, and fresh; Mr. G. Prince 2d with Catherine Mermet, a pretty box; Mr. B. R. Cant 3d, with La France; and the Cranston Nursery Company 4th, with A. K. Williams. With "six single trusses of any Rose," Mr. F. Cant came in 1st, with Marie Baumann, wonderfully fresh, and rich in colour; 2d, Mr. John Wakeley, Church House, Rainham, with La France; 3d, Mr. G. Mount, Hambledown, Canterbury, with the same variety; 4th, the Rev. E. L. Fellowes, with La France. The extra classes, including one for twenty-four Teas or Noisettes, open only to ladies, in which there was a good competition, and in which Mrs. H. B. Biron, Hambledown, came in 1st; for six distinct single trusses of suburban grown Roses, in which the highest award went to Mr. J. E. Coleby, Worple Road, Wimbledon; for six single trusses, open only to amateurs who have never won a prize at any exhibition of the Society, which brought the Rev. Canon Girdlestone of Sunningdale to the front with a grand lot of blooms. The next Rose class calls for little comment, the blooms being for the most part poor.

Royal Botanic: *July* 5.—The corresponding show of last year was greatly marred by a downpour of rain, and so was that held on Wednesday last, the rain at mid-day, and again later on, coming down in a style that was unmistakably drenching, and which unquestionably kept many from venturing into the gardens. It was a good show, too—a much better July show than the Society has had for some time, and though there were present (in the showman's vocabulary) "plenty of greens," there were quite as many flowering plants as one could expect, and, as usual, a very pretty *tout ensemble* was the result. Stove and greenhouse flowering and fine-foliaged plants were not so numerous or so fine as on the last occasion, but still very good. In the flowering section Mr. Cypher, of Cheltenham, was well 1st in the open class for twelve, having large and well bloomed specimens of Allamanda nobilis, Bougainvillea glabra, large and most evenly bloomed; a very well bloomed and very fresh Azalea, Souvenir du Prince Albert, Stephanotis floribunda, a large Erica Parmentierii, E. depressa, and Dracophyllum gracile; 2d, Messrs. J. Jackson & Son, with, amongst others, good sized and well bloomed plants of Kalosanthes Phœnix and K. M. Duphemis, both scarlet, and very closely alike; Plumbago capensis, and Erica Parmentieri rosea, &c. In the trade class for six the last-named exhibitors were well 1st, with a grand plant of Kalosanthes Dr. E. Regel, Statice profusa, Dipladenia amabilis, Ixora Williamsii, &c.; 2d, W. B. Peed & Son, Norbury Nurseries, Streatham; and 3d, Mr. H. James. In the amateurs' six Mr. Child, gr. to Mrs. Torr, was well to the front, with striking plants of the orange-scarlet Begonia Paul Mesurier, the bright scarlet Kalosanthes splendens, &c.; Mr. G. Wheeler was 2d. The best trade half-dozen fine-foliaged plants came from Mr. Cypher, well grown and very healthy examples of Croton Johannis, Kentia Fosteriana, Dasylirion acrostichum, Croton Victoriæ, Cordyline indivisa, &c.; 2d, Mr. B. S. Williams, with two grand Crotons and a handsome Geonoma Seemanni, &c.; 3d, Messrs. Hooper & Co. In the corresponding class for amateurs Mr. C. Rann had admirably grown large Palms and Crotons, and a fine Gleichenia Mendelii. The class for six Palms was a very good one, the 1st prize going to a noble group shown by Mr. Rann, gr. to J. Warren, Esq., Handcross Park, and which included grand specimens of Livistonia altissima, Phœnicophorum seychellarum, Phœnix tenuis, Chamærops humilis, Thrinax elegans, and Pritchardia pacifica. Mr. R. Butler, and Messrs. Hooper & Co., also staged good representative collections. For six exotic Ferns, nurserymen, Mr. B. S. Williams was in his old place, with fine Gleichenias, Davallias, &c., and the best (a very good group) among amateurs came from Mr. Rann, and an almost equally fine lot from Mr. Child. For six Heaths, Mr. Cypher was 1st, with a very nice lot, and Messrs. Jackson & Son 2d.

The Orchid bank was well filled, but not quite so effectively grouped as usual. For twelve, amateurs, Mr. Spyers, gr. to Sir Trevor Lawrence, Bart., M.P., was well 1st, with a grand plant of Cypripedium Stonei, with seven spikes; Aërides affine, with two fine branching spikes; Vanda teres, Coryanthes eximia, with a spike of six very singular blossoms; Cattleya gigas, a good variety with six blooms, the graceful Epidendrum nemorale, with fifteen spikes, a good Oncidium macranthum, Masdevallia Harryana, M. militaris, &c. 2d, with an exceedingly nice lot, Mr. A. G. Catt, gr. to W. Cobb, Esq., Silverdale Lodge, Sydenham. His most valuable examples were of Oncidium macranthum, very fine; a good truss of Epidendrum vitellinum majus, Epidendrum prismatocarpum, with eight spikes; Cypripedium Veitchii, and Cœlogyne pandurata with one fine spike of flowers, pea-green, with very dark marking on the lip. In the nurserymen's class, Mr. H. James came in 1st with a nice lot, including Odontoglossum cordatum aureum, O. Alexandræ, Burlingtonia fragrans, Masdevallia Harryana superba, &c. 2d, Messrs. T. Jackson & Son, Kingston, with Thunia Bensoniæ, Dendrochilum filiforme, Odontoglossum Bluntii, &c. 3d, Mr. Cypher, of Cheltenham, his best plant being a very well bloomed Dendrobium Pierardii latifolium. Mr. James had also the best six amongst nurserymen, and Mr. Spyers the best among amateurs, the latter including Stanhopea tigrinum superbum, with four noble but powerful smelling blooms. Tuberous-rooted Begonias were well done, indeed much better than usual. 1st for twelve, Messrs. John Laing & Co., with well grown and freely flowered examples of Brilliant, Hon. Mrs. Brassey, Hon. and Rev. J. C. Boscawen, General Roberts, Trocadero, Semi-plena, Exoniensis, and Mrs. Dr. Duke, various shades of scarlet and crimson; Reine Blanche, Alba floribunda, white; Empress of India, yellow; and Annie Laing, rose-pink. 2d in the same class were Messrs. H. Coppin & Sons, Shirley, Croydon, well bloomed plants of Sir Bartle Frere, Mrs. Hunter, Flame, Venus, and Turtle Dove. In the amateurs' class a very well grown lot from Mr. J. Child took the lead. His largest plants of Lælia, Empress, Vesuvius, and Killista, were particularly good, and Reine Blanche, Maud Churchill, and Miss Bertha, were first-rate among smaller specimens; Mr. James Long was 2d. In the class for six show Pelargoniums, Mr. Turner was beaten by Mr. Cypher, who had not the superb quality of flower of Mr. Turner's plants, but better cultivated plants. Mr. Turner was, however, 1st for fancies, and Mr. Wiggins 1st in the amateurs' class for show sorts. Fuchsias were only fair, and zonal Pelargoniums ditto.

Cut flowers were particularly well represented, and especially cut Roses, with which Mr. B. R. Cant was again invincible, being 1st for forty-eight singles, twenty-four trebles, and a dozen blooms each of any yellow, white, and red Roses, with Madame Caroline Kuster, Marie Baumann, Devoniensis, &c. For forty-eight singles, the Cranston Nursery Co. were 2d, and Messrs. Paul & Son 3d; and the Hereford growers were again 2d with the two dozen trebles. In the amateurs' class the leading competitors were Mr. G. P. Hawtry, Slough, and Mr. J. Hollingsworth, Maidstone. A pretty lot of Carnations and Picotees came from Mr. Turner, Mr. Douglas, and Mr. Hooper, of Bath, who took the chief prizes amongst them; and Mr. Hooper was also a large contributor of Pyrethrums, Pansies, and other florists' flowers. Cut flowers of hardy herbaceous plants were also well shown by Messrs. Hooper & Co., Covent Garden, Mr. Morse, of Epsom, and Mr. C. Rann; and with stove and greenhouse things Mr. Morse and Messrs. B. Peed & Son came in 1st and 2d. For twelve bunches of Orchids Mr. H. James was well 1st, Mr. Morse coming in 2d. Of wild flowers the display was extensive, and a very creditable collection, gathered within a radius of 5 miles of the parish church of Fletching, Sussex, by Mr. Dixon, gr. to Sir T. M. Maryon Wilson, Bart., Searles, Uckfield, was 1st. Messrs. W. Paul & Son sent a nice lot of blooms of cut Roses, as also did Messrs. Rivers & Son, of Sawbridgeworth.

To the miscellaneous class Messrs. James Veitch & Sons contributed a very fine group of new and rare plants, most conspicuous in which were good specimens of the striking Anthurium Warocqueanum and A. Veitchii, the noble Alocasia Thibautiana, handsome variegated Crotons and Dracænas, the feathery Asparagus plumosus nanus, the clear yellow Sobralia xantholeuca, various Nepenthes, including young plants and an old pitcher of the giant N. Rajah, the new species Morganiana and Mastersiana, a rich assortment of Sarracenias and other side-saddle plants, and a box of good Carnations. On the opposite bank Mr. B. S. Williams had also an extensive and most effectively arranged group of plants, especially rich in stove plants and Orchids, among the latter being a very fine example of Cattleya Mossiæ superba, a very richly-coloured C. gigas, C. Mendelii, and the sweet Dendrobium suavissimum. Other objects of remark were the boldly striped Dracæna Lindeni, Dipladenia amabilis, well bloomed; the new Pitcher-plants, Nepenthes bicalcarata, N. Dormanniana, N. Williamsii, and N. Lawrenceana, &c. Another of the isolated banks contained a choice group from Messrs. John Laing & Co., in which Begonias formed the leading feature, amongst them being well-flowered plants of Prince of Orange, the beautiful white Mrs. Laing, the fine double salmon-pink Madame Camassie, Clovis, double scarlet, &c. From Messrs. Hooper & Co., Covent Garden, came a pretty group of Ferns and fine-foliaged plants, the former including some Japanese species shown suspended on blocks and in baskets. Messrs. Barr & Son exhibited a similarly fine group of cut herbaceous plants to what they had at Kensington on the previous day; and Messrs. Osborn & Son, Fulham, had a nice group of alpine and herbaceous plants in bloom. To the same class Mr. Turner also contributed a grand bank of show Pelargoniums, the brilliant blossoms of which were unmistakably attractive.

New plants were exhibited in great force, and many awards were made. Messrs. James Veitch & Sons had, amongst others, Dracæna Thomsoniana, an erect growing plant, with long, broad, shining green leaves, a new type apparently, received from the west coast of Africa; Selaginella grandis, a fine species, described in another column; Croton Dayspring, with young leaves of a clear orange-yellow margined with green, the older leaves tinged with red; Croton aureos-marmoratus, a species from the South Sea Islands, having long lanceolate leaves, the older ones marbled with yellow, the younger ones almost clear yellow; Davallia tenuifolia Veitchiana, a finely cut and very elegant Fern; Osmunda javanica, a very distinct evergreen Japanese species with the fructification after the manner of O. interrupta; Cypripedium grande×, a hybrid of the caudatum section, and the result of a cross between Roezlii and caudatum; Odontoglossum tripudians aureum, with the side sepals clear yellow, and the lip white; Phalænopsis tetraspis, pure white; Lasia stipulata, an Aroid of botanical interest only; and Sobralia xantholeuca, clear lemon-yellow. Mr. B. S. Williams had a giant form of Cattleya gigas, a lovely flower, with a very high-coloured lip, and rich rose-pink sepals and petals; Lycaste Deppei punctatissimum, and Croton Bruce Findlay, a form with very large green leaves, boldly marked with golden-yellow veins. Mr. Spyers, gr. to Sir Trevor Lawrence, Bart., M.P., showed a very handsome new Aërides named Lawrenceanum, a very distinct species of the Lindleyanum and Schröderi type, with a long, scoop-shaped rosy-purple lip; Cymbidium Parishii, a chaste species, with white flowers, blotched with lemon on the lip, and spotted with cinnamon; Calanthe Textorea, with white flowers, the tip of the lip being creamy-yellow, and in the centre a small blotch of red. The remarkable Grammatophyllum Ellisii, and some pretty Anæctochili came from Messrs. Hugh Low & Co., and Mr. H. James showed a remarkably fine form of Cattleya Mossiæ, named Southgatei, in which the colouring of the lip is very rich, and the sepals and petals of a lovely mauve-tinted rose; and Cattleya gigas alba striata, a small form of gigas, with a broad white bar on the sepals and petals. Amongst new florists' flowers must be included Mr. H. Bennett's new Roses, Her Majesty and Lady Mary Fitzwilliam, both shown in magnificent form. From Messrs. Veitch, Rhododendron balsamiflorum album and aureum, Gloxinia Cordelia, white, with purple blotches and rosy-purple spots; Lobelia Finsbury Park Blue, a very rich blue flowered bedding variety, and Rhododendron Star of India. From Messrs. Daniels Bros., Norwich, Godetia Duchess of Albany, pure white, large, and very free flowering, a first-rate novelty. From Messrs. Wood & Ingram, Huntingdon, Lobelia pumila Ingrami, a good white-flowered variety. New Pelargoniums of the show section came from E. B. Foster, Esq., Clewer, and awards were made to Diadem, upper petals maroon, lower ones salmon-red, and the centre white; Adventurer, upper petals dark velvety-maroon, lower ones rose, shaded with red—large and fine; Veteran, scarlet and maroon shaded upper petals, and delicate rose-coloured lower ones, and white centre; and Sister of Mercy, upper petals dark maroon, lower ones scarlet, with crimson venation, and the centre white. Mr. J. Wiggins, gr. to H. Little, Esq., had also a pretty new variety in Rose Superb, salmon-rose, with a dark blotch.

The awards made were:—

Botanical Certificates.

To Messrs. Veitch & Sons, for Dracæna Thomsoniana.

To Messrs. Veitch & Sons, for Pleopeltis fossa.

To Messrs. Veitch & Sons, for Osmunda japonica corymbifera.

To Messrs. Veitch & Sons, for Selaginella grandis.

To Messrs. Veitch & Sons, for Croton Dayspring.

To Messrs. Veitch & Sons, for Croton aureo-marmoratus.

To Messrs. Veitch & Sons, for Davallia tenuifolia Veitchiana.

To Messrs. Veitch & Sons, for Osmunda javanica.

To Messrs. Veitch & Sons, for Dicksonia chrysotricha.

To Messrs. Veitch & Sons, for Sarracenia Courtii.

To Messrs. Veitch & Sons, for Sarracenia porphyroneura.

To Messrs. Veitch & Sons, for Nepenthes Rajah.

To Messrs. Veitch & Sons, for Nepenthes madagascariensis.

To Messrs Veitch & Sons, for Cypripedium grande.

To Messrs Veitch & Sons, for Odontoglossum tripudians aureum.

To Messrs. Veitch & Sons, for Phalænopsis tetraspis.

To Messrs. Veitch & Sons, for Lasia stipulata.
To Messrs. Veitch & Sons, for Sobralia xantholeuca.
To Messrs. Veitch & Sons, for Begonia gogoensis.
To Messrs. Veitch & Sons, for Begonia lineata.
To Mr. B. S. Williams, for Cattleya gigas grandiflora.
To Mr. B. S. Williams, for Lycaste Deppei punctatissima.
To Mr. B. S. Williams, for Croton Bruce Findlay.
To Mr. Spyers, for Aërides Lawrenceanæ.
To Mr. Spyers, for Cymbidium Parishii.
To Mr. Spyers, for Calanthe Textorea
To Mr. Spyers, for Coryanthes eximea.
To Messrs. H. Low & Co., for Grammatophyllum Edisii.
To Mr. H. James, for Cattleya Mossiæ Southgatei.
To Mr. H. James, for Cattleya gigas alba striata.

Floricultural Certificates.

To E. B. Foster, Esq., for show Pelargonium Diadem.
To E. B. Foster, Esq., for show Pelargonium Adventurer.
To E. B. Foster, Esq., for show Pelargonium Sister of Mercy.
To Messrs. Daniels Brothers, for Godetia Duchess of Albany.
To Messrs. Wood & Ingram, for Lobelia pumila Ingrami.
To Messrs. Veitch & Sons, for Rhododendron balsamiflorum album.
To Messrs. Veitch & Sons, for Rhododendron balsamiflorum aureum.
To Messrs. Veitch & Sons, for Rhododendron Star of India.
To Messrs. Veitch & Sons, for Gloxinia Cordelia.
To Messrs. James Veitch & Sons, for Lobelia Finsbury Park Blue.
To Mr. J. Wiggins, for show Pelargonium Rose Superb.
To Mr. H. Bennett, for Rose Her Majesty.
To Mr. H. Bennett, for Rose Lady Mary Fitzwilliam.
To Messrs. J. Laing & Co., for Begonia Madame Stella.
To Messrs. J. Laing & Co., for Begonia Madame Comesse.

The show of fruit was a very fair one, and included six collections, amongst which Mr. Coleman, Eastnor Castle, came in 1st, with very good Hamburgh and Muscat Grapes, a very good Queen Pine, splendidly coloured Bellegarde Peaches and Elruge Nectarines, and an Eastnor Castle Melon. 2d, Mr. Edmonds, Bestwood Lodge, Nottingham, with first-rate Black Hamburgh and Buckland Sweetwater Grapes, a good Queen Pine, and very fine Royal George Peaches, Lord Napier Nectarines, and William Tillery Melon. Equal 3d, Mr. Wildsmith, Heckfield, and Mr. T. Coombes, gr. to J. A. Rolls, Esq., M.P., Hendre, Monmouth, both showing in excellent form, their fruit being good all round, except as to the colour of the white Grapes. The best pairs of Melons were Turner's Scarlet Gem and Victory of Bath, from Mr. Jas. Bolton, gr. to W. Spottiswoode, Esq., Combe Bank, Sevenoaks; Harding's Scarlet-fleshed, and Davenham Early Green-flesh, from Mr. Nash, gr. to the Duke of Beaufort, Badminton; and Eastnor Castle and Read's Scarlet, from Mr. Coleman. Mr. Wildsmith, with a very fine basket of Black Hamburghs, came in 1st in that class, Mr. J. Edmonds being 2d, and Mr. Woodbridge, Sion House, 3d. Baskets of white Grapes included very good Canon Hall Muscats from Mr. James Douglas, 1st; Muscat of Alexandria from Mr. P. Feist, gr. Bishopgate House, Staines, 2d; and the same variety from Mr. Wildsmith, 3d. Mr. Wildsmith had the best three bunches of Black Hamburghs—a very good sample; Mr. E. Molyneaux, gr., Swanmore Park, Bishop's Waltham, coming in a good 2d; and Mr. J. Hudson, gr., Gunnersbury House, Acton, a close 3d. The last-named grower was easily 1st in the any other black Grape class, with a superb sample of Madresfield Court, Mr. Wildsmith coming in 2d with Black Prince—three good bunches; and Mr. Woodbridge 3d with Madresfield Court. For Muscats, Mr. P. Feist was 1st with a capital sample. Mr. Johnston, gr. to the Marchioness of Camden, Bayham Abbey, a good 2d, and Mr. Woodbridge a good 3d. Any other white Grape.—1st, Mr. E. Adams, gr. to W. H. Trego, Esq., with well-ripened Buckland Sweet, water; 2d, Mr. Johnstone, with thoroughly ripened Bucklands; 3d, Mr. Jas. Worthing, gr. to A. Moss, Esq., Chadwell Heath, with Canon Hall Muscats.

Peaches, two dishes.—1st, Mr. W. Robins, gr. to E. Dyke Lee, Esq., Aylesbury, with very fine Alexandra Noblesse and Barrington. 2d, Mr. J. Edmonds, with Royal George and Chancellor. Nectarines, two dishes.—1st, Mr. J. Bashford, gr. to J. Corbet, Esq., Charlton House, East Sutton, with Stanwick, Elruge, and Rivers' Orange; 2d, Mr. J. Edmonds, with Lord Napier and Elruge; 3d, Mr. C. Goldsmith, gr. to Mrs. Lambert, Bletchingly, with Elruge and Lord Napier—all particularly fine. In a capital class of Strawberries, Mr. C. Goldsmith was 1st with President and Sir Charles Napier, both of extra fine quality. The 1st prize for Figs went to Mr. Coleman, and for Cherries to Mr. Hudson; while in the miscellaneous class Mr. Harris, gr., Singleton, Swansea, was 1st with four good Queen Pines, and Mr. W. Robins 2d and 3d, with Barrington Peaches and Hero of Lockinge Melons.

Crystal Palace: *July* 1.—The Rose Show was held on Saturday last under favourable conditions as regards weather on the day; but unfortunately the weather for some days previous had been very uncertain, heavy thunder showers having visited some districts, their effects being unmistakably visible on some of the exhibits; notwithstanding this the quality of the productions was of a high order of merit, all the winning collections containing superb blooms. In the nurserymen's class for seventy-two varieties, distinct, single trusses, the 1st prize ought to have been awarded to Mr. B. R. Cant, of Colchester; but unfortunately, when the stands were put up, an inferior bloom was removed at the last moment and unwittingly replaced with another of the same variety as one already in the collection, and they were disqualified—the judges awarding an extra prize. The best varieties were Baroness Rothschild, Madame Gabriel Luizet, A. K. Williams, Chas. Lefebvre, Duke of Edinburgh, La France, Marie van Houtte, Duchess of Bedford, extra fine; Madame Willermoz, Captain Christy, François Michelon, Louis van Houtte, Madame Nachury, Madame Ducher, Madame Bravéy, Exposition de Brie, La Boule d'Or, a superb bloom; Auguste Rigotard, very good; Marie Rady, Cheshunt Hybrid, Dr. Andry, Comtesse d'Oxford, and Madame Charles Wood. Messrs. Paul & Son, Old Nurseries, Cheshunt, were awarded the 1st prize, with a collection worthy of them; Magna Charta was in good form, Ferdinand de Lesseps, Etienne Levet, Madame Lacharme, Xavier Olibo, Emily Laxton, La Duchesse de Morny, Senateur Vaisse, Helen Paul, a fine and distinct Rose; Alfred Colomb, Catherine Mermet, Beauty of Waltham, Comtesse de Choiseuil, Star of Waltham, J. S. Mill, Marie Rady, George Moreau, and Penelope Mayo. The Cranston Nursery Co., of Hereford, were 2d, their collection being strong in Tea Roses, Souvenir d'un Ami, Souvenir d'Elise, Niphetos, Anna Olivier, Devoniensis, Madame Willermoz, and Marie van Houtte, being fine; Messrs. Curtis, Sandford & Co., Devon Rosery, Torquay, took the 3d prize.

For forty-eight varieties, distinct, three trusses of each, Messrs. Paul & Son were again 1st, with a very even and well arranged collection, comprising, amongst others, excellent blooms of Duchesse de Valombrosa, Monsieur Noman, Star of Waltham, A. K. Williams, very fine; Ferdinand de Lesseps, La Duchesse de Morny, Egeria, Charles Darwin, Alfred Colomb, Emily Laxton, Souvenir de la Malmaison, superb; Exposition de Brie, Countess of Rosebery, Comtesse d Oxford, and Marquise de Castellane. Mr. Charles Turner, the Royal Nurseries, Slough, was a good 2d, and the Cranston Nursery Co. 3d. In the class for twenty-four varieties, H.P. only, three trusses of each (is there any reason why this class should be limited to hybrid perpetuals?), Mr. Chas. Turner was 1st, with an excellent collection, comprising very fine blooms of Sir G. Wolseley, Marie Baumann, Senateur Vaisse, Mons. E. Y. Teas, Penelope Mayo and A. K. Williams; Mr. Cant was 2d, and in his collection were Madame Chas. Wood, which was very fine, also Marie Baumann and Alfred Colomb; the Cranston Nursery Co. were 3d. In the class for twenty-four, distinct, single trusses, there were sixteen competitors, and here some really fine blooms were to be found. Mr. Cant was 1st, with Duke of Edinburgh, Baroness Rothschild, Capt. Christy, François Michelon, Devoniensis, Marie Baumann, Annie Laxton, Marquise de St. Amand, Alfred Colomb, Louis Peyronny, Marie Finger, Marie Cointet, Louis van Houtte, and Etienne Levet. Mr. Turner was 2d, and a good 2d too, as he was only a very few points behind the other, having A. K. Williams—what a grand Rose this is—Innocenta Pirola, Maréchal Niel, Madame Margottin, Devoniensis, Souvenir d'un Ami, and others.

In the amateurs' classes the space reserved was not so well filled as it ought to have been; no doubt the weather had been unfavourable, and kept some competitors away, but those who did exhibit were in very good form. The 1st prize in the class for thirty-six varieties, distinct, single trusses, was deservedly awarded to E. Mitchell, Esq., Corbets Tey, Romford (Mr. W. Harrington, gr.): his best flowers being of Marie Baumann, Louis van Houtte, Mons. E. Y. Teas, Souvenir d'un Ami, Mdlle. Marie Rady, superb; La France, Marquise de Castellane, Alfred Colomb, Madame Lacharme, and Penelope Mayo, small but very pretty. 2d, Mr. John Sargent, Reigate, with large blooms; 3d, Sir C. R. Rowley, Bart., Tendring Hall, Colchester (Mr. Geo. Rushmore, gr.). Twenty-four varieties, distinct, three trusses of each.—Mr. G. P. Hawtry, Aldin House, Slough, gained the 1st prize; his collection containing some finely finished blooms of Alfred Colomb, Edouard Morren, Madame Victor Verdier, John Hopper, Mons. E. Y. Teas, &c. Mr. J. Hollingsworth of Maidstone, was 2d. Twelve varieties, distinct, three trusses of each.—Rev. J. H. Pemberton was 1st with an evenly matched collection; Duke of Wellington, Marquis de Castellane, Mons. E. Y. Teas, and Marie Baumann, were the best. A. Evans, Esq., Marston, Oxford, was 2d; E. Mitchell, Esq., 3d. For twelve tea Roses, Mr. Mitchell was 1st and Mr. Hawtry, 2d.

In the open classes the prizes were offered for collections of Roses, and for twelve blooms of one variety. For twelve trusses of any Tea Rose or Noisette, Mr. Cant was 1st with Devoniensis in grand condition; Mr. J. Mattock, Oxford, 2d, with Souvenir d'un Ami. Twelve trusses of Marie Baumann or other similar coloured, H.P.—Messrs. Curtis were 1st, with Marie Baumann, and Messrs. Paul 2d with the same; Mr. Cant 3d, with Etienne Levet. Twelve trusses of François Michelon.—Mr. W. Farren, 1st; W. J. Grant, Esq., Hope End, Ledbury, 2d; and Mr. John Sargent, 3d. Twelve of Captain Christy.—Mr. Cant, 1st, with a very good lot of blooms; Messrs. Paul, 2d; and the Cranston Nursery Co. 3d. Twelve of Prince de Rohan.—Messrs. Paul were 1st, with a good dozen of that variety.

For a collection of crimson Roses Mr. Cant was easily 1st, with good blooms of Dr. Andry, Alfred Colomb, Duke of Teck, and A. K. Williams. For a collection of velvety-crimson Roses Mr. Cant was 1st, Mr. C. Turner 2d, and Messrs. Cooling, of Bath, 3d. Collection of pink Roses.—Mr. Cant was again 1st, Messrs. Paul 2d, and Mr. Rumsey, of Waltham Cross, 3d. Collection of white Tea Roses.—Messrs. Cant were 1st with a fine lot, containing beautiful blooms of Niphetos, Innocenta Pirola, Souvenir d'Elise and Devoniensis. The Cranston Nursery Co. were 2d, and Messrs. Paul 3d. In the yellow Teas, Mr. Cant was again 1st, Jean Ducher was very fine, so also was Marie van Houtte, Rêve d'Or, and Madame Falcot; Mr. J. Mattock, Oxford, 2d. There is yet another class, open to the trade only—for twelve Teas and Noisettes. Mr. Cant was 1st with a most beautiful collection, Souvenir d'Elise, Madame Caroline Kuster, Souvenir d'un Ami, Jean Ducher, Rubens, Madame Bravy, Souvenir de Paul Néron, Marie van Houtte, President, Innocenta Pirola, Madame Jules Margottin, and Devoniensis were the sorts. Mr. Mitchell, of Uckfield, was 2d; his blooms of Comtesse de Nadaillac, Catherine Mermet and Duc de Magenta were fine. The Cranston Nursery Co. were 3d.

In the class for new Roses First-class Certificates were awarded to Mr. Bennett, of Shepperton, for Her Majesty; there were twelve blooms exhibited: it is of the Baroness Rothschild type, but far superior to that or any other Rose of the same colour. It is of a pale shaded rosy-salmon, the flowers are of large size and of fine form. This will prove a grand acquisition to Rose exhibitors. Also for Lady Mary Fitzwilliam. Of this there were three blooms of a rosy-blush colour, the flowers are of great depth and of good form. It is a Tea Rose.

Messrs. John Laing & Co., of Stanstead Park, Forest Hill, exhibited a group of tuberous Begonias, mostly seedlings. They were in the usual good condition in which this firm always exhibit them. The seedlings comprised some distinct and good yellow and white forms; classes in which there is much room for improvement. The same firm also showed some capital well-coloured Black Hamburgh Grapes.

Highgate Horticultural: *June* 29.—The annual show of this Society took place on the above date in the grounds attached to the residence of Colonel Wilkinson, Southampton Lodge, Fitzroy Park, Highgate. The exhibition was quite up to the standard of those previously held under the auspices of the Society in the quality of the plants exhibited in the various classes but in many cases they were not so large individually as those shown on former occasions. The President's prize, offered for a group of twelve plants, six in flower and six fine-leaved, was taken by Mr. Eason, gr. to B. Noakes, Esq., Highgate, who had, amongst others, Eucharis amazonica, Bougainvillea glabra, Clerodendron Balfourianum, and Pimelea mirabilis, nicely bloomed. For six Ericas—prizes given by the Treasurer—Mr. Eason was 1st, with small, healthy specimens, well bloomed. Stove and greenhouse flowering plants were nicely shown, Mr. Eason taking the lead. Mr. Osborn, gr. to J. N. Mappin, Esq., Southgate, was 2d.

Ornamental leaved subjects were one of the best features of the show. With six, Mr. Tubbs, gr. to Basil Wood Smith, Esq., Hampstead, took the lead, staging an excellent group; Mr. Sparkes, gr. to Sir S. H. Waterlow, Highgate, was a good 2d; and Mr. Eason, who likewise put up a nice group, was 3d. Caladiums were well done. With a group of large and fresh-looking plants, Mr. Williams came in 1st, his best examples being of Wightii, Belleymei, and Houllettii; Mr. Tubbs, who had smaller, but nicely grown plants, was 2d. Coleus were in full force, and well coloured, Mr. Burnett, gr. to R. D. M. Littler, Esq., Southgate, taking 1st, with handsomely-coloured, moderate-sized specimens, the best of which was the glowing Mrs. George Simpson, Sandy Ball, and Crown Jewel. Ferns were represented in plenty, the best coming from Mr. Burnett, who had fresh, healthy specimens of Lygodium scandens in the form of an erect cone 5 feet high and 2½ feet through; Davallia bullata, Gymnogramma Laucheana, and others, all in excellent condition. 2d, Mr. Sparkes, who staged several Tree Ferns in his group. For six Lycopodiums Mr. Archer, gr. to T. Griffiths, Esq., was 1st, with a beautifully grown half-dozen; and Mr. May, gr. to T. Lodge, Esq., Highgate, 2d.

Orchids were better shown than they usually are at Highgate, Mr. Birse, gr. to J. H. Lermitte, Esq., Highgate, in a close run, securing 1st honours for six, his best plants being of Cattleya Mendelii and two distinct varieties of Odontoglossum vexillarium, one a beautiful light-coloured form, all but pure white, with a bright streak of pink in the centre; 2d, Mr. Aldous, who in a nice six had Dendrobium Falconeri and D. suavissimum, well flowered; 3d, Mr. Eason, whose best plants were of Maxillaria grandiflora, and a dwarf variety of Sobralia macrantha. Pelargoniums, for so late in the season, were in nice condition. Zonals were large and nicely done, the 1st prize for six going to Mr. Catlin, gr. to Mrs. Lermitte, Finchley. Petunias were nicely flowered, and, being present in quantity, made an effective display.

Fruit as usual, was shown in good form. With a collection, Mr. Sparkes was 1st. Three bunches black Grapes.—1st, Mr. Sparkes, with medium-sized bunches of Black Hamburghs, very well finished; Mr. Silvester, gr. to J. Abethell, Esq., Muswell Hill, 2d, also a nice exhibit. Three bunches of white Grapes.—1st, Mr. Burnett, with Foster's Seedling, very well done; 2d, Mr. Sparkes. Six Peaches.—1st, Mr. Sparkes; 2d, Mr. Taylor, gr. to T. Johnstone, Esq. Strawberries.—1st, Mr. Osborn, with a grand dish of President; 2d, Mr. Tonge, gr. to J. S. Law, Esq., Southgate.

The Baroness Burdett Coutts and the Society offer a quantity of prizes to cottagers and the school children of the neighbourhood, that always bring out a number of competitors in the various classes for window plants,

hardy cut flowers, hardy fruits and vegetables, which on the present occasion filled a good-sized tent. The competition, and the meritorious character of the productions exhibited, at once shows that the encouragement thus offered has not been held out in vain.

Mr. B. S. Williams and Messrs. Cutbush & Son both staged, not for competition, nice collections of miscellaneous stove and greenhouse plants.

Romford and Essex Horticultural.—The annual exhibition of this Society was held in the grounds of Gidea Hall Park, Romford, on Thursday, June 29. The entries were very numerous, and the various productions, which were arranged in four large marquees, were quite up to the average quality of previous seasons. The tent devoted to fine-foliage and flowering plants contained specimens that would have won honourable positions at the metropolitan shows. For eight stove and greenhouse plants Mr. Harris, nurseryman, of Chelmsford, was well 1st with a noble specimen of Theophrasta imperialis, a really good specimen of Croton majesticus, a Statice profusa beautifully flowered, and a fine Anthurium Scherzerianum. Mr. Harris was also in the highest place with a beautiful group of Ferns, containing Gleichenia speluncæ and rupestris, and a healthy clean specimen of Adiantum Farleyense. For fine-foliaged plants Mr. Douglas, gr. to F. Whitbourn, Esq., Ilford, was 1st in a close competition, the varied character of the group, which contained a fine Cycas revoluta, Palms, &c., placing it before that set up by Mr. Young, gr. to C. E. Coope, Esq., M.P., of Rochetts, which contained three very handsome well-coloured Crotons. Mr. Douglas also gained 1st prizes for a single specimen flowering plant, for a fine-foliaged plant, for Caladiums, Lycopods, and a nice group of Orchids, the latter containing a handsome Oncidium macranthum, and a good Masdevallia Harryana.

In the tent devoted to Pelargoniums and other florists' flowers there was also a goodly display, and here Mr. Meadmore, of Romford, and Mr. Woodhams, gr. to C. P. Matthews, Esq., of Havering, were the principal competitors. The former gained 1st prizes for single and double zonal Pelargoniums, and also for some really pretty tricolors. The plants were of moderate dimensions, compact and well coloured. Mr. Woodhams gained the 1st prize with a group of show Pelargoniums, amongst them a good example of the variety Rob Roy. Mr. Woodhams was 1st with six well grown and nicely trained Coleus. Fuchsias, which always make a great feature at country shows, arranged down the centre of the stages, were also a prominent feature here; they were well exhibited by Mr. Meadmore and Mr. Young; the last-named exhibitor also being in the front rank with Achimenes, while Messrs. Saltmarsh, of Chelmsford, were 1st for tuberous Begonias.

Fruit was well represented, black Grapes being very fine indeed. Mr. R. Farrance, Chadwell Heath, had the best Black Hamburghs. Mr. Harris, of Chelmsford, also exhibited well. For white Grapes Mr. Moss, Chadwell Heath, was 1st, while the same exhibitor and Mr. Douglas gained 1st prizes for three distinct varieties of Grapes. Mr. Smith, nurseryman, Romford, and Mr. Jas. Clark, Writtle, had the best Strawberries, President, James Veitch, and British Queen being the best varieties. Mr. Douglas gained 1st prize for black and red Cherries, with Knight's Early Black, and Elton. Numerous stands of cut flowers were exhibited, also stands or vases of flowers, button-hole bouquets, &c. Roses were very good indeed, Mr. Meadmore beating Mr. Cant, of Colchester, and Messrs. Saltmarsh, of Chelmsford; while Mr. Harrington, gr. to E. Mitchell, Esq., Corbets Tey, beat the Rev. J. H. Pemberton, of Havering, in the amateurs' class, both exhibitors, however, showing very fine Roses. There were numerous exhibitors in the amateurs' and cottagers' classes, many of the exhibits displaying considerable merit, but space does not permit us to enumerate them.

Scottish Pansy.—The thirty-eighth annual competition of this Society was held on Friday, June 23, at Edinburgh, and was in every respect a marked success. The turn-out of blooms was large, while their quality was probably superior to those of former exhibitions. The competition in the nurserymen's class was strongly contested, and stands of flowers were entered by nearly all the principal Pansy growers. Nurserymen's class, twenty-four show Pansies, dissimilar.—1st (the Society's Silver Medal), Messrs. Wm. Paul & Son, Crossflat Nurseries, Paisley, who had very fine blooms of the following:—Artemis, Captain Knowles, Alex. Watt, J. P. Barbour, Peter Lyle (seedling), John Stewart (seedling), dark selfs; Dr. Campbell and George Rudd, yellow selfs; Mrs. Galloway (seedling) and Silverlight, white selfs; Miss Baird, Gertrude, Mrs. Jas. Millar (seedling), Miss Barr, Miss Meikle, Mrs. D. Wallace, Mrs. Mackenzie, white grounds; Robert Pollock, Wm. Robin, Dr. Livingstone, Jas. Buchanan, A. Henderson, A. Cameron, Bailie Cochrane, yellow grounds. 2d, Mr. Wm. Dickson, florist, Paisley, who had fair blooms of H. A. Hawkins, Rev. J. Morrison, Mauve Queen, Robert Black, dark selfs; D. Dalgish, Sir W. Collins, Thos. Ritchie, D. R. Barr, J. B. Robertson, yellow grounds; Tickler, Jeannie Grieve, Captain Speirs, Mrs. Mackenzie, white grounds. 3d, Mr. John Ormiston, florist, Jedburgh. Twenty-four fancy Pansies, dissimilar.—1st (the Society's Silver Medal), Messrs. Downie & Laird, Edinburgh, who staged large well-grown flowers, many of them over 3 inches in diameter. The varieties were as follows:—Countess of Home, James Gardner, May Tate (seedling), Mrs. W. Brown, John Murray, Mrs. Forsyth, Miss Tofts, W. Cuthbertson, Miss Bliss, Maggie Bell, Mrs. J. Cocker, General Grant, Mrs. James Watt, Mrs. Barrie, Ruby (seedling), Peter Nicol, Mrs. W. Murray, Robert Laird, Mrs. Taylor, Catherine Agnes, Mrs. G. Grant, and three seedlings. 2d, Mrs. Taylor, Woodbine Nursery, Corstorphine, whose lot included pretty blooms of Mrs. Mitchell, Jas. Grieve, Mrs. E. H. Wood, Robt. Dunlop, Geo. Ross, Mars, A. Cuthbertson, Mrs. Jamieson, Maggie Taylor, Wm. Lawrie, Mrs. Taylor, Jupiter, Nancy Lee, and several seedlings. 3d, Mr. John Ormiston. Six seedling show and six seedling fancy Pansies.—Silver medal awarded to Messrs. Wm. Paul & Son, whose blooms were of fine quality and distinct. Twenty-four bunches bedding Violas.—1st, Messrs. Downie & Laird, with blooms of superior merit.

The following include the principal prize-takers in the gardener, amateur, and open classes:—Mr. R. Millar, Paisley; Mr. John Stewart, Campsie; Mr. R. Cuthbertson, Corstorphine; Mr. D. Findlay, Lennox Castle; Mr. R. Ritchie, Cresswell; Mr. A. Borrowman, Beesluck; Mr. J. Ritchie, Denny; Mr. D. Malcolm, Kirkintilloch; Mr. W. Storrie, Lenzie; Messrs. W. Paul & Son, Paisley; Mr. J. Black, East Calder; Mr. Jas. Barr, Paisley; Mr. Geo. Ross, Laurencekirk, who was awarded the President's Medal as the winner of most prizes.

Captain Halford Thompson, Exeter, exhibited several Pansies in pots, which were of dwarf habit, and showing flowers of very fair merit. First-class Certificates were awarded to him for show Pansy Ralph Sanders; to Messrs. Downie & Laird, for fancy Pansy May Tate; to Messrs. Dicksons & Co., for fancy Pansy Jessie Dunlop; and to Mr. T. McCombie, Montrose, for fancy Pansy Mrs. McCombie. (*From a Correspondent.*)

Richmond Horticultural.—The annual summer show of this popular suburban society was held in the old Deer Park, Richmond, on the 29th ult., having all the advantages incidental to beautiful weather and an immense attendance, whilst the show itself was perhaps the most attractive the Society has yet held. We have elsewhere referred to the Veitch Memorial Prizes, which were competed for here, and the limits of our space prevent anything like a complete report being given; we must therefore be content to pick out the most striking competitions and exhibits. Of these none could add more of beauty and interest to the show than did the splendid groups of plants shown by some of the trade growers. The group of pot Roses dressed with cut-leaved Maples, shown by the Messrs. Veitch & Sons, of Chelsea; the group also of pot Roses so elegantly dressed with hardy ornamental shrubs having singularly beautiful leafage, from Messrs. C. Lee & Sons, Hammersmith, the charmingly arranged groups of plants of the usual decorative kind from Mr. F. R. Kinghorn, Richmond, and Messrs. Jackson & Son, Kingston; the interesting collection of hardy plants from Messrs. Osborn & Sons, Fulham; the golden and silver tricolor Pelargoniums from Mr. Pestridge, of Brentford, and other groups, almost made a fine show of themselves. In the large competitive decorative groups a new competitor here, Mr. James, of Castle Nursery, Norwood, was placed 1st, with a simple arrangement consisting of a thin carpet of Maidenhair Ferns, out of which rose some small but pleasing Orchids and a few tall Palms. The award in this case was evidently more due to the Orchids than to the arrangement. The Messrs. Fromow, of Turnham Green, were placed 2d; and Mr. Bruckhaus, manager to the Messrs. Hooper, Twickenham, 3d. Both these had charming groups. Mr. James had a collection of six Orchids of unusual merit for this show, taking the 1st prize with ease; these included Cattleya Mossiæ, Odontoglossum vexillarium, Masdevallia Harryana, Lælia purpurata, and Oncidium crispum. Messrs. Jackson & Sons were an easy 1st in the class for nine stove and greenhouse plants, having specially good Bougainvillea glabra, Rondeletia speciosa, Kalosanthes Dr. E. Regel, of superb colour; Allamanda cathartica, &c. Messrs. Peed & Sons, Streatham, took 2d place. The best single specimen flowering plant came from Mr. Hinnell, whose Erica ventricosa Bothwelliana was, if of but moderate dimensions, superbly grown and bloomed. Mr. Bates took the 2d prize with a good Stephanotis floribunda. The finest Ferns, and there were a grand lot, came from Mr. D. East, gr. to F. Wigan, Esq., East Sheen; these comprised a huge Alsophila excelsa, Cyathea dealbata, Dicksonia antarctica, Adiantum formosum, Davallia Mooreana, &c. Fuchsias were remarkably good, the best lots, young and finely flowered, coming from Mr. Morrell, gr. to J. S. Rutter, Esq., Richmond. Specially good were Aurora superba, marginata, Albert Memorial, and Princess of Wales. Mr. E. Beckett, gr. to J. A. Currie, Esq., Sandown House, Esher, was 2d, with very fine plants just a little past their best; and in the 3d prize group, shown by Mr. Bond, of Teddington, was a remarkably handsome well-flowered pyramidal plant of Lord Beaconsfield. That Mr. Wiggins, gr. to H. Little, Esq., Hillingdon, was a large exhibitor of Pelargoniums in several classes is tantamount to saying that the display of these was good, and that he won all round the board. Of Begonias, Gloxinias, and of foliage plants innumerable, the exhibits were remarkably good. Cut Roses proved to be immensely attractive, for large collections were sent by Messrs. Veitch & Son, Paul & Sons, C. Lee & Sons, Osborn & Sons, Mr. Rumsey of Waltham Cross, and other trade growers; whilst amateurs were well represented. Messrs. Paul & Sons were a good 1st in the classes for thirty-six and twenty-four trebles, having superb flowers, to the best of which we have not here space to refer. Mr. Rumsey was the only other exhibitor in these classes.

Table decorations are always a strong feature at Richmond, there being several classes for them. The open class for three stands brought several professional competitors, the first prize going to Mr. W. Brown, St. Mary's Nursery, Richmond, whose arrangement of fruit and flowers showed great taste, as also did the charming stands exhibited by Mr. Chard of the Floral Depôt, Clapham Common. For the Duke of Teck's prizes for three stands, Mrs. Holford, of Petersham, was placed 1st with a heavy arrangement of Water Lilies and Copper Beech and Nut leaves. The judges in making this award quite overlooked the fact that these flowers would close up towards night, as they certainly did. Still further, some inquiring wag, willing to expose the shortcomings of the arrangement, turned the larger stand round, when it was found that it had no facing on that side, but was all front. It need hardly be said that the exposure created much laughter and dissatisfaction. There were several simple but very pleasing arrangements in this class. In some other classes the stands were extremely handsome and pleasing. Mr. Brown was 1st for bouquets in two classes.

Fruit and vegetables were very good, the collection of six kinds of the former, which came from Mr. Wildsmith, being quite first-rate. It consisted of very fine Black Hamburgh and Muscat of Alexandria Grapes, Bellegarde Peaches, Heckfield Hybrid Melon, Queen Pine, and Brown Turkey Figs. Mr. James Hudson was 2d, also with good black and white Grapes, and also had some finely coloured Lord Napier Nectarines. Mr. Feist, gr. to R. J. Ashton, Esq., Englefield Green, was 1st in both open classes for black and white Grapes; and Mr. Bates was 1st with black Grapes in the limited class; Mr. Wagstaff, gr. to T. Elam, Esq., Isleworth, being 1st with white kinds. Mr. Wildsmith had handsome Heckfield Hybrid in the competition for the Messrs. Sutton's Melon prizes; and Mr. Williams, Peasmarch Place, Sussex, took the 1st prize in Messrs. Carter's class for Peas. Mr. Heible, gr. to Sir Bache Cunard, Twickenham, had the finest Strawberries, in Sir J. Paxton and Sir C. Napier. Mr. E. Beckett was 1st in the open class for twelve kinds of vegetables—really a fine lot, and highly meritorious. Of not less interest was a superb collection of Cherries, sent by Mr. Rivers, of Sawbridgeworth. It included twelve kinds, five white and seven black. Of these Bigarreau Napoleon, Bigarreau de Monstreuse de Morel, Black Hawk, Bigarreau de Schrenken and Bedford Prolific were exceptionally fine.

Aylesbury Horticultural: *June* 29.—This Society, which was established as far back as 1822, held its annual show in the Corn Exchange on the above date, and, in addition, had the privilege of stationing the band in the Public Recreation Ground, and using it as a promenade for the visitors. The show in itself was fairly good for the locality, which is not remarkable as a plant growing district. Lady de Rothschild (Mr. Shrimpton, gr.), had the best collection of stove and greenhouse plants, unlimited in quantity, and comprised nice cleanly-grown specimens of Crotons, Dracænas, Achimenes, Ferns, Begonias, &c.; 2d, T. Threlfall, Esq. (Mr. Maggs, gr.), who had a larger collection of smaller stuff of a useful character, conspicuous among them being some fine examples of Brugmansias. Mr. Shrimpton had the best six stove and greenhouse plants, staging a specimen of Calanthe veratrifolia with eighteen spikes of bloom; a very fine specimen of Adiantum Farleyense, Cattleya gigas, Anthurium Scherzerianum, A. crystallinum, with finely-marked leaves; and Croton interruptus. H. Cazenove, Esq. (Mr. Blake, gr.), was 2d. Tuberous-rooted Begonias were nicely shown by Mr. Shrimpton—good-sized, well grown and flowered plants of a very creditable character, indeed they were one of the features of the show. Pelargoniums, Fuchsias, &c., were fairly well shown; and it was a little late for the former.

Ferns were a good feature. Mr. Shrimpton staged six plants of good quality, comprising Adiantum Farleyense, in the culture of large specimens of which he is very successful; A. formosum, A. trapeziforme, Gymnogramma chrysophylla, and two others. Mr. Shrimpton had the best three also, Davallia Mooreana being very fine; Mr. Blake coming 2d, with smaller but very creditable plants. Foliage plants were pretty good, but did not call for special remark.

One class was for an unlimited collection of plants and fruit. In this class E. D. Lee, Esq., Hartwell House (Mr. J. Robins, gr.), was 1st, and the contribution was so numerous as to be quite a show in itself; it comprised various flowering plants in good condition, and excellent white and black Grapes, Peaches, Nectarines, Melons, Strawberries, Pines, &c., all good; 2d, Mr. Blake, with a smaller and less valuable lot. The best collection of fruit in twelve varieties came also from Mr. Robins, who had very good Black Hamburgh and Foster's Seedling Grapes, very fine Barrington and good Grosse Mignonne Peaches, Violette Hâtive and Prince of Wales Nectarines, Cherries, &c.—a very good lot. 2d, Mr. Blake, who had a very good lot. In the Grape class black and white Grapes were well shown. In the class for two bunches Mr. Robins had excellent examples of Black Hamburgh and Foster's Seedling Grapes, Mr. Blake coming in 2d with the same varieties. In the class for a dish of Peaches, Mr. Robins had a dish of superb Barrington.

In the cut flower classes the leading feature was a collection of cut Roses, not less than twenty-four varieties. Decidedly the best came from Mr. J. Walker, nurseryman, Thame, in whose collection were capital blooms of La France, Charles Lefebvre, Maréchal Niel, grandly coloured; Général Jacqueminot, old, but very good; Duke of Edinburgh, A. K. Williams, very bright; Lord Macaulay, Belle Lyonnaise, Thomas Mills, Mdlle. Eugène Verdier, Dupuy Jamain, Auguste Rigotard, &c. The other competing collections were quite poor compared with this.

Vegetables were numerous and good for the early season of the year. One class was for an unlimited collection, and here Mr. J. D. Frame was 1st, with a

very extensive and remarkably good lot, comprising twenty-two varieties of Potatos, Peas, Beans, Cauliflowers, and all the leading vegetables in great variety. Mr. Blake came in 2d with a good lot; but the dealer had, no doubt, a great advantage over the private grower.

Among miscellaneous contributions was a stand of fine Sweet Williams from Mr. John Walker, Thame.

Meteorological.—The closing meeting of this Society for the present session was held on the 21st inst., at the Institution of Civil Engineers, Mr. J. K. Laughton, F.R.A.S., President, in the chair. The following papers were read :—

I. "A New Metal Screen for Thermometers," by the Rev. F. W. Stow, M.A., F.M.S. This screen differs from the ordinary Stevenson in the following respects :—(1) It is somewhat larger; (2) it has a single set of double zinc louvres; (3) it is partially closed at the bottom to cut off radiation from the ground. The advantages claimed for the use of zinc louvres are : (1) The conductivity of metal causes the heat derived from the sun's rays to be distributed over every part of the louvres; (2) the louvres being much thinner than those of wood, the circulation of air through the screen is not only much greater absolutely, but much greater also in proportion to the bulk of the louvres; (3) the zinc louvres, therefore, are much more sensitive to changes of temperature than wooden ones. Comparative readings of thermometers in this screen, along with those in an ordinary Stevenson screen, were made during the summer of 1881. From these the author is of opinion, that the Stevenson becomes unduly heated when the sun shines; but this may be as much due to its small size as to the material of which the louvres are made. The thermometers in it are only 3 to 5 inches from the louvres at the back of the screen, against 7 to 8 inches in the zinc screen. The roof, too, is single, and the box is open at the bottom. The author also says that there is no need to condemn all wooden screens; but there does seem to be some reason to think that screens with metal louvres might be better.

II. "On the Effect of Different Kinds of Thermometer Cribs, and of Different Exposures, in estimating the Diurnal Range of Temperature at the Royal Observatory, Cape of Good Hope," by David Gill, LL.D., F.R.A.S. Meteorological observations were commenced at the Cape Observatory in 1841, when the thermometers were placed in a well-ventilated crib before a south window, through which they could be read. The buildings were unfortunately burnt in 1852. A small wooden house with double roof, and affording a free passage of air, was then erected on the site of the old Meteorological Observatory. The instruments were placed in the middle of this building, and observations were recommenced on the same plan as before, and continued until the end of August, 1858. On September 1 the thermometers were transferred to a crib erected in front of the south-west window of the transit-circle room. This crib is well ventilated, except on the screen next the transit-room window, but the great mass of solid masonry in the immediate neighbourhood of the thermometers appears seriously to affect the range of temperature. For many years a Glaisher stand has been in use, and at the end of 1880 the author caused a Stevenson screen to be erected in its immediate neighbourhood. In this paper the author gives the results of observations made in the window—Stevenson and Glaisher screens—during the year 1881, from which it is evident that the exposure of the thermometers in the window crib gives a distinctly smaller, and on the Glaisher stand a larger, daily range of temperature than in the Stevenson screen.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, JULY 5, 1882.

Month and Day.	Barometer. Mean Reading Reduced to 32° Fahr.	Barometer. Departure from Average of 18 years.	Temperature of the Air. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years	Hygrometrical Deductions from Glaisher's Tables 6th Edition. Dew Point.	Degree of Humidity. Sat. = 100.	Wind. Average Direction.	Rainfall.
June	In.	In.	°	°	°	°	°	°			In.
29	29.97	+0.15	68.5	57.0	11.5	62.5	— 0	8 55.4	84	E.	0.10
30	29.95	+0.13	62.0	53.0	7.0	55.3	— 5	9 53.7	95	N.E.; E.N.E.	0.00
July 1	29.96	+0.14	73.6	48.0	25.6	59.3	— 1	9 51.0	73	W.	0.00
2	29.94	+0.12	74.0	53.5	20.5	62.1	+ 1	0 53.0	72	E.; S.W.	0.00
3	29.92	+0.09	78.0	56.0	22.0	65.2	+ 4	0 57.0	74	W.; WSW	0.00
4	29.61	—0.22	66.0	57.5	8.5	59.3	— 2	0 51.8	76	S.W.; S.S.W	0.00
5	29.38	—0.43	67.0	55.0	12.0	59.0	— 2	5 51.0	72	S.W.; S.S.W.	0.15
Mean	29.82	+0.00	69.6	54.3	15.3	62.1	— 1	2 53.3	78	S.W.	0.25

June 29.—Fine day, but overcast and dull. Rain from 6 to 8 P.M.
— 30.—A dull, overcast day. Fine night.
July 1.—A very fine bright day. Fine calm night; thin clouds.
July 2.—Fine day. Fine calm night.
— 3.—A very fine, bright, warm day. Fine calm, cloudy night.
— 4.—A fine day, but overcast; gleams of sunshine at times. Fine cloudy night.
— 5.—Fine and bright in early morning. Fine and bright at intervals, with occasional showers of rain. Fine night.

LONDON : *Atmospheric Pressure.*—During the week ending July 1, the reading of the barometer at the level of the sea increased from 29.95 inches at the beginning of the week to 30.10 inches by midnight on the 25th, decreased to 29.98 inches by 3 P.M. on the 26th, increased to 30.23 inches by 3 P.M. on the 28th, and decreased to 30.16 inches by 9 A.M. on the 29th increased to 30.18 inches by 3 P.M. and decreased to 30.11 inches by midnight on the same day, increased to 30.13 inches by 9 A.M. on the 30th, decreased to 30.12 inches by 3 P.M. and increased to 30.13 inches by midnight on the same day, day and was 30.19 inches at the end of the week.

The mean reading for the week at the level of the sea was 30.11 inches, being 0.25 inch higher than last week, and 0.11 inch above the average of the week.

Temperature.—The highest temperature in the shade in the week was 74°, on the 27th. On the 30th the highest temperature was 60°. The mean of the seven high day temperatures was 69°.2.

The lowest temperature in the shade in the week was 48° on July 1; on the 29th the lowest temperature was 57°. The mean of the seven lowest temperatures was 52°.4.

The greatest range of temperature in one day was 25°.6, on July 1; the smallest was 7°, on the 30th. The mean of the seven daily ranges was 16°.8.

The mean temperatures were—on the 25th, 58°.7; on the 26th, 58°; on the 27th, 60°.4; on the 28th, 61°.3; on the 29th, 60°.5; on the 30th, 55°.3; and on July 1st, 59°.3; and these were all below their averages by 2°.4, 3°.2, 0°.9, 0°.8, 5°.9, 1°.9, excepting the 28th, which was the same as its average.

The mean temperature of the air for the week was 59°, being 2°.7 higher than last week, and 2°.2 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo, placed in the full rays of the sun, was 139°, on July 1; the highest on the 30th was 69°.5. The mean of the seven readings was 114°.5.

The lowest reading of a minimum thermometer with its bulb placed on grass and fully exposed to the sky was 43°, on July 1. The mean of the seven readings was 47°.5.

Rain.—Rain fell on three days, to the amount of 0.29 inch.

ENGLAND : *Temperature.*—During the week ending July 1 the highest temperatures were 77° at Cambridge, 76° at Hull, and 75°.7 at Nottingham. The highest temperature at Liverpool was 67°.8, and at Sheffield and Sunderland 70°. The general mean was 72°.4.

The lowest temperatures in the week were 40° at Hull, 42° at Truro, and 43° at Sheffield. The lowest temperature at Liverpool was 50°.2, at Brighton 50°, and at Plymouth 49°.9. The general mean was 46°.3.

The greatest ranges of temperature in the week were 36° at Hull, 33°.5 at Cambridge, and 30°.7 at Nottingham. The least ranges were 17°.6 at Liverpool, 20°.6 at Plymouth, and 22° at Sunderland. The general mean was 26°.1.

The mean of the seven high day temperatures was highest at Nottingham, 73°.4, at Cambridge 73°.2, and at Hull 73°.1; and was lowest at Plymouth, 65°.5, at Liverpool 65°.6, and at Bristol 68°. The general mean was 69°.4.

The mean of the seven lowest night temperatures was highest at Brighton, 53°.4, at Liverpool 53°.3, and at Plymouth 53°.2; and was lowest at Hull, 45°.4, at Nottingham 47°.8, and at Sunderland 48°.7. The general mean was 50°.3.

The mean daily range was greatest at Hull, 27°.7, at Nottingham 25°.6, and at Cambridge 24°; and was least at Plymouth and Liverpool, 12°.3, and at Bristol, 16°.1. The general mean was 19°.1.

The mean temperature for the week was highest at Brighton, 60°, at Cambridge 59°.4, and at Blackheath 59°.1; and was lowest at Sunderland, 56°.2, at Bolton 56°.9, and at Sheffield 57°.2. The general mean was 58°.1.

Rain.—The largest falls were 0.77 inch at Bristol, 0.70 inch at Brighton, and 0.56 inch at Sunderland. The least falls were 0.02 inch at Cambridge, and 0.04 inch at Bolton and Hull. The general mean fall was 0.32 inch.

SCOTLAND : *Temperature.*—During the week ending July 1 the highest temperature was 76°.5, at Glasgow; at Aberdeen the highest temperature was 67°. The general mean was 71°.8.

The lowest temperature in the week was 41°, at Glasgow; at Dundee and Greenock the lowest temperature was 48°. The general mean was 45°.

The mean temperature for the week was highest at Greenock, 59°.7; and lowest at Aberdeen, 56°.3 The general mean was 58°.4.

Rain.—The largest fall was 1 inch, at Glasgow; the smallest fall was five-hundredths of an inch, at Greenock. No rain fell at Dundee. The general mean fall was 0.38 inch.

JAMES GLAISHER, F.R.S.

Enquiries.

He that questioneth much shall learn much.—BACON.

APPLE CROPS.—Will some of your readers inform me the largest quantity of Apples known to have been gathered from one tree in England? *Enquirer.*

Answers to Correspondents.

AUSTRALIAN ORCHIDS : *R. E. F.* See p. 461, last volume.

CLEMATIS ROOTS : *T. M.* We will examine and report.

CUCUMBER DISEASE : *J. H.* If a subscriber you have not read your paper very carefully. The disease in question has been repeatedly figured and described. The mites in the soil have nothing to do with the disease, the real cause of which is to be attributed to minute creatures which inhabit the swellings on the roots. Unfortunately, although the cause of the disease is well known, the remedy is not so obvious. We can only recommend you to turn out the soil, cleanse the house, and start afresh with new plants and fresh soil.

DENDROBIUM GOLDIEI : *M.* See *Gard. Chron.* 1878, vol. ix., p. 652.

EXHIBITOR : *H. B.* You ask whether one who advertises bedding and other greenhouse plants for sale grown by himself, without professional assistance, can fairly enter as an exhibitor in the amateur's class. The schedule is not very explicit, but if the committee have permitted the exhibitor to enter as an amateur, and have allowed him to pay the entrance fee as such, and not as a nurseryman, the committee evidently consider him as an amateur, even though he grows for sale. We do not say this is right, but the matter is one for the committee to decide.

GRAPES : *E. A.* It is not a disease, but the result of scalding. The fact of the black Alicantes not being similarly injured is due to some local circumstance that we cannot explain without seeing the house, but which may, perhaps, be found in connection with the ventilation.

MILDEW COMPOSITION : *P. Walker.* Ask the man who sold you the bottle to tell you how to use it. The manufacturer is Mr. Ewing, Eaton Road, Norwich.

NAMES OF PLANTS : *R. A. G.* 1, Send again when in flower; 2, Spiræa filipendula, double-flowered var.; 3, Centaurea montana; 4, Spiræa salicifolia; 5, Escallonia macrantha; 6, Hieracium aurantiacum. — *C. W. B.* Funckia Sieboldi; Spiræa salicifolia; Elæagnus angustifolia. — *X. Y. Z.* Anthyllis Vulneraria. — *W. B.* 1, Erigeron mucronatum (the Vittadenia triloba of gardens); 2, a Campanula not recognised; 3, Gaillardia picta.—*J. Coupland.* A double Clematis, which we do not recognise. — *Rodger, McL. & Co.* Saxifraga diversifolia.—*R. C. B.* A, Prunella vulgaris; B, Poa fluitans; C, Holcus lanatus; D, Calamagrostis epigeios; E, Inula conyza; F, Ballota nigra; H, doubtful.

OATS : *J. C. M.* The disease is due to a minute worm (Vibrio), similar to that which produces the Cucumber disease. Unfortunately we can suggest no remedy.

PALMS : *Ignoramus.* The Palms you mention, supposing they were correctly named, belong to distinct genera, and were wrongly disqualified.

CATALOGUE RECEIVED.

E. H. KRELAGE & SON, Haarlem — Dutch Flower Roots, &c.

DAMMANN & Co., Portici, near Naples — Wholesale List of Garden and Flower Seeds, Bulbs, &c.

R PARKER, Tooting, S.W.—Herbaceous Asters, Potentillas, and Pyrethrums.

COMMUNICATIONS RECEIVED :—N. E. B.—H. E.—J. S.—T S.—J. H. D.—W. T. T. D.—G. A.—G. C.—T. G.—A. D.—S. H.—W. B.—W. G. R.—H. S.—R. D.—H. O.—S. E. G.—Enquirer.—Novice.—T. C.—W. R.—H. N. E.

Markets.

COVENT GARDEN, July 6.

Large supplies of soft fruit are now reaching us, and making good prices, trade generally being good. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Cherries, ½-sieve ..	5 0	10 0	Lemons, per 100 ..	5 0	7 0
Currants, Black, per ½-sieve	5 6	6 0	Melons, each ..	2 0	4 0
— Red per ½-sieve	3 6	4 6	Peaches, per dozen ..	6 0	12 0
Figs, per dozen ..	6 0	..	Pine-apples St. Michael's, each ..	4 0	10 0
Gooseberry, green, ½-sieve	2 6	3 0	— English, per lb.	4 0	5 0
Grapes, per lb. ..	1 6	4 0	Raspberries, per lb..	0 4½	0 6
			Strawberries, per lb.	0 6	1 0

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.
Artichokes, Globe, per doz.	3 0–	6 0
Asparagus, English, natural, per bun.	7 0–	..
— Fr. Nat, bun.	1 6–	6 0
— Sprue, per bund.	1 0–	..
Beans, French, English grown, p. 100	1 6–	2 6
— French, per lb.	0 9–	..
Beet, per doz.	1 0–	..
Cabbages, per doz.	1 0–	2 0
Carrots, per bunch	0 4–	0 6
— French, per bun.	1 0–	..
Cauliflowers, English, dozen	2 0–	4 0
Celery, per bundle	1 6–	..
Cucumbers, each	0 6–	1 0
Endive, per doz.	2 6–	..
Garlic, per lb.	1 0–	..
Herbs, per bunch	0 2–	0 4
Horse Radish, bund.	4 0–	—
Lettuces, Cabbage, per score	1 6–	..
Mint, green, bunch	0 4–	..
Mushrooms, p. baskt.	1 6–	3 0
Onions, per bushel	4 0–	..
— Spring, per bun.	0 6–	—
Parsley, per bunch	0 4–	..
Peas, per qt.	1 6–	..
Radishes, per doz.	1 6–	..
Rhubarb, per bundle	0 6–	..
Small salading, pun.	0 4–	..
Spinach, per bushel	5 0–	..
Tomatos, Fr., doz	2 0–	..
Vegt. Marrows, doz.	0 0–	..

Potatos.—Kidneys, foreign, 9*s.* ; do., English, 10*s.* ; Rounds, 8*s.* per cwt.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Abutilon, 12 blooms	0 2–	0 4
Arum Lilies, per doz.	4 0–	6 0
Bouvardias, per bun.	1 0–	1 6
Calceolaria, 12 bun.	6 0–12	0
Campanula, 12 bun.	6 0–18	0
Carnations, 12 bun.	4 0–	9 0
Cornflower, 12 bun.	2 0–	4 0
Eucharis, per doz.	4 0–	6 0
Fuchsias, 12 bunches	6 0–	8 0
Gardenias, 12 blms.	3 0–	8 0
Gladiolus, 12 bun.	6 0–12	0
— brenchiensis, 12 sprays	3 0–	6 0
Heliotropes, 12 sp.	0 6–	1 0
Iris, 12 bunches	6 0–12	0
Lapageria, white, 12 blooms	4 0–	6 0
— red, 12 blooms	1 0–	3 0
Lilium longiflorum, 12 blooms	5 0–	6 0
Lilium candidum, 12 bunches	18 0–24	0
Marguerites, 12 bun.	4 0–	6 0
Mignonette, 12 bun.	3 0–	6 0
Pansies, 12 bunches	1 6–	3 0
Pelargoniums, 12 spr.	0 9–	1 0
— zonal, 12 sprays	0 4–	0 9
Pinks, 12 bunches	2 0–	6 0
Primula, double, per bunch	1 0–	1 6
Pyrethrum, 12 bun.	3 0–	9 0
Rhodanthe, 12 bun.	9 0–12	0
Roses (indoor), per dozen	1 0–	3 0
— (outdoor), doz.	0 6–	1 0
— Coloured, doz.	1 0–	2 0
— Moss, 12 bun.	9 0–15	0
Spiræa, 12 bunches	0 0–12	0
Stephanotis, 12 spr.	3 0–	6 0
Stocks, 12 bunches	4 0–	9 0
Sweet Peas, 12 bun.	4 0–	6 0
Sweet Sultan, 12 bun.	8 0–12	0
Tropæolum, 12 bun.	1 0–	2 0

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Aralia Sieboldii, doz.	12 0–24	0
Arbor-vitæ (golden), per dozen	6 0–18	0
— (common), dozen	6 0–12	0
Balsams, per dozen	4 0–	8 0
Bedding Plants, doz.	1 6–	3 0
Begonias, per doz.	6 0–12	0
Calceolaria, doz.	6 0–12	0
— herbaceous, doz.	9 0–18	0
Cockscombs, dozen	4 0–	6 0
Crassula, or Kalosanthes, per dozen	18 0–24	0
Cyperus, per dozen	6 0–12	0
Dracæna terminalis	30 0–60	0
— viridis, per doz.	12 0–24	0
EricaCavendishi, doz.	24 0–36	0
Euonymus, various, per dozen	6 0–18	0
Evergreens, in var., per dozen	6 0–24	0
Ferns, in var., dozen	4 0–18	0
Ficus elastica, each	1 6–	7 0
Foliage Plants, various, each	2 0–10	6
Fuchsias, per dozen	6 0–12	0
Gloxinea, per dozen	12 0–18	0
Heliotrope, per doz.	4 0–	9 0
Hydrangea, doz.	9 0–12	0
— paniculata, doz.	18 0–48	0
Lilium, in var., doz.	30 0–60	0
Margue ite Daisy, per dozen	9 0–18	0
Myrtles, per doz.	6 0–12	0
Palms in variety, each	2 6–21	0
Pelargoniums, doz.	9 0–24	0
— scarlet, per doz.	4 0–	9 0
Rhodanthes, doz.	6 0–12	0
Spiræa, per dozen	9 0–18	0

SEEDS.

LONDON: *July* 5. — The seed market to-day was very thinly attended, and no feature, either of interest or importance, developed itself. Stocks of every description, as previously noted, are unusually low, and quotations all round exhibit, in consequence, extreme firmness. There is no change in either Mustard or Rape seed. For feeding Linseed the demand is very languid. In Canary seed the late advance is well maintained. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

At Mark Lane on Monday English Wheat upheld its value from scarcity; of foreign quotations were not altered from those of Monday se'nnight. Flour also was held for late value. Grinding Barley tended rather against the buyer. Beans and Peas remained unaltered. Maize was reported 6*d.* dearer on the week on most of the principal exchanges. On Wednesday, in the limited business concluded in Wheat, late rates were current. Flour was quiet and unchanged. Barley, Beans, and Peas were steady in value, with moderate inquiry. Maize, with large arrivals, was steady; common qualities of Oats were dull, with a weak tendency, but good corn firm. Barley continued quiet. Average prices of corn for the week ending July 1:—Wheat, 46*s.* 11*d.*; Barley, 25*s.* 10*d.*; Oats, 23*s.* 11*d.* For the corresponding period last year:—Wheat, 45*s.* 4*d.*; Barley, 29*s.* 3*d.*; Oats, 23*s.* 9*d.*

POTATOS.

The Borough and Spitalfields markets reports state that here are good supplies of new to hand, with a steady trade. Quotations:—Jersey kidneys, 9*s.* to 10*s.*; round, 8*s.* to 9*s.*; Cherbourg, 8*s.* to 8*s.* 6*d.*; English kidneys, 8*s.* to 10*s.*; Shaws, 8*s.*; Early Rose, 7*s.*; Lisbon, 7*s.* to 7*s.* 6*d.* per cwt.—The imports into London last week were as follows:—1736 baskets 3683 bags from Rotterdam, 3812 bags Jersey, 498 cases Bordeaux, 202 baskets St. Nazaire, 15 B ulogne, 1000 bags Lisbon, 484 packages Jersey, 15 barrels Hamburgh, 1313 cases Cherbourg, 29 cases 50 casks Port Said, and 90 tons 2000 sacks from St. Malo.

Government Stock.—Consols closed on Monday at 99⅞ to 100 for both delivery and account. The closing prices of both Tuesday and Wednesday were, for delivery, 99⅞ to 99⅞, and 99 15/16 to 99 15/16 for the account. Thursday's final quotations were 99⅞ to 99⅞ for delivery, and 99 15/16 to 99 15/16 for the account. The above transactions were all ex div.

Rosher's Garden Edging Tiles.



THE ABOVE and many other PATTERNS are made in materials of great durability. The plainer sorts are specially suited for KITCHEN GARDENS, as they harbour no Slugs or Insects, take up little room, and, once put down, incur no further labour or expense, as do "grown" Edgings, consequently being much cheaper.





GARDEN VASES, FOUNTAINS &c., in Artificial Stone, very durable and of superior finish, and in great variety of design.

F. ROSHER AND CO., Manufacturers, Upper Ground Street, Blackfriars, S.E.; King's Road, Chelsea, S.W.; Kingsland Road, E.

Agents for LOOKER'S PATENT "ACME FRAMES," PLANT COVERS, and PROPAGATING BOXES; also for FOXLEY'S PATENT BEADED GARDEN WALL BRICKS.

Illustrated Price Lists free by Post. The Trade supplied.

ORNAMENTAL PAVING TILES, for Conservatories, Halls, Corridors, Balconies, &c., from 3*s.* per square yard upwards. Pattern Sheet of Plain or more elaborate Designs, with Prices, sent for selection.

WHITE GLAZED TILES, for Lining Walls of Dairies, Larders, Kitchen Ranges, Baths, &c. Grooved and other Stable Paving of great durability, Wall Copings, Drain Pipes and Tiles of all kinds. Roofing Tiles in great variety, Slates, Cement, &c.

F. ROSHER AND CO., Brick and Tile Merchants.

See Addresses above.

SILVER SAND, fine or coarse grain as desired. Price, by post, per Ton or Truckload, on Wharf in London, or delivered direct from Pits to any Railway Stations. Samples of Sand free by post.

FLINTS and BRICK BURRS for Rockeries or Ferneries.

KENT PEATS or LOAM supplied at lowest rates in any quantities.

F. ROSHER AND CO.—Addresses see above.

N.B.—Orders promptly executed by Rail or to Wharves.

A liberal Discount to the Trade.

JOHN MATTHEWS, THE ROYAL POTTERY, WESTON-SUPER-MARE, Manufacturer of TERRA-COTTA VASES, FOUNTAINS, ITALIAN BASKETS, BORDER TILES, GARDEN POTS, of superior quality, from 1 to 30 inches diameter, stand the frost, and seldom turn green; ORCHID, FERN, SEED and STRIKING PANS, RHUBARB and SEAKALE POTS, &c. Price LIST post-free. Sheet of Designs, 6*d.* Book of Designs, 1*s.*

BELGIAN GLASS for GREENHOUSES, &c.,

Can be obtained in all sizes and qualities of

BETHAM & SON,

9, LOWER THAMES STREET, LONDON, E.C.

B. & Son have always a large stock in London of 20-in. by 12-in., 20-in. by 14-in., 20-in. by 16-in., 20-in. by 18-in., in 16-oz. and 21-oz.; and also large sizes in all qualities for cutting-up purposes, in 200-ft. and 300-ft. cases.

T. MILLINGTON AND CO., 43, Commercial Street, E.

PLATE, SHEET, CROWN GLASS.

Horticultural and all kinds of Glass having so much advanced, we are compelled to withdraw our prices, but on receipt of application the prices will be forwarded, but will be only from day to day until the market is in a more settled state. We have some bargains in 21-ounce, from 9×7 to 14×10 and upwards; sizes sent if required. Propagating Glasses, Hand Frames, Cucumber and Horticultural Glass, genuine White Lead, best Linseed Oil Putty, Paints, Oils, and Colours.

HORTICULTURAL SHEET GLASS,

21 oz. Foreign, of the following sizes, in boxes of 100 and 200 feet, 3ds and 4ths qualities always kept in stock:—

14×12	20×12	20×14	20×16	20×18
16×12	16×14	20×15	22×16	22×18
18×12	18×14	18×16	24×16	24×18

Stock Lists and Prices on application.

All descriptions of British and Foreign Glass can be obtained from

GEORGE FARMILOE & SONS,

GLASS, LEAD, OIL and COLOUR MERCHANTS,

34, St. John's Street, West Smithfield, London, E.C.

Raffia—Raffia—Raffia.

C. E. OSMAN, 14, Windsor Street, Bishopsgate, London, E.C., has just received a consignment of fine quality. Price very moderate.

All HORTICULTURAL SUNDRIES at low prices.

ARCHANGEL and ST. PETERSBURG MATS, RAFFIA, SEED BAGS and SACKS NETTING and SHADING, &c. Prices on application.

MARQUEES and TENTS, SECOND-HAND GOVERNMENT TENTS, 45 feet round, complete, 35*s.*, suitable for the Garden, Cricket Clubs, &c. W. PETERS, 44, Tenter Street South, Goodman's Fields, E.

HAY RICK CLOTHS.

To cover 20 loads	20 feet by 24 feet,	£2	13 2
To cover 25	24 "	by 30 "	3 15 2
To cover 30	30 "	by 30 "	4 14 5
To cover 35	30 "	by 34 "	5 7 3

All other sizes at proportionate rates. Carriage paid to any railway station in England. Terms, cash. Samples on application.

THOMAS H. HUNKIN, St. Sampson's, Guernsey.

DENYN'S Unrivalled ROLL PAPER and CLOTH, as supplied to over 3000 Nurseries, 14 lb., 9*s.*; 28 lb., 18*s.*; cwt., 70*s.*—J. DENYN, Manufacturer, 73, Rendlesham Road, Clapton, London, E.

ARCHANGEL and PETERSBURG MAT MERCHANTS and IMPORTERS.—All the usual kinds at reduced rates. Sacks and Seed Bags, new and second-hand, of every description. Raffia Fibre, Netting and Tiffany, Tarpaulins, Rick-covers, Horse-cloths, Ropes, Lines, and Twines. Price LIST on application to J. BLACKBURN AND SONS, 4 and 5, Wormwood Street, London, E.C.

RICK CLOTHS—RICK CLOTHS.

The best and most durable are those made from extra all long Flax Sail Cloth. A quantity in stock, for sale or hire.

SHADING CANVAS, from 2½*d.* per yard, and upwards.

TANNED NETTING, from 1 to 4 yards wide, 1*d.* per sq. yard.

RUSSIA MATS. RAFFIA FIBRE.

BEST ROLL TOBACCO PAPER.

JAMES T. ANDERSON,

149, Commercial Street, Shoreditch, London, E.

Protection for Fruit and Flowers.

GARDEN NETTING, 2 yards wide, 1½*d.*; and 4 yards wide, 3*d.* per yard. SCRIM CANVAS, 1 yard wide, 3*d.*; 1½ yard, 4½*d.*; and 2 yards, 6*d.* per yard. TIFFANY, 38 inches wide, in pieces of 20 yards each, at 3*s.* 6*d.* per piece. Can be obtained of

HENRY VAN AND CO., 17, Tooley Street, London, S.E., who also supply RICK CLOTHS, TARPAULINS, SACKS, and every requisite for farm purpose. Printed Price List post-free.

NETTING for FRUIT TREES, SEED BEDS, RIPE STRAWBERRIES, &c.

TANNED NETTING for protecting the above from Frost, Blight, Birds, &c., 2 yards wide, 3*d.* per yard, or 100 yards 20*s.*; 4 yards wide, 6*d.* per yard, or 50 yards 20*s.*

NEW TANNED NETTING, suited for any of the above purposes, or as a Fence for Fowls, 2 yards wide, 6*d.* per yard; 4 yards wide, 1*s.* per yard; ¾-inch mesh, 4 yards wide, 1*s.* 6*d.* per yard.

TIFFANY, 6*s.* 6*d.* and 7*s.* 6*d.* per piece of 20 yards.

EATON AND DELLER, 6 and 7, Crooked Lane, London Bridge.

VIRGIN CORKWOOD, for Ferneries, Rockeries, and Ornamental Work in Gardens, supplied at wholesale rates to Nurserymen and Seedsmen by WM. RANKIN AND SONS, 10, Carlton Place, Glasgow, and Lisbon, Portugal.

Shipments direct from Lisbon at special quotations.

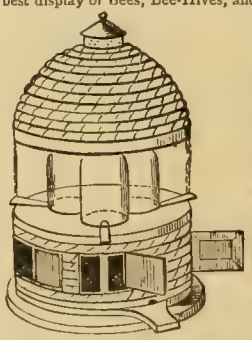
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NEIGHBOUR'S Celebrated BEEHIVES for taking Honey without the destruction of the Bees.

PHILADELPHIA EXHIBITION, 1876.

PARIS EXHIBITION, 1878.

Three Silver Prize Medals awarded to Geo. Neighbour & Sons. Also the Prize Silver Cup at the Caledonian Apiarian Society's Show at Edinburgh, 1877 (in connection with the Highland and Agricultural Society's Annual Exhibition), for the largest and best display of Bees, Bee-Hives, and Bee Apparatus.



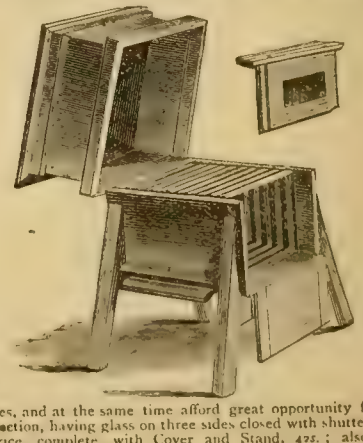
NEIGHBOUR'S IMPROVED **COTTAGE BEE-HIVE** as originally introduced by **Geo. Neighbour & Sons,** working three bell-glasses, is neatly and strongly made of straw; it has three windows in the lower Hive.

This Hive will be found to possess many practical advantages, and is more easy of management than any other Beehive that has been introduced.

Price, complete **£1 15 0**

Stand for ditto **0 10 6**

PHILADELPHIA BAR-FRAME HIVE, from which the Combs can be removed at side opening whilst supers are on. This Hive affords remarkable facility for manipulation, because the frames can also be taken out from top as with other Frame



Hives, and at the same time afford great opportunity for full inspection, having glass on three sides closed with shutters.

Price, complete, with Cover and Stand, 42*s.*; also Bar-Frame Hives, of most approved construction, at 7*s.* 6*d.*, 12*s.* 6*d.*, to 15*s.* each.

An ITALIAN ALP QUEEN, with full directions for uniting to Black Stocks, at current prices.

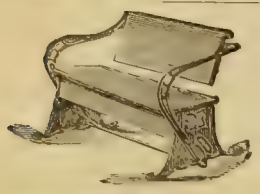
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"THE APIARY." By ALFRED NEIGHBOUR. 5*s.* postage 5*d.*

A newly-arranged Catalogue of other Improved Hives and Appliances, with Drawings and Prices, sent on receipt of two stamps.

GEO. NEIGHBOUR AND SONS, 127, High Holborn, W.C., and 149, Regent Street, London, W.

THOMAS'S Silver Medal GARDEN SEATS.



MEAD'S PATENT Combination SEAT and TABLE,

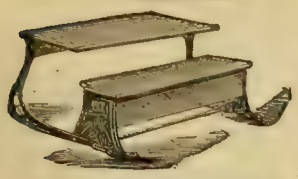
With Box under Seat for Storing TENNIS, CROQUET, BOWLS, &c.

Very Strong and Durable.

Cannot get out of Order.

6 feet long.

Price, £3 18s. 6d.





GARDEN SEAT.

No. 363.

Pitch Pine, varnished.

4 ft. 5 ft. 6 ft. long.

18/- 19/6 21/- each.

Deal, painted green.

4 ft. 5 ft. 6 ft. long.

17/- 18/6 20/- each.



The Villa GARDEN SEAT.

No. 488.

Painted green and varnished.

5 feet long.

Price, £1 15s.



Chairs and Tables

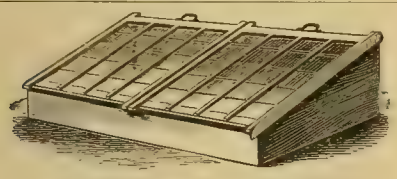
Deal, varnished or painted green.

Chair, No. 351A 4/6.

Folding Table to match, 6/9.

Illustrated Catalogues on application.

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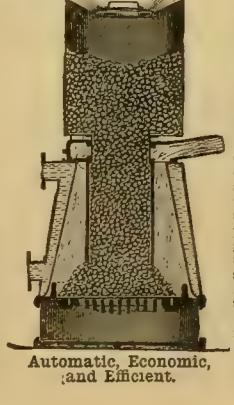
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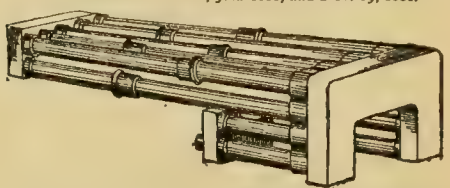
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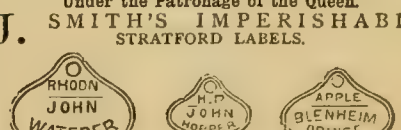
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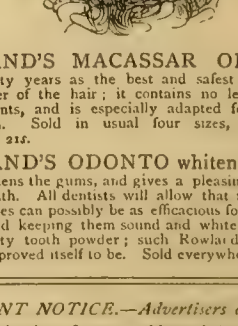
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A. FOULON, 32, St. Mary Axe, E.C.

DENYN'S Unrivalled ROLL PAPER and CLOTH, as supplied to over 3000 Nurseries, 14 lb., 9s.; 28 lb., 18s.; cwt, 70s.—J. DENYN, Manufacturer, 73, Rendlesham Road, Clapton, London, E.

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TILE PAVEMENTS, for Conservatories, Verandahs, Entrance Halls, &c. Enamelled and Decorated Glazed Tiles, for Wall Linings, Fireplaces, &c.; also Patent Indestructible Terra-cotta Plant Markers. Patterns and Prices sent post-free on application.

MAW AND CO., Benthall Works, Broseley, Shropshire.

ARCHANGEL and PETERSBURG MAT MERCHANTS and IMPORTERS.—All the usual kinds at reduced rates. Sacks and Seed Bags, new and second-hand, of every description. Raffia Fibre, Netting and Tiffany, Tarpaulins, Rick-covers, Horse-cloths, Ropes, Lines, and Twines. Price LIST on application to J. BLACKBURN AND SONS, 4 and 5, Wormwood Street, London, E.C.

SALES BY AUCTION.

Important Sale of Natural History Specimens.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King's Street, Covent Garden, W.C., on TUESDAY and WEDNESDAY, July 18 and 19, and FRIDAY and SATURDAY, July 21 and 22, at half-past 12 o'Clock precisely each day; a very select COLLECTION of SHELLS, ten MAHOGANY CABINETS, BRITISH LEPIDOPTERA, EGGS of BRITISH BIRDS, an open LANDAU by Peters and Sons', a few BOOKS, &c., collected by the late Mrs. Stuart, of Bampton, Oxon, and sold by order of the Executor. The Collection of choice BIRDS' EGGS and SKINS, the property of the late A. W. Crichton, Esq., and sold by order of the Executrix and Lord Lilford. Also the Collection of SHELLS, MINERALS, FOSSILS, BOOKS, EGGS, CABINETS, &c., the property of the late Isaac Hindson, Esq., of Kirby Lonsdale; and several other COLLECTIONS of GENERAL NATURAL HISTORY SPECIMENS, CURIOSITIES, &c.

On view after 2 o'Clock the day prior and mornings of Sale, and Catalogues had.

Highly Important Sale of Established Orchids,

The property of JOHN SYMONDS BOCKETT, Esq., The Hall, Stamford Hill, E.

MR. J. C. STEVENS has been favoured with instructions from John Symonds Bockett, Esq. (who is leaving his residence on account of the property being about to be used for building purposes), to offer for SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, July 27, at half-past 12 o'Clock precisely, a portion of his valuable COLLECTION of ESTABLISHED ORCHIDS, which has been formed, during many years, from Collections of all the eminent Orchid-growers, and comprising most of the finest species and varieties in existence. Amongst other grand things will be found the rare Odontoglossum mulus (to which a certificate has been awarded), Oncidium macranthum, Masdevallias, Saccolabium præmorsum, Aërides Schröderi, Aërides in variety, an enormous plant of Cypripedium Stonei, Lælia elegans alba, and many other fine varieties.

May be viewed morning of Sale, and Catalogues had.

Great and Little Newburys Farms, Ilford, Essex.

7 Miles from the City of London, and close to Ilford Railway Station, from whence there are frequent trains to the City.

MR. ALFRED SAVILL has received instructions to SELL by AUCTION, at the Auction Mart, Tokenhouse Yard, E.C., on WEDNESDAY, July 19, at 2 o'Clock precisely, in Six Lots, the valuable FREEHOLD ESTATE (Tithe Free), known as Great and Little Newburys, comprising a Residence, suitable Farm Buildings, Labourers' Cottages, and about 265 Acres of rich PASTURE and MARKET GARDEN GROUND. There is a valuable bed of Brick Earth on the Estate, and there are extensive Road Frontages, and Building Societies and others would find this a good opportunity to purchase an Estate a portion of which is ripe for development for building purposes. Also a Perpetual Rent-charge, in lieu of Tithes, commuted at the sum of £300 per annum.

Particulars, with Plans and Conditions of Sale, may be obtained of Messrs. BLEWITT AND TYLER, Solicitors, 79½, Gracechurch Street, E.C.; of Messrs. LAKE, BEAUMONT, AND LAKE, Solicitors, 10, New Square, Lincoln's Inn, W.C.; at the Auction Mart, E.C.; and at the Auctioneer's Offices, 3, St. Helen's Place, E.C.

Burton Grange, Cheshunt, Herts.

MR. JOHN S. BRIDGMAN will SELL by AUCTION, on the Premises, on WEDNESDAY, July 19, at 11 for 12 o'Clock, a COLLECTION of ORCHIDS and GREENHOUSE PLANTS, including a Dendrobium nobile, in No. 2 pot, about 200 bulbs; 2 Oncidium Phelpsianum of 40 and 30 bulbs; Cattleya crispa, true variety, spotted leaves, 40, 14, and 13 bulbs; Zygopetalum Mackayi, 30 bulbs; Cœlogyne cristata, 80 bulbs; Amaryllis aulica superba, in No. 2 pot, 20 bulbs; Brassia verucosa major, 30 bulbs; 2 Eucharis amazonica, 60 bulbs; and about 12 of 20 bulbs each; 1 Anthurium Scherzerianum, 80 leaves; 16 Calanthe Veitchii; 38 Calanthe vestita oculata, and many others. Also about 50 lots of valuable HORSES and CATTLE.

On the previous day, excellent HOUSEHOLD FURNITURE and EFFECTS. By direction of Edmund Theodore Dogat, Esq., J.P. (the Residence and Estate having been disposed of).

Catalogues may be obtained of Mr. JOHN BRIDGMAN, Auctioneer, Surveyor, Estate Agent, and Accountant, Cheshunt.

Charlwood House, Huyton, near Liverpool.

BY DIRECTION OF MORTON SPARKE, ESQ.

Remarkably fine collection of Tropical Stove and Greenhouse Plants, most of which are particularly well known, on account of their having taken the highest prizes of honour in Manchester, Liverpool, and the suburban exhibitions. The greatest care has been bestowed, and no expense spared upon their growth; therefore the whole of the plants are in most healthy and best possible condition. Amongst the Orchids will be found rare and choice varieties of the Aërides, Dendrobium, Saccolabium, Oncidium, Odontoglossum, Cypripedium, Masdevallia, Epidendrum, Cattleya, Catasetum, Miltonia, Stanhopea, Chysis, Zygopetalum, and many others; Allamanda, Stephanotis floribunda, Eucharis amazonica (specially grown); number of Camellias, chiefly semi-double; well-set Azaleas of the best sorts, Chrysanthemums, Roses in pots, zonal Pelargoniums, and three very capital two-light Cucumber Frames.

MESSRS. BRANCH AND LEETE will SELL, by AUCTION, on THURSDAY, July 20, at 1 o'Clock, on the Premises, Charlwood House, Huyton, near Liverpool, close to the Station, the whole of the valuable and well-known COLLECTION of ORCHIDS, STOVE and GREENHOUSE PLANTS, being the property of Morton Sparke, Esq., who is leaving the neighbourhood for the South of England, and has ordered the contents of his Greenhouses to be sold without reserve.

To be viewed on Wednesday, the 19th inst., when CATALOGUES can be had from the HEAD GARDENER (Mr. Sherwin), or at the Office of Messrs. BRANCH AND LEETE, Hanover Street, Liverpool, who will also be happy to forward them by post on receipt of address.

PRELIMINARY NOTICE. — There will be SOLD in Edinburgh, on the second day of the great International Fruit and Flower Show, in the beginning of September, a magnificent COLLECTION of SPECIMEN ORCHIDS, the property of Alexander Paterson, Esq., M.D., Bridge of Allan.

Particulars in future advertisements. Catalogues will also be issued shortly.

Withington, near Manchester, July 26.

IMPORTANT SALE of GRAND SPECIMEN AUTUMN FLOWERING and other EXHIBITION PLANTS, including five splendid Allamandas of sorts, each 36 by 36 inches; thirty-four exceptionally fine and rare Ericas, well set, up to 48 inches high by 54 inches through; fifty beautiful Ixoras, up to 48 inches by 48 inches; twenty exceedingly fine well-formed Azaleas, from 48 inches high to 60 inches through; grand Eucharis, 15 to 20 bulbs in a pot; numerous good plants of Anthuriums, Aphelexis, Araucarias, Bougainvilleas, Cycas, valuable Crotons, Dipladenias, Dracophyllums, Epacris, Gleichenias and other choice Ferns, Francisceas, Phormiums, very fine Palms, Yuccas, and other valuable specimens of horticultural art.

MESSRS ARTINGSTALL AND HIND respectfully give notice that they have received peremptory instructions to SELL by AUCTION, on WEDNESDAY, July 26, beginning at 12 o'Clock prompt, at Messrs. Cole and Sons' (who are giving up exhibiting) Fogg Lane Nurseries, Withington, near Manchester, the whole of their admirable exhibition, and other rare and numerous PLANTS.

May be viewed on the day prior and morning of Sale; and Catalogues then obtained at the Nursery, or earlier by post, or on application to the Auctioneers, 45, Princess Street, Manchester.

Hooley House, Coulsdon, Surrey.

3 Miles from Caterham Junction Station.

To HORTICULTURISTS. — CLEARANCE SALE of GLASSHOUSES and CHOICE STANDARD ORANGE TREES.

MESSRS. WEATHERALL AND GREEN will SELL by AUCTION, on the Premises (by direction of the Chancery Division of the High Court of Justice), on THURSDAY, July 27, at 2 o'Clock, all the useful Materials, including HOT-WATER PIPING, Slate and York SLABBING, and sound BRICKWORK. Also a number of choice ORANGE TREES.

Catalogues may be obtained on the Premises; at the "Red Lion," Smetham Bottom; and of the Auctioneers, 22, Chancery Lane, E.C.

A Bargain.

TO BE DISPOSED OF, at a great sacrifice, an excellent NURSERY and SEED BUSINESS.—Apply to Messrs. HURST AND SON, Seed Merchants, 152, Houndsditch, London, E.

FOR SALE, that excellent NURSERY, situated in Victoria Road, Old Charlton, near Blackheath, consisting of handsome Show-house, with other Houses and Frames complete. A bargain if sold immediately.

Apply, by letter, to Mr. S., 75, King Street, Woolwich.

TO BE LET, as a going Concern, on September 29, or earlier if desired, a compact NURSERY and small SEED BUSINESS, situated in the best part of Staffordshire, comprising about 8 Acres of well-selected Nursery Stock, also 3 Acres of old Turf Land, and a Dwelling House, a large stock of Hollies in variety, which do well here as does all other Nursery Stock, the Soil being deep Loam, and a never-failing supply of water on the ground. It has been established nearly sixty years, and declining health is the sole cause of disposing of it.

For particulars address R. S., Robert Cooper, Esq., Seed Merchant, 90, Southwark Street, London, S.E.

WANTED TO RENT, by a trustworthy experienced Gardener, a walled KITCHEN GARDEN (with Cottage and some Glass preferred), near a good town. Would keep Pleasure Grounds in order for a stated sum if required. Married, no family.

J. W. C., Ashford, Staines, Middlesex.

NOTE PRICES.—Strong good plants for present planting.—Early CABBAGE, SAVOY, Green Curled and Variegated KALE, Brussels SPROUTS, COUVE TRONCHUDA, Red Pickling CABBAGE, Hardy Green and Rosette COLEWORT, 3s. 6d. per 1000, 60s. per 20,000, very fine. Veitch's Autumn Giant, Walcheren, and Snow's Winter White CAULIFLOWER, 9d. per 100, 7s. per 1000, 30s. for 5000. Early, Medium, Late White, and Purple Sprouting BROCCOLI, 6d. per 100, 4s. 6d. per 1000, £4 for 20,000 CELERY, White and Red, 7d. per 100, 5s. per 1000. Cash or banker's reference with order.—EDW. LEIGH, Wrotham Farm, Dunfold, Godalming.

NEW ROSES of 1882, in pots.—Vendors' Selection, 30s. per dozen; Purchaser's, 36s. per dozen. The above comprise all the best English and French-raised Hybrid Perpetuals, Perpetual Polyantha, Teas, Hybrid Teas, and Perpetual Moss.

ROSES of 1881, of above-named classes, 18s. to 24s. per dozen, in pots.

CHOICE ROSES. — Tea-scented, Hybrid Tea, Noisette, China, and Bourbon, 18s. to 24s. per dozen, strong plants in pots.

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MEIN'S No. 1 CABBAGE.—The earliest, the largest, the finest in existence. Should be grown by all Market Gardeners. A correspondent writes, under date June 12, 1882:—"I have cut Cabbages since April 20 from the Seed you sent me last year, and have an abundance of them left, averaging from 4 to 6 lb. in weight."

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Special price per pound on application.

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Extra Strong

CABBAGE, BROCCOLI, CELERY, and various other plants for present planting.

Early Oxheart, Enfield Market, Nonpareil, Robinson's Champion Drumhead CABBAGE and Drumhead SAVOY (the above will be found very useful for filling up gaps in Mangel), 3s. per 1000. Dwarf Green Curled SAVOYS, BRUSSELS SPROUTS, Green Curled Scotch and other KALES, 3s. per 1000. Veitch's Autumn Giant CAULIFLOWER, Veitch's Self-protecting BROCCOLI, 5s. per 1000. Carter's Champion, Cattell's Eclipse, Early White, Brimstone, Purple and White Sprouting BROCCOLI, 5s. per 1000. Red and White CELERY, 5s. per 1000. The above are unusually strong, healthy, and well-rooted plants. To be had in any quantity, delivered free on rail, or 1000 (for a small garden) of the above for 5s. Cash or reference with order from unknown correspondents.

W. VIRGO, Wonersh Nurseries, Guildford.

Early White Roman Hyacinths.

DOUBLE ROMAN and PAPER WHITE NARCISS.

JAMES VEITCH AND SONS beg to announce that they have received their usual Consignments of the above valuable Bulbs for EARLY FORCING, and will be pleased to receive orders for immediate delivery.

Royal Exotic Nursery, King's Road, Chelsea, London, S.W.

CAULIFLOWER, BRUSSELS SPROUT PLANTS.

VEITCH'S AUTUMN GIANT, 3s. 6d. per 1000.

BRUSSELS SPROUTS, 3s. per 1000.

Packages 3d. per 1000 extra. Order of

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ERICA CAVENDISHII, 5 feet by 5 feet through, splendid specimens, well set with bloom.

ERICA TRICOLOR SPECIOSA, 4 feet by 4 feet through, well set with bloom; many other varieties of Ericas in all sizes.

ALLAMANDAS, APHELEXIS, BOUGAINVILLEAS, CLERODENDRONS, COCOS, CROTONS, CYCAS, GLEICHENIAS, LATANIAS, RONDELETIAS, SEAFORTHIAS, STEPHANOTIS, SWAINSONIAS, VINCAS, &c.

Prices, names, and sizes on application.

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A Double First-class Certificate.

Viz., a First-class Certificate as a Decorative Bedding Rose in 1881, *and a First-class Certificate as a Show Rose in* 1882.

The Royal Horticultural Society have Registered their Award, and this unprecedented success has been achieved by

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Come and See.

Never before were there such a mass of interest to Lovers of Flowers as is to be seen at Swanley, and will continue all the year. Just now double Pansies, double pink Bouvardia, black and other Dahlias, new Salmon Vesuvius and White Clipper Improved, zonal Pelargoniums, Stars and Stripes Verbena, Nicotiana affinis, new Mignonette grandiflora, &c., are grand.

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CALCEOLARIA CLOTH OF GOLD (True).—As we before said, no one can supply either seed or seedlings from new seed of the above but ourselves. Seeds, 2*s.* per packet; Seedlings, 1*s.* 6*d.* per dozen, 10*s.* per 100, post-free.

CINERARIAS from the only two Certificated plants of 1882, and our collection is admitted to be much the nearest perfection ever exhibited.

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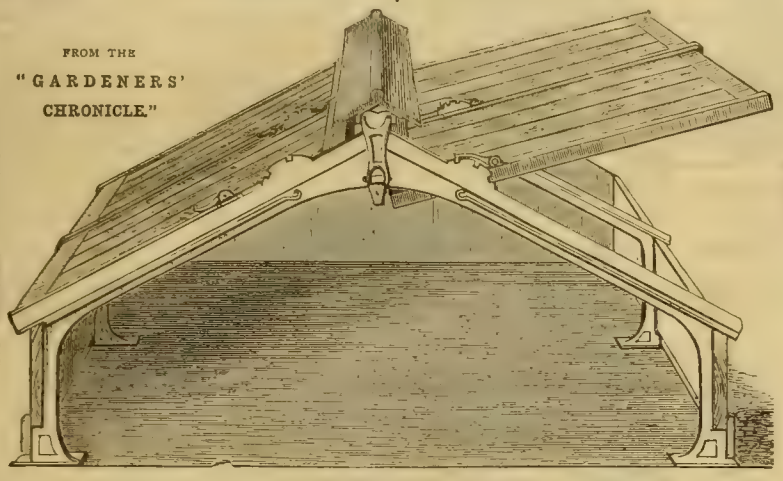
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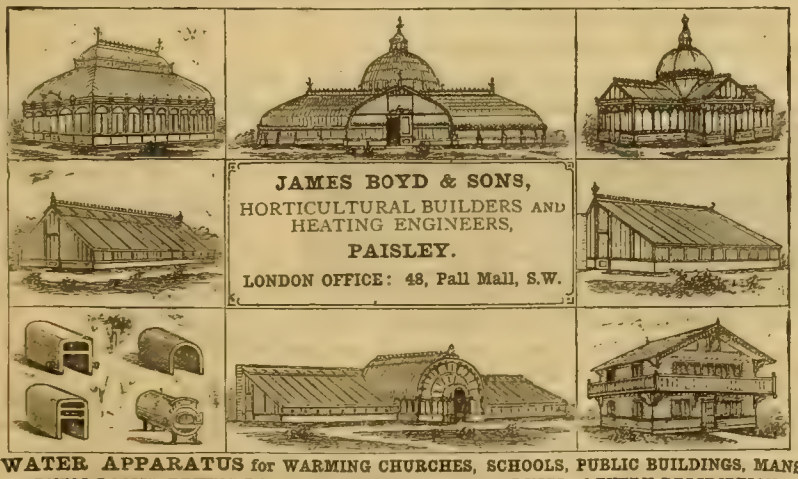
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4*d.* per bushel; 100 for 25*s.*; truck (loose, about 2 tons), 40*s.*; 4-bushel bags, 4*d.* each.
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BLACK FIBROUS PEAT, 5*s.* per sack, 5 sacks 22*s.*; sacks, 4*d.* each.
COARSE SILVER SAND, 1*s.* 9*d.* per bushel; 15*s.* per half ton, 26*s.* per ton; in 2 bushel bags, 4*d.* each.
YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1*s.* per bushel.
SPHAGNUM MOSS, 8*s.* 6*d.* per sack.
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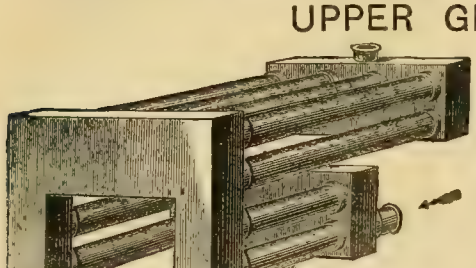
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4 gallons, sufficient to make 100 gallons when mixed with cold water, 7*s.* 6*d.*
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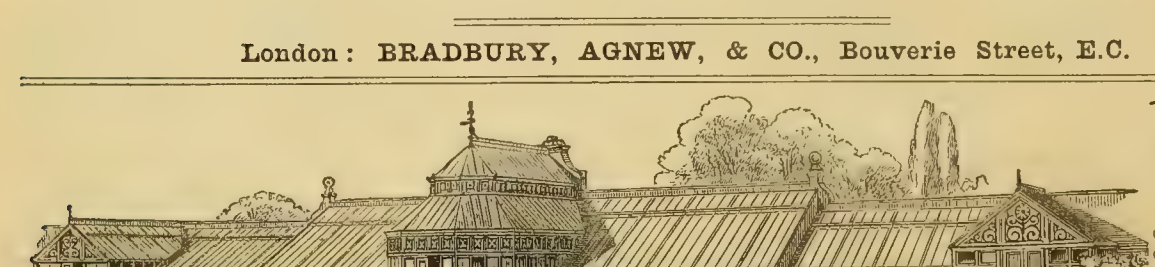
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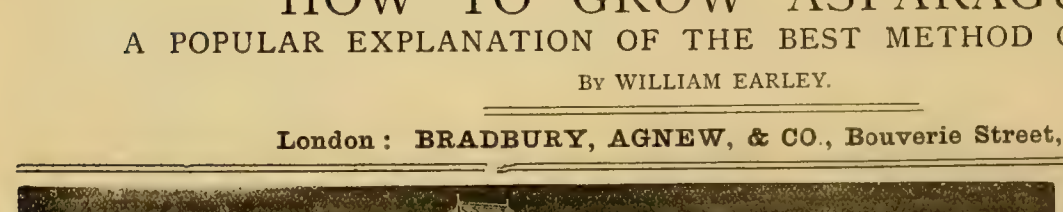
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THE

Gardeners' Chronicle.

SATURDAY, JULY 15, 1882.

SEED SOWING.

ALL who have been occupied with plant raising, and especially from exotic seeds, as I have been for about thirty years, must have had their experience often grievously tried, and their patience in the end worn out altogether by utter failure. Certain tribes have earned a worse reputation than others in this respect: of these the Ranunculaceæ, as first in botanical arrangement, must have the precedence.

So early as the year 1850 I had seeds presented to me by a friend from a lofty mountain range in New Zealand, and so certain to prove hardy here; its only name then given me being "The Shepherd's Lily," which Sir Joseph (then Dr.) Hooker, on being applied to, informed me was Ranunculus Lyalli, one of the finest things in New Zealand. Of course the seeds were sown, and all care bestowed upon them. I gave them ample time, as I thought, to vegetate; but the result was a total failure. Years afterwards I had repeated transmissions of these seeds, and had ultimately the good fortune to receive from a correspondent in Dunedin two living plants, sent, with all care, packed up in a Wardian case; but, like many other rare things so transmitted, the finer fibrous roots had given way from the tubers, no fresh ones were emitted, and, after a time, both roots died.

Subsequently to this I received and repeatedly sowed imported seed, and from these I two or three years ago raised plants, of which I have now two that have stood in the open border for two winters. But I have no record of the exact time they took to vegetate: so far as I remember, it was about two years. I was more precise with the following instance. On receipt from New Zealand of a fresh supply of very ripe and fresh seeds, I sowed them on February 16, 1878, and they vegetated in April, 1881, after lying upwards of three years. My next successful experiment in this tribe—and that, too, after failures stretching over more than a dozen of years—was with a not less rare and striking species viz., R. Guzmanni, a species which, so far as I am aware, was never before introduced into this country, or even into Europe. I may therefore be pardoned if I give a short account of it from Weddell's *Chloris Andina*.* "This Ranunculus," he says, "is as remarkable for its port as for the enormous development of its flower. The flower," he says, "as shown in my specimen—but I cannot say whether it may not be from the pressure in effecting desiccation—was of the exact size of 10½ centimetres in diameter." And in the account he goes on to assert that another flower had been found, which, with its appendages, was of a diameter of 15 centimetres. The account closes with observing on its utility, as when given to the *vaches* (a species of goat) it so excites as to render them more prolific. There appear to be two forms of this R. Guzmanni, one having blooms, yellow streaked with red, and the other with greenish-yellow flowers. The seeds from which I raised my plant (for I

* Weddell's *Chloris Andina*, vol. ii., p 304.

have only one) is the latter variety. It is found growing in the Cordillera of the Andes of the equator, at the verge and "sometimes in the midst of snow." The seeds of both forms were collected and sent to me by Professor Padre Sodiro, of Quito, in March, 1877; the species from which I have raised the plant being labelled "R. Guzmanni, sp. floribus læte flavis magnis, var.? valde rara, mihi reperta." The seeds were sown by me on March 2, 1877, and vegetated in September, 1881, thus taking four years and six months to vegetate. The plant has grown rapidly, and now shows a diameter of 10 inches over the pot it grows in.

It is somewhat singular to remark that, while the R. Lyalli found growing in New Zealand at a height of 6000—7000 feet should take three and a half years to vegetate, this species of R. Guzmanni, found on the Andes at 13,000 feet, should take four and a half years to vegetate. Can the elevations and severity of the climate from which they respectively come account for the differences in the periods of their vegetation?

I have still another instance of obstinate vegetation in this genus to offer. I had from Dr. Curl, of Wellington, Northern Island of New Zealand, seeds of a species, got, I believe, from the mountain ranges, which I sowed on January 29, 1878. It vegetated in September, 1881, thus having lain dormant for three and a half years. Having got it without name, I can say nothing about its character, but the foliage is distinct and peculiar. The seeds were small, but the seeds of R. Guzmanni were not large.

After the Ranunculaceæ some, not all, of the Primulaceæ claim attention for their slowness to vegetate.

Many gardeners are now familiar with the obduracy of the seeds of Primula japonica, which rarely stir till they have lain for a whole year. This, it will be remembered, is a species having a whorled scape. It is a crimson flowered plant, but I have a white variety with a pink eye, by far the handsomer of the two. I have just got seeds through a friend in Germany from "the Orient," with the name of Primula Teaschkeana, said to be one of the finest of the tribe, also a whorled species which also takes a year to come up. Whether Primula purpurea of Royle, also a whorl-stemmed species, takes the same time to germinate I am not aware. It is for the ingenious inquirer to find out the cause or *rationale* of this peculiarity in this verticillate form.

It looks, then, as if the plants having whorled stems in the Primulaceæ are slow to vegetate. May it not be worth enquiry whether this habit so manifests itself in other genera having whorled stems? The Gentianaceæ are also proverbially slow—at least such has been my experience among imported species, of which many years ago I had seeds of some of the finest kinds of the genus from the Andes. And among these I had seeds of one lovely species, which I was most anxious to succeed with. This was Gentiana Jamesoni, named in compliment to my correspondent, Professor Jameson, of Quito; and it, too, was a verticillate species with an umbel of scarlet bells at the top.

There is another species which I never possessed, by name Gentiana verticillata, whose seeds might form a good test. I can speak no farther from my own experience, but I would earnestly suggest to those willing to make the experiment to make trial of seeds of any verticillated plants they may possess to find how far the same characteristic holds. It may be farther tested by sowing the ripe seeds of the several whorls separately; for some of these may take longer and some a shorter period to spring.

I might here go into a long list of exotic things, especially of those sent to me from the Andes of Quito, in raising which I wholly failed, greatly owing to their intractability in vegetating; of which I may particularise the following as yet well worth collecting and transmitting to this country:—(1) Various Castillejas; (2) various Thibaudias, including the allied Macleanias; (3) many Calceolarias, which, with fresh seeds, are manageable, but with not a few of which I did succeed; (4) Chuquiraga insignis; (5) many Gentians, especially G. Jamesoni, already referred to; G. sedifolia, one of the gems of the genus; G. rupicola, &c., to which may be added G. cernua, having yellow flowers, striated with red; and G. gracilis, having a white corolla streaked with violet lines. Another gem, of which I had seeds sent me repeatedly from the same lofty Andes, was (6) Eccremocarpus longiflorus. The seeds were not unlike those of Calampelis scaber; but though I kept them sown for years, I did not raise one. It is a beautiful flower, and from its great elevation of 12,000 feet it cannot fail to be hardy. The flower is tubular, about 3 inches long, half-inch thick, and orange coloured. (7) Sida pichinchensis, which from its dwarf habit, its flowers of the loveliest blue, and its station at a height of from 14,000—15,000 feet on the Cordillera, is one of the most desirable of alpines. I got and sowed it repeatedly, and the same with Sida phyllanthes, another beauty; but I also failed with it.

But I must pass over numerous failures with seeds of rare plants, of which I had from the same favoured ranges of the Andes to notice two of the grandest things remaining yet to be recovered from that region, namely, Tacsonia Jamesoni and Tacsonia Mariæ. About the first I had some correspondence with Dr. Masters, who urged me to inquire after it, with a view, if possible, to recover it. After some correspondence, I did succeed in finding out the only locality where it ever had been found. It has a bold and a very grand flower, unlike any other ever known in the genus. Dr. Masters sent me a sketch of it from a dried specimen, which showed that it amply deserved the high encomium he paid to it. But my correspondent, who went to the forest, found only one plant, and failed to get a sound seed from it, the seed having been destroyed by insects.

Tacsoniæ Mariæ is a not less notable species, and perhaps in its native state the loveliest of its tribe; the flowers, unlike any yet known in this country, specific or hybrid, being large, and of the "intensest blue." I have before me a Latin description, one page and a-half of print, drawn up by my correspondent, for some time Professor of Botany in Quito, who, being also a priest, dedicated the plant to the Virgin Mary, whose name it bears.

Of neither of these plants did I ever receive seeds. A revolution breaking out in the State, my correspondent, Padre Sodiro, was obliged to quit his professorship and pursuit after plants, and confine himself to his religious avocations.

All these Andean plants, above enumerated, being of interesting character, beautiful in species, and for the most part hardy, are well worth being yet sought after, and introduced into this country, which none of them, so far as I know, have yet reached alive.

I have yet said nothing on how to sow the seed, though this is a very important thing. A third of fine loam, a third of peat, and a third of silver-sand, with a little of pulverised leaf-mould, make a good compost. Drain and fill your pot, and when full to a quarter of an inch press down with a flat bottomed tin to make a smooth surface; then if your seeds be small, say of Begonias, Heaths or the like, sift with a fine wire sieve, a little sandy compost, on which sow your fine seeds, and then, without covering them, press down with your smooth-bottomed tin; you will find, by the pressure, they will be sufficiently covered. Larger seeds, such as Delphiniums, Columbines, or the like, may be covered by the wire sieve, as before, then smoothed by the tin. In watering I would recommend you to use only boiled water, for if you use such water as we are supplied with in Edinburgh, or even rain-water from roofs, you will find that if your seeds be long before they grow the pots will be covered with Liverwort before six months are run, which the growth of small seeds, or even pretty large ones, cannot penetrate. For my own part most seeds come better away under a higher temperature than that in which they subsequently grow, but once sprung, remove temperate things to more temperate quarters, and in genial summer weather an open frame, exposed o the rains and dews of heaven, is the best place for them, indeed, I have had hopeless things housed and so exposed for summer after summer. Some of the things above noticed, which took years to vegetate, were so exposed.

There is yet a class of plants I have frequently had no little trouble and sometimes total failure to raise from seeds, namely hybrids among various tribes. Among these I have had large experience, and over many years, especially in the case of Rhododendrons, Gentians, Campanulas, Silenes, Aquilegias, &c. Many years ago I was especially drawn to cross Rhododendrons with Indian Azaleas, at all times a difficult cross. However, when the grand species of Rhododendron, R. Aucklandi, became known, I attempted and did succeed in crossing an Indian Azalea with its pollen, and though I allowed ample time, as I believed, to ripen, I found, to my disgust, when I had pulled the seed capsules, the seeds, though plump, were still green; yet, hopeful after drying them, that some would come, not one seed ever did. This taught experience, and experience hope, and I ever after gave all hybrid things more than the usual time for ripening normal seeds. But we must not stop here, but liberally extend the time for hybrid seeds, when fully ripe, coming up. I found this especially necessary among the Campanulaceæ, which among crosses of the smaller forms, such as Waldsteini, pulla, and the like, would take very frequently two years and more. *I. Anderson-Henry.*

P.S.—Since part of the foregoing paper was written, weeks ago, the Ranunculus treated of (as a form of R. Guzmanni) has advanced considerably, and offering to become a large thing; but R. Guzmanni, of either form, I am persuaded it is not. Yet I can vouch that, at the date stated, I sowed these Ranunculus seeds, gathered by Professor Sodiro at the great elevation stated, though not improbably seeds of other species, there and near there, may have got mixed. On looking at authorities I find that several species are found at above 13,000 feet on the same Cordillera, *e.g.*, R. nubigenus, R. præmorsus, R. Raimondi, some of which it resembles in the descriptions given, though I cannot vouch for it being either. Were it possible that it proved R. Raimondi, still new to Britain, it might prove a blessing to anxious mothers, as Professor Raimondi is assured "that Indian mothers administer the plant to their babies to make them speak early."

New Garden Plants.

PODOLASIA STIPITATA, *N. E. Br.*

(A NEW GENUS OF AROIDEÆ.)

Caudex short, about 1 inch high in the plant seen, leaves 4—6 on a plant. Petiole a foot or more long, sheathing at the base, terete above, bright green, armed on the lower half with short conical light ochreous-brown prickles. Lamina sagittate or hastate, bright green, the front lobe 7—8 inches long, 1—1½ inch broad, linear-oblong acuminate, the basal lobes as long as the front lobe, broadly linear acuminate, ½—¾ inch broad. Midrib of front lobe giving off two primary veins on each side at its base; the inner pair making with the midrib a very acute angle, ascending nearly parallel to the midrib midway between it and the margin, excurrent at the apex; the outer pair at first directed outwards (each giving off about three secondary veins which run down into the basal lobes), then abruptly ascending into the front lobe and running nearly parallel with the margin at about ⅛ inch from it, up to about the middle of the front lobe, and then excurrent in the slender intramarginal vein; midrib of the basal lobes eccentric, denuded for about ¼ inch at the sinus; midrib and veins impressed above, prominent beneath. Peduncle somewhat shorter than the petiole, terete, unarmed (always?), green, dusted with purple-red. Spathe 3½—4 inches long, ¾ inch broad, narrow, boat-shaped, acute at both ends, shortly decurrent on the peduncle, open to the very base, not being in the least convolute, brownish-red or brownish-purple inside and out. Spadix two-thirds as long as the spathe, stipitate, stipes terete, ¾ inch long, green dusted with purple-red; flower bearing part terete, obtuse, 2½ lines thick, cream-coloured; perianth segments 4—6, free, smooth; stamens as many as the perianth segments and opposite them; ovary not exserted, ovoid-oblong, truncate and smooth at the apex, one-celled, with one anatropous ovule affixed to the side of the cavity close to the base.

This remarkable and interesting Aroid has been introduced into Messrs. Veitch and Sons' nurseries from Borneo, by its discoverer, Mr. Curtis. It was exhibited at the Royal Botanic Society's show on July 5, and at the Scientific Committee on July 11, where it obtained a Botanical Certificate. I gave this plant the provisional name of Lasia stipitata,

but by some accident (to judge from the report given on p. 57 of this volume) it was exhibited as Lasia stipulata, a specific name that has no application to the plant. On again examining the plant, however, to draw up the present description, I find that it differs from the genus Lasia in several particulars, and therefore propose to make a new genus of it. It differs from Lasia—1st, in its spathe being open to the very base, not at all convolute, and only about one-third longer than the spadix, instead of many times as long, as it is in Lasia; 2d, in having a long stipes to the spadix; 3d, in having the ovule affixed near the base of the cavity of the ovary instead of near the apex; and, lastly, the leaves are of a different form, and have a different venation, being in these respects like those of the American genus, Urospatha—but Urospatha has a 2-celled ovary, with two or more ovules in each cell; the genus Cyrtosperma is also nearly allied, but has two or more ovules in the single cavity of the ovary, and the leaves have a different venation. These genera are all very closely allied to each other, and there can be little doubt that they are but the surviving forms of plants that in ages long gone past had a greater uniformity of structure, and constituted a single genus, but which, during the great changes the earth has undergone, have become gradually modified and specialised to the extent pointed out, so that now there seems no other way to deal with the existing known forms than either to consolidate them all into one genus with variable characters, which would be inconvenient, or to separate into distinct genera those plants that have a distinct and uniform type of structure, as has been done by Schott and others; this latter course seems to me preferable, and is the one that I believe will be adopted by the authors of the *Genera Plantarum* in the forthcoming part of the concluding volume of that work. *N. E. Brown.*

Globba albo-bracteata, *N. E. Br.*

A new and distinct species of this curious genus, allied to G. atrosanguinea, Hassk., figured in the *Botanical Magazine* at tab. 6626 (sent out by Messrs. Veitch & Sons as G. coccinea), but taller, with larger leaves, white bracts, and a laxer inflorescence. It has been introduced by Messrs. Veitch & Sons, through their collector Mr. Curtis, from the island of Sumatra. The Kew Herbarium contains a specimen of what I take to be the same species, collected by Dr. Beccari on Mount Singalan, in Western Sumatra (No. 208), which only differs from Messrs. Veitch's plant in having the sheaths of the leaves glabrous; in every other respect it appears to me identical. The characters of the following description are taken from Messrs. Veitch's specimen :—

Stem about 2½ feet high, basal vaginæ leafless, dark brown-purple. Leaves about seven or eight to a stem, 2—3 inches apart; vagina green, softly pubescent, with very short hairs, ciliate at the mouth; lamina sessile, 4—5 inches long, 1½ inch broad, ovate-lanceolate, acuminate, ending in a long fine point, base somewhat rounded, dark green and glabrous above, except the midrib, which is minutely pubescent; beneath purple-tinted, softly pubescent with very short hairs. Flower-stem entirely covered with erect closely convolute sheaths; the lower ones long, narrow, green, and pubescent; the upper ones shorter, broader, pure white, and glabrous. Panicle lax, 2—3 inches long, the axis and branches white, pubescent; bracts persistent, oblong, obtuse, pure white, glabrous, more or less reflexed; branches of the panicle ¾—1 inch long, about five-flowered, bracteoles about two, white like the bracts, but smaller; flowers sessile, calyx white, corolla yellow. Sumatra. Curtis! Beccari No. 208! *N. E. Brown.*

Begonia goegoensis, *N. E. Br.*

A very handsome species, closely allied to B. peltata, Hassk., which is figured in the *Botanical Magazine* at t. 4676 as B. hernandiæfolia, and by an error is stated to be a native of Veraguas, whereas it is really a native of Java. From B. peltata the present plant differs in its larger, bullate (not smooth) leaves, with fewer nerves, differently coloured flowers, and the wings of the capsule of a different form. Its dwarf evergreen habit, the bronzy lustre of its leaves, and the pretty rosy-pink flowers render it a very charming and desirable decorative plant. The following is a full description of it :—

Stem short, creeping, rooting, ¼—⅛ of an inch thick, green, with small white spots, internodes very short, almost undeveloped. Stipules broadly ovate, acute, aristate, slightly keeled on the back, 5—7 lines long, 4—6 lines broad, reddish-tinted. Petioles erect, 3—4½ inches long, 2½—to 4 lines thick, four-angled, with unequal concave sides, glabrous, except a few setæ at the apex and base, light green, or tinged with purple. Lamina peltate, 6—7 nerved, orbicular-ovate, shortly cuspidate-acuminate, 4½—7½ inches long, 3½—6 inches broad, glabrous, except a few hairs along the nerves beneath, bullate, the bullations depressed around the insertion of the petiole, margin with short rounded subrevolute teeth, very sparsely ciliate, upper surface rich dark green, with beautiful bronzy reflections (the younger leaves lighter), the course of the nerves of a crystalline pale green, under-surface and margins purple-red, nerves flat and very sparsely hairy beneath, scarcely prominent above. Peduncle 6—10 inches long, terete, glabrous, green or purple-red; cyme monœcious, repeatedly dichotomously branched, the nodes green, ebracteate, or with very few minute subulate bracts. Flowers 5—6 lines across their longest diameter, sepals orbicular-ovate obtuse, rosy-pink outside, pale pink inside; petals one-third as large as the sepals, obovate, white; male flowers with two sepals and two petals, stamens monadelphous in a globose very shortly stipitate head, anthers yellow, obovate; female flowers with two sepals and one petal, styles connate, stigmas sinuous, ovary green, three-celled, three-winged, wings purple-red, unequal, the larger one deltoid obtuse, placentas entire, ovate-acute in transverse section. Only the last flower developed on each ultimate division of the cyme is female, all the others upon the cyme are male, and have fallen off before the females expand.

A native of Goegoe, in Sumatra, where it was discovered by Mr. Curtis, and introduced by him into Messrs. Veitch & Sons' nursery, where it has been flowering for some time past. *N. E. Brown.*

Ixora salicifolia (*Blume*) var. variegata, *N. E. Br.*

This is a variety of the old Ixora salicifolia, having a broad or narrow feathered silvery grey band down the centre of the leaf. It is a native of Sumatra, whence it was sent to the establishment of Messrs. Veitch & Sons by their collector, Mr. Curtis. According to the Kew Herbarium, I. salicifolia is found in Java, Borneo, Labuan, and Sumatra, but it is only the Sumatran specimen that shows any traces of the variegation above noted, and therefore it is probable that it is a form only found in that island. *N. E. Brown.*

Aërides illustre, *n. hyb. nat.?*

Grand and glorious as this is, it is very difficult. It was selected out of an importation of Aërides crispum at Mr. Low's by the reason of its having very broad and short leaves, with comparatively few dark spots on the foliage. Now those broad leaves and the apparently unbranched raceme keep it away from Aërides maculosum. It has also larger flowers, sepals and petals much broader, with a lilac hue on the white colour, and with very few blotches, mostly only on the inner side of the petals. The lip is grand, conspicuous by its finest amethyst-purple, with those longitudinal marks at the base which form a character of Aërides maculosum. The basilar callus is bigeminous, sulcate in the middle. The spur is exserted, and quite that of Aërides maculosum. The column gives me the impression of being intermediate between the long one of A. crispum and the short one of A. maculosum. I obtained this grand thing from Sir Trevor Lawrence.

At my side lies an inflorescence with twenty-five fresh good flowers. Ah! if Sir Trevor found the leisure to deliver a lecture how specimens have to be cut and how they should be sent to botanists. In my memorandum-book are several fine novelties unpublished, because I wait for the time when they will finally be sent by Sir Trevor Lawrence, Mr. Lee, Messrs. Veitch, and some other correspondents of that school. What could I have said, if I had obtained my usual despatch of one or two smashed and crushed flowers without Sir Trevor Lawrence's remarks. And how agreeable it is and reasonable too to know the sender. It is the practice on the Continent, that post-offices regard it a point of honour to send what they have accepted. In England the boxes are accepted, but then one is honoured with a letter, telling one to send somebody to the post-office at London to repack the specimen. In a short time Mr. F. Sander has assisted me in three instances. I cannot trouble him any more, and therefore wish that what is destined for me may be packed in wooden boxes, as card-boxes are smashed and tin-boxes are regarded as injurious by the post-office at London, though the local post-offices accept them with pleasure at least to abolish the stamp. The last anonymous box contained Miltonia flavescens, Lindl. *H. G. Rchb. f.*

Odontoglossum vexillarium Wiotianum, *n. var.*

A glorious variety! It is of the finest, richest white, with a light yellow base to the lip, and three short reddish-purple lines in front. There is a light purple dot at each side of the base of the petal, and the anther and sides of flower are purple, too, as are two short lines on the base of the side sepals inside. It is nearest Odontoglossum vexillarium leucoglossum, but well distinguishable. I dedicate it with pleasure to Mr. Wiot, of the old firm of Jacob, Makoy & Co. *H. G. Rchb. f.*

"THE ROYAL" AT READING.

Fruit and Vegetable Competitions.

The attempt made this year on the part of the Council of the Royal Agricultural Society to engraft upon its operations matters of a more strictly horticultural kind seems to have resulted in lamentable failure, and the good intentions of the promoters have been frustrated at once by their own unhappy restrictions and by the shortcomings of that particular section of the community it was hoped to assist. Farmers are very far from being gardeners; indeed, there seems to be with them, as compared with persons engaged in other and much less allied vocations, little of taste or pleasure in gardening. It may be that in the ever-recurring use of horse labour, of ploughs, and of harrows, of new and extensive machinery, and of the cultivation of land over immense breadths, that they come to regard the less pretentious details of gardening as childish and altogether beneath their notice. If this be so, no greater mistake could well be made, because the very highest and most scientific modes of land cultivation are found in good gardening; and under no condition of culture as adopted by the farmer can he succeed in extracting from the soil, relatively, such good crops as are produced by the simple manual labour inseparable to good gardening. The chief object of the prizes as offered for farmers' fruits and vegetables at Reading, was to induce that section of land cultivators to embark in the cultivation of fruits and vegetables for the supply of the home market, the promoters being evidently under the impression that if the farmer could be induced so to act, he might find in their culture, if not a mine of wealth, at least such a profitable return as should serve to rescue him from those disasters which seemed to be so actively besetting him.

Perhaps we shall but do justice to the agriculturist if we credit him with having, after all, too much good sense to be caught with such captivating, but to him probably questionable, suggestions. He finds himself already a creature of the seasons, for more upon these than upon any other surroundings hangs his prosperity or adversity. He can see, further, that he has had no special training to fit him for market gardening; that he has none of the needful appliances, the obtaining of which needs considerable outlay; that he is a long way removed from populous markets, where alone his garden products can profitably be disposed of; that he would have to pay for garden work higher wages and for his land higher rents, and assuredly higher rates, tithes, and taxes. Then the present season illustrates to him very forcibly how little reliance is to be placed upon fruit crops, for if under-fruits are abundant they are also cheap, whilst top-fruits, that were at blooming time so full of promise, are now a comparative failure. If, in regard to these, experienced cultivators cannot ensure crops, how can he hope to do so?

But the failure of the competitions in question arose from another cause—they were crippled by unhappy restrictions. To tell the truth boldly, the Council of the Society seemed less anxious to encourage the culture of fruits and of vegetables generally, than to encourage their *protégés*, the farmers, and these latter have declined to reciprocate. One important condition imposed upon all exhibitors, with trifling exceptions, was, that they should be tenants to the extent of paying rent for three-fourths of the land they cultivate; and further, that of that land at least one half should be under ordinary farm cultivation. The object of this condition was to ensure that the prizes fell

to the farmers. The result has been the entire failure of the competitions. Had the conditions been reversed, and so rendered that the exhibitor should have at least one half his land under fruit and vegetable culture, then some real encouragement might have been given to fruits and vegetables; and there is not a market grower of these products, which are of such great importance as food for the people, but might have competed if he thought desirable. The promoters of these competitions—chief amongst whom is Mr. Charles Whitehead—must be indeed sanguine men if they regard the present results as encouraging. And the Council will probably think that £136 given in such liberal prizes might be better disposed of. On the other hand, if the Council will offer that sum in prizes for products in season to market growers or private growers of all descriptions without restriction they may have to set before their visitors a display of garden produce such as shall prove to be one of the most attractive features of their great exhibitions.

We strongly criticised the schedule of classes earlier in the year, and pointed out the absurdity of offering prizes early in July for such things as new Apples, Pears, Broccoli, Runner Beans, and similar things; and our criticisms have been so far justified by the fact that in these classes there were no exhibits. Neither were there in several others in which there might reasonably have been many competitors; whilst in all others the entries were very limited, and of these some not represented. The prizes in almost all cases were of the good sums of £3 and £1, 1st and 2d, and were ample for the purpose had competition been possible. There were sixteen classes for fruits, of which there were no entries for 14 lb. of Strawberries, nor for three kinds of 7 lb. each. There was one basket only of white Cherries, a very good sample of Bigarreaus, coming from Mr. John Martin, of Chilham, Canterbury, who was awarded the 1st prize, the same exhibitor having the only exhibit of black Cherries with fairly good May Dukes. White Gooseberries were represented by one half-sieve only—a fair sample, apparently, of Whitesmith—sent by Mr. S. H. Goodwin, Mereworth, Maidstone. There were, strangely enough, no red Gooseberries, nor Raspberries, but there were three fairly good lots of red Currants, the best coming from Mr. Bushridge, Jun., East Farleigh, Maidstone, and the second best from Mr. John Martin—Mr. Wm. Parrott, of Normandy, Guildford, getting for his lot a commendation.

A truly superb sample of black Currants, certainly the most meritorious exhibit, came from Mr. Parrott; and Mr. Martin took the 2d prize with a fair sample, these being the only competitors. There were no new eating or cooking Apples, and in the class for old or keeping eating Apples one exhibitor had put in a basket of Hambledon Deux Ans, but the judges declined to honour it. In the class for keeping cooking Apples the same kind, shown by Mr. J. Watkins, Pomona Farm, Withington, Hereford, was placed 1st, and a capital fresh sample of what the exhibitor called Holland Pippin was 2d. This lot was shown by Mr. H. Humfrey, Kingstone Farm, Shrivenham, Berks. There were no Pears, nor was there any entry for collection of packages suitable for fruit transit; nor in the class for six kinds of fruits, open to market gardeners, though one grower had entered. In the vegetable classes there were of Peas three separate bushels shown, all poor samples—one of Hundredfold and two of Day's Sunrise—but no award was made. One basket of 1½ cwt. of Early Morn Potatos was shown, too poor in sample to secure a prize.

In the corresponding class for kidneys the only local farm competitor, Mr. Davidson, of Highfield Farm, Heckfield (an old gardener, by-the-bye), was 1st, with a handsome lot of Myatt's Ashleaf, having no competitors. Mr. Davidson was 1st also with a dozen heads of fairly good Early London Broccoli, but a long way removed from good market samples. There were no autumn-sown Onions, and one lot of bunches of spring-sown Onions was of too poor a sample to get a prize. The one lot of twelve Cabbages shown, as also of Cos and Cabbage Lettuces, were too poor to get awards; and the one lot of Early Horn Carrots were too small. There were no salads, Beans, or Broccoli; and the section was closed by one exhibit of vegetables in the market growers' class, the competitor being Mr. C. Fidler, of Friar Street, Reading, who had good Ashleaf Kidney and Fillbasket round Potatos, good Cauliflowers, Cabbages, Peas, Intermediate Carrots, and moderate Lettuces.

ORCHIS MACULATA AND O. LATIFOLIA IN NORTH WALES.

In the only place near Eton where Orchis latifolia grows, O. maculata being also abundant, I used to find what seemed to be hybrid or intermediate forms between these two, some of which are still growing in my garden in Cheshire, and keep their doubtful character. The ordinary O. latifolia in the wet meadows to which I refer bore a tall, rather lax, cylindrical spike, with large prominent pointed bracts and long-shaped unspotted leaves. In form it resembled the figure called O. incarnata in the last edition of Sowerby's *British Botany*, but the colour was not rose or fresh-coloured, but dull purple. I believe this to be the commonest type of O. latifolia in the South of England. During the last month I have made the most of an opportunity of examining O. latifolia and its varieties in many of the bogs of Carnarvonshire and Anglesey, where they abound, always in company with O. maculata. Between June 13 and July 5, I visited and searched at least twenty different localities, all situated within 3 or 4 miles of the railway between Conway and Holyhead, one being only 2 miles distant from the latter place. A day or two ago a friend sent me the last number of the *Journal of the Linnean Society*, in which there is a notice and a drawing, by Mr. C. B. Clarke, of the Orchis incarnata of Linnæus. I will mention this Orchis first, because it may be called the extreme form, being decidedly the most distinct from the ordinary type of O. maculata. Its characteristics in North Wales are exactly as described and figured by Mr. Clarke, except that I have been unable to recognise anything like yellow in the centre of the lower lip of the corolla. In other respects the dwarf and stout cylindrical spike, the leaves always spotless, and the flower of pale flesh colour, sometimes tinged with copper colour, correspond with his description. It is, perhaps, the least ornamental of all the forms, and least suited for cultivation in gardens, on account of the small size of the flowers, and their want of clearness and brightness of colour. This form abounds in some small bogs 2 miles to the north-east of Conway, and in several extensive bogs near Beaumaris and in the centre of Anglesey, near Llangefni, but it is by no means universally present, nor is the darker coloured and more common form of O. latifolia always found in the same spot, though O. maculata is always present. It is generally near the sea level. The prevalent type of O. latifolia in North Wales bears flowers of a much deeper colour than I have ever seen it in the South of England. The colour sometimes approaches that of port wine, and is as deep as the darkest shades of O. Morio, or O. mascula. The flower-spike is cylindrical, being fully as thick at the top as at the bottom, and very closely set with flowers. The lower lip of the corolla is broader than in O. incarnata, and is inclined to show a division into three lobes, though the central tongue projects prominently below the lateral lobes. The leaves are broad, and always spotless. This form is common in suitable spots throughout the district which I have searched, being found in wet parts of pasture fields sometimes as much as a thousand feet above the sea level. Throughout Anglesey it is common in the railway cuttings, even where the fields through which they are made are not wet. I have not tried this form sufficiently long in cultivation to know whether, when grown side by side, it will assimilate itself in size and colour to the Southern form O. latifolia, but I think it probable that it will do so.

Besides what I have described as the typical forms of O. incarnata and O. latifolia, I find some Orchises with very spotted leaves, and of a growth more robust than O. maculata and taller than O. latifolia, with the lower lip of the flower broad and divided distinctly into three lobes, bearing very distinct and showy spots. The colour of the flowers is of many shades, and for the most part darker than I ever saw in O. maculata, where not associated with O. latifolia. Some of these approach very near to a well known garden form called O. maculata superba, or the Kilmarnock Orchis which I have cultivated for several years.

Besides these forms, I find associated with O. latifolia forms of O. maculata with broad spotless leaves and stout growth, but with very light coloured flowers, which have all the characteristics of those of the typical O. maculata. With regard to these last, I have observed that in wet ground, at high elevations on the mountains, where O. latifolia has ceased to grow, the flowers of O. maculata are lighter and more varied in colour than in the lower ground, assuming shades of clear pale purple and pale pink; pure white forms, or with spots hardly visible, are also common. I have selected, in the course of my wanderings, more than a hundred for cultivation in my garden. I feel sure that they will form a series in which it will be hardly possible to draw a line between O. latifolia and O. maculata, though I am uncertain whether these large ornamental forms are hybrids or intermediate varieties; but from the remarkable vigour of their growth I suspect that they are hybrids.

The cultivation of these Orchids in gardens is easy, provided rich and open soil, and a sheltered situation, with good dressings of rotten manure and plenty of water are supplied to them. In shade the colour deteriorates. Individual bulbs differ greatly from one another, some becoming very strong, and growing 3 or 4 feet high, with flower-spikes 9 inches long, after having been established for a year or two, whilst others seem never to respond to cultivation, or to improve under it. I have found it best to select the strongest and largest plants, taking care in getting them up not to injure the feeding-roots, which extend horizontally from the top of the tubers. If kept in wet moss in a tin box they may be moved when in flower. I omitted to mention two points of character which I found very inconstant and uncertain—the bracts and the spurs of the flowers. I have often found the bracts quite as large and prominent in plants of the common O. maculata type as in any form of O. latifolia; the spurs vary much, being thin, and of the same breadth through their whole length in the typical O. maculata, but broad and tapering in the typical latifolia; between the two forms, however, I found many gradations. I may mention also that in their native haunts the wetter the ground the nearer the surface the tuber rises, and in spots which are permanently wet through the summer the top of the tuber is often above-ground, and the feeding roots lying on the surface, so that the plant may be pulled up entire by the stalk. In gardens it is better to plant them 3 or 4 inches deep, with a handful or two of gritty road-scrapings surrounding the tuber. *C. Holley Dod, Erskine House, Llandudno, July 7.*

DISEASE OF HART'S-TONGUE FERN

(Didymium effusum, *Link*).

Last November Mr. J. L. Tyerman, of Penlee, Tregoney, Cornwall, forwarded to the office of this paper a frond of Hart's-tongue Fern, found growing in a damp hedge-bank near Penlee. The frond was curiously twisted in growth, and more or less covered on both sides with a parasitic fungus. The groups of little round fungi were extremely like groups of butterfly's eggs. Mr. Tyerman wished to know its name, but it is an easy thing to ask for the name of a fungus, but often a very difficult one to give it. A glance at the parasite under the microscope showed it belonged to the order of fungi named Myxomycetes, a word indicative of the slimy nature of these fungi when in an infant condition. The parasite was Didymium effusum, described by Link in 1809, but new to Britain. The genus was termed Didymium, from *didymos*, double, in reference to the two superimposed skins or coats belonging to some members of the genus, and effusum, from the little globose masses (as seen on the frond and sori) being frequently effused or confluent.

The species is given in Fries' well-known *Systema Mycologicum*, vol. iii., p. 3, and it is described at pp. 163, 164, in Dr. Joseph Rostafinski's Monograph of the Mycetozoa, published in 1875. This work, which is in Polish, has been translated by Dr. M. C. Cooke; but, as at the time of translation Didymium effusum was not known as a British plant, it does not of course find a place in Dr. Cooke's *Myxomycetes of Great Britain*. Dr. Rostafinski was a pupil under Prof. De Bary, of Strasbourg, and he follows his teacher in terming these fungi Mycetozoa—a word designed to indicate that the organisms classed under this heading are intimately related to animals. Few botanists give adherence to this view now; but it may be remarked in this place, that Mr. W. Saville Kent, in his recent *Manual of the Infusoria*, classes these fungi amongst Infusoria on one ground (amongst others) that in so doing he follows the teaching of Professor De Bary. Dr. Cooke challenged this teaching as contrary to modern ideas, and as teaching that had

been "repented of" and "ignored" by De Bary himself. Mr. W. Saville Kent in reply defied Dr. Cooke to point out where or how Professor De Bary had ever ignored his former teaching; to this Dr. Cooke made no answer. It seems strange, however, that, although Dr. Rostafinski retains the misleading appellation of Mycetozoa, yet this name is "entirely divested" by Dr. Rostafinski himself "of any insinuation in the direction of Infusoria or Rhizopoda,"—so Dr. Cooke tells us in his Introduction, and we think Dr. Cooke has done well in retaining the more appropriate name of Myxomycetes, as advocated by Sachs and other authorities.

The general appearance of a portion of a diseased and twisted frond is shown natural size at A (fig. 11). Two sori, or clusters of spore cases, are illustrated at B (fig. 13) to show the remarkable habit of the fungus of growing not only upon both sides of the Fern frond, but also upon the groups of spore cases, and even upon the free spores themselves. This habit indicates considerable rapidity of growth, for the fungi probably grew over the spore cases after the thin covering or skin (indusium) was ruptured: the broken irregular margin of this enclosing skin is shown in the illustration. When a transverse section is made across one of the sori and magnified twenty diameters the fungi are seen as at C (fig. 12). In this instance the spore cases of the Fern support three of the fungi,



FIG. 11.—PORTION OF FROND OF HEART'S-TONGUE FERN, WITH FUNGI AT A. NAT. SIZE.

whilst a fourth fungus at D is seen growing on part of the frond to the left. A high power is not required to make out the structure of the fungus, and all can be fairly well seen if a glass magnifying 120 diameters is used. At E the fungus is seen in elevation, and at F in section, supported by the spore-cases (sporangia) of the Fern. The spore-cases belonging to the Fern in various stages of ripeness, and in the act of shedding their spores, are seen at the base of E. The outer coat of the fungus is beautifully dotted all over with white stars—these stars are crystals or groups of crystals of oxalate of lime. The interior of the fungus is illustrated at F; the white egg-shaped base at G is termed the columella, or little pillar or support, the axes from which the hairs forming the capillitium spring, whilst the radiating threads above form the capillitium itself, so called from its appearance, being like a lot of radiating hairs. These hairs or threads support but do not give rise to the spores, which latter are formed by divisions of the material within the sporangium. The slightest touch on the outside of the fungus is sufficient to remove the coat and set the spores free, as shown on the left side of F. These minute spores are purplish-brown in colour and globular in shape, and are shown at H, magnified 640 diameters on the right hand side of F. Owing to an insufficiency of books and specimens in the public libraries and herbaria of this country it is often most difficult to name or describe new species. Some of the Myxomycetes have been described by different authors under more than thirty different names, sometimes as many as four different plants have been described under the same name, and, as in some libraries the books are absent, and in others the specimens, it often happens that the seeker after fungological knowledge finds himself (especially if he cannot read Russian, Polish, and Hungarian, as well as French, German, and Latin) hopelessly aground. The terms used are often very perplexing, each author appears to delight in introducing new terms of his own, so that the same organs of fungi have different names in different books. If a new writer uses an old writer's terms he runs the risk of some other writer saying, in print, that the new writer does not know what he is writing about. No doubt all these names mean something, but the writer of this notice could very easily show that the authors themselves sometimes do not know the meaning of their own



FIG. 12.—FUNGUS ON SPORE CASES OF FERN (MAGNIFIED). The lower figure shows the fungus cut through, and magnified 120 times, the spores, H, magnified 640 diameters.

terms. For instance, the Greek name of a certain genus indicates that a black fringe of hairs is invariably present, whilst one of the species under this group gives "fringe white." Even in the plant we are now describing we assume the name Didymium to have reference to a double coat, or to two outer layers or skins, yet there is a section of this genus (to which D. effusum belongs) classed as "††. Wall of sporangium single." There ought to be a glossary to every text-book. Dr. Rostafinski, the latest authority on the Myxomycetes, appears to adopt Link's plant and name, and the following description of Didymium effusum, Link, has been kindly translated for us from the Polish, by Dr. Cooke:—"Sporangia (that is, the ovoid fungi themselves) sessile or without regular form: snow-white, or now and then yellowish-white (the Cornwall plant is greyish-white). Capillitium (see F) of very fine fibres with branches combined into a thickly set net, colourless, provided with numerous small thickenings. Spores, dull violet, almost smooth, .01—.011 mm. diameter, rarely only .008 mm."

The Myxomycetes, if not true fungi, come closer to these plants than to any other organisms. Sachs now places them with the fungi. Certain of the species appear to some zoologists to approach the animal kingdom, but the evidence, as far as we are able to estimate it, inclines to the view that they are either true fungi of a low order, or close but aberrant allies of fungi, and therefore plants—not animals. There is, of course, no reason why there should not be intermediate forms between the two kingdoms. With some of the lower Algæ they possibly approach the animal kingdom; but in a kingdom, as in a species, there is no distinct boundary line. There are no outlines in Nature.

A typical Myxomycete is fairly well represented in our engraving. The Myxomycetes commonly consist of an ovoid sporangium, either sessile or stalked, some are extremely small, whilst others are very large, sometimes several inches or even feet in length, the single or double skin is commonly dotted over with crystals of oxalate of lime; the stem and walls of the fungus are not built up of true-cellular tissue, as in other fungi, but these parts are composed of a homogeneous material. The sporangium, E, F, contains a vast number of spores held in position by the radiating thready capillitium which (in our plant) springs from the small white ovoid columella at the base, G. When mature the sporangium of a Myxomycete cracks open like a starry Puff-ball, or in a more simple or irregular manner, or a lid is pushed off. Some species have elastic spiral threads, which curl and uncurl according to whether the air is damp or dry, and so aid the dispersion of millions of spores. The

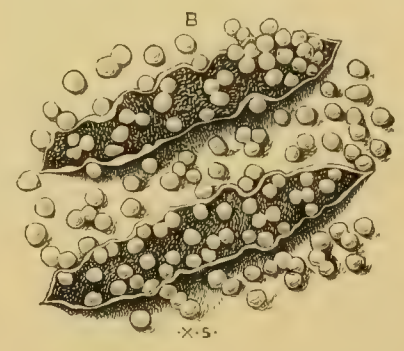


FIG. 13.—FUNGUS ON SORUS OF FERN. MAGNIFIED 5 DIAM.

spores are usually smooth and round, and variously coloured; when these spores germinate, they do not usually protrude a thread, as is the rule, though not without exception, in other fungi, but the contents of the spores flow out as an irregular nucleated sphere of protoplasm; this soon protrudes a hair-like flagellum or tail, and this tail has sufficient power to transport the small mass of protoplasm through water, or over any damp surface. In this respect exactly resembling the moving zoospores expelled from the spores (conidia) of the Potato fungus. This free piece of protoplasm now swims and creeps about, and is capable of dividing and subdividing itself, and also, it is said, of absorbing solid nutrient materials. Some observers, however, strongly question this statement. When a large number of spores germinate near each other their protoplasmic contents coalesce, and form one jelly-like mass (termed a plasmodium). This mass is often several inches across, and is capable of moving over any damp surface or in water. A thin slimy plasmodium upon the damp ground is capable of creeping up the stem of a plant and covering the leaves, and it is possible that the Hart's-tongue Fern here described was so attacked. This slimy plasmodium will, under favourable circumstances, speedily give rise to ovoid sporangia or spore cases, just as in this instance we see them upon the sori of the Hart's-tongue Fern.

As a rule the Myxomycetes grow upon decaying vegetable material, some run over non-organic substances. A few species must be very familiar to every gardener; one, Lycogala epidendrum, is a soft roundish fungus, somewhat less in size than a hazel nut, common on rails and stumps, often brilliant in colour as carnation and vermilion. Reticularia umbrina, a brown fungus, like a dark brown kidney Potato,

*

full of dust, common on old rails and stumps. Æthalium vaporarium, a common sulphur-yellow pest in stoves, sometimes overrunning Pine-apples. Very few fungi are more intolerable than this slimy yellow Æthalium so common on the bark in some stoves; it prevents the plants from growing, and when it has once got an entrance, it is most difficult to expel. Spumaria alba resembles masses of white froth-like saliva upon grass and other plants.

There is probably little fear of healthy Ferns ever being destroyed by a Myxomycete, but here is a proof that a new comer is prepared for mischief, and it is well to be on the alert, for it is probable that when the Fern spores from infected plants are dispersed by the wind they carry the much smaller spores of the parasite with them. *W. G. Smith.* [Sulphur dusted over the tan keeps the fungus in check, as also does salt; but the latter may injure the plants. Ed.]

LANTANAS AT CHISWICK.

How largely the group of Lantanas has increased of late can be inferred from the fact that M. Victor Lemoine, of Nancy, catalogues something like forty varieties, and they are of comparatively recent introduction. Not one of them appears to be of English origin. We are, therefore, indebted to Continental raisers for the production of new forms of the Lantana. Mr. Barron has gathered together a goodly number of these at Chiswick, and grown them in pots, and any one interested in these greenhouse shrubs can inspect them, and note those worthy of cultivation. They vary somewhat in the character of the foliage and in vigour of growth: some are of a free-branching habit, others of a more compact character, while there is a dwarf section that seems particularly well adapted for cultivation in pots. There is a good amount of variety in the tints of colour, and, generally speaking, they are all bright and effective. It is scarcely possible they will ever become a popular class of plants in this country, but some of them, at least, deserve to be grown, and by setting forth a few of the most attractive varieties in the trial at Chiswick, attention may be called to their merits. Taking first of all the maroon, crimson, and red-flowered varieties, all of which are more or less tinted with orange, and which gives a cheerful radiance to the flowers, we find one of the freest, strongest growing and best coloured to be Verluisant, orange-red, deepening materially in colour with age, and with a bright orange centre—the flowers opening orange and changing as they mature. It is the peculiarity of all Lantanas to open their flowers of a pale hue, and to deepen in colour with age. Le Styx, very fine, rich deep orange-red, large and broad trusses of bloom, and a strong grower. Le Vainqueur, very like Le Styx, but, as seen at Chiswick, not so good. M. Boucharlat, very fine, pale orange-red, the pips large and bold, and forming noble trusses of bloom; very good and bright, and a very strong grower. Surprise, in the way of the foregoing, but paler in colour.

There is a group in which pale purple, violet, mauve, and salmon tints are prominent; and the varieties in this group are being improved year after year. The best among them are Venusta, salmon with orange centre, very fine pip and truss, distinct, and very good. Le Patriote opens orange and blush, changing to pink, with rosy-pink centre; fine and distinct. Clio opens gold, and gradually changes to lively rosy-purple; fine pip and truss, and a good free grower. Triomphe du Commerce, pale lilac-pink, deepening to violet; fine pip and truss; extra fine. Giselle, lilac and mauve, tinted with rose; opens pale lemon; good grower, and very free: one of the best in this group. Rosa Mundi, rosy-purple; very pretty indeed. Souvenir d'un Ami, opens gold, changing to orange-salmon, and deepening to rosy-purple; very fine pip and truss. Comtesse de Biencourt, opens yellow, changing to pale rosy-pink; very pretty, and remarkably free. Météore, opens cream, changing to pink and rosy-lilac; pale in colour, but very pretty.

Among the yellow and gold flowered varieties there are a few that are particularly fine and striking. Foremost is Reveil, deep yellow; very fine. Pluie d'Or, golden-yellow, small flower, good colour; capital for pots. Figaro, bronzy-yellow, very free; Bijou, a dwarf form, with pale orange and yellow flowers, very free; an excellent pot plant. Globe d'Or, a fine hue of gold, very dwarf and free. California, pale yellow, distinct in character, good close habit, and very free. Toison d'Or, pale orange, golden centre, small and very free.

The varieties which can be grouped as white flowered are but few in number. The best are Innocence, opens pale lemon changing to white; good habit, and very free. Bouquet Blanc, pale yellow changing to white; and Le Lis opens pale yellow changing to pure white—so far the best white: good habit, and very free.

Lantanas can be put to several uses. Strong growing, high coloured varieties like Le Grenadier, make fine specimens for exhibition purposes, when the foliage is thoroughly good, and the trusses of bloom numerous and richly coloured. It is not often a good specimen Lantana is met with, but occasionally one sees a really good specimen, when it is a telling point in a group. They also make good and useful greenhouse plants, but as they root freely, they require to be grown in thoroughly good soil in order to get well-furnished with foliage, and when the plants become pot-bound they bloom freely and finely. But the plants must be cared for, and not neglected. The dwarfer and closer growing varieties are also very useful for bedding out during the summer, and Mr. Barron has demonstrated at Chiswick how well they are adapted for this purpose. And in the search for new and effective subjects for bedding purposes let not the Lantana be overlooked.

No one can speak of or write about Lantanas without bearing testimony to the zeal and enterprise of M. Victor Lemoine, of Nancy, who has raised in part and collected and distributed the many new varieties obtained from abroad. The English growers are indebted to him for many good and useful things. Let a fitting testimony be borne to his good offices in this respect, and it is desirable that it be interpreted as thanks for the past, and of fruitful anticipation in the future. *R. D.*

CAREY CASTLE,

The beautiful seat of C. Richardson, Esq., stands upon an elevated site in the parish of St. Mary's Church, about 2 miles from Torquay, and is approached by a Lime avenue of considerable length, and more than average beauty. The Castle upon the south side is covered with charming creepers, among them Ampelopsis Veitchii, climbing Roses, Jasmines, and other fragrant climbers. The flower garden upon the south front consists of very pretty groups of Roses and bedding plants, the former, of course, looking supreme above everything else, as becometh the queen of flowers! Looking westward there is a rich landscape which takes in a full view of the Dartmoor Hills, and nearer home there is a view of the Windmill Hill, and a deep ravine which extends to within a short distance of the Castle. Devonshire is famous for its lakes and Lily ponds, and this place is no exception to the general rule, for here are Nymphæas floating upon the surface of a clear pond in front of the Castle, with a fountain in the centre. The show house is gay with flowering plants, many of them fragrant, as the Jasmine, Heliotrope, and Honeysuckle, especially the Heliotrope, which covers a wall several yards high, and is quite a sheet of bloom in various stages. Habrothamnus and other creepers grow luxuriantly here, and pot plants occupy and furnish the stages with a variety of foliage and flowers.

The carriage front is upon the north side, and below is "the cavern," which is a home for hardy Ferns, Periwinkles, Silenes, and other flowers, and is surrounded and partly enclosed by Conifers and spreading trees, which afford the necessary seclusion and shade to a place which has apparently been half designed by Nature. Further to the west lies a portion of the old Castle, where there are two houses, one a Pine stove—the fruiting house, and the second a greenhouse, where there is a brilliant display of zonal Pelargoniums which would be no discredit to Swanley, whence they were obtained. The trusses of Beauty of Surrey (pink), Prince of Wales (maroon), Lady Sheffield, and Herr Wagner are something very fine indeed, and Mrs. Brooks and John Gibbons are wonderful in size and colour. There are three kitchen and fruit gardens, in all of which the crops are promising, with the exception of Pears and Apples, which are scarce everywhere. Plums and Cherries are the staple crops in one garden, and small fruits in another, and of these there is abundance and to spare. Pines, Grapes, Melons, and Cucumbers are much appreciated, and of these Mr. Pope has a good show, as well as many other things which are in daily request with all private families. *W. H.*

A WILD-FLOWER SHOW.

There are few subjects of greater importance, and at the same time more difficult to treat satisfactorily, than that of the education of the village youths of our country.

It is not the lack of subjects to teach the young that troubles the thinking man, but the best methods by which those subjects are to be taught. It is here that the philanthropist may well pause for a solution to the problem—How to educate our boys and girls to a higher, better, and more useful life.

It may be said that it would be better for the lads, and for the community at large, that the range of education in village schools should be limited to a good sound general elementary education, such as is often spoken of as "the three R's," and that more than this is, for various reasons, undesirable; but to lighten the labours, and increase the pleasures o country life, is to make it acceptable and even desirable. By varying its monotony, widening its limits, so that its rewards may be more and greater, we shall awaken an interest in country life in the minds of the young, that some day will be able to resist all the seeming attractions and temptations that now draw so many within the unwholesome vortices of our great cities.

In order to show what may be accomplished by a painstaking schoolmaster to awaken in the minds of his pupils an intelligent interest in the works and various processes of Nature which they see around them, we have to instance Mr. John Henshaw, of the British School, Harpenden. There the boys are taught not only something of the great classes of plants, and the distinctions between them, but they are also taught to observe the forms and growth of plants, and we cannot over-estimate the habit of observation and the love of Nature thus imparted.

On Friday and Saturday in last week the third annual exhibition of wild flowers was held in the British Boys' School, the exhibitors being seven boys belonging to the first class, who set up, in artistically arranged bunches and labelled with their botanical names, thirty different species of wild flowers and grasses; three of the junior boys also set up similar bunches of twenty different species; and William Deller, one of the pupil teachers, set up a magnificent collection of 103 different species, all correctly named. Three vases of wild flowers and grasses, very creditably arranged, were also exhibited by the boys, the whole having a very pretty as well as instructive appearance.

Although the district is not naturally favourable to the Orchid family, we noticed representatives of Listera ovata, Orchis mascula, O. maculata, O. latifolia, and Ophrys apifera.

Ferns were represented by Ophioglossum vulgatum, Aspidium Filix-mas, and Scolopendrium vulgare.

Among the rarer plants exhibited we may notice Campanula glomerata, C. latifolia, C. rapunculoides, Cotyledon umbilicus (Pennywort), Linaria repens (Pale Toadflax), Corydalis lutea, Meconopsis cambrica (Welsh Poppy)—this is an elegant wild flower, said to have been introduced to the neighbourhood of Harpenden by some visitors from Wales; Nymphæa alba (white Water Lily), Antirrhinum majus (Great Snapdragon), of which some splendid spikes were shown; Asarum europæum, the only British species of the Aristolochia family; Melilotus officinalis and M. alba (the yellow and white varieties of the Sweet Melilot). Besides the above, the fringed Loosestrife (Lysimachia ciliata), a North American species which is occasionally gathered wild, but more particularly in the neighbourhood of Cumberland and Dumbarton, also found a place, with some beautiful specimens of a white variety of the Digitalis purpurea or Foxglove, discovered between Luton and Harpenden. From these few remarks it will be readily understood that there was no lack of variety in the plants exhibited, and that considerable pains, and great observation, had been displayed by the boys in the selection of their specimens.

The following were the successful competitors:—For the best collection of thirty species, Henry Rudd, 1st prize, Dr. Masters' *Botany for Beginners*; Alfred C. Luck, 2d prize, Rev. C. A. Johns' *Flowers of the Field*; Arthur Sibley, 3d prize, as the 2d; Stuart Rumball, extra prize, *The Little Florist*.

For the best collection of twenty species, 1st prize, Alfred Hayes; 2d prize, Thomas Warren.

To William Deller, for his collection of 103 species, was presented Stark's *Popular History of British*

Mosses, and Lindsay's *Popular History of British Lichens*, these being the gift of Mrs. Lydekker. The school-room was made more attractive by a valuable collection of Ferns kindly lent by Mr. H. T. Hodgson, which formed an elegant background to the wild flowers.

The class-room was appropriated to collections of hardy herbaceous cut flowers, sent by Dr. J. Griffith, Vicar of Sandridge; Mr. R. L. Howard, Mackerye End House; Mr. C. R. Fenwick, High Firs, Harpenden; and Mr. G. Young, Keyfield Nursery, St. Albans. Many of these were rare and very handsome, and were evidently a great acquisition to the show. We need scarcely say that the number of visitors was exceedingly large, particularly on the second day, when the admission was free.

WATCOMBE PARK.

The beautiful seat of Colonel Wright, occupies a distinct and almost unique situation overlooking the famous watering-place—Torquay, proudly called the Queen of the West by Devonians. The distance from St. Mary's church is not more than 1½ mile, and from Torquay station probably less than 5 miles. The entrance to the park is off the Torquay and Teignmouth road, where there are massive gates set in ornamental stone columns, which are of the most substantial and expensive character. The carriage-drive leads to the north front, and is beautified the whole of the distance with fine trees and flowering shrubs. Of the latter Escallonia macrantha, Berberis Darwinii, and Weigelas, are the most profuse bloomers, and the Conifers and Ilex Oaks are wonderfully vigorous and luxuriant. The finest specimens are Thuyopsis borealis, Cupressus macrocarpa, Picea Morinda, and fine Scotch Firs upon a steep bank facing the carriage promenade, and intermixed with evergreen Oaks and other trees and shrubs. Upon the green slopes by the drive there are a good many plants of Aralia Sieboldii planted out, their green Fig-like leaves looking very ornamental, and improving the appearance of the grass slopes, which are throughout both striking in form and of diverse character. The mansion, a noble building, is in the Gothic style, and is surrounded with plants and shrubs of the choicest and most valuable description.

The conservatory is in two spans, and is entered from the south and east terraces. It is a large costly building, in which there is a representative collection of Palms, Ferns, and other choice and rare foliage and flowering plants. The roof is covered with Tacsonias and other creepers, and the body of the house is laid out in large oblong figures and circles, in which different styles of arrangement are carried out according to the size and nature of the space. The large oblong beds are filled with noble Tree Ferns, Dicksonia antarctica and squarrosa — the latter an immense plant for the variety—Cyathea medullaris and princeps, Alsophila excelsa, tall Dracænas, Musa Ensete, Casuarina sumatrana, Brugmansia Knightii, and many others. The circles are very beautiful, each having a centre plant of Palm or Tree Fern with a clean stem of 6 feet surrounded with a group of flowering Begonias, which have the most charming effect imaginable. The back wall is covered with Ferns and ornamental-leaved Begonias, with a few flowering plants, which contrast with the green Fern fronds and large ornamental leaves which hang over the path or shoot up vertically to within a few inches of the glass. The wall creepers and border plants on the south side of the mansion are both rare and beautiful; seldom, indeed, are so many choice shrubs found in one collection in a private garden. They comprise Phormium tenax, Veronicas of sorts, the Gum Cistus, Aralias, Ceanothus azureus, Dracæna australis, Buddleia globosa, Eulalia japonica, Ceanothus divaricatus, Pittosporums, Diplacus glutinosus, Choisya ternata, and a mixture of low flowering plants which cover the whole surface of the border, among which Eschscholtzia californica is the most striking and beautiful.

From the terraces in front of the mansion the distant views of the surrounding country are both picturesque and delightful, and the lower pleasure-grounds, which slope away rapidly towards the south and terminate in a lovely valley, are of themselves sufficient to charm and delight, apart from the splendour of Torbay and the Lumminton Hills, which present a rugged surface of limestone rock alternately with green slopes of a remarkably peculiar character. Later in the season one might have thought a shower of snow had fallen upon the slope of a hill, were it not for the luxuriance of verdure and foliage which the eye takes in in travelling over so rich a landscape. The Daison Woods rise up to an immense elevation above the sea, and there are also good views of Lord Churston's seat, about 10 miles off, of Brixham Pier, and St. Mary's Church, Torquay.

Flower-beds are laid out upon the first terrace, and about its centre there is a full sweep projecting over a steep slope which descends rapidly to the lower pleasure-grounds. This sweep is of course included in the terrace, and is half-moon shape, and surrounded by balustrading about 2½ feet high. A large shrubbery bed is laid out in the middle of the half-moon, which is filled with Tritomas, Rhododendrons, &c., planted in medley style, and the former of which are very beautiful through the autumn months. The slopes to the south-east are planted with valuable Conifers and flowering shrubs, and the Italian garden is laid out upon the west side. The best view of this garden is obtained from the terrace above it, and from the windows of the mansion. It is an oblong garden with an oval end, enclosed by a magnificent Yew hedge, and well sheltered from the north winds by large specimens of Cupressus macrocarpa. The hedge is about 4 feet in diameter upon the top, and at every few yards it rises a foot or two above the general level. In these raised portions there are circular holes cut out, and at the extreme western end a portion projects, forming three sides of a square, which breaks the formal straight line, and gives the whole a rather ornamental and pleasing appearance.

The garden is tastefully laid out, and is rich in showy young Conifers, which are beautifully coloured in this remarkable climate. The flower beds are not numerous, and are simple in design and pleasing to the eye as regards form and arrangement. But, striking as are the beauties of terraces, geometrical and Italian gardens, and other ornaments, the greatest feast is in store for the visitor who has time to explore the "lower pleasure-grounds," and who knows something of trees and plants. These grounds commence at the bottom of the slope below the terraces, and run southwards in a long strip, being bounded upon either side by rising ground upon the east and west, which is clothed with fine trees, and intersected by cool shaded walks, which are margined with hardy Ferns or St. John's Wort.

The first thing that strikes one upon entering these grounds is a round pond, with an island in the centre, in which there is a group of hardy Fuchsias. The aquatics are Richardia æthiopica, Nymphæa alba, and Aponogeton distachyon. The border of stones round the pond is planted with Funkias and wild Iris; and a little group of the latter are formed round the base of a large Elm, where they look very simple and pretty.

Overlooking the grounds a rustic seat is fixed in the bank, with a background of Arbutus Unedo and a groundwork of Tussilago fragrans. The majestic beauties of the place now become more and more striking as they are examined more minutely. Upon a high bank on the west side there are tall Cupressus macrocarpa and Hollies growing out of a groundwork of Hypericum lucidum, Portugal Laurels, and Laburnums, edged with Funkias and Stachys lanata, and the tall Bocconia cordata shoots up by the side of Araucarias—in all making a bank and border of surpassing beauty.

The irregular curves of the banks and shrubbery beds in front of them indicate the care and skill that was taken in laying out these grounds by the great Brunel, who, with a man named Forsyth, carried out the work, except what trifling alterations have since been made upon the original plans. Here is a sample of one great sweep of bank, which will give the reader some idea of the style of planting. There is a breadth of Pines, Tulip trees, and Arbutus, then a mixture of Escallonias and Berberis Darwinii, among which are odd plants of Heracleum giganteum, which are now effective as their tall white heads shoot up over the berry-bearing Berberis and the dark green leaves of the Escallonia. In front of this there is a group composed of Camellias, variegated Acers, Tritomas, Funkias, and hardy Fuchsias. Another bed consists of hardy Heaths, Leycesteria formosa, Berberis Darwinii, Magnolia conspicua, Rhododendrons, Liliums, Spiræas, and a charming display of the Gum Cistus. About midway in these grounds there is a path which takes the visitor up the bank into the north-west side of the grounds, where there are curving walks and collections of Conifers. This path is known as the "Horse-shoe Steps," because a group of beds has been cut out there in the form of a horse-shoe. Here again is a very pretty display of planting, of Cedars, evergreen Oaks, Araucarias, Photinia serrulata, tall Aralias, Ailantus glandulosa, Liriodendron tulipifera, spreading Robinias, always beautiful, and clumps of hardy Fuchsias in front of them. Then there is a specimen or two of Taxodium sempervirens, and a bed of Deutzia scabra edged with Pæonies. Other notable specimens are Abies Douglasii, Abies Pinsapo, Picea Morinda, Wellingtonias, Abies cephalonica, Taxodiums, Cryptomeria japonica, Pinus insignis, Cedrus atlantica and Lebanon, and the Japan Loquat, Eriobotrya coccinea. There are also groups of Yuccas, of Berberis, of Escallonias, and other plants remarkable for health, symmetry, and beauty.

At the eastern extremity of these grounds, near to the park, is what is called Brunel's Rockery. It is partly enclosed by tall trees, and has a centre of rockwork in which are planted hardy Heaths, Aralia Sieboldi, Anemone japonica, and hardy Ferns. But the great attraction is the formation of the bank of little ponds and rocks, and the style of planting. A Chamærops excelsa is now in flower for the first time in twenty-six years. It is overhung by the boughs of a drooping English Yew, and has for its companions specimens of Buddleia globosa, Ligustrum lucidum, Ferns, Fuchsias, and wild Iris. Several of the rocks —prominent ones—are covered with Cotoneaster, and one of the ponds, with a little island in its centre, has a plant of Osmunda regalis looking really royal and at home in its quarters, which could not have been better selected. This pond is encircled by Polypodiums and Ivies. At the entrance there are Yuccas, Gynerium argenteum, Picea pigmæa, a pyramid, Saxifragas, and Periwinkles. In the park side there are grand groups and specimens of evergreen Oaks; but we will turn to the left for a moment, and glance at a fine collection of Cratægus planted on the face of a hill, and sheltered by other trees standing at a much higher elevation.

The woodland walks in this direction are of the most charming kind; but we must return, and ascend the Horse-shoe Steps, leading to the "Old Wood Walk," where there is a splendid view into the valley below, and to the English Channel in the direction of Southampton. This walk is bordered by Ferns, and leads to a fine collection of Pinus insignis of over three acres in extent. But evening is drawing near, and I must note hurriedly some remarkable Douglas Firs and Abies cephalonica, and then proceed to the hothouses, which are located within a few yards of the entrance gate.

The houses, like the garden, are nearly new, and everything is in first-class order. The first range of three houses consists of two vineries and a Melon-house. The early crop is cut, but the late crops of Muscats, Black Alicante, Lady Downe's, and others, are fine in bunch and berry, and the crop of Hero of Bath Melon a splendid one. At the end of these there are two span plant-houses running north and south, well equipped in every respect as regards heating and ventilating. There are beautiful flag paths in these houses, which are always clean and bright to look at. The centre stage is filled with specimens of Allamanda, Anthuriums, Dieffenbachias, Pandanus, Caladiums, Palms, Dracænas, Crotons, and Orchids, the nucleus of a collection which is being extended and enlarged. The second house is an intermediate one, filled chiefly with Azaleas, a fine collection of specimens and half specimens, and other miscellaneous plants. Creepers are trained upon the roof, and Abutilon igneum is spoken highly of, among others, for winter flowering. Pits of Pelargoniums and other plants are passed on our way to the long fernery—a low span-roofed house, with a path up the centre, where there is a large stock of Ferns planted out for cutting. The cross-bars which tie the roof are covered with the creeping Fern, Lygodium scandens, and other creepers; and the general effect and health of the plants speak highly in favour of the cultivator. The bulk of the collection consists of various kinds of Adiantums, Pteris tremula, P. scaberula, Gleichenias, and mosses; and there are odd flowering plants introduced here and there, which add much to the effect. The flowering plants are of the sweet-scented type, and altogether the house is the most pleasing and interesting one in the garden.

The range of forcing-houses is in three divisions, and in these there are grand crops of Hathaway's

Excelsior Tomato and flowering plants. One house of Gloxinias and Gesneras is indeed worth going many miles to see, as is another filled with tuberous-rooted Begonias. The New Holland house contains a good collection of these favourite plants, and winter-blooming stock in houses, pits, and frames may be counted to infinity.

The fruit and kitchen gardens are about three acres in extent; and in them may be seen the usual stocks of fruits and vegetables.

This fine establishment is under the charge of Mr. Sandford, formerly gardener to the Earl of Bective at Underley. In those days everybody knew Mr. Sandford as a successful exhibitor and experienced cultivator; and although he has for the time being retired from the din and battle of horticultural contests, his zeal as a cultivator has in no way diminished, nor has his enthusiasm waxed cold, since his removal from those stirring scenes which are less frequent in the West of England than in the busy go-ahead Northern Counties.

NOTES ON MANURES.

THE value of experimental stations where experiments with a definite purpose can be adequately carried out under the superintendence of competent experimenters, is happily becoming more and more recognised. The Sussex Association, for instance, sets out to ascertain for any particular crop on any particular the soil, the most efficacious and economical forms of manure, limiting its enquiries in the first instance to the different forms of phosphorus, and the effect of applying with the phosphorus other essential ingredients. From the experiments carried out under the superintendence of Mr. Jamieson at Hassock's Gate, it appears that potassic chloride (muriate of potash) does harm when applied as manure in cases where the organic matter in the soil is in low proportion. The theory is that the chlorine is liberated and injures the plant, unless it can be neutralised by organic matter. The proportion of organic matter is much less in Sussex than in Scotland, the soils in colder climates possessing more nitrogen. As regards the use of phosphates, the greatest economy was reached by mixing the cheapest phosphate (ground coprolite) with that sold at moderate cost (steamed bone-flour), by which means a saving of one-third might be affected without detriment to the weight or quality of the crop. For rough experimental purposes Mr. Jamieson recommends that farmers should procure six or eight bags of manure—one to contain all the ingredients a plant requires—*e.g.*, nitrogen, phosphorus, potash, lime, magnesia, sulphur, iron—another all but one, omitting, say, potash; a third all but one, but this time a different one from the former, say phosphate, and so throughout the series.

The experiments at Hassock's Gate seem to be most instructive. The soil there is almost pure sand, and as such very suitable, from its poor character, for trying experiments as to the comparative value of manures. On this soil, where no manure was given, the plants never got beyond the first few germinal leaves; when all the ingredients except phosphate were given, a crop of half a ton per acre was procured; but when the phosphate was applied, even in the form usually supposed to be inoperative, the produce rose to 18—20 tons per acre. The advantage of steamed bone-flour is that after steaming at high pressure and the extraction of gelatinous matter, the bones could be much more finely ground than raw bones. It is to be hoped that the very interesting experiments at Hassock's Gate may be repeated over and over again under as nearly as possible similar circumstances, using, so to say, plots of virgin soil each year in succession, as well as continuing the experiment on the same plots year after year. The problem is so complex, and the possible sources of fallacy so numerous that it is only by careful repetitions, under as nearly as possible identical conditions, that full confidence in the result of such experiments can be justified.

From experiments made at the College Farm of the New Jersey Board of Agriculture it appears that neither sulphate of ammonia nor superphosphate of lime, used alone, increased the grain or the straw in the case of Maize during an average of seven years. Potassic chloride increased the yield of grain 13 per cent., and of the straw 26 per cent. (ten years' average). Farmyard manure increased the grain 36 per cent., and the straw 24 per cent. (five years' average). The complete chemical manure increased the grain 26, and the stalks 38 per cent. (average seven years).

FLOWERS IN SEASON.

MENISPERMUM CANADENSE.—"Jack Towel" sends specimens of this fresh looking free-growing hardy climber, the large peltate green leaves of which are of themselves attractive, while the panicles of greenish flowers are by no means destitute of beauty.

PERIPLOCA GRÆCA.—Though, as its name implies, this is a Greek plant, yet it thrives well even in a city atmosphere. Its glossy oblong leaves and very curious purplish flowers render it one of the best of hardy climbers.

ANEMONE RIDULARIS.—Herbaceous perennial, growing to a height of 2 feet. The flowers are in loose terminal cymes, on long leafless stalks, each about 1 inch across; star-like, the five oblong segments purplish without, clear white on the upper surface. From Messrs. Cripps.

ANTHERICUM RAMOSUM.—A hardy perennial with a thick rootstock and fleshy root-fibres. The leaves are long and grass-like, the flowers numerous, star-like, snow-white, contrasting with the yellow anthers, and arranged in erect branching panicles. Each floral segment is marked in the centre with 3—5 prominent ribs. A native of central Europe, and an old inhabitant of our gardens. A. liliago is like it, but has larger flowers in unbranched inflorescence, while Paradisea liliastrum (the Anthericum Liliastrum of Linnæus) is of similar habit, but has funnel or bell-shaped flowers.

TROPÆOLUM PENTAPHYLLUM.—A charming creeper, sent us from Tunbridge Wells, with slender herbaceous stems and long-stalked small roundish palmately lobed leaves, the fine segments of which are very shortly stalked and oblong. The red flower-stalks greatly exceed the leaves in length, and are terminated by an extinguisher-like crimson flower, the fine lanceolate sepals at the top of the "spur" being greenish. Within the calyx are two tiny spade-like petals of a rich crimson, and greenish anthers, which open to liberate the pollen before the stigmas are ripe. It is exceptional for the calyx to be coloured. The Fuchsia is another well known instance. The minute size and diminished number of the petals is probably connected with the fact that the calyx is coloured, and hence there is not the same necessity for the petals. That insects are necessary to fertilisation is shown by the fact of the anthers opening before the stigma is ripe. The pollen must be taken from such flowers and be applied to the stigma of another which is in a fit state ere seed can be formed.

CALYCANTHUS FLORIDUS.—Of this old-fashioned sweet-scented shrub there appear to be numerous seedling varieties, some of which have received names according to the form of the foliage, such as oblongus, ovatus, &c., but it seems scarcely worth while to name them separately.

GENISTA ÆTNENSIS is decidedly the showiest and most graceful of all the shrubs of the Pea family now in flower in the Kew Arboretum. It attains a height of 8 or 10 feet or more (Loudon, in his *Encyclopedia of Trees and Shrubs*, gives the height as 2 feet to 4 feet), and its slender almost leafless twigs are terminated with racemes of bright yellow blossoms. It is perfectly hardy, and few more desirable shrubs for the shrubbery or for the margin of the ornamental plantation could be selected from the entire list of hardy subjects. It lasts some time in flower too, and commences to open when a good many of its near relations are quite past. Seeds are produced in abundance, and from these it is readily propagated. Introduced from the wooded region of Mount Etna (at from 3000 feet to 6000 feet elevation) in 1816.

BEGONIA DISCOLOR.—A very charming display of this old Begonia may now be seen in the conservatory at Watcombe Park, Torquay. It is planted out in a circle in which there is a fine Seaforthia elegans for a centre. The broad mass of purple-veined leaves and delicate pink flowers is very effective under the shadow of the green Palms, and surrounded with so much other green foliage. It is not always the most valuable plants that are most effective, and it is an open question whether as good an effect could be made with any of the more showy and valuable kinds of Begonias. There is a quiet repose about this bed or group which appeals to the refined taste rather than to the eye that loves a gaudy colour, and even the leaves of the plant harmonise with its own flowers. The bulbs are not removed from the bed when the plants die down, but pot plants are introduced to take their places, and arrangements are made in this way to keep up a show of flowers all the year round.

GLADIOLUS COLVILLI ALBUS.—This beautiful and chaste variety is also known as The Bride, and if it were now introduced for the first time, and shown in the fine form in which Mr. J. Roberts has it at Gunnersbury Park, it would be certificated by general admiration, and growers would nearly go frantic over it. Mr. Roberts wisely grows it in pots, to have it under control, and he pots his first batch in September and October, and goes on doing this successionally till Christmas. How marvellously free it is can be understood when it is stated that Mr. Roberts potted half-a-dozen bulbs in a 32-sized (6-inch) pot, and on these six bulbs can be counted not less than seventeen spikes of bloom. When well grown it is very free of bloom, and, as might be expected, Mr. Roberts finds it invaluable for cutting from. When the spikes of bloom are cut away, the plants will be placed out-of-doors and cared for, and eventually planted in the open border. If planted in a dry warm border, and a little deeply, there seems no reason why the bulbs should not remain sound, and grow and supply bloom in future years. Those who grow this beautiful variety for cutting from will do well to import fresh bulbs annually in order to make sure of a crop of bloom. It is being grown somewhat largely just now for market purposes.

GROUPS OF ALSTRÖMERIAS.—No wonder that people enjoying the advantage of a good climate should sing the praises of those lovely flowers to an apathetic public. Plant them, say our Northern friends, at the base of a south wall or in some sheltered situation. Yes, plant them, but what is the result in nineteen cases out of twenty? Why, a few straggling flower-spikes and foliage scanty, pale and diminutive. We have planted them in patches in a warm soil in the South of England, and succeeded fairly well, but a glorious bed of them lately seen in the neighbourhood of Torquay confirms our impression that they succeed best in groups or masses where they are protected and sheltered by surrounding shrubs. Their small Lily-like flowers are produced in such numbers and among a wealth of healthy foliage that there are few other flowers of the season that will half compare with them either for giving out-door effects or for cutting for sitting-rooms.

METROSIDEROS FLORIDA.—This rather curious looking New Holland plant, the Bottle-brush as it is familiarly called, is now a very pretty sight in the new conservatory at the Daison, Torquay. The plant is a good-sized bush, and is bearing a great number of its red brush-like flowers. It makes a capital associate with Palms or Australian Dracænas, by reason of the striking colour of its flowers, which hold their own in point of interest and beauty with the gayest of summer flowering plants.

HYPERICUM PATULUM.—A hardy shrub, with slender glabrous terete stems, ovate lanceolate leaves, yellowish-green above, glaucescent beneath, and with linear transparent spots. Flowers 1¾ inch in diameter; sepals oblong obtuse; petals similar in form, but much larger, clear gamboge-yellow; very ornamental. Nepal. From Messrs. Cripps.

HYPERICUM OBLONGIFOLIUM.—A shrubby species, with roundish or somewhat angular stems; nearly sessile, ovate lanceolate glabrous leaves, deep green above, paler beneath, and with reddish recurved margins. The resin glands are relatively not numerous, though a few may be seen on holding the leaf to the light. Flowers cymose, 1½ inch across; sepals oblong; petals bright yellow.

HYPERICUM OLYMPICUM.—A very distinct species, of shrubby habit, with cylindrical, slender stems, and sessile, glaucous, lanceolate leaves, with very numerous reservoirs for resin, which, when the leaf is held to the light, appear like transparent spots. The bright yellow flowers are over 2 inches in diameter, protected by a calyx of fine lanceolate leafy segments, sprinkled with black dots near the margin. From Mr. Dartnall.

FORESTRY.

The Deodar Forests of the Dhauli Valley in Garhwal.—The eastern limit of the natural forests of Deodar, says Dr. Brandis, in the North-west Himalaya, is in the valley of the Dhauli River below the Niti Pass in long. 19° 48'.

The tree is found further east in Kumaon, planted in temple-groves and near villages, but, as far as is known, there is no natural Deodar forest east of the Dhauli valley. It is always a matter of considerable interest to determine the distributive areas of trees, which have great practical importance, and to study the circumstances, climatic or otherwise, which contribute to put a stop to the spread of such trees in a certain direction.

In some cases these circumstances can readily be understood. Thus we are probably not far wrong in believing that Sal forests are not found east of Tezpur in Assam, because the moisture of Upper Assam is greater than the Sal tree (Shorea robusta) can bear in the struggle for existence with other trees, which delight in excessive moisture. And its western limit in the Hushiarpur and Kangra districts of the Punjab is doubtless partly attributable to the fact, that further west the climate is too dry and too cold to be favourable for the growth of Sal. And as regards Teak there is little doubt that the natural spread of this tree beyond the hills in the Jhansi district in a northerly and north-westerly direction is precluded by the low temperature of the winter months.

It would not be easy to explain the facts which limit the spread of the Deodar eastward beyond the Dhauli valley. It may be that the climate of Eastern Kumaon and Nepal is too moist, and that this gives an advantage in the struggle for existence to the other species which are usually associated with Deodar. It nevertheless is remarkable that Pinus excelsa, which, like the Cedar (the varieties known as the Atlas, Cyprus and Lebanon Cedars), is found as far west as the Mediterranean region on the mountains of Macedonia and Montenegro, forms large forests in Nepal and Bhutan.

Other trees met with in this valley, surrounded by lofty mountains, snow slopes, and glaciers, according to Mr. Litchfield, are Oaks, Cheer (Pinus longifolia), Rhododendrons, Picea Smithiana, Abies Webbiana, Pinus excelsa, Hazels, Birches, Maples, &c.

RUSTIC BRIDGE.

A good handy carpenter, with an eye to the picturesque, is a most useful man about a garden. The illustration we now give (fig. 14), taken from a design of Messrs. Barron, of the Elvaston Nurseries, Borrowash, shows what a pleasing effect can be produced by any estate carpenter, by the use of a few rough branches, forming a bridge over a narrow span, where the levels do not admit of a flat bridge, or where a pleasing pyramidal outline is desired. In practice some of the bolder foliaged creepers, trailing Roses and Clematis, kept within bounds, might be trained over the woodwork to break its formality.

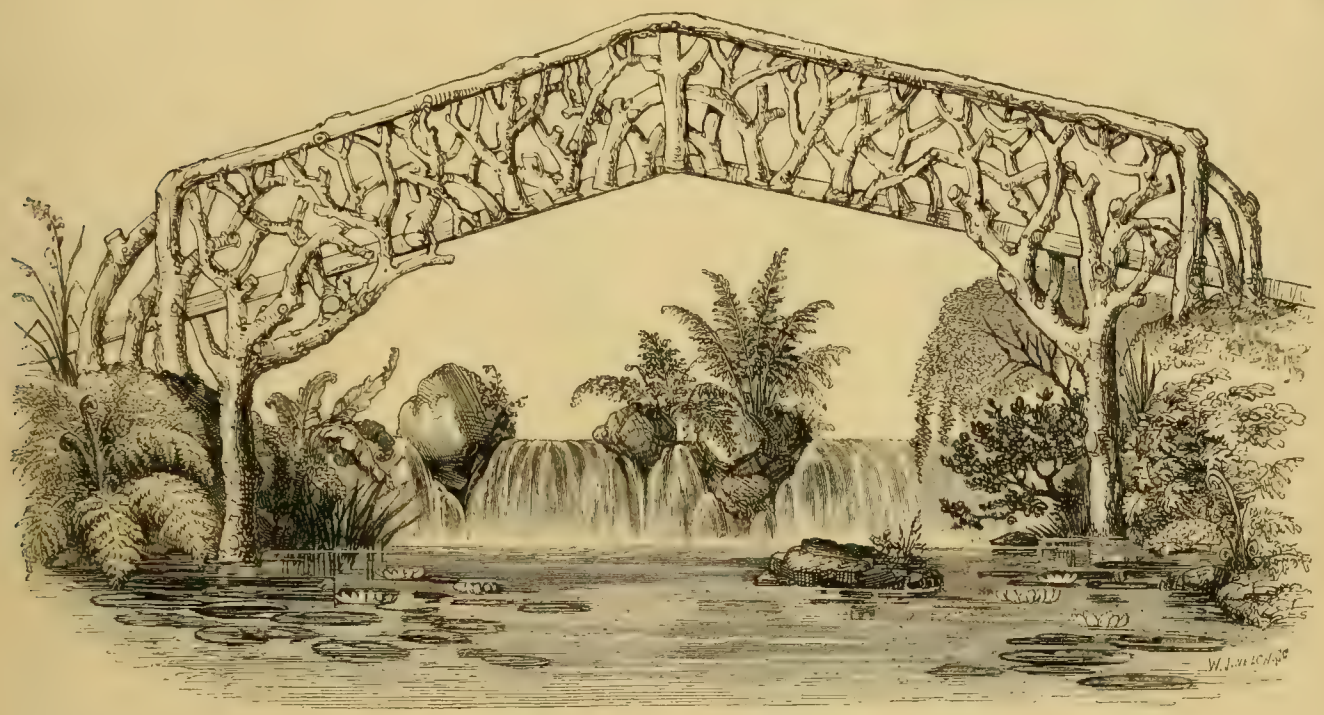


Fig. 14.—A rustic bridge.

FRUIT NOTES.

The Geographical Distribution of Varieties of Fruits.—The American Pomological Society publishes each year a valuable report embodying a vast amount of information from all parts of the States, and also a catalogue specifying the particular varieties which do best in particular States. The country is so vast that very marked differences in climate of course exists, but for the practical purposes for which this catalogue is compiled the whole country is divided into a northern division between 42° and 49° N. lat., a central division between 35° and 42°, and a southern division between 28° and 35°. On cursorily looking through this list some singular features become obvious; thus, while the selected best Apples are local, being chiefly confined to one division north, central, or south as the case may be, the best Pears are much more widely diffused, thus apparently showing that the Pear is less influenced by climatal variations than the Apple. A few examples will illustrate our meaning. The Baldwin Apple is a prime favourite in almost all the northern States, and in some of the central, while it meets with scanty favour in the south. Ben Davis, on the other hand, is favoured in the central and southern States, and appears to be almost unrepresented in the north. A similar remark applies to Carolina Red June. Hubbard & Son's Nonsuch, a great favourite northwards, is less appreciated in the centre, and scarcely at all in the south. Jonathan is to some extent an exception, as both north and central States concur to give him a good character, and even as far south as Louisiana he is esteemed. Maiden's Blush is admired in the north and in the south, but her charms are most appreciated in the central States. Red Astrachan is almost a universal favourite, and forms a most striking exception to the usually more or less restricted range of particular Apples.

Turning to Cherries, we find Early Richmond, and Governor Wood, and May Duke, favourites in the north and centre, but hardly grown in the south.

Crawford's Early Peach extends almost from north to south; Heath Cling finds few friends in the north, but plenty in the central and southern regions; Early York is relished in the north and centre, but not in the south. Oldmixon Freestone is a general favourite, but Oldmixon Clingstone is only regarded in the centre and in the south.

Of Pears, Bartlett is a universal favourite, so are Beurré Bosc, Beurré d'Anjou, Beurré Goubault, Buffum's Doyenné d'Ete, Duchesse d'Angouléme, Flemish Beauty, Howell, Lawrence, Louise Bonne of Jersey, Seckel, and Sheldon. It would thus appear that the characteristics which render Pears valuable are more uniform over vast tracts of the American continent than are the corresponding qualities of Apples.

Madresfield Court Grape.—Both at Gunnersbury Park, by Mr. J. Roberts, and at Gunnersbury House, by Mr. J. Hudson, this fine Grape is superbly grown, and without any of the blemishes of spare setting and a tendency to crack, which is sometimes found in the variety. In the large vinery Mr. Roberts has it in splendid form—large in bunch, and grand in berry, and if it only colours well, as there is reason to believe it will, more perfectly finished specimens can scarcely be conceived. The bunches are very large, and most symmetrical. How successful Mr. Roberts' neighbour, Mr. J. Hudson, has been with it is shown from the fact that with specimens of this variety he carried off the Veitch Memorial Prize recently at Richmond. One main secret of success appears to be perfect fertilisation. Golden Champion can be seen in one of Mr. Roberts' vineries very promising both in bunch and berry.

The range of vineries faces south, and there is a quarter-span of glass above the brickwork at the top at the back. It is in this position that the Golden Champion is found. Mr. Roberts states that he cannot grow it in the sun, but at the back, in the shade, it does finely. The Vines in the big vinery throughout are in fine condition, and unless some unforeseen accident occurs—which is highly impro-

bable—there will be a rare sight of Grapes during the summer.

STRAWBERRY TRIOMPHE DE PARIS. — Cultivators desiring to obtain a really fine late strawberry for dessert purposes should try the above variety, which, if suited to soil and climate, is destined to become very popular. It grows to an immense size, but is not a heavy cropper. In private gardens this is not a matter of so much importance as the means of obtaining late fruits of good size and handsome appearance. There is a sharp acidity about its flavour which would please those who complain of Sir Charles Napier being too acid—a variety which it somewhat resembles in flavour, but milder. The fruits travel well, and in this respect it would make a good market variety, and would be sure to sell well owing to its fine size and appearance.

Orchid Notes and Gleanings.

WORK IN THE HOUSES.—The Orchid season, so far as the flowering of the plant is concerned, is now passing away; but there are still a few plants of sterling merit that do not come in till late summer or early autumn. Among those that are worthy of mention are Cattleya crispa, C. labiata, C. Dominiana, Oncidium lanceanum, O. ornithorrhynchum, and O. Forbesii. In the East Indian section, Aërides quinquevulnerum and Saccolabium Blumei will soon be showing for flower, and if their spikes are expected to be well developed the plants must not be allowed to suffer from drought, either at the root or in the atmosphere. The greater part of the Stanhopeas will now be over, and if the plants require attention in the way of rebasketing, the sooner it is seen to the better.

Let the material about their roots be of an open and fibrous description; and when arranging the drainage for these plants see that it is done with rough material, with plenty of open spaces for the flower-spikes to find their way outside of the baskets without getting crippled. The material that will suit them to grow in can be composed of two parts fibrous peat to one of clean sphagnum moss. Thunias that are now going out of flower should be very gradually put to rest by withholding water to their roots, and exposing them to more light than hitherto. These are showy and easily grown Orchids, and soon make large plants, if well attended to. They may now be increased by cutting up the half-ripened stems, with a few joints to each cutting, and inserting them in an open material in brisk heat; at the same time water the cuttings carefully till they show signs of making new growths, when they should at once be got near the light to give substance to the young growths.

One of the sweetest of Orchids—Angræcum falcatum, is now in flower, and though it is only a small grower it is a charming plant. Most of the Angræcums are heat-loving plants, but this species will thrive perfectly in the Cattleya-house. It should be grown in a perforated pan, or a basket suspended near the glass, and the material that will suit it, if the plants are strong, is one part fibrous peat to two of sphagnum moss. At this season of the year it often happens that some of the East Indian plants begin to assume a yellow and unhealthy aspect, and where this occurs the plants should be kept a little closer, and at the same time the old moss should be picked from about their roots, and the plants resurfaced with some clean live sphagnum moss. This treatment will generally restore matters to a normal condition. If thrips show themselves on the East Indian plants, lose no time in giving a couple of light fumigations in quick succession. *J. Roberts, Gunnersbury.*

CATTLEYA CITRINA, Lindl.—The finest flower I ever saw is just to hand. It was grown by Joshua Broome, Esq., Wood Lawn, Didsbury, Manchester, and I am informed it belongs to the long-bulbed variety, the bulbs being 2½ inches in length. There are 3—4 flowers on block plants. I remember having seen Cattleya citrina in 1862, at a South Kensington exhibition, in pots. Is this still done anywhere? [Yes.] *H. G. Rchb. f.*

BRASSAVOLA LINEATA.—This somewhat rare Orchid is now in flower in the Kew collection. It has long, almost terete (but grooved on one side), dark green, rigid, curved, pendent leaves, and two flowered peduncles. The sepals and petals are uniform, almost linear in shape, and of a pale yellowish green colour, the very large white lip being cordate ovate. In the general shape and size of flower it is not unlike B. venosa. It was introduced to this country by Warscewitz in 1852.

ORCHIDS IN FLOWER IN MR. WILLIAM BULL'S EXHIBITION, JULY 10, 1882:—

Aërides crassifolium
,, crispum
,, Fieldingii
,, nobile
,, odoratum
,, virens
,, ,, Dayanum
Anguloa Clowesii
Brasavola Digbyana
Brassia brachiata
,, caudata
Calanthe masuca
,, veratrifolia
Cattleya aurea
,, gigas
,, ,, Normanii
,, ,, splendens
,, Leopoldii
,, Mendelii
,, Mossiæ
,, ,, albo-marginata
,, ,, aurantiaca
,, ,, grandis
,, ,, rubra
,, ,, splendens
,, superba
,, Warneri
Chysis aurea
Cymbidium eburneum
,, Lowianum
Cypripedium barbatum
,, ,, nigrum
,, ,, superbum
,, caudatum roseum
,, Dominii
,, Hookeræ
,, lævigatum
,, Lawrenceanum
,, Lowii
,, Mastersianum
,, niveum
,, Parishii
,, Roezlii
,, Stonei
,, superbiens
Dendrobium bigibbum
,, calceolus
,, Dalhousianum
,, dixanthum
,, eburneum
,, Jamesianum
,, lituiflorum
,, secundum
,, suavissimum
,, thyrsiflorum
,, tortile roseum
Dendrochilum filiforme
Disa grandiflora
Epidendrum falcatum
,, macrochilum
,, nemorale
,, prismatocarpum
,, ramiferum
,, vitellinum majus
Lælia majalis
,, purpurata
,, ,, alba
Lycaste Deppei
,, mesochlæna
,, Skinneri
Masdevallia bella
,, conchiflora
,, Harryana
,, ,, cœrulescens
,, ,, ,, magnifica
,, ,, coccinea superba
,, ,, mirabilis
,, ,, purpurea
,, ,, regina
,, ,, splendens
,, ,, superba
,, ,, violacea
,, Lindeni
,, maculata
,, Reichenbachii
,, Shuttleworthii
,, Veitchiana
Maxillaria grandiflora
,, venusta
Nanodes Medusæ
Odontoglossum cirrhosum
,, citrosmum
,, ,, roseum
,, cordatum
,, crispum (Alexandræ)
,, ,, grandiflorum
,, ,, guttatum
,, ,, speciosum
,, Hallii [natum
,, Lindleyanum acumi-
,, maculatum
,, nebulosum pardinum
,, Pescatorei
,, pulchellum majus
,, Reichenheimii
,, Roezlii
,, ,, alba
,, ,, splendens
,, Schleiperianum
,, Uro Skinneri
,, vexillarium
,, ,, bicolor
,, ,, grandiflorum
,, ,, marmoratum
,, ,, roseum
,, ,, rubrum
Oncidium ampliatum majus
,, crispum
,, daystyle
,, divaricatum
,, Gardnerianum
,, Kramerianum
,, macranthum
,, ,, hastiferum
,, prætextum
,, sphegiferum
,, stelligerum
,, virgulatum
Phalænopsis grandiflora
,, Luddemanniana
Pleurothallis incompta
Saccolabium Blumei majus
Sarcopodium Lobbii
Sobralia macrantha
,, ,, splendens
Uropedium Lindeni
Vanda suavis
,, teres
Zygopetalum crinitum
,, Gautieri

DR. BODDAERT VAN CUTSEM'S MONSTER OF DENDROBIUM CAMBRIDGEANUM. — Herr Wilcke, the excellent Orchid grower of Dr. Boddaert van Cutsem, of Ghent, has just sent me one of the most curious Orchid monsters. When I opened the box I saw a twig with five curled leaves, and on that a few orange or sulphur spots. It gave me the impression of a twig of an Alströmeria, with some nests of a hypodermic fungus, say an Æcidium. When I looked nearer, I found each leaf had a spot with a surface of filiform papillæ, as are found on the lip of Dendrobium just named. The first basilar leaf had a large yellow area and a purple eye blotch, as is to be seen in the lip. Herr Wilcke has a very witty manner of looking at the thing. He says:—"I send a monster of Dendrobium Cambridgeanum, that may have been in jeopardy, whether it intended to become a flower or a twig." I believe this case might be reported in Dr. Masters' work, near part 3, chap. iii., as partial heterotaxy; and speaking of Teratology, is it true that the edition of Dr. Master's *Vegetable Teratology* is exhausted? [Yes.] If so, why is there no second edition given? *H. G. Rchb. f.* [One might be forthcoming if the requisite funds were! ED.]

The Flower Garden.

FLOWER BEDS.—Before the summer bedded-out plants become too thick on the ground a favourable opportunity should be finally taken to pass a narrow hoe through them, so as to thoroughly loosen all the surface; and this should be well attended to at this time, as later on the very necessary work of keeping the surface moved about and in a loose open condition will only be possible with a pointed instrument of some kind, at the same time a small additional covering of cocoa fibre will be beneficial; if weeds should break through now and then they are easily removed by hand. A strict attention to neatness and a trim condition of keeping in all the surroundings must be secured as essential to complete enjoyment, and therefore mowing, edging verges, and rolling the grass, will require frequent attention; if gravel walks are interspersed they must be frequently rolled, and Box edging trimmed at once if not already completed. A good stock of hooked pegs should be kept in hand for the purpose of regulating the plants in the beds by pegging down or tying out as the case may, be so that the beds may be evenly furnished.

CARPET BEDDING.—In this department there will be constant work and supervision required, so much so that unless there is a certain amount of labour to be at all times available to be told off for this purpose it will not be possible to excel in this mode of arrangement, as after the planting is done—the foundation, as it were, laid—the real work can only be said to commence, as the pinching and pegging out so as to compel each plant to assume and maintain its allotted position is an almost daily recurring necessity. It is astonishing how soon such plants as Mesembryanthemum cordifolium, the Golden Feather, and even the stronger growing Alternanthera, begin to straggle over their legitimate bounds, and muddle up any geometrical arrangement or design, and these beds are nothing if the device is not kept clear and intact; besides which the Golden Feather is apt to degenerate in colour if not kept regularly pinched. It will not do to let a large growth accumulate and then make a grand sweep of the pinching work. It is better to remove a little of the growth to-day, more to-morrow, and so on, in order that the handiwork may not be perceived; in fact, it is necessary that the eye should be incessantly at work to detect and remove irregularities over the whole design. Such finnicking work! some say, which may well be granted, but at the same time it is an absolute necessity to perfection, and cannot be pooh-poohed away as useless and not needed. Any gardener, therefore, who is under-manned, as it is called, had better not attempt too much of this work, but stick to bedding-out flowers, as these, with a good supply of such things as Donald Beaton used to call starers and subtropicals will furnish enough material for a grand display at considerably less trouble than complicated arrangements in imitation of the patterns on a carpet which must be made a speciality and have a fixed amount of labour expended upon it.

RHODODENDRONS.—Now that the borders and beds of Azaleas and Rhododendrons are past flowering, it will greatly strengthen the plants for future blooming, and also contribute to maintain a neat appearance in the bushes to remove all the clusters of seed vessels: at the same time the opportunity should be embraced to hoe over the surface for the destruction of weeds and the keeping up a trim and neat condition in the borders. Should the weather prove dry after a time a good soaking of water should be applied during extreme heat and drought. Lilium auratum, candidum, and others will require the support of short stout stakes, which should be kept low out of sight.

ROSE GARDEN.—Roses should have the exhausted blooms constantly removed to strengthen the later blooms, long straggling shoots may be shortened at once; the result in some cases, but not invariably, will be a very welcome show of late blooms. The state of the weather lately has been such as to preclude the necessity for watering, but if drought follows later on, they will still require a fair supply. *John Cox, Redleaf.*

The Pine Stove.

Continue to remove the suckers from Queens' or other varieties that are prolific in forming them. Take them all carefully out but one, and, when large fruit are required, all suckers should be removed, which causes the vigour to flow to the fruit. Treat scarce varieties as before advised, so as to keep up a good succession. Give succession plants plenty of room, as nothing is to be gained at any time by overcrowding the plants. Keep the glass clean both inside and out, so as to give them plenty of light. The covering of all houses, pits, or frames may be discontinued for the next three months, as light, night and morning, is more essential than a few degrees of heat. Keep the temperature in the houses in which the fruits are colouring a little cooler and drier, for in the case of large fruit too much heat is apt to make the juice exude before they are ripe. This is very important where fruit has to be packed and sent a long distance. The temperatures and treatment previously advised should still be continued for the present. If the crowns get too large this dull weather, keep the temperatures a little drier. Pot all scarce kinds, small suckers, or crowns, for although they take a longer time in fruiting, they are serviceable where a number are grown. As the fruit commences to colour the plants may be removed to any cool fruit-house, where the temperature stands from 55° to 60°. Where sufficient fruiting-house accommodation is not available, those plants growing in pits or frames or any second-rate structures, should be removed into the compartments from which the early fruit has been cleared out, or, as above stated, any plants showing signs of colouring may be removed to make room for this batch, which ought to be removed before the plants are in flower so that every flower may be properly fertilised, without which not only will symmetry be deficient, but that regularity of pip which constitutes a well-grown fruit is absent. When allotting fruiting plants their respective distances, as before stated, plunge them in straight lines, and place the plants diagonally to make the most of the space. During dull wet weather, such as we are having, do not overshade; if the blinds are portable, which is decidedly the best, they can be managed to meet all circumstances. When shifting and overhauling plants plunge them in tan. When procurable I consider Oak bark from the tan-yard the very best of all plunging materials for Pines. It combines a greater number of suitable qualities; it is clean to work the pots in, easily moved, and when kept dry decomposes slowly, so that it lasts a long time. It does not require to be replenished or changed every year, but, adding a portion every time the plunging of the plants takes place, this keeps up a steady bottom-heat. Where tan is not to be got saw-dust is a good substitute. It answers over hot-water pipes or over a bed of leaves or litter. *D. Wilson, Castle Hill, Devon.*

The Orchard House.

The fruit will now in all probability be gathered from the trees in the early house, and in that case the best plan will be to give them a thorough washing with the garden engine if the house is large; but if it is a small house, the syringe may be sufficient. The object is to clear the leaves from red-spider, which too frequently overruns the trees when syringing is discontinued to allow the fruit to ripen. The trees must be kept in good health and be freely supplied with water at the roots, in order to mature the buds, which is the first step towards insuring a crop of fruit next year. If the trees are in pots, it may be thought by some that the best way to ripen the wood would be to place them in the sun out-of-doors: if we could ensure fine weather and warm nights, that would probably be the best plan, but in our variable climate it is best to keep the trees under the glass until the wood is well ripened, and then, if it is necessary, there is no reason why they should not be turned out-of-doors. The question is often cropping up, whether it is best to plant the trees out or to grow them in pots? and the answer to it would depend on whether is it intended to use the Orchard house for any other purpose; and also, whether the owner takes a personal interest in his trees. I have proved over and over again, that as good fruit can be gathered from trees in pots as from those planted out in borders. There may be a little more trouble to grow the trees, but they are more under the control of the cultivator when grown in pots; and if a tree does not give any satisfaction it can be thrown away and is easily replaced. In our late house without any forcing the Alexander Peach and Amsden June have been gathered; they were ripe about the last week in June, and are certainly by far the best of our early Peaches, as the fruit colours well and is of good flavour. The trees were surface-dressed a few weeks ago; they will again have some fresh compost added to the surface, pressing it in rather firmly; and as by this time the fresh material has raised the compost above the rim of the pots, it is necessary to form a shallow basin round the stems of the trees, else it is difficult to get them a sufficient supply of water. Pear and Plum trees may be removed outside now to ripen their fruits if the house has become too crowded; but in most cases better fruit can be obtained if the trees are in a position where they can obtain light and air inside. It must not be forgotten that to obtain good well-coloured fruit of Pears and Plums, the trees ought to have more air than Peaches and Nectarines.

Now that we have gathered the fruit from the two trees already alluded to—none of the others are nearly ripe, the treatment therefore is still to syringe freely, and to keep up the temperature of the house by shutting up early in the afternoon. *J. Douglas.*

The Hardy Fruit Garden.

Great attention is generally necessary at this time of the year to prevent trees on walls from suffering from lack of sufficient moisture to bring their fruits to perfection; especially is this the case on walls with a southern exposure, and on individual trees bearing heavy crops; but as the heavy rains that have lately fallen have been fairly general throughout the kingdom, much labour has been saved. Continue to nail in extensive shoots of Peaches and Nectarines, and to lay in thinly other growths as required, stopping all laterals to one leaf. It may be found necessary to remove some nails that endanger adjacent fruits, and to add additional support to the bearing branches at a safer distance from them. A second growth of shoots is being plentifully produced by Apricots now that the stoning process is completed and the fruits are rapidly swelling off. Aphides quickly establish themselves on such young shoots if at all neglected, and it will be well to pinch in all sub-laterals to one leaf at once where any have been suffered to remain, and to apply water freely to the trees, so as to leave them clean over the period of the fruit ripening, when no assistance can be given to them in this direction. Any trees of Plums or Pears that have been suffered to retain heavier individual crops because of the general scarcity should be assisted to perfect their extra burdens by liquid manure, which should be either carefully diluted to a safe strength or applied after rain, when the ground will be sufficiently moist to prevent injury. Any Currant or Gooseberry bushes that are making excessive growth will be benefited by having a portion of the most vigorous shoots removed, and others cut back to three or four leaves. Standard and pyramidal-shaped bushes by the sides of walks require to have this attention bestowed upon them in order to preserve them in the required shape, and also to secure a tidy appearance in such positions. See that no caterpillars be suffered to perfect themselves upon the bushes, or a late autumn batch will probably appear to work further injury. Ground for the reception of the Strawberry runners, previously recommended to be prepared, should now be got in order if other operations have prevented such work up to this time. Let the ground be deeply dug and enriched with thoroughly rotten manure, which will allow the soil to be made firm. It is essential that no very fresh littery manure be applied when the planting has to be proceeded with shortly after the preparation of the site, or the operation of firming the plants will be rendered troublesome, and, probably, unsatisfactory, when done. Fruit gathering now demands constant attention to secure it to the greatest advantage, and without waste. When the weather is suitable, and any crop ready, the operation of gathering must be "noted urgent," whatever else has to be left, otherwise the year's labour bestowed upon it may be lost through the fickleness of the weather, and the perishableness of the fruit. Nets will require to be removed to later crops as the earlier ones are cleared off. Birds are exceedingly troublesome, and even the discharge of a gun soon fails to have much effect when no shot is used, for they seem soon to become aware of the fact. It is imperative to be about early in the mornings, and to net as much of the fruit as possible—a supply of unprotected fruit having the effect of drawing the birds from other districts. Weeds, which are apt to get established during this busy season, must have early attention with the hoe, and all suckers must be removed from fruit trees as often as they appear. *R. Crossling, Castle Gardens, St. Fagans.*

Grapes and Vineries.

The earliest house will not now require any more fire-heat, and must have abundance of air on the front and back ventilators night and day, and if the foliage is clean they will do without any further syringing overhead; but if there is any red-spider to be seen use the engine every night until it disappears. Give the borders sufficient clear water to keep the roots healthy; it will be better to use cold water now. If the laterals become very crowded thin them out, so that the sun and light can penetrate freely among them. Those houses in which ripe fruit are hanging, keep as advised in my last Calendar. Those in which the fruit is colouring must have back and front air admitted, so that the atmosphere is light and buoyant without cold draughts. Keep a little heat in the pipes night and day until the fruit is ripe; then, if the wood is well ripened, it may be reduced gradually, and in bright weather be discontinued. Damp the paths only on bright days, doing it in the early part of the day, so that it will dry up before evening. Late houses of Hamburghs that are swelling their fruit must have liberal supplies of tepid manure-water on the inside borders. The outside borders here are sufficiently wet with the rainfall. It is a good plan sometimes to damp the paths and borders with manure-water, as the ammonia given off is very beneficial to the foliage, and helps to keep it clean. Give air early in the day, and increase it as the temperature rises, closing early in the afternoon with plenty of atmospheric moisture. In bright summer weather fire-heat may be nearly done without, but in the weather we are now having (stormy and sunless) a little fire-heat must be used. Houses in which Muscats are ripe, or ripening, must have a drier atmosphere, and the borders when they are dry must now be watered with clear tepid water. Keep the night temperature 70°, with a rise of 10° by day, until they are ripe, when it may be reduced. If red-spider appears paint the pipes with sulphur, as previously recommended. Those that are swelling their fruit must be kept at a night temperature of 70°, with a rise of 10° by day. Give air on the back ventilators in the early part of the day—on bright mornings at 6 A.M.—so that the foliage is dry before the sun is powerful, then there will be no scalded foliage. Increase it as the temperature rises, and reduce it as the heat declines in the afternoon, closing early with plenty of atmospheric moisture, and let the thermometer rise to 95° after closing with bright sunshine. Late varieties of Grapes for keeping through the winter may be kept at a night temperature of 65° to 70°, with a rise of 10° by day. When the borders are dry give them plenty of tepid manure or guano-water—sufficient to go thoroughly through the border. Admit air on the back ventilators early in the morning, and close the house early in the afternoon. Houses in which Lady Downe's are growing, and any of them scalding, keep them a little warmer and drier in the atmosphere, with more air, until the scalding stage has passed, which is generally about ten days. Vineries planted this year must have plenty of heat and air to make a good growth early, so that it can be well ripened early in the autumn. Give them clear water at the roots for the first year; those that are making their second year's growth can have the leaders stopped when they reach the top of the house, and the laterals stopped as they require it. Pot Vines for next year's fruiting must have plenty of heat, and now that the pots are filled with roots give them plenty of tepid manure-water. Admit air early in the day, and close early in the afternoon. Stop the laterals as they require it, and do not stand them too close together. *Joshua Atkins, Lockinge Gardens, Wantage.*

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, July 18—Leek Rose Show
WEDNESDAY, July 19—Flower Shows at Luton, Beds, and Sutton Coldfield; National Rose Society's Show at Darlington
THURSDAY, July 20—Helensburgh Rose Show.

THE Reports of the several COLONIAL BOTANICAL GARDENS which we receive from time to time, though, of course, largely occupied with administrative details that have little interest for the home reader unfamiliar with the peculiar local circumstances of each particular case, frequently contain some matter of general interest. It is pleasant to see how in the older colonies the value and importance of such institutions is in general fairly recognised.

Such institutions have several distinct but mutually connected functions to fulfil. They are, or ought to be, great educational institutions wherein the student should find the means of studying the vegetation of the country, and of selected representatives of the flora of other countries, such as it may be possible to cultivate.

When we speak of educational institutions we do not limit the term to pure science, the demand for which, and the means for which must, as a rule, both be small in the colonies; but we would include also the practical applications of botany, such as the merchant and the planter would appreciate, and the hortiultural and agricultural element which contributes not only to the food and physical welfare of the population, but to the culture and refined enjoyment of the people. These latter matters, though less capable of direct estimation, are, in the long run, fully as important to the general welfare of a country as those the practical advantages of which are more immediately apparent. Science looks to these establishments for aid in the discovery, determination and distribution of the native plants, for investigation as to the conditions, climatal and otherwise, under which their cultivation can be carried on—in fact, for the elucidation of all matters connected with the flora of the country, its geographical distribution, its natural history, and its use for horticultural or economic purposes. Services such as these are available for the whole civilised world, and to render them is, in a degree, to repay the advantages and benefits conferred by our common civilisation.

Of more restricted but still vast importance are the experiments which should always be carried out in such gardens—experiments having for their object the determination of what plants can be profitably introduced into cultivation with a view to increase, not only the local resources and wealth of the country, but the advantage of the world at large. We need only specify what has been done in the case of the Cinchona, and of the Tea-plant in India, to illustrate our meaning.

In the third place, these gardens should contribute to the welfare and gratification of the residents. This may be done by keeping the gardens in such condition as to be agreeable and sightly at all times; they should furnish evidences of taste and culture, such as cannot fail to be beneficial, and which go far in the eyes of the public to justify the expenditure. Public appreciation is likely to be roused by the sight of a well-organised, well-maintained establishment, which, while contributing to the recreation of the people, and cultivating their sense of beauty, has, at the same time, a business-like aspect, which appeals more directly to their sense of what is fitting.

We have before us as we write recent reports of three of these institutions, and if we advert to them only on this occasion, it is with no intention of disparaging the others. Who could do so who remembers the splendid services rendered in India, in Melbourne, in Sydney, and elsewhere, by botanic gardens and their Directors?

Dr. SCHOMBURGK'S report on the Botanic Garden at Adelaide gives a vivid picture of the difficulties of maintaining a garden where great extremes of temperature and humidity occur. In June and July the temperature on several occasions was as low as 29°, the frost proving very prejudicial to the tropical Figs and other plants. In January, on the other hand, the weather was of a torrid character—112° in the shade and 180° in the sun! not so much below boiling point—while the rainfall for the entire year was only a little over 18 inches. A large part of Dr. SCHOMBURGK'S report is occupied with details of the trials of varieties of Wheat and fodder plants. Certain Millets withstood the drought well, and prove excellent for their purpose. The Cytisus prolíferus also is shown to be highly valuable as a forage plant in South Australia. Vitis californica is mentioned as valuable as resisting the Phylloxera, and, therefore, as likely to be useful as a stock for grafting other Vines upon. Flower farming for the purpose of the manufacture of perfumes is alluded to as eminently suitable for South Australia, though at present not much practised. The Museum of Economic Botany is said to be highly appreciated from the way in which the utilitarian side of botanical and horticultural pursuits is brought home to the public.

In this connection it is impossible to overlook the zeal and energy shown by Baron MUELLER at Melbourne for the last quarter of a century, not only in scientifically investigating the native flora, but also in seizing every opportunity of showing by practical experiment the commercial and economic value of plants.

The terrestrial paradise at Peradeniya has, under the care of Dr. TRIMEN, been redeemed from the condition of jungle to which, from want of thinning, it was approximating. The situation of this garden, and of the others associated with it, is such that the introduction of Cinchonas has been carried to such an extent that State aid is no longer needed there to distribute this valuable tree, the best varieties being now in general cultivation, thus leaving space for trials with drugs, dyes, and other products, which need to be tried. Mr. WARD'S researches into the Coffee disease (Hemileia) have been successful in unravelling the whole history of the pest, and of showing the necessity for cooperation and united action on the part of the planters in the endeavour to stamp out, or at least restrict, the disease.

Ceylon seems to be favourably placed for the introduction of the various "rubber plants," especially the species of Landolphia which promise to be of such vast commercial importance in the supply of caoutchouc. We cannot now mention more as to the useful work carried on in Ceylon, but we note the complaint of the Director that he is called upon to sell Ferns, Orchids, &c., for conveyance to England and elsewhere at a direct pecuniary loss to the garden; and, what is worse, at a sacrifice of time and energy which should be devoted to more important and relevant matters.

This leads us to speak of the third report on our table, that of the Botanic Gardens at Cape Town under the management of Mr. MCOWAN, a highly competent botanist. The condition of the garden is, as some of our own correspondents have informed us, and as is substantiated in the report before us, far from satisfactory. Mr. MCOWAN complains bitterly of deficient water supply, without which it is obvious no garden can exist. Eucalyptus and other useful trees have, however, been largely distributed, and a useful hint is given as to the possibility of distilling spirit from sugar Sorghum, in the event of the introduction of the Phylloxera to the Cape, and the consequent loss to the wine growers. But what strikes us with nothing less than disgust is the fact that the authorities have so little appreciation of what duties a botanic garden should perform, and what the work of its Director should be, that we find the State neglecting its proper business and undertaking that of the nurseryman. The receipts and expenditure of the garden are somewhere about £2000 annually. Of the receipts, £500 are supplied by Government, £189 by private subscriptions, leaving £1300 or so to be raised from the sale of plants and seeds! So that here we have a highly talented Director, capable of doing excellent public service, reduced to the condition of a salesman, and the garden turned into a nursery establishment, hard pressed in competition with the local nurserymen, who complain on their side of the illegitimate interference of Government with their lawful calling. This is altogether a most humiliating state of things, and the more to be deplored from the peculiar opportunities of furthering botany and horticulture, scientific and economic, which a properly organised and equipped establishment at the Cape has. At present, it seems, the Botanic Garden does not and cannot mind its own business, while its energies are vainly frittered in the attempt to do what it has no right to meddle with.

—— MELONS AND CUCUMBERS IN THE SAME HOUSE.—Shortly after the publication of the note at p. 742 of our last volume, on economical Melon growing, we received from Mr. JOHN COYSH, The Gardens, Newbold Revel, Rugby, a photograph, from which the annexed illustration, fig. 15, was prepared, accompanied by the following remarks:—"At this establishment for several years I have practised with success growing Melons and Cucumbers in the same house, and the photograph I send will help to show that this plan is worthy of a trial. The house being too large for Melons alone, where a small but regular supply is required, I determined to try the two fruits together, and this year in February, on one side ten Melon plants were planted, and on the other, six Cucumbers. The Melons have borne forty-five fruits, all of a good size. They began to ripen on May 18, and all were ripe in a few days afterwards, when the house was cleared and planted as before."

—— PET PLANTS.—*Aunt Judy's Magazine* has a well deserved reputation for the general excellence of its articles; matter and spirit are alike good. For some time past a series of articles on pet plants has been running its course, and the way in which the subject is handled is so different from that generally adopted in the gardening columns of what we may call lay periodicals, that it is a pleasure to call attention to it. Too often such articles are written by persons with a minimum knowledge of plants, and little or no practical experience of their culture. It is different in the present case.

—— WELL-EARNED PROMOTION.—Although Syon is private property, yet for many years has it been associated with horticulture in a sense so wide and so eminent that whatsoever attaches to its reputation and to its fortunes possesses—at least, to gardeners—an almost national interest. Perhaps its proximity to London has had something to do with the high esteem in which it is held, because its fine gardens have ever been open to the inspection of all horticultural students who have found in it a sort of minor Kew, with in addition many gardening features that the national gardens do not possess. From Syon also have from time to time gone forth into the world many young men who now occupy in gardening distinguished positions. All these remember with pride their early connection with gardens so long famous and still so well maintained. Syon has had in years past many able and eminent garden chiefs, but we may well doubt whether any can claim a higher horticultural reputation than is possessed by Mr. JOHN WOODBRIDGE, who has now and ably served the Duke and Duchess of NORTHUMBERLAND for twelve years. The transition of the present land steward of the Syon and Isleworth estates to the more extensive domain at Alnwick created a vacancy

at Syon that it was desired to fill with a trustworthy and efficient servant, and it is with pleasure we record the fact that his Grace, having spontaneously offered the post to Mr. Woodbridge, it has been by him accepted, though he still retains the supervision of the gardens.

—— Grevillea robusta.—In some interesting notes on the Shuveroy Hills for 1881, recently communicated to the Agri-Horticultural Society of Madras by Deputy-Surgeon-General Shortt, the following paragraph occurs :—"Of the plants introduced on these hills, I have to notice a peculiarity as regards the Grevillea robusta—one tree, which is now eleven years old, has for the last two years during the rains produced spontaneously each year 10 oz. of a translucent gum which has no smell or particular taste, is of a pale yellow colour, and mixes readily with water, when it forms a whitish brown-coloured mucilage, and as a paste answers all the purposes of the so-called gum arabic for adhesive purposes. The other Grevillea trees are some 2 or three years younger, and have not as yet evinced any disposition to produce gum." This statement is a remarkable one, as none of the Proteaceæ were known to yield gum.

—— Gloxinias as Cut Flowers.—In a note upon a box of cut Gloxinia blooms shown last year at Twickenham we recommended that a special class for these should be formed, as they were well qualified to produce a pleasing and active competition. The Twickenham committee adopted the suggestion, and this year a class for cut blooms of distinct varieties in bunches of three was inserted in the schedule. The result was most satisfactory, as at the show held on the 7th six boxes were in competition, and a charming display of these beautiful flowers resulted. Exhibitors would do well to select for this purpose only erect kinds, and if the limitation as to number of blooms could be extended it is probable that bunches of fine blooms dressed with a few small fronds of Ferns, and tied to keep them in position, would much enhance the effect. The 1st prize in the present instance fell to Mr. Warwick, gr. to J. P. Kitchen, Esq., Hampton, who had a charming lot of flowers.

—— Horticulture at the Royal Agricultural Society's Show at Reading.—It may be accepted as a fact, that each year some aspects of horticulture present themselves to view in an increasingly marked manner at this great agricultural gathering. Not a great while since the extensive and elaborate stands, arranged by some of the leading seedsmen, comprised wholly seeds, &c., relating to agriculture ; now the claims of the garden as well as the farm are allowed, and one of these stands is incomplete without some touch of floral beauty, or some feature of interest centering in garden produce. This year the centre of Messrs. Sutton & Sons' most elaborate stand at Reading is formed as a semicircular bay, with a tier of shelves on the back, and on these are arranged, with much taste, specimen plants of variegated Japanese Maize, Petunias, tuberous-rooted Begonias, and charming Gloxinias—all in excellent condition. At the foot of the shelves is a sloping bank of verdant turf reaching to the ground level, raised from fine lawn-grass seeds, sown on May 1, and about this are very pleasantly dotted a few specimen Gloxinias of the excellent strain for which the Reading firm is celebrated, and some tuberous-rooted Begonias, the pots plunged in the emerald turf, as if they had grown out of it ; and as an appropriate edging is a line of plants of a singularly pleasing pale blue selected form of Lobelia speciosa. This is a great point of attraction to the visitors. Then there is an extensive collection of last year's Potatos, preserved with remarkable success ; and also a collection of good examples of this year's Potatos, comprising Early Border, Fillbasket, Early Ashleaf, Purple Kidney, fine in colour ; Sutton's First and Best, very fine ; Prizetaker, a pretty pale salmon kidney ; Sutton's Field Ashleaf, Woodstock Kidney, very fine, &c. A fine collection of Peas is also a prominent feature, and includes good samples of Blue Peter, Improved Prin-



Fig. 15.—A combined melon and cucumber house. (see p. 80.)

cess Royal, Fillbasket, Laxton's Prolific, Day's Early Sunrise, Hundredfold, Kentish Invicta, Telegraph, Market Favourite, Alpha, Champion of England, Fortyfold, Emerald Gem, &c. Then there are vegetable and flower seeds in great variety, and agricultural produce in varied and great abundance. On Messrs. CARTER & Co.'s stand flowers are absent, but there is a fine collection of this year's Potatos of such sorts as Early Six-weeks, Porter's Excelsior, First-crop Ashleaf, very good; Early Rose, Triumph, Bountiful, and many others; and some truly wonderful pods of Telegraph, Telephone, Pride of the Market, Balmoral Castle, Wiltshire Wonder, and Princess Royal Peas. Then there are groups of desirable and undesirable grasses for pasture and hay, roots, seeds, &c. Messrs. WEBB & SONS have a very extensive stand, in which they have grouped flowering examples of Petunias, Accrocliniums, Rhodanthes, &c.; while garden and farm produce and roots and seeds play an important part also. Almost in the centre of the show-ground a pavillion was erected for the Prince of WALES on the occasion of his visit. It was finished on the exterior by covering the walls with virgin cork and training Ivy, Tropæolums and other plants over it. A pretty flower garden was also arranged with flowering and foliage plants plunged in cocoa fibre. The whole was very tastefully set out by Messrs. SUTTON & SONS, and it is worthy of remark that, out of some two dozen plants employed, all but the Ivy were raised from seeds sown in the spring. In the very midst of the yard, where on one hand the engines toil and the din of machinery fills the air, on the other the lowing and bleating of cattle are heard. This spot, brightened with flowers, attracted multitudes to view it, like a speck of sweet floral beauty amid a wilderness of utilitarian designs and powers.

—— GAILLARDIA.—Dr. REGEL, under the one specific form of G. pulchella includes var. α *lanceolata*, syn. G. aristata, Pursh.; G. lanceolata, Michx.; G. Roezlii, Regel; G. rustica, Cass; var. β *bicolor* = G. bicolor, Lam.; G. pulchella, Fouger; G. pinnatifida, Torr.; G. picta, Don, var. γ *Drummondi*, syn. G. bicolor, Drummondi, Hook.; G. grandiflora, hort.; G. Drummondi, DC.; G. coccinea, hort.; G. Smeathmanni, hort., var. δ tricolor, G. picta tricolor, *Fl. de Serr.*; var. ε *amblyodon* = G. amblyodon, Gay, and var. ξ *Lorenziana*.

—— THE POLICE ORPHANAGE AT TWICKENHAM.—On the occasion of the visit of their Royal Highnesses the Prince and Princess of WALES to the Police Orphanage at Twickenham on Saturday last, to open the new school wing of the building, the floral decorations were admirably carried out by Mr. BROCKHAUS, manager to Messrs. HOOPER & Co., of Covent Garden, who gave the needed services free of cost, as the object was essentially a charitable one. The plants employed were many and varied, and were used chiefly to dress the entrance-hall and the splendid reception-tent erected by the Messrs. PIGOTT, of London-bridge. On the same day the Royal party also visited the Boy's Home at Fortescue House, near the railway station, where the floral decorations were carried out in the same generous spirit by Messrs. HAWKINS & BENNETT, whose ample stock of Maidenhair Ferns and single and double Pelargoniums were effectively employed.

—— A ROSE SPORT.—Mr. BROWN, Great Doods, Reigate, writes:—"In your report of the National Rose Society's show at South Kensington you state that one of the most remarkable blooms shown in the amateurs' section was a sport. Being the grower of the above I think it might interest some of your readers to know its origin. Last year I observed a small shoot, with a striped flower, on Comtesse d'Oxford, the buds on this shoot were inserted at once, and I have now four plants exactly the same. One of the plants in question has also thrown out a shoot that has a flower exactly the same colour as the stripe in the flower sent." We have observed the sporting of the same variety in our own garden, but not to so great an extent.

—— THE RAIN TREE (Pithecolobium saman) in the gardens of the Agri-Horticultural Society of Madras, the measurements of which were given in the *Proceedings* of August 7, 1878, and then believed to be under six years from the seed, continues, in spite of its having been necessary to amputate some of its largest limbs, to grow enormously. Measured on July 30 last it showed girth 9 feet 4 inches at the ground, 6 feet 3 inches at 3 feet high, and 5 feet 9 inches at 5 feet high; in spread about 85 feet from north to south; and a total height of about 46 feet. A reference to the former measurements shows that the girth at 3 feet from the ground has increased in the last three years 2 feet 2inches. The age of the tree is, if anything, overestimated; but search is being made for traces of the receipt of the seed, which it is believed came from Ceylon about 1872. A Casuarina tree standing alongside, which was the specimen of its order when that part of the ground was laid out as the Botanical Garden, and is therefore known to be about ten years old, now measures at 5 feet from the ground only 2 feet 8½ inches, though it is about 82 feet high.

—— SINGLE DAHLIAS.—In New Jersey it appears that these will not succeed under glass.

—— HARDY ORNAMENTAL SHRUBS, &C.—At the recent flower show at Twickenham the well-known firm of Messrs. C. LEE & SONS, of Hammersmith, exhibited a singularly interesting and pleasing group of hardy ornamental shrubs and trees that attracted great attention. Very conspicuous was the Golden Elder, Sambucus aurea, and hardly less striking were the creamy-white shoots of Sambucus laciniata variegata. Of Oaks, there were huge-leaved forms of Quercus nigra nobilis, and of the elegant Q. Daimio; also Q. Robur nana variegata, and the copper-coloured Q. atropurpurea. The purple-leaved Peach, Persica purpurea, is an effective shrub, and Æsculus aurea, the Golden Chestnut, is as striking. Cornus albus variegatus was finely coloured, and C. mascula aurea elegantissima has charming leafage. Very fine and effective leafage has Pyrus Sorbus vestita. Rhus Osbecki, Corylus Avellanus purpureus and many others have beautiful foliage.

—— THE WINTER IN RUSSIA.—Our excellent correspondent, M. DE WOLKENSTEIN, tells us that in point of temperature the last winter was one of a very mild character for Russia, but owing to the absence of a protective covering of snow, when the frost did come the havoc was fearful, even the Daisies were killed, and the wild Juniper was killed to the roots, both about St. Petersburg and in the vicinity of Moscow.

—— LACHENALIAS AND DAFFODILS.—The unique collections of Lachenalias and Daffodils possessed and cultivated by the late Rev. JOHN NELSON, of Aldborough Rectory, have passed into the hands of Messrs. BARR & SON, for distribution. The collection of Lachenalias consists of the following sixteen species and varieties:—1, Nelsoni; 2, Nelsoni aurea × rosea; 3, Nelsoni luteola × aurea; 4, aurea; 5, quadricolor; 6, superba; 7, tricolor; 8, luteola; 9, maculata; 10, pendula kermesina; 11, pendula amœna; 12, gigantea; 13, versicolor; 14, fragrans; 15, rosea; 16, tigrina. The collection of Daffodils possesses special importance, inasmuch as Mr. NELSON carefully selected the finest types, and discarded those he considered as too closely resembling each other.

—— THE AGE OF TREES.—For determining the rate of growth of coniferous trees Dr. BRANDIS recommends that on each section a "mean radius," along which the average rate of growth is most fairly determined, should be selected, a line drawn across the section in the spot so selected, and then marks made upon the line at intervals of two inches—the number of rings being counted in each section thus:—

Silver Fir.—Total Diameter of Section, 36 inches; Bark, ¾ inch.

Inches.	Rings.	Inches.	Rings.
2	11	12	18
4	8	14	19
6	10	16	19
8	10	18	14
10	18		
Total years			127

—— MACROZAMIA DENISONI.—A finely developed specimen of this splendid Cycad is now to be seen in one of the plant-houses at Gunnersbury Park. It has noble arched leaves, and pinnæ of a bright shining green colour, which render it a very fine decorative plant. It makes a rare specimen for exhibition purposes. As the specimen is comparatively young, the leaves are only about 3½ feet to 4 feet in length; but they will become longer as the plant ages. It is said to grow to the height of 60 feet in its own country; but that must require generations, as in this country this species appear to make a stem very slowly.

—— MICROLEPIA HIRTA CRISTATA.—As a single specimen for the embellishment of rooms, no Fern is better adapted for the purpose. Its long drooping fronds hang gracefully over the sides of a pot or basket, and besides being a rapid grower it requires only the warmth of an intermediate-house or vinery in summer, where it is afforded the necessary shade from the Vine leaves.

—— PLANTING ASPARAGUS IN JULY.—Those who have seedling Asparagus a few inches high will find this present month a good time to plant it out in its permanent quarters. For amateurs especially it is the cheapest and most reliable way of securing a supply of so delicious a vegetable. Plants raised from seeds during the past spring are now in fit condition for planting out, and the daily showers we are having, though harassing to haymakers, will be beneficial to newly planted Asparagus; indeed, the plants receive no check at all, so quickly do the roots lay hold of the fresh soil and grow apace. Not one plant in a hundred will miss taking root or sustain injury of any kind, but if such a thing did occur the blank can be filled up any time during this month or early in the next month from the reserve stock. Compared with spring-planting everything is in favour of the amateur. In the spring the soil is cold, and the roots of the plants often suffer in transit; the beginner also thinks the older the plants are the greater the prospect of an early return. But occasionally the roots get sadly mutilated in lifting, and more frequently they suffer from the effects of dry weather before they are planted; and owing to this or other causes many blanks have to be filled up afterwards. Not so, however, with the seedlings, which are simply transferred from one quarter of the garden to another, or from the nearest nursery in a growing state, which is just as cheap a way of obtaining them (to the small grower) and as good. Small gardens will not admit of the lines being planted at wide distances apart; but two lines may be planted in a 3-foot bed, and good results obtained from this system of planting. Rows of Lettuces, or other temporary crops, may be grown between the rows of Asparagus in the meantime, and in the winter give rich surface dressings which will be washed into the earth by the winter rains. The advocates of big Asparagus have a number of followers, and are no doubt doing much good in arousing cultivators from the apathetic modes of culture; but the old English Squire still shakes his head significantly if you talk about quality in the monstrosities that are to be seen in the greengrocer's window. Medium sized heads, and plenty of them, will always suit the epicure as well or better than the big heads we see or read of.

—— BRAVOA GEMINIFLORA. — This handsome Mexican Amaryllid is now finely in flower at Kew. Some good specimens are flowering in pots in one of the cool houses, but these in luxuriance and beauty are far surpassed by individuals planted out in the open border, but somewhat sheltered by the building near which they are growing. The flower-stems of these latter are more than 2 feet in height, and the rich orange-red tubular flowers are larger and more highly coloured than are those of the specimens under glass. Any collection of choice tuberous or bulbous plants should include the species now noted.

—— RUSELLIA JUNCA.—How seldom we see this old-fashioned plant now-a-days. It is Rush-like, as its name implies, and bears little scarlet bells which are exceedingly chaste and pretty. It is a winter-flowering plant, and is most useful for forming front lines in plant-houses owing to its light habit. It fills a space where a bushy-habited plant, however pretty, would be out of place, and is therefore a desirable plant to possess for the show-house in winter.

—— DISBUDDING CHRYSANTHEMUMS.—The enthusiast in Chrysanthemum growing, who has an eye to big blooms next November, will often be puzzled during the present month, assuming him to be a beginner in the art of growing large flowers. It is an art, whatever may be said otherwise. Any one can master the art by patience, observation, and application. These three things are absolutely indispensable in the composition of the cultivator who seeks to gain a position as a grower of large flowers.

There is nothing so mysterious after all in the way those big flowers are obtained, but still you must know the way to get them. No one can teach another how to do this unless he who desires to learn will observe for himself. The critical point is to know "what bud" to take in certain varieties. A great many of the best show kinds have unfortunately characteristics belonging to themselves, and the cultivator must note this and watch the result of any experiments that he tries during the present season, so that unsuccessful experiments may not be repeated. This is simply a note of warning to those who are upon the look-out for information upon this important point in the cultivation of the Chrysanthemum. And it is this: take no notice of any bud that appears during the present month. Do not pinch the plant because of the appearance of a big flat bud, or think that there is anything wrong because of its presence. Let Nature have her course, let the plant grow on: if it is now a singled-stemmed plant there will very soon be (if there is not already) three shoots, and the big bud will gradually grow into a little one until you will want an eye-glass to see it. If green-fly makes its appearance dust the points of the shoots with tobacco powder, and keep on repeating the operation until the insects are entirely destroyed. Towards the end of next month will be early enough to look out for the buds that will ultimately grow into the large flowers. The July bud only produces those broad ragged blooms, with a few coarse petals, which are neither useful nor ornamental.

—— Odontoglossum vexillarium.—Dr. Patterson writes:—"Six years ago I bought a plant of Odontoglossum vexillarium from Messrs. Low—one little bulb with three leaves. Every year since then it has increased in size and inflorescence. This year it has thirty-six spikes, bearing 189 flowers, all of which I send you, along with a spike of Vanda tricolor Patersoni, which is considered as good, if not better, than the Dalkeith var., and a spike of Vanda suavis." The Vandas are both very fine spikes of thirteen and seventeen flowers respectively; and the blooms of Odontoglossum vexillarium, though not individually large, are charming in the aggregate.

—— Publications Received.—*Familiar Wild Flowers and Familiar Garden Flowers* (Cassell).—*The Micrographic Dictionary* (Van Voorst: ed. 4, parts 8—13).—*Illustrations of British Fungi:* Cooke (viii. and ix.: Williams & Norgate).—*Coloured Figures of Species of Agaricus.—Bulletino della R. Societa Toscana di Orticultura.—Bulletin d'Arboriculture.—Gartenflora Westnik.—Revue de l'Horticulture Belge.—Illustration Horticole.—Journal des Roses.*—Williams' *Orchid Album.—Jahresbericht des Naturhistorischen Vereins von Wisconsin* (Annual Report of the Wisconsin Natural History Society.)

—— The Weather.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending July 10, issued by the Meteorological Office, London:—The weather has been very cloudy and unsettled, with frequent thunderstorms and heavy rain. Temperature has been slightly above the mean in "Scotland, E.," and about equal to it in "Scotland, W.," and "England, N.E.," but in all other districts it has been from 2° to 4° below its normal value. The maxima were very low for the season, and ranged from 65° in "England, N.W." to 72° in "Ireland, N." In some parts of the south and south-west of England on the 4th, the thermometer did not exceed 59°. The minima, which were generally registered towards the close of the period, were as low as 40° in "England, E.," and from 43° to 47° elsewhere. The rainfall has been more than the mean in all districts, the excess in the western parts of England being very large. At Cullompton and Manchester more than 3 inches of rain was measured. Bright sunshine shows a slight increase in most of the English districts, but a decrease over Ireland and Scotland. The percentage was greatest (46°) in England, S.W.," and least (25°) in "Ireland, E." Depressions observed:—The barometer has been comparatively high over France and Scandinavia, while over our islands, owing to the passage of several small depressions from south-west to north-east, it has been low and unsteady. The wind has been generally south-west to south-east, and light to moderate in force; but on the 6th and 7th it blew a moderate to fresh gale from the westward at many of our southern and western stations, while in the extreme north of Scotland a light easterly breeze was experienced.

—— Gardening Appointments.—Mr. G. D. Chisholm, late Gardener to C. M. Webster, Esq., Pallion Hall, Sunderland, has been engaged as Gardener to the Hon. Henry Butler, Eagle Hall, Pateley Bridge, Yorks.—Mr. McBain, for twenty years Gardener to Lord Windsor, at Oakley Park, near Ludlow, has taken to farming, and is succeeded by Mr. Reason, lately a Foreman in Lord Holmesdale's service.

THE VEGETATION OF TRINIDAD IN THE SOUTH ATLANTIC.

Trindad or Trinidade is a rocky islet in the South Atlantic, distant between 600 and 700 miles from the coast of Brazil, in about 20° 30′ South lat. It is scarcely more than half the size of the Isle of Wight, but its lofty basaltic columns and peaks are easily seen at distances of 50 miles and upwards. This remote speck in the ocean is now regarded as a portion of the Brazilian province of Espiritu Santo, opposite to which it lies, yet it has successively been claimed by the British and Portuguese. Halley, the renowned astronomer, landed on the island early in the reign of George I., and formally took possession in his name, leaving at the same time a number of goats, hogs, and guinea-fowls. In 1781 the English, under Commodore Johnstone, tested its capabilities during a two months' stay, and decided that it was impracticable to form a settlement. Afterwards the Portuguese took possession of it, and erected some rude buildings, the ruins of which remain at the present time. They did not stay long, however, for they had withdrawn when the American Commodore, Amaco Delano, visited the island in 1803. He, it is recorded, found there numerous goats and hogs, as well as some cats. The only botanist who has visited the island is Sir Joseph D. Hooker, who landed with Sir James Ross and others whilst on the outward voyage of discovery to the antarctic regions in 1839. But although they succeeded in landing, they were unable to scale the cliffs, and the only plants obtained were a Sedge and a Fern—Polypodium lepidopteris. A second landing was not attempted, and the young botanist left the island with the tantalising knowledge afforded by a telescope, that a tree Fern and other arboreous vegetation existed, to say nothing of what these might conceal. It is noteworthy that one goat was seen by Sir James Ross's party.

Nearly forty years elapsed, and Dr. Ralph Copeland, of the Dunecht Observatory, Aberdeen, when on the voyage out in the *Venus* to observe the transit of Venus, had the good fortune to land at a point whence he could get into the interior. Dr. Copeland has contributed a report of his visit to the *Abhandlungen der Naturwissenschaftlichen Vereines zu Bremen*, from which most of the following is extracted, and Dr. Buchanan adds a list of the names of the plants collected. The island was approached from the north-west, where a number of frigate-birds and red geese were encountered, and some were shot. A fine view was obtained of the "Nine Pin," or "Monument," a basaltic, tower-like rock, about 150 feet in diameter, and 820 feet high, with quite perpendicular sides. Sir James Ross's party landed in North-west Bay, a little to the north of the Nine Pin Rock, a view of which is given in the narrative of the voyage. According to earlier reports, says Dr. Copeland, the summit of this rock was clothed with tall green trees, but they have now disappeared. It does not seem very likely that tall trees ever grew in such an uncomfortable spot. As they sailed along the western side of the island the coast was carefully scanned through a telescope, in order to find a landing place, and a boat was sent to examine the coast for the same purpose; but it was reported to be well-nigh impossible to land, and the anchorage very bad. Nevertheless, Dr. Copeland and a companion tried and succeeded in landing on some projecting rocks about sunset, and after some climbing on the extremely rough volcanic stone they reached the shore, where they met with innumerable small yellow land crabs, and a tufted Sedge, probably the same as the one collected by Sir Joseph Hooker. They had hardly landed, however, before they were obliged to take to their boat and return to the ship, which they did not reach until it was quite dark. All along this side of the island there was not a single living tree to be seen in the lower part, though the higher ridges of the hills were covered with a dense forest; which was inhabited by enormous numbers of boobies. Many of the trees were recognised as being Palm-like, and probably Tree Ferns.

The next day the ship rounded the north point, when the whole of the east coast appeared in view. Here naked cliffs overtop the broad green slopes, in striking contrast to the barren shores and wooded summits of the western side. The east coast is divided into three shallow bays, and at first sight looks very favourable for landing, but near the shore there is a narrow reef running parallel to the coast, apparently from end to end. At length a small opening was found in the second bay, through which a boat could enter, and where there was no difficulty in landing, and drawing the boat up.

The country did not gain on closer inspection, for the green slopes, that seemed at a distance to be clothed with a grassy turf, were completely overgrown by one species of Bean (Canavalia sp., probably C. gladiata, DC.), whose entangled branches rendered walking very uncomfortable. Moreover, the ground was everywhere burrowed by innumerable land-crabs—as far as the travellers went they found every spot literally swarming with them. Accompanied by one sailor, Dr. Copeland made for the high land of the interior, passing through on his way and examining the ruins of the buildings erected by the Portuguese. No traces of cultivated plants were found, but everything was overrun by the Canavalia mentioned above. Proceeding on their journey the travellers ascended a ravine formed by a rivulet that flows into the bay below. Soon they came upon colonies of frigate-birds nesting in the branches of prostrate dead trees. It is noteworthy that, although most of the valleys on the eastern side of the island contained enormous numbers of dead trees, not a single living one was to be found except near the highest points. Indeed, nearly all the trees were thrown down, and, as it appeared they had been down many years, Dr. Copeland asks whether, as in St. Helena, the trees were not destroyed by goats. This is uncertain. Neither Dr. Copeland nor any member of the party saw a single goat, hog, or cat, yet dense vegetation was encountered in easily accessible localities. Nor did they see a guinea fowl or any other kind of fowl. The pieces of wood brought away are said to resemble mahogany, but are of less density. At an altitude of about 1800 feet the valley suddenly widens into a kind of plateau, for the greater part covered with a dense layer of a matted grass [Sedge?]. This grass is seated on tough stems from one to two inches high, so that the heavy rains that doubtless fall here can easily run away. Bordering a small watercourse was a group of Tree Ferns, many of them dead, however, though their snake-like stems were still standing upright. Ascending some two or three hundred feet the vegetation was found to be of quite a different character. Large spaces of ground were clothed with luxuriant Ferns, each kind growing in separate patches. These Ferns were Polypodium lepidopteris, Asplenium præmorsum, and Asplenium compressum. The last was not so abundant as the others, but it is the most interesting, inasmuch as it had previously only been found in St. Helena. Intermixed with the Ferns were clumps of a small shrubby Composite, Achyrocline capitata, covered with yellowish-white flower-heads. The summit above, as well as the south-western slope, was covered with forest, the outskirts of which were very dense, consisting of stunted, almost impenetrable bushes. Looking down into the principal western valley, in which there is a waterfall, a pretty sight met the eye. The valley was nearly filled with Tree Ferns, which, seen from above, showed each about eight fronds; and as the trees were all of the same size, and just touched each other, the whole formed the most beautiful carpet imaginable. Near the summit a few Tree Ferns were associated with the trees forming the forest; and their stems were about a foot in girth, and from 8 to 14 feet high. An imperfect specimen of Tree Fern from here was brought home, and it has been described as a new species of Cyathea, namely, C. Copelandi. Scraps of a species of Eugenia, of an Abatia, and of an Alternanthera, were also brought home, but, unfortunately, no specimens were secured of the trees forming the bulk of the forest. The only other flowering plant noted is the Castor-oil plant, which was found growing luxuriantly on the way down.

It is a great pity that Dr. Copeland did so little in the way of collecting specimens; the little he did makes us wish he had done more. The discovery of Asplenium compressum is specially interesting, as it indicates some connection between the floras of these remote islets of Trinidad and St. Helena. It may be mentioned in passing that Melliss in his *St. Helena*, by some slip, records this Fern as also inhabiting South Africa, Madagascar, &c. *W. B. Hemsley.*

WINSLADE,

Is the seat of Joshua Dickson, Esq., who is widely known in Devonshire as a magnificent patron of horticulture, and who is also a keen agriculturist and a benefactor to all who are in any way connected with his estates, as indeed he is to others with whom he is not so closely associated. Winslade is 5 miles from Exeter, and about 3 or 4 miles from Topsham, which is reached, as your correspondent was informed, by the "Topsham express," which travels at the rate of about 12 miles an hour! There was a vein of irony in the manner of the gentleman who supplied this information, which did not turn out to be precisely correct, as the journey was by no means a slow or unpleasant one. The main entrance is off St. George's Road, from Exeter, where a new lodge has been built, known as the Exeter lodge. The drive, or rather the greater part of it, is also new, and the trees which margin the new portion have been very successfully removed to their present position by a tree-lifting machine, so that the new portion very nearly corresponds with the old. The trees consist chiefly of Turkey, English, and Ilex Oaks. A slight curve to the left takes the visitor over a rustic bridge into a series of Laurel walks which communicate with the grounds upon the north side of the house, and from which there are pretty peeps into the park over the entire distance. There are also striking views of distant objects famous in the neighbourhood, notably the Belvedere at Lord Haldon's, which is a conspicuous object for miles in this part of the country. You can also see herds of sheep grazing upon the green slopes of the Haldon Hills, encircled by trees, their white woollen coats looking very pretty in the distance. The Laurel slopes are beautifully kept, and the borders are dotted with trees and flowering shrubs of various kinds, some of which are in flower at most seasons of the year. There are low clumps of Berberis Hookeri, which bears flowers of a paler yellow than B. Darwinii, a plant that makes a capital ornamental hedge, and is altogether a very desirable shrub for the adornment of pleasure grounds. Then there are beds or clumps of Michaelmas Daisies, Ghent Azaleas, Veronica decussata, Mahonias, and the False Acacia is occasionally to be met with overhanging the walk. A second rustic bridge is crossed, and the north pleasure grounds are entered.

At this point the ground is formed like the end of a large oval, and is bounded on the left by another Laurel walk, and upon the right by a walk and ornamental shrubbery border planted with choice Rhododendrons and other shrubs, with a margin of the beautiful little rock Cistus. The sweep of pleasure garden between these boundaries widens gradually in the direction of the north front, and is planted with the best of the Conifer family, including Wellingtonias, Cupressus, Cryptomerias, Thuyopsis gigantea, Biota aurea elegantissima, and other rare and valuable kinds. There are beds of alpine Rhododendrons, planted alternately with the Conifers upon the east side, and upon the west side a summer-house and croquet lawn, enclosed by a broad belt of Rhododendrons. The entrance to the latter is all that is visible from the north pleasure garden, and is one of those pleasant spots which crop up now and then at Winslade, where the stranger would least expect to find them. The summer-house is a spacious thatched structure, faced with bark, and panels of moss, and affording a delightful retreat for garden parties, or for ladies and gentlemen who are interested in the game of croquet. There are two large Cedars of Lebanon in front of the house, and the lawns are of the richest verdure and faultlessly kept. The park is divided from the grounds proper by a har-ha fence, which, to those who do not understand the style, had better be explained. It consists of two terraces, sloping to a narrow line at the bottom something like the letter V. An ornamental fence then divides the two slopes. The style is certainly a great improvement compared with the old sunk fence, made of a pile of dingy looking stones staring at you from one side. The house is a fine square block, ornamented with a portico supported by Doric columns. From the west front there is a clear view of the park, which contains many fine trees, and a stream—a tributary of the river Clyst—besides a commanding view of the Haldon Hills, which, upon this side, are densely wooded and exceedingly picturesque in appearance.

The conservatory is at the east side of the house, and is a noble glass structure 60 feet long by 40 wide. It is in two roofs, and is supported by iron columns which are placed under the centre gutter. It is now being extended at the east end, where an ornamental division is being added, which is to be specially treated for stove plants and other tender subjects requiring more than usual care. The whole structure is unusually elaborate in design and workmanship, and the plants—the permanent occupants especially—are among the very finest in the country. The roof adornments consist of Tacsonia exoniensis and Van Volxemi, and grand baskets of Adiantum cuneatum and Nephrolepis exaltata. The back wall is also rich in basket Ferns of many kinds, and ornamental leaved and flowering Begonias. The large plants of course occupy the central bed, and comprise fine specimens of Cyathea medullaris with stems over 7 feet high, Cibotium princeps, Dicksonia squarrosa, Cyathea Smithii, Palms of all the choicer kinds, and Camellias. There is a groundwork of Ferns among the tall Ferns and Palms, giving the whole group a very natural appearance. The borders are differently laid out, and are highly effective. The groundwork is composed of Selaginella Krausiana and Ferns, and the flowering plants of all sizes are plunged in the carpet of moss. These consist of tall Fuchsias, Neriums, Celosias, double Pelargoniums, tuberous-rooted Begonias, Cacti, and other showy flowers. The border plants are, of course, smaller, but no less effective. There are some valuable specimens of filmy Ferns in a case, in the cultivation of which Mr. Craggs is very successful; these comprise Todea superba and pellucida, and Hymenophyllum chiloense, a variety that is very scarce, if, indeed it is yet possessed by the trade, which is doubtful. There is a kind of recess or corridor upon the north side, between the house and conservatory, of course leading into both, heated for the accommodation of stove plants, but which will be no longer required after the extension at the opposite end, which is now proceeding, is complete. In this cosy little place there are well grown pans of Achimenes grandiflora, and fine specimens of Ixora Williamsii, bearing very large trusses of flowers beautifully coloured. Also good plants, well-flowered, of Clerodendron fallax, and other stove plants.

The flower garden consists of a series of three terraces upon the south side of the house, with the usual accompaniments of steps, statuary, vases, and other ornaments. The first terrace is designed in Box and in grass, a very pretty scroll work in which carpet bedding is already growing effective. The circles in the chain of Box, which is in the centre of the design, are filled with ornamental foliage plants which give a relieving tone to the arrangement. The border by the wall of the second terrace is carpetted with raised circles and diamonds of the usual stock employed for such purposes, and having a groundwork of Saxifrage which is both chaste and pretty to look upon. Upon either side the centre walk geometrical groups of beds are planted in the bedding style, and specimen Conifers are dotted about by the margins of the walks—handsome specimens, every one of which is in its proper place, and was evidently planted for a definite purpose, for although there are practically three gardens, they all form a harmonious whole from whatever part they are viewed. Descending by the steps to the third terrace the Golden Yews constitute the greatest ornament of this garden, which is simply plain grass plots furnished with specimen Conifers — Pinus insignis, excelsa, Abies Nordmanniana and grandis being among the best of the collection. To the west of the terraces lies the paradise of Winslade — the Dell Garden! There is a pond in the centre where there are wild Iris and the white and yellow Nymphæas. By the margin of the pond the beautiful Arundo Donax grows to a height of 14 feet, and at a distance one might mistake the colour of its tall healthy shoots for a shade of blue, so highly is it coloured, and so luxuriant is the growth. Its companions are pillar Roses loosely trained, and samples of Salisburia adiantifolia, which I have never seen more at home than it is here, either as regards health or position. The boundary border upon one side is composed of the purple-flowered Acacia, creamy-white Spiræas, Spruce stumps naturally and beautifully clad with Ivy, and upon the opposite side with Mahonia latifolia and Berberis Darwinii dotted with golden-coloured Conifers, and edged with a selection of hardy Ferns. Then there is rockwork with a pretty specimen of Retinospora plumosa aurea at the entrance, under which may be seen a group of Polystichum angulare, or a bush of Viburnum japonicum or Thuya gigantea var. planted in a groundwork of variegated Vincas and Ivies. Gaultheria Shallon also succeeds well, and makes a good rock plant. The surroundings are so pretty and so adapted to each other as a whole that one feature seems to blend with another precisely as if the work had been designed and executed by Dame Nature herself. As, for instance, where the Golden Ash overhangs the rockwork, or the Hemlock, Spruce, or English Yews touch the edge of the pond with their sweeping branches from the island, or the purple Nut borders a secluded walk, or the Royal Fern shoots up majestically by the water's edge. You may also find a plant of Cephalotaxus Fortunei so cosily situated as if it had been measured for the corner where all its beauty is seen without any of its defects, or a fine specimen of Taxodium distichum elevated above its neighbours, where its health and symmetry may be admired without an effort. Turning eastward by the canal which divides the park from the grounds upon the south side the walk is bordered very prettily with Vincas and Hypericum lucidum. The canal is margined with balustrading or a terrace wall ornamented with Roses along the southern and eastern boundary, the latter of which is known as the "long terrace," which runs the full length of the garden. The wall upon the left hand is completely covered with creepers, and the border is then made up of coniferous and American plants, with a sprinkling of flowers to render the whole interesting and lively. For this purpose hardy herbaceous and alpine plants, annuals, or any surplus stock are called into request at different seasons of the year.

(*To be continued.*)

PLANT PORTRAITS.

Amorpha canescens, Nuttall; Hook. f. in *Bot. Mag.*, t. 6618.—An old-fashioned but beautiful hardy shrub with oblong pinnate leaves of numerous segments and long spikes of minute, papilionaceous flowers, of which, however, only the small, hyacinthine standard is present which forms a pretty contrast to the numerous yellow stamens.

Apple Rambour Papelen, *Bulletin d'Arboriculture*, February.—Robust variety, with deep green leaves; fruit large, globose, with shallow open eye, yellow, richly tinted and streaked on the sunny side; flavour acidulous. Will keep till January. A kitchen Apple of great excellence.

Begonia Diadema, Hort. Linden, *Illust. Hort.* t. 446.—Leaves petiolate, palmately 5—7-lobed, lobes lanceolate serrate, green, mottled with white. Borneo.

Crinum Schmidtii, *Regel Gartenflora*, t. 1072.—A species from Natal, with flowers of medium size, segments oblong, lanceolate, white tipped with rose.

Disa grandiflora vars., *Garden*, February 28.—Two very striking varieties—superba and Barrelli—but without indication as to which is which.

Erigeron aurantiacus, *Revue Horticole*, Feb. 16.—A dwarf hardy perennial, not unlike a Marigold, but dwarfer, more refined, and with narrower florets. The flower-heads are terminal, about 1½ inch in diameter, deep orange. Native of the mountains of Turkestan, whence it was introduced by M. A. Regel.

Linaria maritima, *Garten Zeitung*, March.—A low-growing annual, with linear-ovate leaves, and a profusion of blue-violet flowers. Haage & Schmidt.

Nymphæa tuberosa, *Garden*, February 25.—A North American white Water Lily, well adapted for culture in this country, though but little known.

Olearia ramulosa, Bentham, *Gartenflora*, t. 1073. — A greenhouse shrubby Composite, with narrow linear leaves, and small star-like flowers, white heads, flowering in winter.

Phalænopsis intermedia Portei, *Garden*, March 4.—Flower segments white, the lip rosy-lilac. Philippine Islands.

Spiræa Fortunei rubra, *Revue Horticole*, March 1.—A dwarf-flowering shrub, with ovate dentate leaves, and terminal clusters of deep rose flowers.—Japan. It appears different from the plant grown in English gardens under the name Fortunei.

Symplocos Sumuntia, D. Don, *Gartenflora*, t. 1074.—A Nepalese evergreen shrub, with shortly stalked, ovate lanceolate serrated leaves, tapering to both ends; flowers small, white, in racemes.

Home Correspondence.

Sowing Annuals.—The plan I adopt is to make up a slight hotbed and sow the seeds thinly in drills, and when large enough to handle, prick the plants off into another bed made on a hard bottom about 3 inches thick, composed of old potting soil and leaf-mould sifted, where, shaded from the sun for a time, and carefully attended to as regards watering, they soon make nice stuff to put out where they are to flower. I find this plan answers better than sowing in pots, or allowing the plants to stop in the seed-drills till finally planted out, which operation has been greatly benefited this season by the frequent rains. But when the soil is light and open I should be inclined to adopt the plan you suggest, as annuals would lay hold of their permanent quarters at the start, and thus receive no check, which is a great consideration. Asters germinated badly this season, and have not done much since; is this general? *George Potts, Jun., Surbiton Hill, July* 11.

Tree Guards.—The wire-netting recommended by your correspondent, Mr. Michie, is no doubt effective in protecting young trees from horses; unfortunately these are generally accompanied by cattle, and the latter seem to think that wire netting is put up especially for them to tear down with their horns. I have found stout fencing-wire, doubled backwards and forwards in 6-foot lengths and tied together, to make a tolerable extempore tree-guard. *H. K.*

The Peach Wall at Sundorne Castle.—This week I have seen certainly the best wall (ouside) of Peaches and Nectarines I have had the pleasure of seeing for some years, viz., at Sundorne Castle, near Shrewsbury. The length of the wall is 60 yards, on which were originally planted twelve trees; but one had to be replaced two years ago: the remaining eleven, although old, are in the most perfect health and cleanliness it is possible to imagine, well and evenly set with fruit now larger than Walnuts, averaging from twelve to fourteen dozens per tree. The whole face of the wall is covered with fine healthy growths and foliage, and not a diseased branch is to be seen. The gardener (Mr. R. Milner) attributes the healthy state of the trees, in part, to the plan he has adopted, of heavily syringing—when the weather will permit—once each week with soap suds, commencing early in January, and continuing the operation through the spring. Mr. Milner said, he had not seen a trace of blackfly or blight on them this season. *F. G. G.*

Anemones.—It is only those who have had the good fortune to see a bed of these that can form any idea how gorgeously beautiful they are when in flower, especially if the plants happen to have been raised from seed, as then the blooms present great variety of colour, and when fully expanded are perfectly dazzling to look on. Those who would have them to come in next autumn, winter, or spring should lose no time sowing, that the plants may become strong, as it is only such that are able to throw up any great number of blossoms. The readiest way of raising them is to sow either broadcast or in rows where they are to remain, by doing which all check from pricking out or transplanting is avoided, and they therefore become established at once. The best situation to grow them in is a warm dry border, facing south, where they can enjoy the full influence of the sun, which is necessary to open and expand the flowers and mature and ripen the tubers. Some growers like the tubers taken up to winter, but that only weakens them, as, however carefully they may be stored, they are sure to shrivel and lose much of their weight and vitality. The soil that suits Anemones best is that of a somewhat light and dry nature, with a fair amount of sand, and in such as this, with manure added, they will flourish amazingly. Besides making such a fine and brilliant display in beds and borders the blooms of Anemones are exceedingly valuable for cutting, and though in the open they close towards night, when placed in rooms they remain fully expanded, and last a long time in perfection. *J. S.*

Protective Moulding of Potatos.—I beg to inform you that since the publication of my little book, I have made further experiments which have confirmed in the most satisfactory way possible all the principal results laid down in my pamphlet, as far as the "protective moulding" and the different soils are concerned. I fear no contradictions from practical field experiments if only they are carried out in exact accordance with my directions. Two things, especially, are necessary, viz.:—1, The earth covering given by protective moulding must be no less than about 5 inches over the upper surface of the uppermost tubers (settling by-and-by to about 4 inches); 2, The protective moulding must be executed before the disease in the leaves has set in, or at least as soon as the first traces can be noticed by a careful inspection of the leaves. A covering of 4 inches is, however, quite sufficient for sandy soils, but for medium and stronger soils 5 inches (to begin with) will be necessary. These suggestions rest on experiments recently corroborated. *J. L. Jensen, Copenhagen.* [We shall be glad to hear more of the results you obtain. Ed.]

Friendly Sparrows.—I feel I am communicating to you a bit of news which will be acceptable to many of your readers. I have long caused much kindness to be shown to the wild birds which now ordinarily winter here by causing them to be regularly fed during winter, though among these sparrows greatly predominate, which heretofore have only requited me by destroying my earliest Crocuses and Primroses. These this bygone spring they have all but left unmolested, while now they have thoughtfully betaken themselves to Roses, not to injure, but to strip them of every greenfly upon their young shoots. My gardener, as well as myself, has watched their very welcome operations. We cannot find an aphis on our Roses anywhere now, though heretofore at this time so abundant. *I. A. H.*

Rhododendron triflorum.—The plant from which your engraving of Rhododendron triflorum was taken (p. 45), grew and bore its flowers in the open air. Last November I moved it from an exposed hill to a spot under a west wall, and the result was forty-seven trusses such as those you saw and figured. Other plants, however, blossomed well without any protection, and in the springs of 1880 and 1881 I had many flowers although some of the buds were frozen. I think it was two years ago when Messrs. Cripps, of Tunbridge Wells, sent you for identification flowers of R. triflorum; they have probably plants of the species still. Mine were raised from seed received many years since from Kew, and have always lived in the open air. *J. H. Mangles.*

Rhododendron Metternichii.—Allow me to take this opportunity of referring once more to Rhododendron Metternichii. Since I wrote last I have met with and procured a so-called plant in France, and Mr. Luscombe has kindly sent me a bloom from what he believes to be the true species. This latter seems like a very poor truss of R. maximum, and the parts of the flower are not in sevens, as in the specimen in the Kew herbarium. Nevertheless it may be what is reckoned the true species, for the authorities mention a variety which has the parts of the flower in fives, as in this case; and the likeness to R. maximum has constantly been noticed. What would interest me most would be the flower with its parts in sevens, like R. Fortunei; but perhaps this has never been introduced. In all the hybrids I have seen from R. Fortunei, the arrangement in sevens is lost. May the pentamerous R. Metternichii be in reality a hybrid? At all events the heptamerous arrangement of a Rhododendron flower is so exceptional as to justify some curiosity. *J. H. Mangles, Valewood, Haslemere.*

Petroleum as an Insecticide.—After two years' experience I can speak very strongly in favour of petroleum (erroneously called paraffin) as an insecticide. For that worst of all pests, mealy-bug, on Gardenias and Stephanotis it is first-rate; and it is equally fatal to red-spider, thrips, and brown scale. I do not know who first made known its value for this purpose [Mr. D. Thomson], but I for one am greatly indebted to him. I use one-twelfth part of a pint to one gallon of water, and as often as I find any insects, whether it be once a month or twice a week. The most important point is the thorough mixture of the oil and water. I know of only one method by which it can be performed, and those who think it too troublesome had better leave petroleum alone and try Hughes' Fir-tree Oil, which is a capital thing, mixes easily with water, and is not unpleasant in the using; but as the quantity required for one gallon of water costs eighteenpence, while of petroleum the quantity required for one gallon of water costs half a farthing, we use petroleum. I put the oil and water in a vessel, and fill the syringe, then force it back into the vessel, repeating this action a dozen times or more before using any on the plants; afterwards each alternate syringeful is forced back into the can. It does not injure the roots or blooms apparently in the slightest degree, in fact, I am not quite sure that it does not benefit them. I enclose you a few specimens from plants that have been treated in the way I describe for the last two years (indeed, the last application was made four days ago), that you may see whether I am justified in saying so much. If so, I think it a duty to help to make known such a boon. I do not recommend it for such tender foliaged plants as Coleus or Cucumbers, and I think in the case of Gardenias and Stephanotis it is best used on a dull day or in the evening, when the sun's rays are not so powerful. I ought perhaps to mention that except on the days when the petroleum is used, the plants are syringed daily with clear rain-water. If any one has tried petroleum in this way for mealy-bug on Vines, I should be glad if he would kindly give us the benefit of his experience, as I have not so tried it. *G. Duffield, Winchmore Hill.*

Potato Disease.—Now that the Potato disease is in some places sweeping off entire crops, one more word as to its certain mode of propagation may be printed. A well-known scientific gentleman—the Rev. J. E. Vize, of Forden, Welshpool—has published a printed list of fungi, that he has mounted upon glasses, and keeps for sale, and ready for examination under the microscope. In this list he gives the resting-spores of the Potato fungus *in situ*. I wrote to ask where he got his resting-spores from. He replied—"I have lots of Peronospora infestans resting-spores ready for the microscope, and believe they are abundant always in the wet, undecayed sets of a previous year." Let gardeners notice these words—the resting-spores are abundant always in the effete Potato material of the previous year. These resting-spores do not, of course, grow in this old material—they grew when the material was alive; as is characteristic of Peronospora, the resting-spores for next summer are forming now, and may be found in living Potato plants; being transparent, they are sometimes mistaken by beginners for a fungus named Pythium. By next summer, however, when a year old, they will be brown, and so totally different both in nature and appearance from Pythium. *W. G. S.*

—— The Potato disease has made its appearance unusually early this year, as on June 27 I detected it here on the leaves of a plot of Myatt's, where it has since spread at such a rapid rate as to affect the whole piece, and the plants are now exhaling that peculiarly offensive odour they always do when the fungus is on them. The ground where these Potatos are planted is under the shade of some Plum trees, and the foliage is therefore thin from not having sufficient air and exposure; but as they were only wanted for seed I thought they might do very well, and be ripe enough to lift before the plague caught them. I shall, however, hesitate before planting in a similar position again, as I have always noticed that the more sunny and open the situation the harder the leaves and the stems become, and the less they are affected by spot. This is strikingly apparent now, for, though we have the same kind of Potato growing close by on a south-east border, there are no symptom of disease in them yet, neither can I see any on others in different parts of the garden. The dry weather which has set in since may have had something to do with stopping its spread, as it is only when the atmosphere is damp and close that the spores seem to take. Although Potatos are looking well at present, the prospect of a full crop is not a bright one; for now that the scourge is on them, and has shown itself in different parts, it may travel, and affect the whole in a week. As to cutting the tops off when stricken, the work is useless, except as a means of stamping out when the tubers are fully grown; and if they are not in this state the best course is to leave them to take their chance; but if the skins are set, then off with the haulm, and take up the Potatos at once. As yet, it is only the very forward sorts that are ready for this, and, when lifted, they should not be left exposed, but housed in some cool, light, airy shed, if for seed, and covered or stored in a dark cellar if required for cooking. *J. S.*

—— I was much interested in your review of Mr. J. L. Jensen's *How to Overcome the Potato Disease*, having been practically acquainted with almost the identical process for at least eleven years past. On entering upon an appointment as gardener in Devonshire during the winter of 1871, I got into casual conversation with one of my assistants (a labourer) regarding Potato disease. He gave me singuar information of a process which he had habitually worked out for years, whenever disease appeared, and through which he was invariably enabled to secure nearly the whole of his crop when disease was somewhat moderate, and always an excellent percentage when disease was rampant, and consequently was much better off than his neighbours. Feeling naturally sceptical I was ultimately invited to see his system of procedure, as slight disease had appeared in the following summer, 1872. He began at one end of an outside row, swiftly drawing away the soil with his hand from the base of the stalks, outwards at right angles with the row, forming a furrow deep and wide enough to lay each set of stalks low down. Then with his mattock he well loosened and broke up the bottom of the furrow between the first and second row, following this by carefully heaping up as much of the soil as he could well manage, wholly covering the Potato ridge and a goodly portion of the stalks he had previously laid down, forming an even

broad face or slope at an angle perhaps of about 45°, and giving the slope a pat as he proceeded with the back of his mattock to make it somewhat firm. I may here mention that, independent of this high earthing, his Potatos were always ridged up as usual in due season. I examined these Potatos when they were being lifted, and found but little wrong—the disease, though, was not severe with us that season. The following, or perhaps it might have been the second season after, I bore strong witness to the truth of this man's assertion. I perceived disease in the slightest form on a breadth of Rector of Woodstock in our own garden. I was anxious about the variety, as it was rather choice in that part. I at once procured three men to perform on this Potato—one man I directed to lay the stalks, the second went ahead between the two first rows with a steel fork, well breaking up and pounding the bottom, the third man following with a spade, raising the broken earth and forming a neat slope, well patted with the spade. The haulm was laid to the north instead of south, by doing which I considered that the side of the slope likewise the stalks, would have the full benefit of the sun. Probably three parts of the whole breadth was performed on. The result was that the whole of the tubers in the fourth part were diseased, but from the other three parts plenty were saved to plant a good breadth the following season. I think that Copenhagen and Devonshire may shake hands, and cry quits, so far as this remedy is concerned—for in my opinion it is precisely the same. *R. F.*

New Pelargoniums.—Allow me to correct an error in your report of the Pelargonium show at South Kensington, in which it is stated that in the classes for new zonals not in commerce there were either no entries or the plants exhibited were not of sufficient merit for any prizes to be awarded. I showed in class 5 and was awarded the 1st prize for the best three zonal Pelargoniums not in commerce, and send you a pip of each—Favourite, Emperor and Edith George, the truss of the latter measuring 12 inches over and full to the centre. Mr. H. Little took the 1st prize for the best zonal, single plant, but the prize cards were not put on till very late—hence, no doubt, the erroneous statement. *J. George, Putney Heath.*

Notices of Books.

A | Dictionary | of | Popular Names of the Plants which Furnish the | Natural and Acquired Wants of Man, in all | Matters of Domestic and General Economy; | their History, Products, and Uses. | By John Smith, A.L.S. (Macmillan & Co.)

We cite the title of this work textually, for in substance, as in form, it resembles the long-winded titles in which our ancestors rejoiced. The title, although somewhat cumbrous and inconsequent, sufficiently indicates the nature of the book.

Mr. Smith has had unusual opportunities for compiling such a work, from his long personal experience, and the extensive notes left by his son, the late Alexander Smith. It is curious to note the opinion of a veteran whose views are so worthy of respect on the question of popular names for plants. Barring some, which no one with a grain of sentiment or a trace of love for philology, literature, or folk-lore would discard, there are "many of them" which, to use our author's words, are vulgar and undignified, and derogatory to the useful, pretty, and curious plant they designate, such as Aaron's Beard, Mourning Widow, &c. The names are arranged in alphabetical order, a popular description of the plant, together with an account of the uses to which it is put, being given under each head. Thus, under the head of Caoutchouc we have brief accounts of the several plants producing the different kinds of rubber and its mode of extraction and manufacture, as well as statistical details. This article, by the way, is a proof that the octogenarian author has, in spite of physical infirmity, found means of incorporating recent information, having been aided by Sir J. D. Hooker and Mr. Jackson. A list of the genera alluded to in the body of the volume is given in the index.

Some curious incidental notes are given under various headings—thus, under the head of the Weeping Willow we are told that, in 1825, "it came into special public notice, on account of a twig having been received at Kew taken from a tree growing over Napoleon's grave at St. Helena. To see this twig the crowd was so great, that one Sunday before the hour of opening the gates were burst open. The twig grew into a fine tree 40 feet high—French visitors paying reverence to it by taking off their hats on passing it."

Lehrbuch der Baumkrankheiten. Von Dr. Robert Hartig. Berlin: Spring. (*Treatise on the Diseases of Trees.*)

A small, but for its compass very thorough description of the diseases of trees, including those the result of injury from parasitical plants, wounds, unsuitable soil, frost, sunstroke, wind, lightning, &c. The work is illustrated with numerous wood engravings, and eleven large beautifully executed lithographs, showing the effect of certain parasitic fungi on certain trees.

The Geology of the Counties of England and Wales. By W. Jerome Harrison. (Kelly & Co.) 8vo. Pp. 342; figs. 106.

A conscientiously executed and excellent work, just suited to the resident who desires to know thoroughly the geological construction of the neighbourhood in which he lives, or to the traveller whose demands are limited to a more general notion of the strata he is passing over or through. The work is thus a geographical geology, each county being separately described as to its geological features. Thus, in Kent, we have the strata from the Wealden and Hastings beds to the post tertiary deposits described, and their localities mentioned, while illustrative sections and representations of characteristic fossils are also supplied. At the commencement of each comital description are lists of the local Natural History Societies and Museums, with references to the publications of the Geological Survey, and the principal books and memoirs on the geology of the district. Prefixed to the whole is a brief introduction devoted to an elucidation of the principles of geology. A glossarial appendix and an index complete one of the most useful, and, for its pretensions, thorough pieces of work it has been our pleasure to have to notice. In a subsequent issue it would be well if the author could add a few more details as to the course of the river-valley and hill ranges, so as to complete the account of the configuration of each county, and indicate the chief agricultural characteristics, such as pasture lands, arable lands, hop-gardens, fruit-growing districts, all of which are dependent on geological peculiarities.

The Forester: a Practical Treatise on the Planting, Rearing, and General Management of Forest Trees. By James Brown, LL.D.; assisted by his son, G. P. Brown. Fifth edition. Blackwood.

The proof that systematic attention to arboriculture is daily increasing among us is shown in various ways, among others by the establishment of the excellent *Journal of Forestry*. The publication of a fifth edition of Brown's *Forester* is another proof, and one, too, that must be satisfactory to its author. The present edition we are told is enlarged and improved, and there are evidences of the truth of this statement in various references to Colonial and Indian forests, and in a valuable and concise account of forestry, as practised in India, by Dr. Brandis. This gives, in short compass, much that the general reader interested in such matters requires, and which he could not readily obtain previously, except by consulting numerous and not very accessible books and reports. As to the accounts given of the forestry as practised in various European countries, they are meagre, and it is a matter for very great regret that some account of one or other of the great forest-schools of Germany or France, with the system of education, practical and scientific, therein followed is not given. Brown's *Forester* is an established text-book to which enquirers will naturally turn for information, or at least for references to the best sources of information, hence our regret that so little is vouchsafed on the point we have just mentioned. It is satisfactory, however, to find the author advocating the formation of a forest school, where, in addition to instruction in the principles of forest-science, mensuration, &c., the pupils should be properly trained in the operations of planting, thinning, bark stripping, draining, and, by implication, in the proper organisation and administration of forest land and the keeping of records and financial details belonging thereto. Of the purely practical value of this work it is quite unnecessary to speak—a book in a fifth edition speaks for itself—but, as above hinted, we cannot overlook the fact that the book is a text-book, and, although expressly called a practical treatise, its statements as to first principles are sure to be accepted as those of a standard book. This being so it is very unfortunate that the physiological and botanical portions have not been thoroughly revised. Here we have the exploded notions as to the circulation of the sap confidently asserted as if the year were 1822 instead of 1882. It is cruel to the memory of the author of the *Theory of Horticulture* to reproduce statements which at the time they were written were, of course, abreast of the time, but which have been superseded and modified in all subsequent text-books of any standing. Had the author of the present volume referred to the leading periodicals or consulted any one of the multitude of handbooks on botany issued within the last ten or a dozen years, he would have seen how inappropriate to the year 1882 are most of his remarks on the physiology of plants. We can but regret that the space devoted to this portion of the subject was not occupied with the author's personal observations on the growth of trees, if possible, unbiassed by what he read in books a quarter of a century or more old. Similarly we could have wished that the author had given us his own descriptions of trees, instead of borrowing them from Loudon and Gordon, neither of whom can be accepted as authorities, and it is much to be regretted that so little that has been published in the various journals and publications devoted to the subject of recent years has here been incorporated relating to the history of the trees mentioned, and their value for timber. The practical directions in this volume are on the whole excellent, and worthy of the author's reputation; but as compared to the German and French text-books, we fear this will give but a very poor notion of the application of British science to forestry, and will justify those who exalt Continental at the expense of British forest-science.

Florists' Flowers.

TULIPS AT WAKEFIELD.—In Lancashire, Yorkshire, and Nottinghamshire, particularly, as well as in other counties, the culture of florists' flowers in particular, and especially of the Tulip, is mainly in the hands of what may be denominated "working men." It is their love for special flowers, and the time and attention they give to their culture, that keep aloft and burning the lamp of enthusiasm that the generation of florists which went before them kept burning so brightly and effectively in their day. And there are not lacking indications that in some cases the children of the present generation of florists, as well as younger men not so intimately connected by family ties, are coming forward to take the place of those who fall away from the ranks on the termination of the race of life. When at Wakefield on Whit Monday we had an opportunity of inspecting the garden of George Gill, a working shoemaker, a prominent member of the committee, and a leading exhibitor at the shows, of the Wakefield Amateur Tulip Society. Here we found two large beds of Tulips in superb bloom, covered, as is usual, with a light canvas awning to screen the flowers from sun and rain. The two beds were margined with wooden slabs in a rough-and-ready fashion, and raised above the ground level, as is usual in the case of Tulip beds. This worthy florist makes his beds wider than is usual, the regulation width being to take a line of seven flowers; and thus it is that Tulip cultivators have made us familiar with first, second, third, and fourth-row flowers; but Mr. Gill has as many as ten or twelve bulbs in a row, his beds 4 feet in width and 72 feet in length. Here there was not a trace of the disease that so completely destroyed the head of bloom in the beds of Mr. Barlow and others; the growth, notwithstanding that the beds were near the heart of Wakefield—being situated at Eastmoor—was vigorous, and the flowers finely developed. Some seedling Tulips from the best parents have been raised of late at Wakefield, and the breeders have passed into the hands of Mr. George Gill and his two brothers, Thomas and Charles, and also into those of Mr.

R. J. Sharpley, with whom they are breaking into form year after year.

Breeders are a strong feature, and among the bizarres we noticed the following new varieties, very few of which have been "let out"—viz., John Brook, Criterion, Lord Frederick Cavendish, James Goodair, Fancy, Brunswick, Thomas Garnett, George Ramsden, Mr. T. B. Burke, Charles Darwin, and Satisfaction. Byblœmens:—George Hardwick, Louisa Brook, Mary Ann, Ethel, Edith Mackie, Elizabeth, Mrs. Gill, Mary Ellen Fawcett, Jane Gill, and Parker's Emperor. Roses:—Thomas Parker, Isabella, Mrs. Longbottom, and Mr. W. H. Leatham. Feathered bizarres:—Brunswick, Wallace, Charles Gill, Fancy, John Brook, Criterion, and Red Rover. Flamed bizarres:—Fancy, William Thornes, Lord Frederick Cavendish, Criterion, John Brook, and Charles Gill. Flamed byblœmens:—Mrs. Gill, George Hardwick, Mary Ellen Fawcett, and Louisa Brook. Feathered byblœmens:—Majestic, George Hardwick, Mr. Gill, Frederick Gill, Mr. E. A. Leatham, and Elizabeth. Feathered roses:—Minerva, Crown Prince, Fanny, and Thomas Parker. Flamed rose:—Mrs. John Mackie.

It will be seen that Mr. Gill has a large number of new varieties, but whether they come up to the high standard of quality required by the Lancashire Tulip cultivators remains to be seen; but Mr. Barlow will have an opportunity next season of testing some of them by the side of the newest and best varieties raised by others, and the Rev. F. D. Horner will do the same at Kirby Malzeard.

George Gill is a working shoemaker, and has a kind of cabin, or workshop, apart from his dwelling, but so situated as to occupy a commanding position at the head of his beds; and as he sits at work on his bench he can by means of a low window see his beds, and watch the gradual development of the plants from the time they are planted until they are in full bloom. We sat down on the bench of this worthy son of Crispin, and found we could take in at a glance the whole surface of the head of bloom on the two beds; and it was an unusual sight to see hundreds of flowers in a high state of development, with the rich self-coloured breeders thickly mingled with the rectified flowers. It was a sight long to be remembered. A few Chrysanthemums, Auriculas, Polyanthus, &c., are also grown in this garden, but they appear to fall into the second place as compared with the gorgeous Tulips.

Mr. Robert J. Sharpley, Silver Street, has a remarkably good collection of Tulips also. A few years ago Mr. Sharpley purchased a choice collection of Tulips, and he has gone on improving it, and broken some fine flowers; indeed he is the exclusive owner of such recently rectified forms as Miss Edith Mackie, Mrs. John Mackie, William Henry Leatham, Emperor, William Thomas, Fanny Sharpley, Isabella, and Thomas Parker. In addition Mr. Sharpley has a very fine lot of unbroken seedlings, many of which are of the most promising character.

Other Wakefield growers are Mr. Jeremiah Netherwood, the secretary of the Amateur Tulip Society, who has a fine collection, chiefly of Mr. John Hepworth's strain, among them a rectified bizarre named John Bright, a flower of excellent quality; Mr. George Lamb, who has a collection of good old varieties; Mr. J. Hardwick, Eastmoor, who has a grand collection of both old and new varieties; Mr. E. Lister, who has a very refined collection of good sorts; Mr. Thomas Spurr, who has a good collection; and Charles and Thomas Gill, of Crigglestone, who have large batches of seedlings chiefly raised by their father, which are already known in the locality, with the exception of Majestic, Reliance, Wallace, John Brook, and Criterion.

The Wakefield division of Yorkshire is, therefore, well to the fore in the matter of Tulip culture, and also in raising seedlings. It is a prevailing opinion among the leading growers that, like the Auricula, the Tulip is destined to witness something like a modern revival. It may be remarked with much truth that it has already set in around Wakefield. *R. D.*

Escallonia rubra.—For covering walls, trelliswork, or even rockwork, associated with the well-known Cotoneaster, this pretty little Escallonia is remarkably handsome, and if not so striking as its congener, E. macrantha, it is at least more chaste and equally ornamental as a wall creeper. Let a good carpet of it be trained against a wall, and then let the stronger shoots grow wild—natural like—all over, and the effect is pleasing indeed. It was not, however, quite proof against the late severe winters about London.

Reports of Societies.

Royal Horticultural: *July* 11.

Scientific Committee.—Dr. Maxwell T. Masters, F.R.S., in the chair.

Hollyhock Seeds Diseased.—In reference to this subject Mr. W. G. Smith exhibited fruits of Malva sylvestris thickly covered with the mature fungus of the Hollyhock disease—Puccinia malvacearum (see fig. 16). The examples were forwarded by Mr. William Phillips, who gathered them near Shrewsbury. These fruits confirmed the correctness of Mr. Smith's observation, that the fungus-infected fruits or seeds of Malvaceæ fall to the ground and are then capable of producing diseased seedlings without an intervening Æcidium condition.



Fig. 16.—Fruits of Malva sylvestris with fungus of hollyhock disease: enlarged.



Fig. 17.—Leaf with holes resulting from the sun's agency on drops of water on the leaf.

Disease of Hart's-tongue Fern.—Mr. W. G. Smith exhibited and made some remarks on a frond of Hart's-tongue Fern attacked by a fungus new to Britain—Didymium effusum (see p. 72.)

Plants Exhibited.—Dr. Masters showed specimens of the dwarf Spanish Oak (seep. 113. vol. i., 1874) in fruit; also specimens of Nymphæa Lotus, from Mr. Green, gr. to Sir G. Macleay, showing one of the sepals assuming a leafy condition; Sedum Semenovii, from Mr. Ellacombe; a species allied to S. asiaticum, but with long racemes of flowers. It has been referred to Umbilicus, but the petals are free; also specimens of Thuya Standishii (japonica) in fruit.

Purple-podded Peas.—From Mr. Laxton came pods of Peas, the result of crossing a purple-podded variety with the pollen of a white-podded variety. From the specimens sent it was obvious that the purple colour was due to the purple colouring matter overlaying the chlorophyll.

Petroleum Oil as an Insecticide.—From Mr. Duffield, gr. to H. K. Meyer, Esq., came specimens of Gardenia, showing the good effect of oil of petroleum, applied in the proportion of a wineglassful to a gallon of water, and kept diligently stirred by syringing, for the destruction of mealy-bug (see p. 85). The success of the remedy depends on the strict attention to causing the admixture of the oil with the water by the use of the syringe. A little soft soap mixed with the water secures the more perfect admixture of the oil with the water, but unless the precaution be taken of duly mixing the oil and water by the means indicated the result may be injurious to the plant.

Thread-worms.—Dr. Masters showed plants of Oat and also of the roots of a Clematis affected with nematoid worms allied to the Anguillula tritici. In the case of the Oat the roots were destroyed, the cellular tissue destroyed, and the base of the leaves rotted. In the case of the Clematis small nodules were present on the roots, which, when cut open, were seen to be full of cysts or bags containing eggs of the vibrio in question. Some remarks were made as to the prevalence of worms of this character, not only in the plants in question, but in one form of the Cucumber disease, in the Carnation, in the roots of Stephanotis, and other plants.

Aërial Potatos.—From Major Barnard came specimens showing the formation of Potatos on the haulm, showing the real nature of the tuber of the Potato to be a swollen bud.

Canker in Trees.—Specimens of canker in various stages were sent from Daventry. Some of the specimens had indications of the presence of a corm allied to the American blight.

Plants Exhibited.—From Messrs. Veitch came specimens of Podolasia stipitata, described in another column; of Hoya lasiantha, a new Bornean species, with oblong Gardenia-like leaves and pendulous umbels of cream-coloured flowers, the petals of which are marked at the base with tufts of white silky hairs, and of Impatiens Sultani, a species from Zanzibar, with clear rosy-lilac flowers, previously mentioned; to these three Botanical Certificates were awarded. Mr. Ware showed specimen of Hesperaloe yuccifolia, a Californian perennial, with tufted, channelled, oblong strap-shaped leaves, with the margin split up into threads as in Yucca filifera, and with a long spike of cream-coloured flowers, of which a fuller description will be given on a future occasion.

Leaves Injured by Hail.—Specimens of leaves perforated with holes were shown (see fig. 17). In some case patches of dead brown tissue were seen. In a more advanced stage the dead portions were completely separated from the healthy tissue, leaving little holes, as shown in our illustration. These holes are either caused by hailstones, or, which is more probable, by drop of dew or rain resting on the leaves, and which when exposed to the sun act as burning glasses, and burn holes in the leaves.

Floral Committee.—G. F. Wilson, Esq., F.R.S., in the chair. "Small and select" was the characteristic feature of the meeting to-day. Messrs. James Veitch & Sons contributed a number of first-rate new plants, several of which were noted in our last issue. Those which gained the committee's favour were the beautiful Tydæa Robert le Diable, Osmunda japonica corymbifera, Croton aureo-marmoratus, Croton Dayspring, which is unequalled for the size of its leaves and the richness of their colouring; Davallia tenuifolia Veitchiana, and Pleopeltis fossa, a very singular Fern with curiously cut fronds. Mr. Cannell again brought up a very beautiful stand of cut Verbenas, and cut flowers of the pure white Œnothera speciosa, the equally pearly-white Campanula persicifolia alba, and the satiny-white Malva moschata alba; also a double-flowered purple self-coloured Pansy, named Lord Waveney. From Chiswick Mr. Barron brought up a choice group of Achimenes, another of Oleanders in flower, and a third, better than all, of tuberous-rooted Begonias, grown and flowered in the very best style. Most of them were Chiswick seedlings, and the committee selected one, A. F. Barron, a fine dark crimson-scarlet, measuring 3 inches by 3½ inches across, for the highest award. Mr. T. S. Ware sent one of the best and most tastefully arranged little groups of hardy flowers that has yet come from his nursery, and which included many grand spikes of Lilium candidum, L. dalmaticum, L. pardalinum, L. giganteum, L. excelsum, L. longiflorum, L. speciosum, L. Humboldtiana, L. croceum, L. martagon plenum, and L. Thunbergianum cruentum, the latter a fine novelty with deep rich claret coloured flowers; the singular Morina longifolia, showy Ixias, Calochortus, Scabious, Triteleia, and Chrysanthemum La Petite Marie, a

diminutive variety only 4 inches high, and having white flowers with a lemon centre. Mr. W. Howard, of Southgate, showed a large group of well flowered Carnations and Pinks, rich in colour, wealthy in perfume, and nicely set off in Maidenhair Ferns. Mr. Chas. Noble, who last year obtained a Certificate for his new H.P. Rose Duchess of Connaught, as a "decorative variety," showed the same variety again to-day, and in such exquisite form that the committee gave it a First-class Certificate as a show flower. It is exquisite in form, brilliant red in colour, and very sweetly perfumed. The fine white Godetia Duchess of Albany, of Messrs. Daniels Bros., was also shown and approved. The awards made were :—

First-class Certificates.

To Messrs. J. Veitch & Sons, for Tydæa Robert le Diable.

To Messrs. J. Veitch & Sons, for Osmunda japonica corymbifera.

To Messrs. J. Veitch & Sons, for Croton aureo-marmoratus.

To Messrs. J. Veitch & Sons, for Rhododendron balsamiflorum aureum.

To Messrs. J. Veitch & Sons, for Rhododendron balsamiflorum album.

To Messrs. J. Veitch & Sons, for Croton Dayspring.

To Messrs. J. Veitch & Sons, for Davallia tenuifolia Veitchiana.

To Messrs. J. Veitch & Sons, for Pleopeltis fossa.

To Mr. T. S. Ware, for Lilium Thunbergianum cruentum.

To Messrs. Daniels Bros., for Godetia Duchess of Albany.

To Messrs. H. Cannell & Sons, for Double Pansy Lord Waveney.

To Mr. Charles Noble, for H.P. Rose Duchess of Connaught.

To the Royal Horticultural Society, for tuberous Begonia A. F. Barron.

Second-class Certificate.

To Mr. T. S. Ware, for Chrysanthemum La Petite Marie.

Fruit Committee.—H. J. Veitch, Esq., in the chair. From Mr. Bonsall, The Gardens, Campsmount, Doncaster, came specimens of a Cauliflower called Campsmount, and stated to be the result of a cross between the varieties Snowball and Eclipse. [Can proof of this be given? Ed.] It bore a very close resemblance to the Early Erfurt, and was not shown in a condition to recommend it. Good examples of the Seville Longpod, and Aquadolce, or Leviathan Broad Beans, came from Mr. C. Osman, of the South Metropolitan District Schools, Sutton; and from other growers came new Melons, none of which were above a low average of quality. For Messrs. Sutton & Sons' prize of £2 for two dishes of Peas, there was only one competitor, Mr. White, gr., Glenhurst, Esher, who secured the award with President Garfield and Sutton's Reading Giant.

Chiswick Meeting.—At a meeting of the Fruit and Floral Committees at Chiswick on July 7 certificates were awarded for the following vegetables and plants :—

Fruit and Vegetable Committee.—J. E. Lane, Esq., in the chair. The collection of Peas was examined, and First-class Certificates awarded to the following :—Lye's Favourite (Lye) : a tall round white Marrow.—Gladiator (Veitch) : a dwarf round blue Marrow.—Turner's Emerald (Carter) : a dwarf white-wrinkled Marrow.—Stratagem (Carter) : a dwarf green-wrinkled Marrow.—Alfred the Great (Laxton) : a tall blue-wrinkled Marrow. — Culverwell's Telegraph, Carter's Telephone, Culverwell's Giant Marrow, and Four-hundredfold (Bunyard), were highly recommended, the two former having been previously certificated.

Lettuces were next inspected—Green Unctuous (Benary), Paris Sugar (Benary), being commended.

Shallots were next examined, when it was found that only two truly distinct varieties existed under the names of No. 1, Small White, Silver Grey, Large Brown, Russian; No. 2, Large Red, Small Red, Large Russian, New Russian, Mammoth; the Exhibition Shallots of Stuart & Mein being a somewhat larger selection of No. 2; the Jersey Giant Red Shallots and the Jersey Silverskin Shallots of Pond proving to be some species of Onion to be subsequently determined.

Floral Committee.—B. S. Williams, Esq., in the chair. First-class Certificates were awarded to the following :—

Single zonal Pelargoniums.—Lumen (Pearson) : plant of dwarf habit, the trusses very large; the individual flowers large, of fine rounded form, bright scarlet, with distinct white eye.—Eva (Pearson) : plant of free growth; trusses large, borne well above the foliage; flowers of fine form, beautiful magenta-scarlet.—Miss Hamilton (Pearson) : plant of remarkably dwarf habit, the trusses large; individual flowers large, of very fine form, beautiful blush white; distinct and pretty.—Kléber (Lemoine) : very free habit; trusses of medium size, somewhat loose; the flowers of a beautiful magenta-shaded scarlet, with bright scarlet blotch on lower petals; very pretty colour.—Atala (Pearson) : plant of dwarf habit, very free-flowering; the trusses large; the individual pips large, of a fine rounded form, bright orange-scarlet.—Olive Carre (Pearson) : plant of vigorous habit, free-flowering; the trusses very large; individual pips large, of very fine form, clear rosy-pink, with blotch of white on the under petals; very fine variety for culture in pots.

Double zonal Pelargoniums.—M. Hardy (Lemoine) : plant of dwarf habit; the trusses of medium size; flowers large, semi-double, delicate rose-lilac.—Got (Lemoine) : plant of very vigorous habit, the trusses very large and full; individual flowers of medium size, semi-double, bright scarlet. Very showy.—Aglaia (Pearson) : plant of very dwarf habit, very free-flowering; the trusses large, well displayed; individual pips large and double, purplish-scarlet.—Candidissimum plenum (Pearson) : plant of dwarf growth, very free-flowering; trusses of medium size; individual pips of large size, very double, of a pure white colour. The best white variety.

Ivy-leaved Pelargoniums.—Comte Horace de Choiseuil : plant of free trailing growth, very free-flowering, the trusses of medium size; individual flowers large and double, beautiful rosy-pink with streaks of white along the petals. A very pretty variety.—Comtesse Horace de Choiseuil (Lemoine) : plant of trailing habit, free-flowering; the flowers very large, semi-double, beautiful rose centre shading to magenta towards the edge. Very distinct and showy.

Decorative Pelargoniums.—Belle de Jour (Lemoine) : plant of good compact habit, very free-flowering; flowers semi-double, pure white. Will be a good variety for market purposes.—Madame Harmant (Lemoine) : plant of fine sturdy growth, very free-flowering; the trusses large; individual flowers large, of fine form, pure white slightly streaked with purple towards the eye.—Gloxinia Major Mason (Royal Horticultural Society) : a very fine erect-flowering variety; the flowers very large, with pure white throat, and clear purple margin shading to paler purple towards the edge.—Lantana Phosphore (Lemoine) : plant of very dwarf habit, remarkably free-flowering; the flowers clear golden-yellow.

Tuberous Begonias.—Mrs. Stevens (R.H.S.) : a beautiful free-flowering variety; flowers of fine substance and form, well displayed, beautiful flesh colour suffused with pink.—Thomas Moore (R.H.S.) : plant of free growth, free-flowering; the flowers of medium size, of very fine rounded form, well displayed, pale rosy-scarlet. A very distinct and showy variety.

Neriums.—Sœur Agnes (Huber et Cie.) : flowers single, large, pure white. Free-flowering and pretty.—Mons. Balaguier (Huber et Cie.) : flowers single, well expanded, beautiful delicate pink shaded towards the edge with rose. A very fine variety.—Madonni grandiflorum (Huber et Cie.) : a very free-flowering variety; flowers with double corolla, creamy white. Very distinct.

Mignonette.—Reseda odorata pyramidalis grandiflora (Vilmorin et Cie.) : plant of fine dwarf bushy growth, very branching; heads of flowers very large, the flowers red. A fine variety for pot culture.—Reseda Golden Queen : dwarf habit; flower spikes large, of a fine golden-yellow colour. This also is a fine variety for cultivation in pots.

Ipswich and East of England Horticultural.—This Society, by the kind permission of T. N. Fonnereau, Esq., held its first summer meeting on June 6, in Christchurch Park, which for its size is the most ornamental and picturesque in the county, the ground being naturally diversified and well broken up, and so high as to be above the spires of the churches of the town lying hidden immediately at its foot, from which it is approached by the main carriage entrance to the house, a fine, and most interesting old pile of the Elizabethan style of architecture. The Society is exceedingly fortunate in having the privilege of such a site to hold their shows, as besides being of easy and quick access to the inhabitants of this important and thriving borough on account of its close proximity, the park contains some remarkable old trees with gigantic trunks, knotted and gnarled, and curiously furrowed and twisted bark, which with their huge weatherbeaten branches, show plainly that they have withstood the storms of many a hundred years, and, veterans as they are, they do not look like giving up for ages to come. Although the members of the Society are to be congratulated on having such a place open to them to pitch their tents, the managers are deserving of commiseration in other respects, for the weather behaves most spitefully towards them, as on almost every occasion on which a *fête* is held it is wet; and, though the indefatigable Honorary Secretary, the Rev. Hugh Augustus Berners, does all that man can well do to make the shows popular and successful, it is next to impossible to combat against such adverse influences, and yet he and his *confrères* fight on with courage, and are fast bringing the Society out of its difficulties. As regards the exhibition itself, it is not too much to say that, taken as a whole, it was one of the best, if not the very best, the Society has held, as the Roses were simply superb, those coming from the champion grower, Mr. B. Cant, of Colchester, being shown in excellent style. Those contributed by Mr. F. Cant ran them very close, and so magnificent were the blooms along the side of the tent in which they were displayed as to call forth the remark from one clerical gentleman looking on, "That those he had were such weeds in comparison, he felt inclined to go home and root them all up;" but a brother of the cloth very wisely advised him to set to and cultivate better. Grand as the Roses were as shown by the nurserymen, those from amateurs were little inferior; the stands from the Rev. Foster-Melliar, of Tostock Rectory; Mr. D. T. Fish, of Hardwick, Mr. Rushmere, of Tendring, and Mr. Palmer, of Drinkstone Gardens, being particularly fine. Another reverend gentleman who came well to the front was the Rev. T. H. Pemberton, of Romford, who was 1st in the twenty-fours with very beautiful flowers, in which class the Rev. Page Roberts, of Scole, was a good 2d. In the premier class for forty-eight, in which Mr. B. Cant took highest honours, the finest and most distinct blooms were—Duke of Wellington, Marquise de Castellane, Mrs. Baker, Marie Baumann, Marie van Houtte, Horace Vernet, Etienne Levet, Auguste Rigotard, Duchesse de Valombrosa, Xavier Olibo, Dupuy Jamain, A. K. Williams, Duke of Teck, and Madame Gabriel. In the stand of Mr. F. Cant, who was 2d, the most noteworthy were François Michelon, Marie Baumann, Louis Péronet, Duchess of Bedford, and Star of Waltham. Among the 1st prize thirty-six shown by the Rev. Foster-Melliar, those that call for special notice were La France, Etienne Levet, Duke of Edinburgh, Madame Bravy, and Marie van Houtte; and among others in the 2d lot, from Drinkstone, Captain Christy, Cœlia, Baroness Rothschild, Thomas Mills, Niphetos, and A. K. Williams were specially noticeable. The twelve Teas shown by Mr. B. Cant were of very superior merit, and far outdistanced anything else, the flowers not only being large and most perfect in form, but clear and lovely in colour. To particularise any where all were so good would be invidious, and I just give the names, which are as follows :—Innocenta Pirola, Souvenir d'un Ami, Souvenir d'Elise, Madame Lambard, Madame Margottin, Niphetos, Jean Ducher, Madame Bravy, Souvenir de Madame Pernet, Madame Villermoz, Comtesse de Nadaillac, and President. What helped much to show off the beauties of the Roses and other cut flowers was the soft subdued light, mellowed by having to come through the canvas of a splendid new tent, and the numerous small plants with ornamental foliage arranged along the middle of the table between the boxes, which helped to break up the uniformity and tone down the glare. The table decorations shown by the Messrs. Gilbert, of St. Margaret's Nursery, were put up with taste, being light and elegant throughout, and the bridal bouquet, contributed by Mr. J. Boreham, of Colchester, quite deserves the same notice. The ball-room bouquet by the Messrs. Gilbert, which won the 1st prize, was greatly admired, as was also their stand of herbaceous cut flowers, which attracted as much notice as perhaps anything in the show. Neglected as hardy plants have been they are now fast rising into favour, and no one can look at borders and see an exhibition of them without being struck by their merit. The stove and greenhouse plants were few in number, but what there were were good—those in the 1st prize six shown by Mr. Payne, gr. to E. Packard, Esq., of Birkfield Lodge, containing a large and splendidly bloomed Allamanda Hendersoni, a fine Anthurium Scherzerianum, and Bougainvillea glabra. Those to which the 2d was awarded, and which came from the Messrs. Gilbert, had a huge dense Erica Cavendishii, just past its best, and an Eythræa crista-galli finely grown and in a state of perfection. In the class for six fine-foliage plants the Messrs. Gilbert were first with Euterpe edulis, Caladium Chantinii, Croton Johannis, a very fine Phormium tenax variegata, Latania borbonica, and the old Cissus discolor. Mr. Payne, gr to E. Packard, Esq., came in 2d with smaller clean-looking plants, the best among which were Dracæna amabilis, Pandanus Veitchii, Areca sapida, and Yucca aloifolia variegata. The most remarkable plant, however, in the whole tent, was a Chrysanthemum frutescens, Alice Crousse, sent by the same exhibitor, which was a most perfect specimen, full of flower, and measured at least 4 feet through. The groups of eighteen, in not larger than 8-inch pots, formed quite a feature, and though not making a show like those of elephantine proportions, are a class to be encouraged, as they are more useful for general decorations and furnishing. The 1st award for these fell to Mr. Payne, who also occupied the same position for six exotic Ferns, among which was a superb Davallia Mooreana, Gygmnogramma Mertensi, and Nephrolepis Duffii.

Fruit was not largely represented, but Mr. Allan, gr. to Lord Suffield, of Gunton Park, had a fine collection, containing splendid Peaches and Nectarines and Figs, all of which were remarkable for size and colour. Mr. Blair, gr. to Sir G. N. Broke Middleton, was a good 2d, with fine Royal George Peaches, Pitmaston Orange Nectarines, black and white Grapes, Musa Cavendishii, Figs, Melons, and Strawberries. For six Peaches Mr. Blair was 1st, and Mr. Allan 2d, the 3d falling to Mr. Mill, gr. to Lord Rendlesham, whose were a little overripe. In the class for Nectarines Mr. Allan was 1st, with six highly coloured Hunt's Tawny; and Mr. Blair 2d. Mr. Allan was again to the fore with black Grapes, his bunches, though not large, being well finished. Mr. Rushmere, gr. to Sir C. Rowley, Bart., of Tendring Hall, came 2d, with perhaps larger berries, but not quite so well coloured. Mr. D. T. Fish showed a rich-looking Melon of exquisite flavour, and the same gentleman was also 1st with a red-flesh in quite a large class.

In the vegetable department Mr. Allan was 1st, for a fine collection, and among Peas it is noteworthy that the old favourite, Ne Plus Ultra, came in 1st, against numerous dishes of Telephone and Stratagem, but then they were an unusually fine sample, the pods being large, young, and splendidly filled. *J. Sheppard.*

Tunbridge Wells Horticultural: *July 7.*—The annual summer show of this Society was on this occasion a success in every way, the respective classes for plants, cut flowers, including Roses, and fruit, all being well represented, both as to the quality and number of the exhibits. In the principal classes provided for flowering as well as fine-leaved subjects and Ferns, there was a marked advance over last year's display. In the open classes for eight stove and greenhouse plants in bloom, Mr. T. Gilbert, Springfield Nursery, Hastings, took the lead with an even well-bloomed group containing Statice profusa, 4½ feet through, healthy, and covered with flower; Anthurium Scherzerianum, proportionately large; Allamanda Hendersoni, and A. cathartica, full of bloom; Stephanotis floribunda, and Bougainvillea glabra. Mr. Bolton, gr. to W. Spottiswoode, Esq., who was 2d, had an unusually large and finely bloomed example of Clerodendron fallax, bearing some fifteen bright panicles of its scarlet flowers; a pretty long-spathed form of Anthurium Scherzerianum, carrying thirty-six flowers; and the pure white double-flowered Tabernæmontana, 4 feet in diameter. Mr. S. Pope, gr. to — Barron, Esq., 3d, with a nicely managed group. First honours in the open class for four stove and greenhouse plants also went to Mr. Gilbert, who amongst others, had Dipladenia amabilis, bearing an even lot of large highly coloured blossoms; and Gilbert's variety of the deep blue Statice imbricata, a marked improvement on the common form, than which it is much more pleasing in colour; 2d and 3d, Mr. Bolton and Mr. Fennell, gr. to E. Cazalet, Esq., in the order of their names. Six stove and greenhouse plants (amateurs).—1st, Mr. Pope, who in a well managed hal. dozen had Bougainvillea glabra and Erica Lindleyana; 2d, Mr. Bolton. Four stove and greenhouse plants (amateurs).—1st, Mr. Bolton, with pretily bloomed specimens; 2d, Mr. Pope. Fine-leaved plants were mostly large, and in faultless condition, Mr. Rann, gr. to J. Warren, Esq., Handcross Park, Crawley, being well to the fore with a collection that has held a leading position at not a few metropolitan exhibitions in late years, consisting of Palms, Crotons, &c. Mr. Gilbert, who took 2d, likewise had a meritorious lot of fresh plants; amongst them was an unusually good example of Chamærops excelsa, which, although not a rare Palm, is, from its hardy nature, one of the most useful. Six fine-leaved plants (amateurs).—Mr. Pope, Mr. W. Johnstone, gr. to the Marchioness Camden, Bayham Abbey; and Mr. Bolton took the awards in the order of their names, all having healthy plants.

The prizes offered for groups of plants arranged or effect brought out eight exhibits, with more or less merit in the grouping, Mr. Fennell taking 1st, with a very pretty group, elegant green-leaved plants predominating, as they ever should in such arrangements; 2d, Mr. D. Bashford, gr. to Mrs. Stodart Douglas; 3d, Mr. Bolton. Eight Ferns.—Here, too, Mr. Rann came in 1st, with a large and healthy lot, in which were Gleichenia Mendelii, both the glaucous and the ordinary variety of G. rupestris, and several handsome tree species; Mr. Bolton, to whose lot 2d honours fell, had a group more distinct in character than usually met with on exhibition stages, including the elegant drooping Goniophlebium subauriculatum, over 5 feet across; G. appendiculatum, and a large example of Balantium culcita; Mr. Pope 3d. Six Ferns.—1st, Mr. Wilkins, gr. to Mr. Williams, whose exhibit contained the pretty Gymnogramma decomposita, very well done; 2d, Mr. Bashford. Hardy Ferns were in excellent form. Mr. H. Scammell, gr. to C. Reilly, Esq., The Priory, took the lead with one of the best lots we have seen for some time, containing a greater number of genera than ordinary; the fault of hardy Ferns as usually shown is that they are largely made up of Athyriums, Polystichums, and Scolopendriums; Mr. Allan, gr. to G. Hanbury Field, Esq., Ashurst Park, 2d. Achimenes were present in unexceptional condition, Mr. Allan deservedly taking 1st with large examples covered with bright flowers. Why is it that these easily managed, beautiful plants are so rarely seen in fine order? 2d, Mr. Scammell, with a smaller, but nicely bloomed six. Fuchsias, although mostly old plants, were well represented, clothed with plenty of flowers and ample foliage. With six Mr. Earley, gr. to G. A. Britten, Esq., had 1st; Mr. Shoebridge, gr. to W. Edwards, Esq., 2d, showing a group quite the reverse of the overtrained specimens often exhibited. Pelargoniums, both the show kinds and fancies, as well as zonals, were very well done, Mr. Wilkins having 1st for the large-flowered sorts, and likewise for fancies; Mr. Allan being 2d in each of these classes: the same gentleman taking 1st for six single zonals. We have seldom seen double zonals so well managed, profusely flowered, and, what is rarely met with, not over-trained. Mr. Wilkins 1st, Mr. Allan 2d.

Roses were present in considerable numbers, and for the season in good condition. In the open classes for forty-eight varieties, single blooms, Messrs. Mitchell & Sons, Piltdown Nurseries, Uckfield, had 1st, showing in their collection, as they usually do, a number of Tea varieties in beautful condition. Messrs. Bunyard & Co., Maidstone, who were 2d, had good flowers. Twenty-four varieties, in threes.—Here there was a close run been Messrs. Bunyard and Mitchell, the former taking 1st; 3d, Mr. Piper. In the amateurs' class for twenty-four Roses, the 1st prize, given by Messrs. Mitchell, was won by Mr. A. Slaughter, Steyning, with a beautiful stand; 2d, Mr. Allan. With twelve, Mr. Slaughter again took the lead, staging an excellent dozen; Mr. Standen, gr. to W. E. Wilder, Esq., 2d. Twelve Tea or Noisette varieties.—With these Mr. Slaughter was likewise to the fore, having several splendid blooms.

Collections of wild flowers as shown at exhibitions have often little to recommend them, either as representative of the wild flora of the district, or in their arrangement and nomenclature; but, here they were an exception to this, the 201 kinds shown by Miss Ware were really a most interesting exhibit, alike deserving of praise in the kinds, the way they were set up, and also the neat manner they were labelled; 2d, Mr. Dixon, gr. to Sir S. M. Wilson, Uckfield.

There was an extensive display of table decorations, both in the classes for cultivated and for wild flowers. But if competitions of this kind are to be of any use in spreading correct taste in these matters, there should be something like an acknowledged standard on which the awards ought to be made. Here, arrangements that were double the size, and contained material enough to fill three times the number of stands, found most favour, and were in each case placed before others that were in every way preferable.

Fruit, as usual, was well represented with a collection in which arrangement as well as quality was to be taken into consideration. Mr. Henderson, gr. to J. Deacon, Esq., Mabledon, had 1st, his best dishes being Black Hamburgh and Foster's Seedling Grapes, and a Melon; Mr. Fennel, 2d; Mr. Waterman, gr. to H. A. Brassey, Esq., M.P., Aylesford, 3d. Black Grapes were well shown, with three bunches; Mr. Henderson came in 1st with good examples of Black Hamburgh; Mr. Barnes, gr. to Lady Hershall, Hawkhurst, 2d, staging Mrs. Pince's Black Muscat, nice bunches, well coloured—a condition in which this variety is not very often met with; 3d, Mr. Hopgood, gr. to Sir Julian Goldsmid, Tonbridge. White Grapes, three bunches.—1st, Mr. Johnstone, with Muscat of Alexandria, nicely coloured for the time of the year; 2d, Mr. Adams, gr. to W. H. Trigo, Esq., Reigate Hill. Three bunches of Grapes, in three varieties.—With these Mr. Adams had 1st honours, staging Madresfield Court, with Buckland Sweetwater and Foster's Seedling—all nicely shown; Mr. Johnstone 2d. Dish of Peaches.—1st, Mr. J. Bashford, gr. to J. Corlett, Esq., East Sutton, with handsome examples of Crimson Galande; Mr. J. Hopkins 2d. Dish of Nectarines.—1st, Mr. J. Bashford, with Stanwick Elruge; 2d, Mr. G. Goldsmith, gr. to P. C. Hardwick, Esq., Tonbridge. Green-fleshed Melon.—1st, Mr. Hopgood, with William Tillery; Mr. Bolton 2d. In scarlet-fleshed Melons Mr. Henderson had 1st, with that excellent variety, Read's Scarlet; Mr. Pope 2d. Dr. Hogg Strawberries, large, and in beautiful condition, were shown by Mr. G. Goldsmith, who was 1st.

Bagshot Horticultural: *July 4 and 5.*—Weather excepted, the show of this Society was a decided success, and a great advance on the shows of former years. It was held in Bagshot Park, the seat of the Duke of Connaught, both his Royal Highness and the Duchess taking a warm personal interest in every detail of the show. The schedule was of the usual comprehensive nature, viz., open to all—amateurs, cottagers, ladies, &c.; and there were numerous classes under each of these divisions, so that obviously space will not admit of a detailed account of each, and therefore only the more prominent features will be noticed. The first of these was undoubtedly the honorary exhibitors, Messrs. John Waterer & Sons. of the Bagshot Nurseries, showing a grand group of Rhododendrons, Japanese Maples, Retinosporas, and other choice shrubs, the whole intermingled with well-grown specimens of Lilium auratum, both the arrangement and products doing credit to that well-known firm; Messrs. Sutton & Sons, of Reading, showed a magnificent lot of seedling Gloxinias, Begonias, Carnations, and other seedling plants, all bearing marks of the highest culture and choice seed stocks; Messrs. John Standish & Co., of the Ascot Nurseries, showed an excellent collection of cut Roses and plants, their strong point being grand pots of American Tuberoses; Mr. B. S. Williams, Victoria Nurseries, Holloway, formed a goodly collections of plants of various kinds, the Carnations Souvenir de la Malmaison and Amateur standing out consp cuously. The cut Roses, from the Messrs. Cuthbert, of the Horsell Nurseries, Woking, and those from Mr. Godfrey, gr. to H. C. Rothery, Esq., Worplesdon, deserve special mention, both for the freshness of bloom and the tasteful way in which they were staged.

In the competing classes the groups of plants arranged for effect must have the palm for effectiveness, there being four competitors—all well up—the awards being made to Mr. Elliott, gr. to Mrs. Fry, York Town; Mr. Mossman, gr. to G. Pollock, Esq., Windlesham; Mr. Goddard, gr. to G. Marshall, Esq., Windlesham; and Mr. Champion, gr. to Mrs. M. Waterer, Bagshot. The above-named gentlemen were also the principal prize-takers in the other plant classes, except in the class for twelve specimen stove and greenhouse plants, the 1st award here being made to Mr. Tucker, gr. to J. M. Weguelin, Esq., Guildford, who had fine specimens of Erica rosea, Clerodendron Balfourianum, Dracænas, and Crotons.

Of fruit, there were four collections of six dishes, the 1st award being made to Mr. Turton, gr. to John Hargreaves, Esq., Marden Erleigh, Reading, all his dishes being superb, the Black Hamburgh Grapes, Royal Peaches, President Strawberries, and Heckfield Hybrid Melon, especially so. The 2d prize lot, which came from Mr. Spreckley, gr. to J. H. Baxendale, Esq., Worplesdon, was also good the best dishes being Advance Nectarines, Buckland Sweetwater Grapes, and Bellegarde Peaches; none of the fruit in the other classes call for special comment, the quality being fairly up to the average of provincial shows, but, as regards quantity, far below what might be expected in such a purely horticultural district as Bagshot. Vegetables were well to the front, particularly in the special classes for the prizes offered by the Messrs. Sutton and Sons, for twelve dishes. Mr. Ward, of Longford Castle, Salisbury, was the champion, and had wonderful produce throughout—the most notable being White Naples Onion, French Bean, Canadian Wonder, Telephone Pea, Early Nantes, Carrot, Leeks, Criterion Tomatos, Tender and True Cucumbers, and Myatt's Ashleaf Potatos. In this class there were eleven lots staged, and all passable and most of them good.

The amateur and cottagers' classes were also well represented as to vegetables—but, unfortunately, the comparatively worthless American varieties of Potatos seem to be the principal kinds grown—which, perhaps, may be accounted for by reason of their enormous productive properties; and the nature of the soil of the district being light, their quality is passable. We are glad to know that, in spite of showery weather, the financial part of the show turned out well; and the committee and their excellent Secretary, Mr. Babbage, deserve the thanks, not only of exhibitors, but of the inhabitants of Bagshot generally.

Wimbledon and District Horticultural.—The tenth exhibition of this Society was held in the grounds of Cannizaro House, Wimbledon, on Wednesday, July 5. The exhibits were well arranged in three tents, the principal one being devoted to foliage and flowering plants. It was well filled too, with a good average collection. At one end two competing groups of foliage and flowering plants, not to exceed 100 square feet, were placed. The 1st prize was awarded to Mr. G. Runnacles, gr. to Mrs. Schuster, Cannizaro House; he had good plants fairly well arranged; perhaps the pots were rather conspicuous. Mr. G. Stevens, St. John's Nursery, Putney, was 2d, with a group in which the plants were rather too thickly placed, but the margin of the group was better than that of the 1st prize one.

Mr. Runnacles also gained a 1st prize for six foliage or flowering plants, Mr. J. Bentley, gr. to Sir T. Gabriel, Edgecombe Hill, being 1st in a corresponding class for four. Mr. Stevens had the best collection of Ferns—Davallia pyxidata, Alsophilla excelsa and Dicksonia antarctica were the best of them. Mr. Runnacles exhibited some really good Coleus, which gained for him the 1st prize, Mrs. Geo. Simpson, Gloria, Hendersoni, and Rosina were the best of them. The same gentleman also gained 1st prizes for Achimenes and flowering Begonias. The Caladiums exhibited by Mr. Law, gr. to R. S. Dean, Esq., The Priory, were very fine, Myerbeer and Albert Edward were the most conspicuous. Mr. W. Stratton, gr. to Miss Forbes, Chester House, was great in Fuchsias, and gained two 1st prizes for them. Mr. Stratton also gained a well deserved 1st prize for Lycopodiums. Besides the plants exhibited for competition in this tent Messrs. Veitch, of Chelsea, sent 100 pots of Roses, nice thrifty young specimens, dwarf, and densely bloomed. The same firm also exibited six boxes of cut Roses. Messrs. John Laing & Co., of Forest Hill, also arranged a nice group of flowering Begonias and choice stove and greenhouse plants. Mr. D. S. Thompson, of the Wimbledon Nurseries, also exhibited a group of well-grown plants, comprising Liliums, Ferns, &c.

The tent set apart for cut blooms, bouquets, fruits, &c., was by no means the least attractive. The cut Roses were really good; the best being sent from Ernest Wilkins, Esq., Lyndhurst Sutton—Marie Baumann, Baroness Rothschild, Louise van Houtte, were specially good. Mr. Norman, of Coombe Bank, Kingston-on-Thames, also exhibited well; he gained a 1st prize for twelve blooms, while Mr. Wilkins was 1st for twenty-four and six. Mrs. Douglas, of Loxford Cottage, Ilford, was successful in taking the highest award for an excellent group of three vases. Fruit formed a very good feature of the exhibition. The Black Hamburgh Grapes from Mr. Davis, gr. to the Rev. J. Morris, Manresa House, Roehampton, were large in berry and well coloured. Mr. Bently gained the 1st prize in the class for white Grapes with good Buckland Sweetwater. Miss Hatfield, Morden Hall, received a 1st prize for a very good dish of Noblesse Peaches. Mr. Davis having the best Nectarines. Collections of vegetables, were really good from several exhibitors. The vegetables, both in the gardeners' and cottagers' classes, were of very good quality. If space permitted it would be well to notice the window plants of cottagers, and other productions from their gardens, as they were of great merit. This class of exhibitors receives much encouragement in this district.

Twickenham Horticultural: This flourishing suburban society held its annual summer show on the 7th inst., and once more, through the kindness of Sir John Astley, in the charming grounds of the Orleans Club. The threatening weather of the morning fortunately gave place later on to pleasant sunshine and drying winds, and the result to the committee was a large attendance and a comple success. The exhibition, held in several detached tents, was an improvement on that of preceding years, as indeed it should be in this rich and populous neighbourhood. As usual here, the groups furnished for decorative purposes solely by the trade growers and others were an important feature; the superb collection of dwarf pot Roses from Messrs. Veitch & Sons; the beautiful group of hardy plants from Messrs. C. Lee & Sons, elsewhere alluded to; a truly charming group of Maidenhair Ferns and Pelargoniums from Messrs. Hawkins & Bennett.

A fine collection of foliage and flowering plants, amongst which a huge scarlet Kalosanthes and some good Orchids figured from Messrs. Jackson & Sons; a pleasing group of plants from Mr. R. Laing, Twickenham; two effective groups sent by Messrs. Hooper & Co.; a grand group of large-flowered and zonal Pelargoniums from H. Little, Esq., of Hillingdon; and a large collection of good plants sent by Mr. Bates, gr.

to J. E. Meek, Esq., Twickenham, all very materially helped the exhibition. The best group of plants in competition was arranged by Mr. Munro, gr. to Lady John Chichester, Twickenham; and Mr. Parsons, gr. to — Twining, Esq., Twickenham, came next. Mr. Munro had the best six foliage plants, but was close run by Mr. Beckett, gr. to J. P. Currie, Esq., Esher, both lots comprising chiefly Palms and Crotons. Mr. Hinnell, gr. to F. A. Davis, Esq., Surbiton, had the best six stove and greenhouse plants in flower, and amongst them were a pair of handsome Ericas, Phœnocoma prolifer a Barnesii, Dracophyllum gracile, &c.; Mr. Beckett again coming 2d. Mr. Munro had the best nine table plants, fresh and well coloured, and Mr. Heckle, gr. to W. Cunard, Esq., Twickenham, had the greatest variety. Mr. Sallows, gr. to J. S. Flack, Esq., Twickenham, was placed 1st in the class for Achimenes with six huge pans. Mr. J. Wells, gr. to C. Selwyn, Esq., Richmond, had some very neatly flowered Pelargoniums, and very good Fuchsias. There were numerous other small plant classes. The show of fruit was excellent; Mr. C. Davis, gr. to the Rev. S. Morris, Roehampton, was 1st with a collection of six dishes, and also had the best Black Hamburgh Grapes. The best white Grapes, large, but rather spotted samples of Foster's Seedling, came from Mr. Sallows. The finest Peaches were Noblesse, and the Nectarines were Stanwick, rich in colour. Mr. Coombes, gr. to Sir H. Manx, Sheen, had very fine Sir Joseph Paxton Strawberries, and Mr. Hickle had even finer, if less highly coloured Sir C. Napier. Mr. M. Clarke, the famous market Strawberry grower, sent a basket of splendid Sir Joseph Paxtons, but not for competition. Messrs. Beckett & Waite, of Esher, were placed equal 1st with fine collections of vegetables; and Mr. Beckett secured the Messrs. Carter & Co.'s 1st prize for four dishes of Peas. A remarkably nice lot of vegetables and fruit came from Mr. W. Poupart, Twickenham. The cut flower tent was very bright with large collections of beautiful cut Roses, sent by the Messrs. Veitch & Sons, and by Messrs C. Lee & Sons; of Pelargoniums from Mr. Little; of hardy flowers, from the Messrs. Hooper & Co.; and also the table decorations, which were in some cases very pretty, and in others the reverse. There was, as usual, great competition by the cottagers, and about sixty bunches of wild flowers were put up. We must not omit to notice a huge bed of annuals in pots and in great variety, shown by Messrs. Jas. Carter & Co., and which made a singularly attractive feature in the open.

Obituary.

WE regret to have to announce the death of Mr. WILLIAM PERRY, who for the last fifteen years was gardener at Pen-Pole, Shirehampton, Bristol, the residence of C. H. Miles, Esq., whose demise took place last month. He was one of the most successful plant growers, including Orchids, in the western part of the kingdom, as those who in late years have had an opportunity of visiting the gardens at Pen-Pole, or of seeing the principal exhibitions in the neighbouring counties, cannot fail to have noticed. Mr. Perry was one of a band of gardeners resident in the neighbourhood of Bristol who have worked hard and successfully to promote horticulture in the district, as evidenced by the excellent displays at the spring and autumn exhibitions held at the flourishing old town. Those who were personally acquainted with Mr. Perry well knew his good-natured genial disposition, and will feel his loss. With him Death's call came early and, until recently, quite unexpectedly—he was only in his thirty-sixth year. We understand that many of those connected with gardening in the neighbourhood, as well as a number of other friends, accompanied his remains to their last resting-place, in Shirehampton churchyard.

—— We regret to have to announce the death on the 3d inst. of Dr. SAMUEL NEWINGTON, of Ticehurst, in his 69th year. Dr. Newington's professional duties in the management of a large private lunatic asylum left him but little time for personal intercourse with the gardening fraternity, of which, nevertheless, he was one of the most active members. His professional training, aided by singular clearness of perception, fertility of resource, and inventive talent, rendered him not only an admirable organiser and administrator, but a most competent and thoughtful practitioner, and, withal, a go-ahead gardener. To our own columns as well as to other organs of the horticultural Press, Dr. Newington was a frequent contributor. His articles were marked by original thought based on comprehensive knowledge of physiology and plant-life, while his inventive faculty was shown in the numerous contrivances, such as the ground vinery, the cylinder vinery, the Philodendron Tree-lifter, and other implements which he designed and brought under notice. The latest of these is the tree-lifter figured in these columns, the simplicity of which was such that some doubted whether it were really capable of effecting the work it was said to do. This led us to send a special reporter to Ticehurst to see the machine in action, when all that 'the Doctor had said was amply confirmed. It is not always that acquired culture and natural taste go hand-in-hand, but it was so in Dr. Newington's case, as witnessed among other things by the formation of the beautiful rockery illustrated in our columns, and from which hints were taken in the construction of the new rock garden at Kew. Dr. Newington was physically handsome, and his manner and bearing those of the old school, courteous and friendly to all. The most recent of his contributions to our pages were addressed from the Riviera, whether he proceeded last winter to recruit his then failing health.

—— We have also to record the death, a few days ago, of Mr. JAMES ABBIS, one of the original promoters and a warm supporter of the Potato Show.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, JULY 12, 1882.

MONTH AND DAY.	BAROMETER.		TEMPERATURE OF THE AIR.					Hygrometrical Deductions from Glaisher's Tables 6th Edition.		WIND.	RAINFALL.
	Mean Reading Reduced to 32° Fahr.	Departure from Average of 18 years.	Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years	Dew Point.	Degree of Humidity. Sat. = 100	Average Direction.	
July	In.	In.	°	°	°	°	°				In.
6	29.26	—0.55	64.0	53.0	11.0	56.8	— 4.8	51.4	82	S. WSW	0.09
7	29.25	—0.56	66.0	52.0	14.0	57.6	— 4.2	50.5	87	S.S.W.	0.21
8	29.36	—0.46	64.5	51.0	13.5	56.2	— 5.8	52.7	88	S.W.	0.47
9	29.48	—0.33	69.0	52.0	17.0	58.5	— 3.6	49.9	73	S.W.; WSW	0.04
10	29.58	—0.24	67.0	49.5	17.5	56.8	— 5.4	48.1	70	W.; S.W.	0.06
11	29.31	—0.51	62.5	52.5	10.0	56.3	— 6.0	55.3	97	S.; S.W.	0.48
12	29.59	—0.23	68.0	53.5	14.5	59.2	— 3.2	53.1	81	W.	0.08
Mean	29.40	—0.41	65.8	51.9	13.9	57.3	— 4.7	51.6	83	S.W.	1.43

July 6.—A dull day, frequent showers of rain. Fine night; windy.
— 7.—A dull, showery day, with bright intervals. Cloudy night; thin rain.
— 8.—A dull day, frequent heavy showers of rain; cloudy till 11 P.M., then partly clear.
— 9.—Sun at intervals; alternately clear and cloudy. Fine night; showers of rain at times.
— 10.—Overcast day; showers till 5 P.M. Fine night.
— 11.—A very dull, overcast, rainy day. Cloudy night.
— 12.—Rain in early morning, with strong wind. Fine day, sun shining at times. Fine evening and night.

LONDON: *Atmospheric Pressure.*—During the week ending July 8, the reading of the barometer at the level of the sea decreased from 30.19 inches by the beginning of the week to 30.10 inches by 3 P.M. on the 2d, increased to 30.15 inches by midnight on the same day, decreased from 29.51 inches by 3 P.M. on the 5th, increased to 29.58 inches by midnight on the same day, decreased to 29.39 inches by midnight on the 6th, and was 29.60 inches by the end of the week.

The mean reading for the week was 29.71 inches, being 0.40 inch lower than last week, and 0.28 inch below the average of the week.

Temperature.—The highest temperature in the shade in the week was 78°, on the 3d. On the 6th the highest temperature was 64°. The mean of the seven high day temperatures was 68°.5.

The lowest temperature in the shade in the week was 51°, on the 8th; on the 4th the lowest temperature was 57°.5. The mean of the seven lowest temperatures was 54°.

The greatest range of temperature in one day was 22°, on the 3d; the smallest was 8°.5, on the 4th. The mean of the seven daily ranges was 14°.5.

The mean temperatures were—on the 2d, 62°.1; on the 3d, 65°.2; on the 4th, 59°.3; on the 5th, 59°; on the 6th, 56°.8; on the 7th, 57°.6; and on the 8th, 56°.2; those of the 2d and 3d were above their averages by 1° and 4° respectively, and the remainder were below their averages by 2°, 2°.5, 4°.8, 4°.2, and 5°.8 respectively.

The mean temperature of the air for the week was 59°.5, being 0°.4 higher than last week, and 2° below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo, placed in the full rays of the sun, was 139°.5, on the 7th; the highest on the 6th was 97°.5. The mean daily reading was 123°.1.

The lowest reading of a minimum thermometer with its bulb placed on grass and fully exposed to the sky was 46°, on the 8th.

Rain.—Rain fell on four days, to the amount of 0.92 inch, of which 0.47 inch fell on the 8th.

ENGLAND: *Temperature.*—During the week ending July 8 the highest temperatures were 80°.1 at Cambridge, 78° at Blackheath, and 77° at Sunderland. The highest temperature at Liverpool was 70°.3, at Brighton was 71°, and at Plymouth was 71°.5. The general mean was 73°.8.

The lowest temperatures in the week were 45° at Sunderland, 46° at Truro, and 46°.5 at Cambridge. The lowest temperature at Plymouth was 53°.8, at Bradford 51.°2, and at Brighton, Blackheath, and Leeds was 51°. The general mean was 49°.

The greatest ranges of temperature in the week were 33°.6 at Cambridge, 32° at Sunderland, and 29°.1 at Nottingham. The least ranges were 17°.7 at Plymouth, 20° at Brighton, and 21°.3 at Liverpool. The general mean was 24°.8.

The mean of the seven high day temperatures was highest, 73°.5, at Cambridge, 73° at Sunderland, and 72°.5 at Nottingham; and was lowest at Bolton, 64°.1, at Bristol 65°.1, and at Liverpool 65°.2. The general mean was 68°.6.

The mean of the seven low night temperatures was highest at Plymouth, 55°.6, at Bradford 54°.7, and at Brighton 54°.4; and was lowest at Bolton, 51°.2, at Sunderland 51°.4, and at Wolverhampton 51°.7. The general mean was 53.

The mean daily range was greatest at Sunderland, 21°.6, at Cambridge 21°, and at Nottingham 20°.7; and was least at Plymouth, 10°.5, at Bristol 11°.8, and at Liverpool 12°.3. The general mean was 15°.6.

The mean temperature for the week was highest at Cambridge, 61°.1, and at Nottingham and Sunderland 60°.3; and was lowest at Bolton, 55°.7, at Liverpool 57°.2, and at Bristol 57°.3. The general mean was 58°.9.

Rain.—The largest falls were 2.41 inches at Bolton, 1.72 inch at Sunderland, and 1.66 inch at Bristol. The least falls were 0.37 inch at Cambridge, 0.48 inch at Plymouth, and 0.52 inch at Brighton and Hull. The general mean was 1.10 inch. The average number of days was five and a half, but it fell on every day in the week at Sheffield, Bolton, and Bradford.

Thunderstorms occurred at Bradford on the 2d, 6th, and 7th; at Cambridge on the 7th, at Liverpool on the 8th, at Hull on the 8th. Severe thunderstorms at Sunderland on the 7th and 8th.

Thunder heard on the 6th, 7th and 8th at Cambridge; 6th and 7th at Liverpool; 5th, 6th and 7th, at Hull.

SCOTLAND: *Temperature.*—During the week ending July 8 the highest temperature was 77°, at Dundee; at Aberdeen the highest temperature was 66°.6. The general mean was 72°.5.

The lowest temperature in the week was 47°, at Glasgow; at Edinbugh the lowest temperature was 50°.6. The general mean was 49°.3.

The mean temperature for the week was highest at Dundee and Greenock, 60°; and lowest at Aberdeen, 57°.6. The general mean was 59°.

Rain.—The largest fall was 1.77 inch, at Greenock; the smallest fall was 0·6 inch, at Leith. The general mean fall was 1.17 inch.

JAMES GLAISHER, F.R.S.

Answers to Correspondents.

*** Professor Reichenbach requests us to state that he is going to Italy for a few weeks, and would like his correspondents to send their specimens dried; if, however, sent fresh, they will be carefully dried as received afterwards. Letters sent to him *poste-restante* Nice, France, might find him.

AMIROLIA LUCIDA: *T. S., Newry.* The plant sent under the above name is Scopolia lurida.

BOOKS: *R. Fleming.* Britten & Holland's *Dictionary of English Plant Names* is, no doubt, the book alluded to in the *Cornhill.* It is in course of publication for the English Dialect Society by Trübner & Co., Ludgate Hill. Dr. Prior's *Popular Names of English Plants* is published by Williams & Norgate, Henrietta Street, Covent Garden.

CHEMISTRY: *J. B.* You must specify more particularly what you want—an elementary treatise or a work on agricultural chemistry. There are scores of books.

DOUBLE FLOWERS: *H. B.*—There is no certain way known of producing these at will, although in the case of the Stocks it is alleged that a certain percentage of double flowers can be obtained by processes devised by M. Chaté, and described in our columns. The ordinary way of obtaining them is by selecting seed year after year from those flowers which show a tendency to become double. In this way, by continual selection, the tendency is enhanced and fixed. Some plants show a much greater liability than others to become double.

GRAPE JUDGING: *J. G.* should endeavour to obtain a satisfactory answer to his question through the secretary of the society before asking us to give his question publicity. No doubt the judges had satisfactory reasons for making their awards in the manner complained of, and equally, no doubt, would give their reasons if asked officially.

GRAPES: *A. V. C.* For the early crop Black Hamburgh; and for the late one Muscat of Alexandria, Lady Downe's, Black Alicante, and Gros Colman.

GRASSES: *J. R. H.* Flat flower, Cynosurus cristatus; pink, Holcus mollis; purple, Poa trivialis.

HEATHS: *N.* We do not know; but we think it highly probable that the use of the viscid exudation from the flowers of some species is to entrap noxious insects which are not wanted, or which are desired to make their entrance into the flowers by a particular inlet only.

INSECTS: *E. R. C.*—The insects were the larvæ of one of the smaller species of ladybirds, which had doubtless fed on the aphides infesting your Cluster Damson Plum. When they reached us, they were all in the pupa state. Do not destroy them. Their transformations are figured in *Gard. Chron.* 1844, p. 588. *I. O. W.*

NAMES OF PLANTS: *J. C. Clarke.* 1, Adiantum cuneatum; 2, a Palm, quite indeterminable from a fragment of a young leaf; 3, Blechnum brasiliense.—*E. Orpet.* 1, Anemia tomentosa; 2, Doodia caudata; 3, Adiantum, very imperfect, but apparently an incised form of A. Capillus-Veneris; 4, Platyloma rotunditolium; 5, Blechnum cognatum; 6, Asplenium ebeneum; 7, Cystopteris fragilis; 8, Asplenium præmorsum.—*T. S.* Maxillaria tenuifolia. It is unusual for Cœlogyne cristata to flower at this season.—*Symon.* 1, Eugenia Ugni; 2, Myoporum, probably M. acuminatum.—*H. T. B.* 1, Crataegus coccinea, probably; 2, Spiræa ariæfolia; 3, Menispermum canadense; 4, Spiræa Fortunei; 5, Periploca græca; 6, Spiræa salicifolia var.—*Miss H., Blairhill.* The flowers sent belong to different varieties of Alstrœmeria. They are easily propagated by dividing the root in autumn. They dislike cold, wet, heavy soil, but thrive on a rich well-drained sandy loam. They are very attractive and varied in colour. The leaves are curiously twisted. The species are natives of Chili, and the name commemorates a Swedish naturalist and traveller, Alstrom.—*E. B.* A Solanum of which we will endeavour to give you the full name next week. It is evidently an introduction—perhaps with ship's ballast?—*W. K.* 1, Claytonia perfoliata; 2, A Malvaceous plant, of which we will give you the name next week.—*C. E. B.* Sedum stoloniferum.—*W. A.* Trifolium medium.—*D. D.* Vaccinium maderense and Rubus suberectus.

OLEARIA HAASTII: *J. C.* This is propagated by cuttings put under hand-lights in October. When it strikes freely it can be put in the propagating-house in pots, where it does well. It is not propagated by layers.

PELARGONIUMS: *C. P.* Your seedling Regal Pelargonium appears to closely resemble a variety exhibited a few weeks ago under the name of Lady Brooke; but it is not satisfactory to make any definite statement concerning a flower when only a single truss is sent.

PYRETHRUM DISEASE: *E. J.* Please send better specimens; they were rotten when they reached us.

STRAWBERRIES: *H. E.* Keens' Seedling, Sir C. Napier, Sir J. Paxton, President, and British Queen.

CATALOGUE RECEIVED.

STEPHEN BROWN, Weston-super-Mare—Seeds for Summer and Autumn Sowing.

THOMAS METHVEN & SONS, 15, Princes Street, Edinburgh—Dutch and Other Flower Roots.

COMMUNICATIONS RECEIVED.—J. B.—D. & W.—F. P.—E. B.—W. K.—E. Webb & Sons.—James Carter & Co.—M. C.—H. W. W.—D. D.—P. Wolkenstein, Nijni Novgorod.—C. B. P.—J. B.—C. G.—Professor Henriquez, Coimbra.—E. P., Ghent.—Henwife.—J. G. B.—H. Low & Co.—J. S.—J. D.—J. R. J.—W. H.—H. G. R.

Markets.

COVENT GARDEN, July 13.

The late weather has had a depressing effect upon our market. Prices generally falling, with heavy supplies. *James Webber, Wholesale Apple Market.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Aralia Sieboldii, doz.	12 0	24 0
Arbor-vitæ (golden), per dozen	.. 6 0	18 0
— (common), dozen	6 0	12 0
Balsams, per dozen	.. 4 0	8 0
Bedding Plants, doz.	1 6	3 0
Begonias, per doz.	.. 6 0	12 0
Calceolaria, doz.	.. 6 0	12 0
— herbaceous, doz.	9 0	18 0
Cockscombs, dozen	4 0	6 0
Crassula, or Kalosanthes, per dozen	18 0	24 0
Cyperus, per dozen	6 0	12 0
Dracæna terminalis	30 0	60 0
— viridis, per doz.	.. 12 0	24 0
Erica Cavendishi, doz.	24 0	36 0
Euonymus, various, per dozen	.. 6 0	18 0
Evergreens, in var., per dozen	.. 6 0	24 0
Ferns, in var., dozen	4 0	18 0
Ficus elastica, each	1 6	7 0
Foliage Plants, various, each	.. 2 0	10 6
Fuchsias, per dozen	6 0	12 0
Gloxinea, per dozen	12 0	18 0
Heliotrope, per doz.	4 0	9 0
Hydrangea, doz.	.. 9 0	12 0
— paniculata, doz.	18 0	48 0
Lilium, in var., doz.	30 0	60 0
Marguerite Daisy, per dozen	.. 9 0	18 0
Myrtles, per doz.	.. 0 0	12 0
Palms in variety, each	.. .. 2 6	21 0
Pelargoniums, doz.	.. 9 0	24 0
— scarlet, per doz.	4 0	9 0
Rhodanthes, doz.	.. 6 0	12 0
Spiræa, per dozen	.. 9 0	18 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Abutilon, 12 blooms	0 2–	0 4
Arum Lilies, per doz.	4 0–	6 0
Bouvardias, per bun.	1 0–	1 6
Calceolaria, 12 bun.	6 0–	12 0
Campanula, 12 bun.	6 0–	18 0
Carnations, 12 bun..	4 0–	9 0
Cornflower, 12 bun.	2 0–	4 0
Eucharis, per doz.	.. 4 0–	6 0
Fuchsias, 12 bunches	6 0–	8 0
Gardenias, 12 blms..	3 0–	8 0
Gladioli, 12 bun.	.. 6 0–	12 0
— brenchensis, 12 sprays	.. .. 3 0–	6 0
Heliotropes, 12 sp.	.. 0 6–	1 0
Lapageria, white, 12 blooms	.. .. 4 0–	6 0
— red, 12 blooms	.. 1 0–	3 0
Lilium longiflorum, 12 blooms	.. .. 5 0–	6 0
Lilium candidum, 12 bunches	.. ..18 0–	24 0
Marguerites, 12 bun.	4 0–	6 0
Mignonette, 12 bun.	3 0–	6 0
Pansies, 12 bunches	1 6–	3 0
Pelargoniums, 12 sprays	.. .. 0 9–	1 0
— zonal, 12 sprays	0 4–	0 9
Pinks, 12 bunches	.. 2 0–	6 0
Primula, double, per bunch	.. .. 1 0–	1 6
Pyrethrum, 12 bun.	3 0–	9 0
Rhodanthe, 12 bun.	9 0–	12 0
Roses (indoor), per dozen	.. .. 1 0–	3 0
— (outdoor), doz.	.. 0 6–	1 0
— Coloured, doz.	.. 1 0–	2 0
— Moss, 12 bun.	.. 9 0–	15 0
Spiræa, 12 bunches	.. 0 0–	12 0
Stephanotis, 12 spr.	3 0–	6 0
Stocks, 12 bunches	.. 4 0–	9 0
Sunflower, 12 blooms	1 0–	3 0
Sweet Peas, 12 bun.	4 0–	6 0
Tropæolum, 12 bun.	1 0–	2 0

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Cherries, ½-sieve	.. 5 0–	10 0
Currants, Black, per ½-sieve	.. .. 5 3–	5 6
— Red, per ½-sieve	3 0–	3 6
Figs, per dozen	.. 6 0–	..
Gooseberry, green, ½-sieve	.. .. 2 6–	3 0
Grapes, per lb.	.. 1 6–	4 0
Lemons, per 100	— 5 0–	7 0
Melons, each	.. 2 0–	4 0
Peaches, per dozen	.. 6 0–	12 0
Pine-apples, St. Michael's, each	.. 4 0–	10 0
— English, per lb.	4 0–	5 0
Raspberries, per lb.	0 4–	0 6
Strawberries, per lb.	0 6–	1 0

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.
Artichokes, Globe, per doz.	.. .. 3 0–	6 0
Asparagus, English, natural, per bun.	.. 7 0–	..
— Fr. Nat, bun.	.. 1 6–	6 0
— Sprue, per bund.	1 0–	..
Beans, French, English grown, p. 100	1 6–	2 6
— French, per lb.	.. 0 0–	..
Beet, per doz.	.. 1 0–	..
Cabbages, per doz.	.. 1 0–	2 0
Carrots, per bunch	.. 0 4–	0 6
— French, per bun.	1 0–	..
Cauliflowers, English, dozen	.. 2 0–	4 0
Celery, per bundle	.. 1 6–	..
Cucumbers, each	.. 0 6–	1 0
Endive, per doz.	.. 2 6–	..
Garlic, per lb.	.. 1 0–	..
Herbs, per bunch	.. 0 2–	0 4
Horse Radish, bund.	4 0–	..
Lettuces, Cabbage, per score	.. .. 1 6–	..
Mint, green, bunch	.. 0 4–	..
Mushrooms, p. baskt.	1 0–	3 0
Onions, per bushel	.. 4 0–	..
— Spring, per bun.	0 6–	..
Parsley, per bunch	.. 0 4–	..
Peas, per qt.	.. 1 6–	..
Radishes, per doz.	.. 1 6–	..
Rhubarb, per bundle	0 6–	..
Small salading, pun.	0 4–	..
Spinach, per bushel	5 0–	..
Tomatos, Fr., doz.	.. 2 0–	..
Vegt. Marrows, doz.	0 0–	..

[Potatos.—Kidneys, foreign, 9*s.*; do., English, 10*s.*; Kounds, 8*s.* per cwt.

SEEDS.

LONDON: *July* 12.—As usual at this season there is now no business of importance doing in the seed market. American letters continue to speak very gravely of the prospects of red Clover seed. In the important State of Michigan the result, it is feared, will prove only one-fifth of a crop. The samples of new French Trifolium which are coming to hand show unsatisfactory quality. For Mustard seed the sale is slow. New home-grown Rape seed is now offering. For Canary seed the market keeps firm at the late advance. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

At Mark Lane on Monday 2*s.* per quarter over the rates of Monday last was realised on the small quantity of English Wheat, and 1*s.* to 2*s.* on foreign, of which arrivals were fair. Flour followed with an advance of 1*s.* per sack. Maize, Beans, Peas, and Lentils were 1*s.* per quarter higher, Oats and grinding Barley 6*d.* A good amount of business was concluded.—On Wednesday trade opened firm, wite higher prices asked for all kinds of grain, but the finer weather checked the movement. Only a moderate business was done, at 6*d.* to 1*s.* advance for Wheat, 1*s.* for Australian flour, 6*d.* for Maize, and 6*d.* for Barley and Oats, the trade finishing with a more subdued tone. Average prices of corn for the week ending July 8:—Wheat, 47*s.* 7*d.*; Barley, 27*s.* 4*d.*; Oats, 24*s.* For the corresponding period last year:—Wheat, 46*s.* 8*d.*; Barley, 27*s.* 9*d.*; Oats, 23*s.* 5*d.*

POTATOS.

The Borough and Spitalfields Markets reports state that supplies of new home-grown have increased, and easier rates have to be taken in consequence. Quotations:—English kidneys, 10*s.* to 12*s.*; round, 9*s.* to 10*s.*; Jersey kidneys, 11*s.* to 12*s.*; ditto round, 10*s.*; Cherbourg round, 9*s.*; ditto flukes, 10*s.* per cwt.—The imports into London last week were as follows:—2500 packages from Lisbon, 249 Boulogne, 2604 Jersey, 300 Barfleur, 972 Bordeaux, 14,674 Rotterdam, 399 Dunkirk, and 1000 packages Cherbourg.

COALS.

The following are the prices current at market during the week:—East Wylam, 15*s.*; Walls End—Hetton, 17*s.* 6*d.*; Hetton Lyons, 15*s.*; Lambton, 17*s.*; Wear, 15*s.*; Chilton Tees, 15*s.* 6*d.*; Tees, 17*s.* 6*d.*; Original Hartlepool, 17*s.* 6*d.*; Thornley, 16*s.* 9*d.*

Government Stock.—Consols closed on Monday at 99$\frac{13}{16}$ to 99$\frac{15}{16}$ for delivery, and 99$\frac{7}{8}$ to 100 for the account. Tuesday's business was concluded at 99$\frac{1}{2}$ to 99$\frac{5}{8}$ for delivery, and 99$\frac{9}{16}$ to 99$\frac{11}{16}$ for the account. On Wednesday the figures at the close were, 99$\frac{3}{4}$ to 100 for delivery, and 99$\frac{13}{16}$ to 99$\frac{15}{16}$ for the account. Thursday's final figures were 99$\frac{1}{2}$ to 99$\frac{3}{4}$ for both delivery and the account. The above transactions were ex div.



W. CLARK'S PATENT COMBINATION GARDEN IMPLEMENT.

This simple machine will cut turf and grass, at the same time cleaning the lower part of the pathway which forms the gutter, throwing the rubbish on one side, making a clean cut of the turf, and leaving a smooth bottom to the pathway; acts for weeding gravel walks, hoeing, and gathering the refuse. It will cut out all kinds of ornamental flower beds, &c., watercourses, and gutters. This Patent Machine has been shown in Hyde Park, where there are upwards of 20 miles of turf edging, and is considered to be the best implement for the purpose ever seen. It was sent to the Crystal Palace, where there are about 10 miles of garden edging, besides all their ornamental flower beds, and gave every satisfaction—a supply being sent in at once. The Machine shows at a glance simplicity and lightness in construction, and being so cheap is at every one's command.

It can be sharpened with a stone in the ordinary way, and is sold in three sizes.

Prices:—No. 1, 7*s.*; No. 2, 8*s.*; No. 3, 9*s.*

To be obtained from all Ironmongers in the United Kingdom, and from the Patentee,

W. CLARK, 232, Oxford Street, London near the Marble Arch.

GISHURST COMPOUND.—Used by many of the leading Gardeners, since 1859, against Red-spider, Mildew, Thrips, Greenfly, and other Blight, in solutions of from 1 to 2 oz. to the gallon of soft water, and of from 4 to 16 oz. as a winter dressing for Vines and Fruit Trees. Has outlived many preparations intended to supersede it. In Boxes, 1*s.*, 3*s.*, & 10*s.* 6*d.*

AMERICAN BLIGHT on APPLE TREES CURED by rubbing a wet hard Painter's brush on Gishurst Compound, and working the lather into the infected part.

GISHURSTINE keeps feet dry, softens hard boots, preserves leather, takes a polish. In boxes, 6*d.* and 1*s.* each. Wholesale by PRICE'S PATENT CANDLE COMPANY (Limited). Retail by Seedsmen and Oilmen. Complaints are made of difficulty in getting Gishurstine. Some leading Nurserymen have put it on their lists others are requested to do so.

HOSE—HOSE—HOSE.

PATENT RED-RUBBER GARDEN HOSE.

Stands severe tests of Government Departments, thus proving superiority of quality. Lasts four times as long as ordinary Indiarubber Hose, Lighter in Weight, Greater in Strength, and Cheaper in the long run than any other Hose for Garden Use.

A correspondent writes:—"I have had a length of your Red-Rubber Hose in use nine years, and it is now as good as ever."

Private Customers Supplied at Trade Prices.

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The best and most durable are those made from extra all long Flax Sail Cloth. A quantity in stock, for sale or hire.

SHADING CANVAS, from 2½*d.* per yard, and upwards.

TANNED NETTING, from 1 to 4 yards wide, 1*d.* per sq. yard.

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Shipments direct from Lisbon at special quotations.

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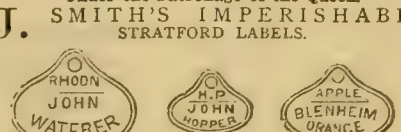
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The above Labels are made of a White Metal, with RAISED BLACK-FACED LETTERS.

The *Gardeners' Magazine* says:—"We must give these the palm before all other plant labels, as the very first in merit."

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J. SMITH, The Royal Label Factory, Stratford-on-Avon.

SUPERIOR VARNISH.

BLACK, RED, GREEN and CHOCOLATE.



It is applied cold, and may be laid on by any farm labourer or other unskilled person. It dries quickly, giving a hard, brilliant polish, and looks equally as well as oil paint, yet at one-fourth the cost.

PRICES:—BLACK, 1*s.* 6*d.*; RED and CHOCOLATE, 2*s.* 3*d.*; and GREEN, 2*s.* 9*d.* per gallon; in casks containing not less than 9 gallons, delivered free at most railway stations. Casks extra, but two-thirds allowed if returned carriage paid to our works in good condition. BRUSHES for coating Ironwork, Wood, or Stone, 1*s.* each.

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21 oz. Foreign, of the following sizes, in boxes of 100 and 200 feet, 3ds and 4ths qualities always kept in stock:—

14×12	20×12	20×14	20×16	20×18
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PLATE, SHEET, CROWN GLASS.

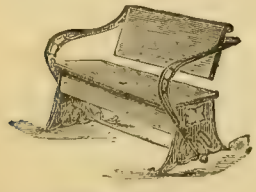
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B. & Son have always a large stock in London of 20-in. by 12-in., 20-in. by 14-in., 20-in. by 16-in., 20-in. by 18-in., in 16-oz. and 21-oz.; and also large sizes in all qualities for cutting-up purposes, in 200-ft. and 300-ft. cases.

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MEAD'S PATENT Combination SEAT and TABLE,
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TENNIS, CROQUET, BOWLS, &c.
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Cannot get out of Order.
6 feet long.
Price, £3 18*s.* 6*d.*





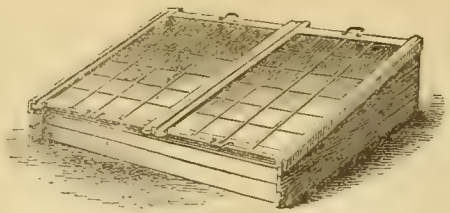
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Deal varnished or painted green.
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The glass is nailed and puttied in. Lights and framing for brick pits at proportionately low prices.

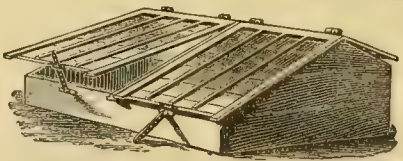
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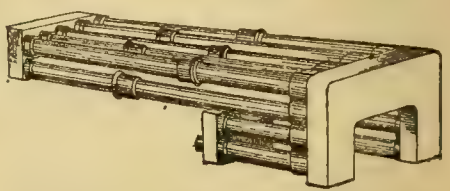
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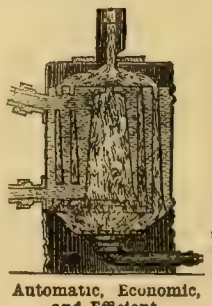


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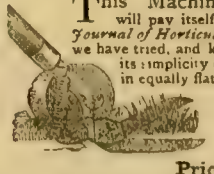


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This Machine, constantly employed, will pay itself in two days. Dr. Hogg in the *Journal of Horticulture* says:—"This Edge Clipper we have tried, and know not which to admire most—its simplicity or efficiency." Mr. Moore writes in equally flattering terms in the *Florist*.

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NURSERY FOREMAN (OUTDOOR).—Age 38; well up in the Propagating and Management of Fruit Trees, Roses, and General Nursery Stock. Twenty-three years' practical experience; five years' good character from present employer.—A. Z., 23, White Cross Street, Hereford.

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HORTICULTURAL EXHIBITION AND MARKET,

AGRICULTURAL HALL, LONDON.

July 24, 25, 26, 27, 28, 29, 31; August 1, 2, 3, 4, 5, 1882.

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His Grace the DUKE of ARGYLL, K.T.
The Most Hon. the MARQUIS of BRISTOL.
The Right Hon. the EARL of DARNLEY.
The Right Hon. the EARL of EGMONT.
The Right Hon. the EARL of SEFTON.
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THE

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IMPORTANT NOTICE.—Advertisers are cautioned against having Letters addressed to INITIALS, or to FICTITIOUS NAMES, at Post-offices, as Letters so addressed are not forwarded, but are sent at once to the Returned Letter Office.

Now Ready, in cloth, 16s.,

THE GARDENERS' CHRONICLE,

Volume XVII., JANUARY to JUNE, 1882.

W. RICHARDS, 41, Wellington Street, Strand, W.C.

ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.

NOTICE!—COMMITTEES' MEETINGS, Fruit and Floral, at 11 A.M.; Scientific at 1 P.M.; General Meeting for the Election of Fellows, &c., at 3 P.M. On TUESDAY NEXT, July 25, NATIONAL CARNATION and PICOTEE SOCIETY'S SHOW, and Band of the Royal Horse Guards at 4 P.M. Doors open at 1 o'Clock. Admission 1s. Show closes at 6 o'Clock.

*** Prizes offered by Messrs. HOOPER AND CO., Covent Garden, July 25.

HOOPER'S "ABUNDANCE" TOMATO.

The Three Heaviest Fruits. 21s., 10s. 6d.

The Handsomest Dish of 9 Fruits, 21s., 10s. 6d.

The Seed Pocket must be placed on each exhibit until after judging.

EVENING FÊTE.—ROYAL HORTICULTURAL GARDENS, Chiswick: THURSDAY, July 27. Gardens brilliantly Illuminated. Band of the Royal Horse Guards. Gates open at 7. Admission by ticket 2s. 6d., or on payment at the gates 3s. 6d.

J. T. MUSGRAVE, Hon. Sec.

Sutton Court Road, Chiswick.

Frequent Trains to and from London, from Gunnersbury, Acton Green, Turnham Green, and Chiswick up to 11.30.

ALEXANDRA PALACE. NATIONAL GOOSEBERRY SHOW, SATURDAY, August 5.

EXHIBITION of TABLE DECORATIONS and SHOW of GLADIOLI, August 12. Schedules of

J. F. JOHNSON, at the Palace.

THE LIVERPOOL HORTICULTURAL ASSOCIATION'S FOURTH GRAND FLORAL and HORTICULTURAL EXHIBITION, will be held at Sefton Park, on SATURDAY, August 5, and MONDAY, August 7 (Bank Holiday). Valuable Prizes will be given, including Cups, Gold Medals, and Money Prizes, amounting to nearly FOUR HUNDRED POUNDS, open to all England. Entries Close July 29. Schedules may be had by applying to

JOHN GLOVER, Secretary.

Wood Lane, Gateacre, near Liverpool.

1st Lancashire Volunteers and H.M.S. "Indefatigable" Bands will be in attendance each day.

DEVIZES HORTICULTURAL SOCIETY will hold its ANNUAL SHOW, in Roundway Park, by kind permission of C. E. H. A. Colston, Esq., on AUGUST 7. LARGE PRIZES for STOVE and GREENHOUSE PLANTS, SILVER CUP and other MONEY PRIZES for ROSES. Schedule on application to

Mr. C. N. MAY, or J. A. RANDELL, Hon. Secs.

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IMPORTANT REGULATION.—All exhibits to be staged in 24-sized pots (8 inches in diameter, inside rim), and the special label attached that has been distributed with each packet of seed. All exhibits without it will be disqualified.

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SALES BY AUCTION.

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MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY NEXT, July 25, at half-past 12 o'Clock precisely, by order of Messrs. Shuttleworth, Carder & Co., a grand lot of Imported Plants of LYCASTE SKINNERI, in grand masses and splendid condition. ÆDONTOGLOSSUM PULCHELLUM, O. CRISPUM, CATTLEYA TRIANÆ, var., ONCIDIUM CAVENDISHII, &c., just to hand per R.M.SS. *Nile*, all in the best possible condition.

On view morning of Sale and Catalogues had.

Thursday Next, July 27.

MR. J. C. STEVENS has received instructions from Mr. F. Sander, to SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, July 27, at half-past 12 o'Clock precisely, valuable imported ORCHIDS, including Masdevallia Reichenbachiana, M. Chimæra (Sander's variety), Odontoglossum Alexandræ, Chysis bractescens, Lycaste Skinneri, Oncidium varicosum Rogersi, &c.

On view morning of Sale and Catalogues had.

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Withington, near Manchester, July 26.

IMPORTANT SALE of GRAND SPECIMEN AUTUMN FLOWERING and other EXHIBITION PLANTS, including five splendid Allamandas of sorts, each 36 by 36 inches; thirty-four exceptionally fine and rare Ericas, well set, up to 48 inches high by 54 inches through; fifty beautiful Ixoras, up to 48 inches by 48 inches; twenty exceedingly fine well-formed Azaleas, from 48 inches high to 60 inches through; grand Eucharis, 15 to 20 bulbs in a pot; numerous good plants of Anthuriums, Aphelexis, Araucarias, Bougainvilleas, Cycas, valuable Crotons, Dipladenias, Dracophyllums, Epacris, Gleichenias and other choice Ferns, Franciscæas, Phormiums, very fine Palms, Yuccas, and other valuable specimens of horticultural art.

MESSRS ARTINGSTALL AND HIND respectfully give notice that they have received peremptory instructions to SELL by AUCTION, on WEDNESDAY, July 26, beginning at 12 o'Clock prompt, at Messrs. Cole and Sons' (who are giving up exhibiting) Fogg Lane Nurseries, Withington, near Manchester, the whole of their admirable exhibition, and other rare and numerous PLANTS.

May be viewed on the day prior and morning of Sale; and Catalogues then obtained at the Nursery, or earlier by post, or on application to the Auctioneers, 45, Princess Street, Manchester.

Horsell and Woking, Surrey.

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MESSRS. BUCKLAND AND SONS will SELL by AUCTION, at the Anchor Hotel, Knapp Hill, near Woking, on WEDNESDAY, July 26, at 2 for 3 o'Clock, TWO MEADOWS and COPPICE, containing 14a. 3r. 10p., beautifully placed at Knapp Hill; several enclosures containing 14a. 2r. 28p., called Blue Gates, at Knapp Hill; three enclosures containing 10a. 1r. 26p., called Wilcox Meadows, near the Woking Prison; three enclosures containing 10a. 3r. 25p., called Parley Meadows, near Horsell Birch; and a long leasehold, equal to freehold, containing 4a. 1r., known as Dollys.

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A Bargain.

TO BE DISPOSED OF, at a great sacrifice, an excellent NURSERY and SEED BUSINESS.—Apply to Messrs. HURST AND SON, Seed Merchants, 152, Houndsditch, London, E.

TO BE LET, as a going Concern, on September 29, 10r earlier if desired, a compact NURSERY and small SEED BUSINESS, situated in the best part of Staffordshire, comprising about 8 Acres of well-selected Nursery Stock, also 3 Acres of old Turf Land, and a Dwelling House, a large stock of Hollies in variety, which do well here as does all other Nursery Stock, the Soil being deep Loam, and a never-failing supply of water on the ground. It has been established nearly sixty years, and declining health is the sole cause of disposing of it.

For particulars address R. S., Robert Cooper, Esq., Seed Merchant, 90, Southwark Street, London, S.E.

TO LET, an Old-established NURSERY and MARKET GARDEN in Kent; 25 Acres, well stocked; long Lease, low Rental. Coming in about £800, or would TAKE a PARTNER to fil the place of one retiring to go abroad.

Apply personally, or by letter, to Mr. R. WOOD, 326, East Street, Old Kent Road, London, S.E.

PROTHEROE AND MORRIS, HORTICULTURAL, MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 8, New Broad Street, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

Boiler Explosions Act, 1882.

NOTICE to POLICE and SANITARY AUTHORITIES and to the USERS of STEAM BOILERS. The Boiler Explosions Act, 1882 (45 and 46 Vict., c. 22), is now in force.

Users of Steam Boilers should at once obtain a Copy of the Act in order that they may avoid the penalties attendant on a disregard of it provisions. The Clerk of any Police, or Sanitary, or other Local Authority, and any user of a Steam Boiler (other than of a boiler used for domestic purposes) can obtain a Copy of the Act gratis by making application by post to the undersigned within TEN DAYS from the date of this notice.

Issued by order of the Board of Trade this 15th day of July, 1882.

THOMAS GRAY,
One of the Assistant Secretaries of the said Board.
7, Whitehall Gardens, S.W.

DESIGNS Made and Works EXECUTED

In the Arrangement of TERRACES, CONSERVATORIES, FLORAL CORRIDORS, ROOF GARDENS on uninteresting Lead Flats, &c., formed with substantial PULHAMITE KERB for the FLOWER BORDERS, JARDINIERE, &c., in TERRA-COTTA or ARTIFICIAL STONE of various colours.

BALUSTRADES, VASES, PEDESTALS, FIGURES, FOUNTAINS, CONSERVATORY and WINDOW BOXES in great variety, suitable for any style of House.

Various Specimens of KERB or EDGING, PULHAMITE PERMANENT GRAVEL PATHING for GARDEN, TERRACE and other WALKS and FLOORS, to be seen at the Horticultural Company's, Regent Street, W.; at The Orchard, Philip Lane, Tottenham; and at our Brixton Depot there is the greatest variety of the above to be seen; also at Agricultural Exhibition till August 5. DURABILITY GUARANTEED.

A Photographic Book of over 200 Illustrations, with Sizes and Prices, sent for Inspection on receipt of twelve stamps.

Address—
PULHAM & SON, The Works, Broxbourne.
(Established in 1837.)

Novelty.

GRAND NEW BEDDING PLANT.
First-class Certificate Leeds Horticultural Society.

LOBELIA "ANDREW HOLMES.", By far the best dark blue. See Advertisements in June numbers of *Gardeners' Chronicle*. Price, 1s. each, 9s. per doz., 60s. per 100. The usual discount to the Trade.
GEORGE HOLMES, Florist, York.

Lily of the Valley.

ELSTER AND KOLLMANN, Lubeck, near Hamburgh, Germany, beg to offer the above for Forcing. Single Crowns, 3-yr. old, extra fine roots, 32s. per 1000, cash; or 34s. per 1000, terms three months.

FOR SALE.—A fine OLEANDER, now in full bloom, 7 feet high, including tub.
HOLMDALE, Church Road, Forest Hill, Kent.

Three Thousand Adiantum cuneatum.

H. B. MAY offers splendid stuff, in 5-inch pots, at 50s. per 100, for quantities of not less than 25 package free on rail for cash with order.
Dyson's Lane Nursery, Edmonton.

To the Trade.

TEA ROSES.—Fine Plants, in 48-pots, also a few extra size, leading varieties.
EDWIN HILLIER, Winchester.

JOSEPH BAUMANN, NURSERYMAN, Ghent, Belgium, begs to offer:—
12 GYNURA AURANTIACA, new, 10s. to 15s.
100 " " 75s. to 100s.
100 CAMELLIAS, with flower-buds, £6 to £8.
100 " stocks, £1.
Large ARAUCARIA EXCELSA.
100 SPIRÆA JAPONICA, 10s. to 15s.

CYCLAMEN, CINERARIA, and PRIMULA SEED, from some of the finest show varieties, per packet, 1s. 6d. and 2s. 6d. New PRIMULA, Queen Victoria, 3s. 6d.; New CYCLAMEN, Duke of Albany, 3s. 6d. A few good Cyclamen bulbs, 5s. per dozen. Also a fine collection of PANSIES and AURICULAS, per packet, 1s. As we grow all our own seed we can warrant it true to name and good in quality. CHRYSANTHEMUM Sœur Melaine, good strong plants, 1s. 3d. per dozen. CINERARIA PLANTS, from our First Prize collection, 1s. 3d. per dozen, 8s. per 100.
JOHN ODELL, Seed Grower, Gould's Green, Hillingdon, near Uxbridge.

Bulbs—Bulbs—Bulbs.

SEGERS AND CO., BULB GROWERS, Lisse, near Haarlem, Holland, are now booking orders for Dutch Bulbs of every description. They advise their customers to send orders for them as soon as possible in their own advantage.

CATALOGUES may be had free on application. No Auction Sales or Retail Trade supplied, but the Wholesale only.
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Tuberous Begonias.

JOHN LAING AND CO.'S Gold Medal Collection is unrivalled. They have now in cultivation 100,000 Begonias, which present to the public an unprecedented floral display of single and double flowers. A visit is solicited (Catford Bridge Station, South-Eastern Railway).
Prices, 12s. to 60s. per dozen.
CATALOGUES on application. Address
JOHN LAING AND CO., Forest Hill, S.E.

EARLY FORCING BULBS.

EARLY WHITE ROMAN HYACINTHS.
DOUBLE ROMAN and PAPER WHITE NARCISSUS.

B. S. WILLIAMS

takes this opportunity of announcing that he has received his annual consignments of the above bulbs, which are invaluable for early forcing, and solicits early orders, which will have prompt and immediate attention.

The Bulbs are unexceptionally fine this year.

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Upper Holloway, London, N.

CABBAGE PLANTS.—Enfield Market, Brussels Sprouts, Green Curled Kale, Thousand-headed Kale, Drumhead Savoys, and Robinson's Champion Drumhead. Fine plants. Prices moderate. Apply to
T. DAVIES, Tangley, Guildford, Surrey.

Extra Strong

CABBAGE, BROCCOLI, CELERY, and various other plants for present planting.

Early Oxheart, Enfield Market, Nonpareil, Robinson's Champion Drumhead CABBAGE and Drumhead SAVOY (the above will be found very useful for filling up gaps in Mangel), 3s. per 1000. Dwarf Green Curled SAVOYS, BRUSSELS SPROUTS, Green Curled Scotch and other KALES, 3s. per 1000. Veitch's Autumn Giant CAULIFLOWER, Veitch's Self-protecting BROCCOLI, 5s. per 1000. Carter's Champion, Cattell's Eclipse, Early White, Brimstone, Purple and White Sprouting BROCCOLI, 5s. per 1000. Red and White CELERY, 5s. per 1000. The above are unusually strong, healthy, and well-rooted plants. To be had in any quantity, delivered free on rail, or 1000 (for a small garden) of the above for 5s. Cash or reference with order from unknown correspondents.
W. VIRGO, Wonersh Nurseries, Guildford.

MEIN'S No. 1 CABBAGE.—The earliest, the largest, the finest in existence. Should be grown by all Market Gardeners. A correspondent writes, under date June 12, 1882:—"I have cut Cabbages since April 20 from the Seed you sent me last year, and have an abundance of them left, averaging from 4 to 6 lb. in weight."

Price 1s. per ounce (post-free).

Special price per pound on application.

STUART AND MEIN, Kelso, N.B.

NEW ROSES of 1882, in pots.—Vendors' Selection, 30s. per dozen; Purchaser's, 36s. per dozen. The above comprise all the best English and French-raised Hybrid Perpetuals, Perpetual Polyantha, Teas, Hybrid Teas, and Perpetual Moss.

ROSES of 1881, of above-named classes, 18s. to 24s. per dozen, in pots.

CHOICE ROSES. — Tea-scented, Hybrid Tea, Noisette, China, and Bourbon, 18s. to 24s. per dozen, strong plants in pots.
Descriptive LIST on application.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

NOTE PRICES.—Strong good plants for present planting.—Early CABBAGE, SAVOY, Green Curled and Variegated KALE, Brussels SPROUTS, COUVE TRONCHUDA, Red Pickling CABBAGE, Hardy Green and Rosette COLEWORT, 3s. 6d. per 1000, 60s. per 20,000, very fine. Veitch's Autumn Giant, Walcheren, and Snow's Winter White CAULIFLOWER, 9d. per 100, 7s. per 1000, 30s. for 5000. Early, Medium, Late White, and Purple Sprouting BROCCOLI, 6d. per 100, 4s. 6d. per 1000, £4 for 20,000. CELERY, White and Red, 7d. per 100, 5s. per 1000. Cash or banker's reference with order.—EDW. LEIGH, Wrotham Farm, Dunfold, Godalming.

DUTCH BULBS.

DIRECT FROM THE GROWERS.

ANT. ROOZEN AND SON, NURSERYMEN, Overveen, near Haarlem, Holland.

Before ordering Dutch Bulbs, read ANT. ROOZEN AND SON'S CATALOGUE for 1882, which their Agents, Messrs. MERTENS AND CO., 5, Billiter Square, London, E.C., will forward post-free on application.

PALMS—PALMS.
ARECA LUTESCENS, this year's seedlings, 20s. per 100.
ARECA RUBRA, last year's potted seedlings, 20s. per 100.
CEROXYLON NIVEUM, this year's potted seedlings, 30s. per dozen, £10 per 100.
COCOS WEDDELLIANA, this year's potted seedlings, 30s. per 100.
CORYPHA AUSTRALIS, this year's potted seedlings, 15s. per 100.
" " stronger plants, 24s. to 50s. per 100.
EUTERPE EDULIS, last year's seedlings, 20s. per 100.
LATANIA BORBONICA, last year's seedlings, 6s. per 100, 40s. per 1000.
" RUBRA VERA, two year's plants, 30s. per dozen, £10 per 100.
PHŒNIX RECLINATA, LEONENSIS, TENUIS, from 15s. to 50s. per 100.
PANDANUS UTILIS, this year's seedlings, 15s. per 100.
SEEMANN AND GOEPEL, Wandsbek, near Hamburgh.

FLOWER ROOTS for Early Forcing.
HYACINTHS, Early White Roman, 24s. per 100, 3s. 6d. per doz.
POLYANTHUS NARCISSUS, Double Roman, 15s. per 100, 2s. per dozen; Paper White do., 15s. per 100, 2s. per dozen.
Bulbs value 20s. and upwards, carriage pre-paid.
DICKSON AND ROBINSON, Seed Merchants, 12, Old Millgate, Manchester.

Mushroom Spawn.

OSBORN AND SONS desire to call the attention of all Growers of Mushrooms to their celebrated Spawn, which with ordinary care is certain to produce most satisfactory results. Copies of testimonials will be found in the Seed CATALOGUE for 1882, which will be sent post-free to all applicants. Price 5s. per bushel, package extra. Trade price upon application.
The Fulham Nursery, London, S.W.

NEW GOLDEN BEDDING PANSY, KING OF YELLOWS — the largest, freest, and brightest of all golden-yellow Pansies; strong plants, 1s. each, 9s. per dozen.
PANSY THOS. GRANGER, rich glowing Crimson, 5s. per dozen.
PANSY SUNBURST, fine Red, 16s. per 100, 3s. per dozen.
Fine collection of all leading sorts.
RODGER, McCLELLAND AND CO., Nurserymen, &c. Newry.

CAULIFLOWER, BRUSSELS SPROUT PLANTS.
VEITCH'S AUTUMN GIANT, 3s. 6d. per 1000.
BRUSSELS SPROUTS, 3s. per 1000.
Packages 3d. per 1000 extra. Order of
R. BATH, Crayford; or J. BATH, 34, Wellington Street, Covent Garden, W.C.

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SELLING OFF OF NURSERY STOCK.

EWING & CO.,

EATON, near NORWICH.

Great Reduction in Price for Cash Payments, viz.,

15 per Cent. for Cash before delivery.
10 per Cent. for Cash within One Month of date of invoice.
5 per Cent. for Cash within Three Months of date of invoice.
After Three Months no discount can be allowed.

In addition to their immense Outdoor Stock of ROSES; FRUIT TREES, Bushes and Roots; ORNAMENTAL TREES and SHRUBS, they have ready for immediate Sale a very extensive Stock of New and Scarce ROSES in Pots; Tea and Noisette ROSES in Pots; CLEMATISES of best Old and New Varieties, in Pots; Variegated and Choice Green-leaved IVIES, in Pots; AMPELOPSIS VEITCHII, and many other Hardy CLIMBING and CREEPING PLANTS, in Pots, &c.

N.B. Cut Roses, &c., can be supplied at cheap rates, carefully packed for travelling long distances.

A slight extra charge must in most cases be made for packing. Where cash in payment of goods is sent *with the order*, the amount for *package* may be forwarded in stamps *after* despatch of goods.

N.B. Post-office Orders should be made payable to EWING AND CO., at Eaton, near Norwich. Cheques crossed GURNEY AND CO., Norwich.

Trade Terms on application.

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FOR PRESENT SOWING.

Post or Carriage Free at Prices Quoted.

	Per oz. s. d.
DANIELS' DEFIANCE CABBAGE.—The most magnificent variety ever sent out, weight 12 lb. to 15 lb., remarkably early, short-legged, and compact, and of the most delicious Marrow flavour. Should be in every garden. .. .. .. Per packet 1s. 6d.	3 6
From Rev. E. P. CAMBRIDGE, *Warmwell Rectory, July 21.*—"Daniels' Defiance Cabbage has turned out the finest and most delicate flavoured I have ever eaten."	
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,, Large Red Tripoli	1 0
,, ,, White	0 8
,, White Lisbon	0 6
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,, New Queen	1 4
LETTUCE—Black-seed Bath Cos	1 0
,, Wheeler's Tom Thumb	1 6
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PARSLEY—Daniels' Queen .. .. Per packet, 1s.	..
TURNIP—Daniels' Improved Snowball	0 6

Special quotations for larger quantities on application.

DANIELS BROS.,
Royal Norfolk Seed Establishment, Norwich.

Ferns a Speciality.

EXOTIC AND BRITISH FERNS

IN great number and variety, suitable for Stove and Greenhouse cultivation, for Outdoor Ferneries and other purposes.

Intending Purchasers before buying elsewhere should send for our SPECIAL LIST of CHEAP FERNS, which will be forwarded free on application.

W. AND J. BIRKENHEAD, Fern Nursery, Sale, near Manchester.

All the Season.

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H. CANNELL AND SONS have now large breadths of all classes of the above, particularly Zonals (an acre), and would be glad to quote special prices for Cuttings per 100 or 1000.

CHRYSANTHEMUMS.

H. CANNELL AND SONS have now the largest and the most complete collection of the above ever seen in one lot—the early flowering section now coming beautifully into flower, and will send twelve distinct kinds, full of buds, 6s. per dozen; fifty splendid varieties, to include all classes, ready for shifting into blooming size pots, for 12s.; 100 for 20s., our selection; 600 varieties for £6. For cuttings and rooted little plants see Catalogue, sent post-free.

THE HOME FOR FLOWERS SWANLEY KENT.

A Double First-class Certificate.

Viz., a First-class Certificate as a Decorative Bedding Rose in 1881, *and a First-class Certificate as a Show Rose in* 1882.

The Royal Horticultural Society have Registered their Award, and this unprecedented success has been achieved by

An English Raised Seedling Rose.

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COCOA-NUT FIBRE REFUSE.

4*d.* per bushel; 100 for 25*s.*; truck (loose, about 2 tons), 40*s.*; 4-bushel bags, 4*d.* each.

LIGHT BROWN FIBROUS PEAT, 5*s.* 6*d.* per sack; 5 sacks, 25*s.*; sacks, 4*d.* each.

BLACK FIBROUS PEAT, 5*s.* per sack, 5 sacks 22*s.*; sacks, 4*d.* each.

COARSE SILVER SAND, 1*s.* 9*d.* per bushel; 15*s.* per half ton, 26*s.* per ton; in 2 bushel bags, 4*d.* each.

YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1*s.* per bushel.

SPHAGNUM MOSS, 8*s.* 6*d.* per sack.

Manures, Garden Sticks, Virgin Cork, Tobacco Cloth, Russia Mats, &c. Write for Free PRICE LIST.

H. G. SMYTH,

17A, Coal Yard, Drury Lane (late of Castle St., Long Acre), W.C.

COCOA NUT FIBRE REFUSE, all newly made, as supplied by J. S. STEVENS AND CO. to the Royal Horticultural Society and all the principal Nurserymen and Head Gardeners in the United Kingdom, in sacks at 1*s.* 3*d.*; 15 sacks, 16*s.*; 30 sacks, £1 10*s.*; truckload loose, of about two tons, £1 10*s.*: all free on to rail.

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COCOA-NUT FIBRE REFUSE, best and pure only, 4 bushel bag, 1*s.* 4*d.*; 15 bags, 14*s.*; 30 bags, 25*s.*; sent to all parts. Truckloads 33*s.*, free to rail.

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COCOA-NUT FIBRE REFUSE, by Chubb's Patent Process, as supplied to all the Royal Gardens and principal Nurseries of Europe; useful at all seasons. Invaluable for Potting, Plunging, Forcing, Ferneries, Strawberries, Bedding-out Plants, &c.; Destroys all Slugs and Insects.

JULY 1, 1882.—In consequence of the great scarcity of husks and enormous Continental demand for our "Refuse," we are compelled from this date to advance prices as follows, and only Orders accompanied by remittance will receive attention (in rotation). We also find it necessary to caution purchasers to beware of spurious imitations and buy the genuine "Refuse" direct. Sacks, 1*s.* 6*d.* each; 10 Sacks, 13*s.*; 15 Sacks, 18*s.*; 20 Sacks, 23*s.*; 30 Sacks, 30*s.* (all Sacks included); Truck-load, free on rail, £2. Limited quantities of P.M. *Special Quality*, granulated, in sacks only, 2*s.* 6*d.* each (2 prize medals), valuable for potting and use in conservatory. Terms strictly cash with order.—To obtain the genuine article, buy direct from the Manufacturers, CHUBB, ROUND AND CO., Fibre Works, West Ferry Road, Millwall, London, E.

12-oz. Sample Packets, free by post, 12 stamps.

FIBROUS PEAT for ORCHIDS, &c.—BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6*s.* per truck. BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, 15*s.* per ton per truck. Sample bag, 5*s.*; 5 bags, 22*s.* 6*d.*; 10 bags, 45*s.* Bags included. Fresh SPHAGNUM, 10*s.* 6*d.* per bag.

SILVER SAND, Coarse or Fine, 52*s.* per truck of 4 tons. Red Sandstone ROCKWORK, £5 per truck of 4 tons. GRAVEL, good colour, 25*s.* per truck of 6 tons.

WALKER AND CO., Farnborough Station, Hants.

LOAM, splendid Yellow Fibrous, 15*s.* 6*d.* per ton. Useful brown PEAT, 22*s.* per ton, free to Bricklayers' Arms, S. E. R. Fine ORCHID PEAT, as supplied to the principal Orchid Growers. Prices on application.

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Thomson's Vine and Plant Manure.

Manufactured and Sold by

THE LIVERPOOL HORTICULTURAL COMPANY
(JOHN COWAN), LIMITED.

This is the Manure used to produce the splendid Grapes grown at the Tweed Vineyard, Clovenfords.

Full particulars on application. The Trade supplied.

All Letters to be addressed to THE MANAGER, The Vineyard and Nursery, Garston, near Liverpool.

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Hydro-Carbon Oils as Insecticides and Washes for Plants and Animals.

SOLUBLE

FIR TREE OIL INSECTICIDE.

Bottles, 1s. 6d., 2s. 6d., 4s. 6d., and 7s. 6d.; Gallons, 12s. 6d.; Casks, 11s. per gallon.

It destroys all insect pests on plants and fruit trees, whether at the roots or on the foliage. It destroys all parasites and fungoids which infest animals and human beings.

It is free from poison, very clean and pleasant in the using.

It is the cheapest insecticide ever produced.

Testimonial.

"*Willersley Gardens, February* 15, 1882.

"Mr. HUGHES.—Sir,—Please send me at once 1 gallon Fir Tree Oil. I have again tried the above, and believe it to be what has been said of it. My previous disappointment with it was on account of its not being stirred sufficiently.—Yours, &c.,

"JAS. TISSINGTON."

From all Seedsmen and Chemists. Manufactured by E. GRIFFITHS HUGHES, Operative Chemist, Victoria Street, Manchester.

SILVER SAND, 7*s.* 6*d.* to 11*s.* 6*d.* per ton; PEAT, 8*s.* to 15*s.* per cubic yard; LOAM, 8*s.* to 10*s.* per cubic yard; ROCKWORK STONE, 7*s.* per ton; by Truck-loads.

WILLIAM SHORT, Horticultural Depot, Red Hill, Surrey.

Weeds! — Weeds! — Weeds! — Great success of

SMITH'S Celebrated WEED KILLER, the best preparation ever invented for destroying weeds on garden walks and carriage drives. Splendid testimonials.

4 gallons, sufficient to make 100 gallons when mixed with cold water, 7*s.* 6*d.*
16 gallons, do. do. do. do. 400 gallons, £1 8*s.*
40 gallons, do. do. do. do. 1000 gallons, £3.

Sent carriage paid. Manufactured only by

MARK SMITH, Chemist, Louth, Lincolnshire.

Weeds almost cease to grow where this article has been used two seasons.

DENYN'S Unrivalled ROLL PAPER and CLOTH, as supplied to over 3000 Nurseries, 14 lb., 9*s.*; 28 lb., 18*s.*; cwt., 70*s.*—J. DENYN, Manufacturer, 73, Rendlesham Road, Clapton, London, E.

GISHURST COMPOUND.—Used by many of the leading Gardeners, since 1859, against Red-spider, Mildew, Thrips, Greenfly, and other Blight, in solutions of from 1 to 2 oz. to the gallon of soft water, and of from 4 to 16 oz. as a winter dressing for Vines and Fruit Trees. Has outlived many preparations intended to supersede it. In Boxes, 1*s.*, 3*s.*, & 10*s.* 6*d.*

AMERICAN BLIGHT on APPLE TREES CURED by rubbing a wet hard Painter's brush on Gishurst Compound, and working the lather into the infected part.

GISHURSTINE keeps feet dry, softens hard boots, preserves leather, takes a polish. In boxes, 6*d.* and 1*s.* each.—Wholesale by PRICE'S PATENT CANDLE COMPANY (Limited). Retail by Seedsmen and Oilmen. Complaints are made of difficulty in getting Gishurstine. Some leading Nurserymen have put it on their lists others are requested to do so.

ARCHANGEL and PETERSBURG MAT MERCHANTS and IMPORTERS.—All the usual kinds at reduced rates. Sacks and Seed Bags, new and second-hand, of every description. Raffia Fibre, Netting and Tiffany, Tarpaulins, Rick-covers, Horse-cloths, Ropes, Lines, and Twines. Price LIST on application to J. BLACKBURN AND SONS, 4 and 5, Wormwood Street, London, E.C.

ARCHANGEL and ST. PETERSBURG MATS, RAFFIA, SEED BAGS and SACKS NETTING and SHADING, &c. Prices on application.

MARQUEES and TENTS, SECOND-HAND GOVERNMENT TENTS, 45 feet round, complete, 35*s.*, suitable for the Garden, Cricket Clubs, &c.

W. PETERS, 44, Tenter Street South, Goodman's Fields, E.

Raffia—Raffia—Raffia.

C. E. OSMAN, 14, Windsor Street, Bishopsgate, London, E.C., has just received a consignment of fine quality. Price very moderate.

All HORTICULTURAL SUNDRIES at low prices.

RICK CLOTHS—RICK CLOTHS.

The best and most durable are those made from extra all long Flax Sail Cloth. A quantity in stock, for sale or hire.

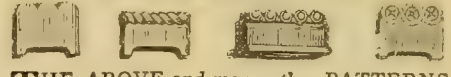
SHADING CANVAS, from 2½*d.* per yard, and upwards.

TANNED NETTING, from 1 to 4 yards wide, 1*d.* per sq. yard.

RUSSIA MATS. RAFFIA FIBRE.
BEST ROLL TOBACCO PAPER.

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THE ABOVE and many other PATTERNS are made in materials of great durability. The plainer sorts are specially suited for KITCHEN GARDENS, as they harbour no Slugs or Insects, take up little room, and, once put down, incur no further labour or expense, as do "grown" Edgings, consequently being much cheaper.





GARDEN VASES, FOUNTAINS, &c., in Artificial Stone, very durable and of superior finish, and in great variety of design.

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Agents for LOOKER'S PATENT "ACME FRAMES," PLANT COVERS, and PROPAGATING BOXES; also for FOXLEY'S PATENT BEADED GARDEN WALL BRICKS.

Illustrated Price Lists free by Post. The Trade supplied.

ORNAMENTAL PAVING TILES, for Conservatories, Halls, Corridors, Balconies, &c., from 3*s.* per square yard upwards. Pattern Sheet of Plain or more elaborate Designs, with Prices, sent for selection.

WHITE GLAZED TILES, for Lining Walls of Dairies, Larders, Kitchen Ranges, Baths, &c. Grooved and other Stable Paving of great durability, Wall Copings, Drain Pipes and Tiles of all kinds. Roofing Tiles in great variety, Slates, Cement, &c.

F. ROSHER AND CO., Brick and Tile Merchants.
See Addresses above.

SILVER SAND, fine or coarse grain as desired. Price, by post, per Ton or Truckload, on Wharf in London, or delivered direct from Pits to any Railway Stations. Samples of Sand free by post.

FLINTS and BRICK BURRS for Rockeries or Ferneries.

KENT PEATS or LOAM supplied at lowest rates in any quantities.

F. ROSHER AND CO.—Addresses see above.

N.B.—Orders promptly executed by Rail or to Wharves.
A liberal Discount to the Trade.

Geometrical Mosaic and Encaustic

TILE PAVEMENTS, for Conservatories, Verandahs, Entrance Halls, &c. Enamelled and Decorated Glazed Tiles, for Wall Linings, Fireplaces, &c.; also Patent Indestructible Terra-cotta Plant Markers. Patterns and Prices sent post-free on application.

MAW AND CO., Benthall Works, Broseley, Shropshire.

THE

GARDENERS' CHRONICLE

(THE "TIMES" OF HORTICULTURE),

A Weekly Illustrated Journal,

(Established 1841,)

Devoted to all Branches of Gardening and Rural Pursuits Generally.

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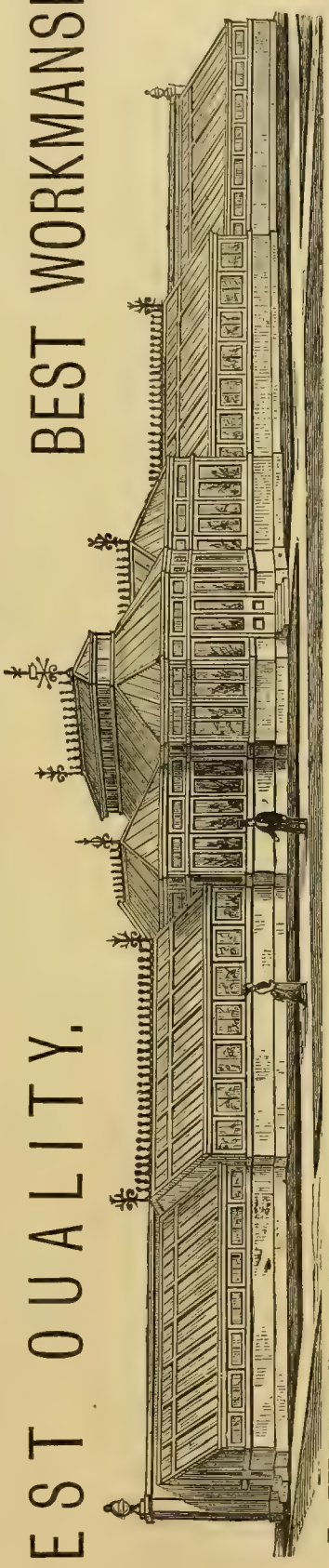
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THE
Gardeners' Chronicle.
SATURDAY, JULY 22, 1882.

THE OAK.

WHEN staying in that Oak-producing part of Wales, Dolgelly, in Merionethshire, under the peaks of Cader Idris, I paid a visit to Nannan Park, where Howell Sele lived, and where Owen Glendower killed him in his own park, in fair or treacherous fight—the business was a duel or a murder—and pegged him in a hollow Oak.

I had wandered through a wilderness of Oaks, commencing at the bridge in the street of Dolgelly, and had passed up and up, through the plantation and out of it towards the top of the mountain, beyond the Oak level, where the view of the country was very fine. All the Oaks were mountain-side Oaks and small, too small for pegging bodies in, according to the story I had in mind. Next day I found my way to Nannan, on the opposite side of the valley, where the Oaks are larger, standing as they do on lower ground in a transverse valley, watered by a little stream which flows from the mountains past the house above and into the Dolgelly river in the main valley.

Near the lodge there are several small Oaks, rooted on a most congenial site. I can hardly say rooted, for they have spread themselves on the bare rock, which here comes to the surface. In some situations they could never have fastened on such a spot, but the damp climate and the moisture of the rock kept the seedlings alive, and they have grown into little old trees with rugged heads and branches, but with trunks by no means large enough for hiding the body of Howell Sele. From the entrance gates of Nannan Park the approach road passes to the house up a long ascent with a tumbling stream by the side of the drive. It winds as it ascends through a thickly planted wood of Oaks, and many other sorts of trees; but the soil is poor and the trees are small, and abounding water only could have induced their growth. The dampness of the site and of the atmosphere in the tangled wood has produced near the road an epiphytal curiosity in the shape of a large Rhododendron bush growing on the crown of a stunted gnarled Oak. It found its roothold in a mass of decaying timber and vegetable matter, and is reared up at least 8 feet from the ground, entirely isolated, for the tree is not hollow, and the roots of the Rhododendron do not reach the earth. It is a "far cry" from Wales to Sikkim, and the climates are different, but even those Rhododendrons which Sir Joseph Hooker described as hanging among the branches in the forests of Sikkim are not more decidedly epiphytal than the bush on the Oak in Nannan Park.

But where can the body be? I still wandered on, higher and higher, nearer the mountain top, nearer those high levels where the trees dwindle in size till they disappear from the scene altogether. In saying Where can it be? I mean, of course, the place where it once was,-the cavity, the hollow tree where Howell Sele at his decease was hid. The trees here are all too small, and I began to doubt the

truth of the story till presently, at a spot halfway between the house and the lodge, and half a mile from each, the trees grew larger, and in a little dell, or hollow, carpeted with Ferns and mosses, I observed some Oaks of considerable size. A Beech and a Spruce came first in my way, and they measured 5 or 6 feet in girth; then came a Silver Fir, measuring 9 feet; and then some Oaks varying from 6 feet to 10 feet. They were the largest trees I had seen. "These will do," I thought; "I wonder if the remains hang in the tree still!"

A hollow trunk stood among the other Oaks in this secluded dell, with a cavity charred by fire, and a diameter of 4 feet. It would have held Howell Sele, however stout he may have been. My search ended here; this was not the identical tree, but the real Oak is stated to be within a stone's-throw. The story is that Glendower boarded up the body, which was not discovered till many years had elapsed.

The foregoing is an example of a comparatively modern Oak, rendered interesting, as the reader, it is hoped, may think, by the nature of its site, and the romantic story connected with it. Among the ancient Oaks of England few are more interesting than the gigantic ruin now standing in an arable field on the banks of the Severn, near Shrewsbury. It is the sole remaining tree of those vast forests which gave Shrewsbury its Saxon name of Schobbesburgh. The Saxons seized this part of the county A.D. 577, when they burnt the Roman city of Uriconium, where Wroxeter now stands, 4 miles from the village of Cressage; and underneath this now decrepit dotard it is said that the earliest Christian missionaries of those times—and possibly St. Chad himself—preached to the heathen before churches had been built. The Cressage Oak—called by the Saxons Criste-ache, Christ's Oak—is probably not less than fourteen centuries old. The circumference of the trunk was about 30 feet, measured fairly at a height of 5 feet from the ground; but only about one-half of the shell of the hollow trunk now remains. It still bears fifteen living branches, each 15 feet or 16 feet in length. A young Oak grows from the centre of the hollow.

The noted Oaks of England, thanks to those who have preserved them, thanks to the universal veneration for timber, and to a stirring and lengthened history, are innumerable. Windsor Forest is particularly rich in historic Oaks, and Sherwood Forest, though disafforested, still contains some memorial timber, like Needwood, once a Crown forest, now a fine estate of well-farmed land. Dryden's

> "Three centuries he grows and three he stays,
> Supreme in state, and in three more decays,"

is a poetical statement, and some of the dates on trees cut down in Sherwood Forest, and marked 600 years before, in the time of King John, prove that it is an under-estimate. The great Winfarthing Oak in Norfolk was called the "Old Oak" in the time of the Conqueror, and has been supposed to have attained the age of 1500 years. The King Oak in Windsor Forest is upwards of 1000 years old. *A Traveller.*

FRAGARIA INDICA.—This is extensively grown in the Royal Nurseries, Harborne Road, Edgbaston, Birmingham, and a useful plant it is for decorative purposes. In one of the houses it is hanging down the side walls from 4 to 6 feet long, literally covered with its scarlet fruit. Dipladenia boliviensis is also well grown on the roof of one of the stoves; this covers a space 18 feet by 6 feet, covered with its beautiful pure white flowers with yellow throat. It is a useful plant, and can be had in flower nearly all the season. Gladiolus The Bride (syn. Covillei alba) is wonderfully well grown in 5 and 6-inch pots, as also is the American Tuberose The Pearl, which is valuable for cutting purposes. These are well done by Mr. Spinks, the manager, a good all-round cultivator.

New Garden Plants.

STENOMESSON STRICKLANDI, *n. sp.**

THIS is a very distinct new Amaryllid, from the Andes of Ecuador, raised and recognised as a novelty by Sir C. W. Strickland, Bart., of Hildenley, and Boynton, in Yorkshire, to whom I am indebted for a couple of flowering specimens, and a drawing of the fruit in an immature stage. In inflorescence and the size and colouring of the flowers it is most like Stenomesson suspensum or coccineum, of which there are good recent figures in Saunders' *Refugium* (tabs. 22 and 309), but the perianth-segments are as long in proportion to the tube as in Callipsyche, and Sir C. Strickland tells me that the leaves closely resemble those of Callipsyche aurantiaca, whilst in all the Stenomessons and Coburgias they are linear, without any petiole. And it differs also from the Stenomessons in requiring more heat for its successful culture.

Leaves petioled, oblong-lanceolate, resembling those of Callipsyche aurantiaca. Scape 1 foot long, terete, slender. Umbel 5—6 flowered, with a spathe of several linear bracts; pedicels cernuous, about 1 inch long. Ovary oblong-trigonous, $\frac{1}{6}$ inch long in the flowering stage. Perianth infundibuliform, $1\frac{1}{4}$ inch long; tube green campanulate $\frac{1}{4}$ inch long; segments permanently connivent oblanceolate cuspidate bright red 1 inch long. Stamens inserted at the throat of the perianth-tube, $\frac{1}{4}$ inch larger than the segments; filaments united in the lower half; free portion of the filaments dilated and valvate towards the base, without any interstaminal teeth; anthers small oblong versatile pale yellow; style finally protruded beyond the stamens; stigma capitate. Capsule short deeply three-lobed. *J. G. Baker.*

SAXIFRAGA MILESII, *Hort. Leichtlin.*†

This is one of the Himalayan Saxifrages of the Megasæa group, which has lately attracted the attention of cultivators both in England and on the Continent, and for which no special name, so far as I am aware, has yet been published. We have had a fine plant of it at Kew at the east end of the rockery in the herbaceous ground this summer. We regarded it as a variety of Saxifraga Stracheyi, but it differs from the type of that sub-species as figured *Bot. Mag.*, tab. 5967, by its longer leaves, oblong calyx segments, which are as long as the stamens, and white petals with a more distinct claw. I have just received it, with a note of its distinctive peculiarities, from Mr. Max Leichtlin, under the above name, given in honour of Mr. Frank Miles, of Chelsea, the well-known artist, who imported the seeds from an elevation of 11,000 feet from Kidarkanta, in the North-Western Himalayas. With us it flowers the latest of all the forms of the Megasæa group, and at the present time (the last week in June) all its petals have faded. I think all the Himalayan Megasæas are best regarded as sub-species and varieties of one variable specific type, and that the same may be said of all the Siberian forms.

Leaves obovate, obtuse, reaching a length of 9—12, and a breadth at the middle of 4—5 inches, obtuse, more or less distinctly crenate, deltoid, not at all cordate at the base, distinctly ciliated on the margin, glabrous on both surfaces, bright green on the face, pale green on the back. Corymbs dense, about as long as the leaves. Peduncles and calyx finely glanduloso-pubescent. Calyx with a campanulate tube and oblong segments $\frac{1}{3}$ inch long. Ovaries adnate to the calyx only at the very base. Petals white, or slightly tinged with pink, obovate with a distinct claw, 9—10 lines long. Stamens inserted with the petals at the throat of the calyx-tube, half as long as the petals. Styles as long as the calyx-segments. *J. G. Baker.*

ACINETA HRUBYANA, *n. sp.**

This fine new Acineta is distinct from all known species in the narrow erect side partition of the lip, and in the white colour of the flowers, which have only a few purple spots inside the lip, mostly on the sella turcica. It was imported from New Granada by Mr. Sander, and has just flowered with Baron Hruby, of Holde, in Bohemia, whose name it may bear. *H. G. Rchb. f.*

MASDEVALLIA ARMINII (*Lind.*), *Rchb. f.*

I called this in 1854 (Seemann's *Bonplandia*, ii., 283), "plantula elegantissima." It bore its name from my late unfortunate friend, Hermann Wagener. It is much in the way of Masdevallia Wageneriana, yet the flower is a good deal larger and most probably distinct, expanded and of a very fine rose colour, tinged with purple. It would seem to be a rare gem, as it has not appeared since Wagener's days. It was not, however, discovered by Wagener, but by Louis Schlim, Director Linden's half-brother, which we did not know when we gave the name. It has been sent me now by Mr. F. Sander, and will prove a noble addition to the collection of Masdevallia gems, a nice companion for Masdevallia Estradæ and ludibunda. *H. G. Rchb. f.*

ANGULOA DUBIA, *Rchb. f.*

Mr. B. S. Williams has kindly forwarded me a second flower, which is identical with the first one in al the most minute details; hence, the fear of its being an abnormal state is much lessened. This is a case of interest for science, as it has been shown often by Messrs. Veitch. *H. G. Rchb. f.*

MASDEVALLIA (FISSÆ) TRICOLOR, *n. sp.*†

This is near Masdevallia Estradæ. It has flowers equalling or surpassing those of that species. Most probably it is very curious from its colours. The dried flowers look reddish-mauve. They were said to be purple by Messrs. Roezl and Wallis, who discovered them. A memorandum of Mr. Carder calls them "light blue colour." The lip is very curious and uncommon, nearly square; the tails of the sepals are short; the lateral sepals connate. It comes from New Granada, and is in the possession of Messrs. Shuttleworth, Carder & Co. *H. G. Rchb. f.*

ODONTOGLOSSUM ANDERSONIANUM TENUE GUTTULATUM.

A very nice variety, near Odontoglossum Andersonianum tenue, but most beautifully spotted with small brown spots on the sepals and petals. Lip white with a yellow base and a few brown lines. It was kindly sent me by Messrs. H. Low & Co. *H. G. Rchb. f.*

CYPRIPEDIUM NIGRITUM, *n. sp.*

A Bornese introduction of the New Bulb Company, Lion Walk, Colchester. Leaves like those of Cypripedium virens, light green, with darker reticulations. The flower comes near to that of Cypripedium barbatum. The colours are those of a very dark variety. The odd sepal is oblong acute, not almost circular, thus coming nearer that of Cypripedium purpuratum. The veins stand much nearer to one another. The petals are much narrower, and the marginal warts stand partly over the middle to the apex. The equal sepals form a very narrow body. There are obscure warts on the stalk of the lip. Staminode like that of Cypripedium barbatum, but with intermediate small teeth in front, and longer angles on each side of the dorsal sinus. Thus it is near Cypripedium barbatum, but it appears quite distinct. *H. G. Rchb. f.*

* *Stenomesson Stricklandi, Baker*, n.sp.—Foliis hysteranthiis petiolatis oblongo-lanceolatis; scapo tereti pedali; bracteis pluribus linearibus; umbellis 5—6 floris; pedicellis cernuis; ovario oblongo-trigono; perianthii segmentis rubris oblanceolatis cuspidatis tubo viridi quadruplo longioribus; staminibus exsertis, filamentis dimidio inferiori monadelphis, dentibus interstamineis nullis; stylo exserto, stigmate capitato; fructu brevi profunde lobato.

† *Saxifraga Milesii*, Hort. Leichtlin. — Foliis obovatis obtusis crenatis basi deltoideis margine ciliatis dorso et facie glabris; pedicellis calycibusque glanduloso-puberulis, calycis segmentis oblongis tubo 2—3-plo longioribus; staminibus æquilongis; petalis albidis obovatis distincte unguiculatis.

* *Acineta Hrubyana*, n. sp.—Racemo laxo; floribus candidis maculis purpureis intus in labello, præsertim in sella turcica; sepalis tepalisque affinium specierum; labelli partitionibus lateralibus ligulatis oblique obtuseque retusiusculis, partitione mediana ligulata obtuse acute concava, sella turcica pandurata antice et postice emarginato-bidentata; dentibus anticis retusis papula supposita ligulata emarginata retrorsum curva, carinis obliquis in partitionibus lateralibus, carina longitudinali utrinque in ungue canaliculato; columnæ basi puberæ alis rotundatis; flores pulchre albi eboracei. *H. G. Rchb. f.*

† *Masdevallia tricolor*, n. sp.—Fissæ unifloræ, bractea ampla pedicellum non æquante; sepalo impari oblongo breviter caudato; sepalis lateralibus subæqualibus, per tres quartas coalitis; tepalis cuneato ligulatis angustis, labello quadrato obtusangulo; columna apiculata, apiculo nunc fisso. Nova Granada, Roezl! Wallis! Carder! *H. G. Rchb. f.*

HYBRID TACSONIAS.

MR. SMYTHE sends us from Basing Park Gardens, Alton, a hybrid raised between T. exoniensis × as the seed-parent, and T. insignis as the pollen-bearer. It will be remembered that Tacsonia exoniensis is itself a hybrid between T. Volxemii, female, and T. mollissima, male; so that we may expect to find in this new form the characteristics of three species. The leaves are like those of T. insignis, but some of them are three-lobed, as in T. Volxemii, although the leaves are not so deeply divided even as they are in exoniensis. The flower-stalks are longer than in mollissima, but not so long as in Volxemii. The bracts are like those of insignis, entirely free at the base, not slightly united as in mollissima, broadly ovate-lanceolate, acuminate, toothed, and downy. The flower-tube, much longer than in Volxemii, is slightly downy. The flower-segments have the colour of those of exoniensis. The throat is occupied by a row of short violet threads, as in insignis, but the little row of tubercles within the threads which are found in exoniensis are in this case not present; near the base of the tube on the inner side is another row of delicate threads pointing upwards; quite at the base is a decurved white flap overhanging the globose part of the tube where the honey is secreted. Neither the fringe of hairs nor the flap in question prevent the ingress of ants, but the flap more or less effectually prevents their escape. The gynophore is glabrous, the anthers with relatively little pollen, the ovary club-shaped, downy, with three styles capped by large green cushion-like stigmas.

These botanical details suffice to show the reality of the cross, but what is of more interest to the gardener is the fact that the seeds of this new variety were only sown in March, 1881, and now (July, 1882) the seedling plant is 4 feet high and already showing flowers. These Tacsonias are so lovely, and some of them so free flowering, that we wonder our cultivators have not made more sustained efforts to secure hardy varieties. The plants in question grow at great heights on the Andes, where the cold is as great as it is here. We hope Mr. Smythe will turn his attention to this matter, and by grafting, or selection, or hybridisation, or all three, succeed in endowing our gardens with a hardy Tacsonia. The very anomalous case of Passiflora cœrulea, which is hardy in ordinary winters near London, although a native of South Brazil, surely lends encouragement to experimenters in this direction. *M. T. M.*

STOODLEIGH COURT,

THE seat of T. C. Daniels, Esq., lies 7 miles from Tiverton, and stands upon an elevation of between 800 and 900 feet above the level of the sea. The drive to the Court is over 3 miles long, and rises all the way from the time you cross the Exe at its entrance until the mansion is reached at its termination. The bridge over the Exe is of iron, and from it the views both right and left are romantic and beautiful. You look into a glen or valley, through which the river flows along in the direction of Tiverton, and upon the hillsides there is a variety of trees and underwood of a charmingly varied character. Here is the Hemlock Spruce spreading its branches with majestic grandeur over a surface of deep verdure, and away upon the hillsides are green masses of Larch or Spruce, or you catch a glimpse of a specimen Conifer towering above the valley by the brink of the clear flowing river. The Mountain Ash stands upon the brink of a steep precipice, and fine samples of Pinus excelsa and Cupressus macrocarpa shoot up their heads from the valley upon the right. Such strangely romantic views, and in an English county: one could fancy one's self transported for the moment to the North or West Highlands of Scotland, where scenes such as these, minus the deep green verdure and leafage and great variety of choice trees, are to be met with in favoured situations. Hark! there is a rush of water from somewhere, and the stranger eagerly looks for its source; and in a moment it is discovered gushing forth from the limestone rocks or trickling slowly down the surface of the hill into the channel by the side of the drive, where it travels rapidly towards the valley of the Exe. The drive is a winding, circuitous one, and is bordered by Beech hedges, which are kept in excellent order.

There are many curves and bends in this drive, but one in particular deserves notice. It is in the form of a coil, or probably rather more serpent-like, but, at least, it adds half a mile to the journey. It follows the brink of a slope, beneath which lies a deep valley of pasture land or meadow. But still you keep going up and up until the mansion is reached, and here the visitor is rewarded by a view over a great expanse of richly wooded country, of hills and dales and rich ripe meadows, in which the reaper is already busy at work. The carriage front is upon the north side of the mansion. The grounds are of considerable extent, and run east and west of the house, and are well furnished with large trees, Conifers, and groups and clumps of flowering shrubs. These consist of large English and Turkey Oaks, several varieties of rare Pines and Wellingtonias. The flower garden is upon the west side of the house, and the bedding is very tastefully arranged by Mr. Barnes, who has some beautiful carpet beds in addition to the flower garden proper, which is planted in the ordinary style of very choice and healthy material. The mansion is old except a new wing, which has been built in the Gothic style, which harmonises well with the aged trees by which it is surrounded. The verandah by the old wing of the building is clothed with choice creepers, and in front, upon the lawn, may be seen a group of seven Sycamores, which have grown together so as to look like one great tree in the distance; and from the new terrace there is a good view to Tiverton Valley and Tiverton Railway Junction.

It is not often one meets with fruit-houses in a flower garden, but here they are a sure sign that the place has not sprung into existence during the memory of the present generation. The range is in two divisions, and in the first there is a fair crop of peaches, an excellent Maréchal Niel Rose, from which early Roses are cut in March, and a good stock of Capsicums in pots. The second division is a cool stove in which there are highly-coloured Dracænas, fine specimen Ferns, and a miscellaneous collection of plants generally, which are mainly employed for house furnishing. The vegetable and fruit gardens consist of about 9 acres, three of which are walled in. It is in four divisions, the quarters being divided from each other by Hornbeam hedges. The elevation is such that this protection is necessary to shelter the crops from cold cutting winds. The great feature of this garden is its fine orchard-house—the largest, the longest at any rate, in Devonshire. It is about 280 feet long acd 8½ feet wide, and covers the entire south wall of the garden. It is ornamented by a pediment about its centre, and although it is called an orchard-house it is as much a rosery as it is an orchard-house. The structure is a lean-to, with a path running close by the back wall, which is covered with Peaches, Cherries, Plums, or Roses. The mixture is just as it is described. There are next cross trellising, commonly called diamond trellising, running from the front of the house to the path, and forming arches over the latter at every 7 feet. These are covered with a magnificent collection of Roses, and there are fruit trees in pots grown between. I may say at the outset that the fruit trees are in excellent bearing condition over the entire range, both the trees that are planted out and those that are fruited in pots.

But the Roses. A house 500 feet long, with arches of Roses! "Well, but what of the kind?" the reader is sure to ask. "There must be a lot of varieties." And so there are. At the bottom of the house there is a fine Maréchal Niel growing with his accustomed vigour, and supplying loads of richly coloured Roses for cutting every spring. Of course, in a house of this kind there are Roses all the year round, but the month of May is the time to see arches of Roses in earnest. Niphetos, Devoniensis (not the climbing one), Cloth of Gold, and Safrano are very good, but Cloth of Gold is a shy bloomer, and Mr. Barnes "rings the stem" in order to get it to flower. But, after all, it is most floriferous upon the points of rambling shoots. Narcisse is a good variety for bouquet work — it is a pale-sellow Rose, and is good in the bud for a button-hole. Souvenir de la Malmaison produces great bunches of flowers, and Mad. Lacharme, a flesh-coloured hybrid perpetual, does fairly well, but is not as satisfactory as it is out-of-doors. The old red China blooms nine months out of the twelve, and Souvenir d'un Ami produces immense pink blooms, but flowers best in spring and autumn. Cheshunt Hybrid and climbing Devoniensis also enjoy a good reputation; the former is a splendid Rose out-of-doors anywhere in Devonshire, and it is good news to hear of it doing so well under glass, because, as a rule, Roses that do well out-of-doors dislike codling under glass. But there are exceptions, and the greatest surprise of all was to find splendid blooms of Sénateur Vaisse, which grows vigorously indoors, and is a rich deep crimson, changing to a purple shade as the flower grows old. Then, in rapid succession, may be mentioned Gloire de Dijon, Triomphe de Rennes, Aimée Vibert, a grand Rose for covering trelliswork; Isabella Sprunt, climbing Devoniensis, Homer, having the open petals fringed with pink; Lamarque, Catherine Mermet, which does best on the seedling Brier; Marie van Houtte, Madame Bravy, a good pink and white Rose, but a shy bloomer; and a great many others which are not so favourably spoken of.

Proceeding to the forcing department we find a range in four divisions filled respectively with Tomatos, Melons, Cucumbers, and flowering plants. All the crops are of the highest excellence, and the plants in variety are well grown and effectively arranged. Grapes in a span vinery, where the Vine roots are all confined to the run of narrow borders, are unusually fine of Black Hamburghs, West's St. Peter, Gros Colmar, Lady Downe's, Madresfield Court, and Trentham Black. The borders are heavily mulched, and the Vine roots are well supplied with liquid manure, which accounts for so good a crop of Grapes and the great luxuriance of the leaves. The next range of forcing houses is divided by a corridor in which there are showy flowering plants of Lilies, Begonias, and decorative Pelargoniums. Upon the right is a plant-house which was formerly a Pine-stove now under repairs, and beyond it a division filled with Statice profusa, Hydrangeas, Begonias, semi-double Pelargoniums, and Carnation The Governor. The best decorative Pelargoniums in a good collection are Bridal Bouquet, Beauty of Oxton, and Dr. Masters. The plant stove and fernery is stocked with about equal numbers of fine foliage and flowering plants and Ferns. Large specimens of Allamandas are trained upon trellises, and then extend to wires fixed to the roof, which they beautify with a profusion of their large yellow flowers and deep green leaves, the result of liberal and skilful cultivation. Here also are Aralias, Dipladenia profusa and Brearleyana, Aralia filicifolia, Palms in variety, and a large stock of Ferns beautifully grown.

Next to this house there is an early Hamburgh vinery, where the crop is just ripe—and a really fine crop it is of even, fair-sized, well-finished bunches. In another quarter of the garden there is an orangery where there are Orange trees, Lemons, Citrons, Camellias, and other flowering plants, including the purple Swainsonia galegifolia, trained against the back wall, and a collection of young Azaleas. The different quarters and borders of the garden are stocked with vegetables, fruits, or flowers, all of which are well managed by Mr. Barnes, who is natty and orderly in his arrangements, and who is the head of a garden which is brimful of interest to the plant or fruit grower who is able to appreciate high cultural skill and intelligence in a brother cultivator.

FLORA OF NEW ZEALAND.

FROM time to time we have recorded the progress of botanical discovery in New Zealand since the publication of Sir Joseph Hooker's *Handbook* of the Flora. The fourteenth volume of the *Transactions and Proceedings of the New Zealand Institute* is now before us, and it contains several botanical contributions, the contents of which we will briefly indicate. Before doing so, however, it may be mentioned that the botanists of New Zealand labour under the great disadvantage of not possessing authenticated specimens of many of the members of the flora, so that their only course is to determine their plants as well as they can from the descriptions. This, as all practical botanists are aware, cannot often be done with certainty, even by those who have had long practice, and who know a great many species; and it is especially difficult in the case of species founded upon a single set of specimens from one locality, and described from dried specimens. A large number of New Zealand species were founded in this way, therefore the botanists of New Zealand run great risks of giving new names to previously described species, when they publish what they take to be new species without having been able to compare them with such as have already been published.

The first paper is by W. J. Spencer, on the Freshwater Algæ, a group that has been little investigated in New Zealand. It is illustrated by a plate of crude drawings of supposed new species. Fortunately the

author has given no names to them. Mr. T. F. Cheeseman follows with notes on Pozoa reniformis, Ligusticum deltoideum, n. sp.; Poranthera alpina, n. sp.; Triglochin palustre, Carex leporina, and C. cinnamomea, n. sp., additions to the flora of New Zealand proper. The same author contributes an enumeration of the plants observed in the Nelson district. Mr. Colenso describes Clematis quadribracteolata, Parsonsia macrocarpa, Sarcochilus breviscapa, Astelia polyneuron, Polypodium paradoxum, and some other Cryptogams. The next paper is by Mr. John Buchanan, and is devoted to the alpine flora of the country. This is illustrated by ten plates, representing fourteen previously described plants and fourteen described as new. We fear that some of the latter are old plants under new names, and some, if correctly drawn, cannot belong to the genera to which they are referred. Thus "Mitrasacme Hookeri," and "M. Cheesemanii" (plate 29) are surely species of Veronica, though the two stamens are represented as opposite to two lobes of the corolla. Then on the next plate is "Mitrasacme Petriei," also most likely a Veronica; in this the stamens are shown alternate with the lobes of the corolla. Some of the others are equally unsatisfactory, and the dissections generally are not good, to say nothing of the essential characters being usually omitted.

Mr. J. B. Armstrong describes Asperula fragrantissima, Viola hydrocotyloides, and Asplenium canterburiense; Mr. D. Petrie, Cotula maniototo, Carex Wakatipu, C. Goyeni, and C. longiculmis; Mr. T. Kirk, Triodia exigua, and Atropis pumila, and three species of Lepidium. Altogether thirty-five new flowering plants are described, and several others are indicated. Then there are several additional species that have been identified with Australian. Of these the most noteworthy, if correctly determined, is Epiblema grandiflorum, an Orchid, previously known only from West Australia. Epacris microphylla has been found on the southern side of Manukau Harbour, where, however, it is assumed that it was introduced by some means.

LIST OF GARDEN ORCHIDS.

(*Continued from p.* 53.)

35. BULBOPHYLLUM GRACILE, Parish and Rchb. f., *Gard. Chron.*, n.s., ii., p. 162.—Birma. Introduced by Rev. Mr. Parish, and cultivated by Messrs. Low, in 1874.

36. B. GRANDIFLORUM, Blume, *Rumphia*, iv., p. 42; *Walp. Ann.*, vi., p. 245. *Sarcopodium grandiflorum*, Lindl., in *Lindl. and Paxt. Fl. Gard.*, i., p. 155. *Ephippium grandiflorum*, Blume, *Rumphia*, iv., t. 195, fig. 3, and t. 199 B.—New Guinea. Cultivated at Buitenzorg in 1866. The flowers are the largest of the genus, being 8 inches in diameter; but they are pale yellowish-green, and not so showy as those of the allied B. Lobbii.

37. B. HERMINIOSTACHYS, Rchb. f., *Walp. Ann.*, vi., p. 254. *Taurostalix herminiostachys*, Rchb. f., *Bot. Zeit.* 1852, p. 933.—Sierra Leone. Imported and cultivated by Senator Jenisch, of Hamburgh.

38. B. HIRTUM, Lindl., *Gen. and Sp. Orch. Pl.*, p. 51; *Bot. Reg.*, 1847, under t. 66.—India. Imported and cultivated by Messrs. Loddiges. It produces a long drooping tail of small whitish flowers, having exactly the smell of Sweet Vernal Grass, Anthoxanthum odoratum.

39. B. IMBRICATUM, Lindl., *Bot. Reg.* 1841, Misc., n. 65; *Walp. Ann.*, vi., p. 249.—Sierra Leone. Cultivated by Messrs. Loddiges. Flowers dull purple.

40. B. INÆQUALE, Lindl., *Gen. and Sp. Orch. Pl.*, p. 49; Miq., *Fl. Nederl. Ind.*, iii., p. 647. *Diphyes inæqualis*, Blume, *Bijdr. tot Fl. Nederl. Ind.*, p. 319.—Java. Cultivated in the Buitenzorg Garden in 1866.

41. B. INERS, Rchb. f., *Gard. Chron.*, n.s., xiii., p. 776.—India. Introduced and cultivated by Mr. Bull. Of botanical interest only.

42. B. INOPS, Rchb. f., *Gard. Chron.*, n.s., xiv., p. 620.—Native country not recorded. Cultivated by Messrs. Henderson, of the Pine-apple Nursery, in 1880. Allied to B. recurvum.

43. B. (EPICRANTHES) JAVANICA, Blume, *Bijdr. tot Fl. Nederl. Ind.*, p. 306, t. 9.—Java. Cultivated at Buitenzorg in 1866. Provisionally referred here.

44. B. KHASYANUM, Griffith, *Notula*, p. 284; *Gard. Chron.*, n.s., x., p. 716. *B. Gibsoni*, Lindl.—India. Originally discovered in the Khasya Hills by Griffith, and subsequently sent to Chatsworth by Gibson, the Duke of Devonshire's collector.

45. B. LASIANTHUM, De Vr., *Ill. d'Orch.*; *Gard. Chron.* 1855, p. 53.—Sumatra, etc. Cultivated by Loddiges. Flowers medium size, dull purple, bearded.

46. B. LEMNISCATUM, Parish, *Bot. Mag.*, t. 5961; *Gard. Chron.* 1872, p. 1654.—Moulmein. Sent in 1870 to Kew by the Rev. Mr. Parish. One of the most singularly beautiful of small flowered Orchids. It has warty pseudobulbs, from beneath which rise the slender scapes, bearing at the apex a short recurved spike of small purple flowers of very curious structure Each of the sepals bears a relatively long club-shaped appendage, which consists of a slender axis, and ten radiating, longitudinal plates of great delicacy.

47. B. LIMBATUM, Lindl., *Bot. Reg.* 1840, Misc., n. 171; *Walp. Ann.*, vi., p. 255.—Singapore. Imported and cultivated by Messrs. Loddiges. Flowers deep, dull purple, fringed with whitish hairs.

48. B. LOBBII, Lindl., *Bot. Reg.* 1847, under t. 29; *Gard. Chron.* 1847, p. 423; *Bot. Mag.*, t. 4532; *Walp. Ann.*, vi., p. 245. *Sarcopodium Lobbii, Lindl. and Paxt, Fl. Gard.*, i., p. 1, fig. 98. *Sarcopodium Lobbii var. Henshalli*, Henfrey, *Moore and Ayres' Gard. Mag. Bot.*, iii., p. 269, with a coloured plate; *Jard. Fleur.*, ii., t. 183 (copied from *Gard. Mag. Bot.*).—Java. Discovered and introduced by Thos. Lobb for Messrs. Veitch, with whom it flowered in 1850. One of the handsomest of the genus. Flowers solitary, fully 4 inches across, yellow, shaded with cinnamon, spotted with light brown, and speckled outside with purple-brown. The so-called variety looks like a badly-cultivated specimen of the type. Hort. Kew.

Var. SIAMENSE, Rchb. f., *Gard. Chron.* 1867, p. 592; *Refug. Bot.*, ii., t. 116.—Siam. Introduced by Mr. J. Day. Flowers lemon-yellow, with fine longitudinal red lines.

49. B. MACRANTHUM, *Bot. Reg.*, 1844, t. 13; *Gard. Chron.* 1844, p. 215; *Walp. Ann.* vi. p., 245. *Sarcopodium macranthum*, Lindl. — Singapore. Imported by Loddiges, and flowered first in 1844. Flowers large, solitary, dull purple, mottled with chocolate, greenish-yellow in the centre. Hort. Kew.

50. B. MEMBRANACEUM, Teijsm. et. Binnend, *Nederl. Kruidk. Archief*, iii., p. 397—Java. Cultivated at Buitenzorg in 1866.

51. B. MUCRONATUM, Lindl., *Gen. and Sp. Orch. Pl.*, p. 57; Miq., *Fl. Nederl. Ind.*, iii. p. 646. *Diphyes mucronata*, Blume, *Bijdr. tot Fl. Nederl. Ind.*, p. 317.—Java. Buitenzorg Botanic Garden, 1866.

52. B. NASUTUM, Rchb. f., *Gard. Chron.* 1871, p. 1842.—Native country unrecorded. Cultivated by W. W. Saunders. Flowers medium, pale sulphur colour, with some purple-orange and white.

53. B. NEILGHERRENSE, Wight, *Ic. Pl. Ind. Or.*, t. 1650; *Bot. Mag.*, t. 5050.—Indian Peninsula. Sent to Kew in 1849, by Mr. McIvor. Belongs to the same group as B. Careyanum, but the scape is longer and erect. Flowers red and green. Hort. Kew.

54. B. OBTUSUM, Lindl., *Gen. and Sp. Orch. Pl.*, p. 56; Miq., *Fl. Nederl. Ind.*, iii., p. 650. *Diphyes obtusa*, Blume, *Bijdr. tot Fl. Nederl. Ind.*, p. 315.—Java. Buitenzorg Botanic Garden, 1866.

55. B. OCULATUM, Teijsm. et Binnend, *Bat. Nat. Tijdschr.*, xxiv., reprint, p. 5.—Java. Cultivated at Buitenzorg in 1866.

56. B. ODORATUM, Lindl., *Gen. and Sp. Orch. Pl.*, p. 54; Miq., *Fl. Nederl. Ind.*, iii., p. 648. *Diphyes odorata*, Blume, *Bijdr. tot Fl. Nederl. Ind.*, p. 312.—Java. Buitenzorg Botanic Garden, 1866.

57. B. OLIGOGLOSSUM, Rchb. f., *Hamb. Gartenz.*, xxi., p. 297.—Birma. Imported by Messrs. Low, and cultivated by Mr. Bullen, about 1865. Allied to B. odoratissimum; flowers yellowish-white, capitate.

58. B. PALEACEUM, Benth., in *Benth. and Hook. Gen. Plant.*, iii., ined. *Ione paleacea*, Lindl., *Fol. Orch.* 1853; *Walp. Ann.*, vi., p. 636; *Bot. Mag.*, t. 6344; *Gard. Chron.*, n.s., x., p. 562.—India. Originally collected by Griffith in Assam; and Dr. King sent it to Kew a few years ago, where it flowered in 1878. Rather a pretty species, having an erect scape bearing a raceme of medium size, narrow, yellow and red flowers, with a purple lip.

59. B. PARVULUM, Lindl., *Gen. and Sp. Orch. Pl.*, p. 49; Miq., *Fl. Nederl. Ind.*, iii., p. 646. *Diphyes pusilla*, Blume, *Bijdr. tot Fl. Nederl. Ind.*, p. 317.—Java. Buitenzorg Garden, 1866.

60. B. PAVIMENTATUM, Lindl., *Journ. Linn. Soc.*, vi., p. 128; *Bot. Mag.*, t. 5329.—Western Tropical Africa. Discovered on the banks of the River Nun by Gustav Mann, and sent to Kew in 1860. A neat and pretty species with dense pedunculate spikes of small, crimson flowers.

61. B. PILEATUM, Lindl., *Bot. Reg.* 1844, Misc., n. 73; *Walp. Ann.*, vi., p. 246.—Singapore. Imported and cultivated by Messrs. Loddiges. Small ochre-yellow flowers.

62. B. PIPIO, Rchb. f., *Linnæa*, xli., p. 92; *Xenia*, iii., p. 45, t. 219, fig. 7—13.—Western Tropical Africa. Cultivated by W. W. Saunders, 1877. A minute plant.

63. B. PSITTACOGLOSSUM, Rchb. f., *Bot. Zeit.* 1863, p. 237.—Moulmein. Imported by Messrs. Low, and cultivated by Mr. Day, of Tottentham. Allied to B. macranthum; flowers leather-yellow and purple. Hort. Kew.

64. B. PSYCHOON, Rchb. f., *Gard. Chron.*, n.s., x., p. 170.—India. Sent from Assam to Mr. Bull by Mr. Freeman. Inconspicuous.

65. B. RECURVUM, Lindl., *Gen. and Sp. Orch. Pl.*, p. 53; *Tribrachia pendula*, Lindl., *Bot. Reg.*, t. 963.—Sierra Leone. Sent to the Horticultural Society in 1822 by Mr. J. Don. Very small green and purple flowers. Hort. Kew.

66. B. RETICULATUM, Batem., *Bot. Mag.*, t. 5605.—Borneo. Introduced by Mr. T. Lobb for Messrs. Veitch, in whose nursery it flowered in 1866. It is described as the finest of the genus. Leaves prominently netted. Flowers yellowish-white and purple.

67. B. RHIZOPHORÆ, Lindl., *Journ. Linn. Soc.*, vi., p. 124; *Bot. Mag.*, t. 5309.—Western Tropical Africa. Gathered by Barter on the banks of the Nun river about 1858, and sent to Kew, and again by Mann in 1860. A pretty little plant, with small rich crimson flowers scattered all along the slender scapes.

(*To be continued.*)

ALPINE PLANTS.

(*Continued from p.* 10.)

Anemone narcissiflora, L., occurs in the Alps, in the Jura, the Pyrenees, and in general on all the mountains of central Europe. The flowers are arranged in groups of six or eight, each of a rose or white colour, forming very pretty groups surrounded by bright green foliage. This plant flowered beautifully this spring on our rockery, and produced a fine effect by the prodigious number of its flowers, and their long duration. It is a lime-loving species.

A. nemorosa, L., is the best known of all our European species. It is found in woods and copses, where it produces a beautiful effect in spring. It should not, however, be grown on the rockery, as it spreads too rapidly; it should be planted in copses, and by the sides of wild shrubberies in shady places. There is a double flowered variety, and one with violet flowers.

Anemone ranunculoides, L., is also widely diffused in our plains. It is generally met with in sandy and wet places, where it occurs often in company with A. nemorosa. Its flower is bright yellow. Though not strictly an alpine species, it is found on the Col de Jaman.

Anemone apennina, L., is one of the prettiest Anemones. It resembles A. nemorosa, but its flowers are azure-blue, and its habit is rather different. Those who have visited Italy and Corsica, will not need any recommendation of this plant from me. Its flowers recall in their tint that of the Italian sky. It is easily cultivated on the rockery, where it should be grown fully exposed to the sun. A little copse thickly planted with Anemone nemorosa, A. apennina, and A. ranunculoides would be delightful in spring.

Anemone trifoliata, L., a native of Greece and eastern Austria, is one of the prettiest species of the genus. It resembles A. nemorosa, from which it is distinguished by its three leaves, forming a triangle with the stem, and by the stamens, which are white instead of yellow. The plant flowers in spring, is rather tender, requiring a dry soil and exposure to the sun. I have never seen seeds of this species.

Anemone baldensis, L., is a species peculiar to the chain of the Alps. It is found in the highest mountains of the Valais and the Grisons, but is rare. It is a small but very pretty species, and grows on the damp and calcareous masses of soil that have fallen from above. To cultivate it, it must be taken in autumn when at rest, and kept in pots for some time. The pots should be kept dry during the winter, being watered very seldom. When spring comes and the days lengthen, watering may be done more freely, and when the plant is seen to be growing, it may be transferred to the rockery.

Anemone silvestris, L., is a very beautiful species which grows in the north-west of Switzerland, and which is met with frequently in Germany and Northern France. The flowers are large, globose, and white. It succeeds very well on the rockery, where it flowers in April. It requires to be in a shaded position, and to be grown in a soil rich in humus.

Anemone dichotoma, a north American species, is very like A. silvestris, but owing to its spreading habit it is not suited to culture on the rockery. It must be grown in the shade and on rich soil. It is a beautiful free flowering plant, the pure white flowers resembling those of A. nemorosa, but much larger.

Anemone Hepatica, L., and its varieties may be passed over with the mere mention.

Anemone alliana, Stev., a native of the mountains of Asia Minor, is a very peculiar species, unlike any other. The small grey flowers tinged with violet, have the petals short and curled back as in Clematis integrifolia. Its foliage is very finely cut, like that of A. Pulsatilla. This species is rare in cultivation; it flowered this year on our rockery, but I have never been able to obtain seed. It may be cultivated in the same way as A. Pulsatilla or A. montana.

I have alluded to having successfully sown seeds of various species of Anemone. Many people have told me they have tried and failed. I believe the reason of my success lies in the fact that I sow the seed immediately after gathering it. Last autumn also I

sowed some seed, which had been gathered three months previously, in pots placed in a dark situation, and kept them dry during the winter. At the beginning of spring I placed them in a warmer, lighter situation, and gave them water freely. This plan also succeeded well with me. *Henri Correvon, Inspector, Botanic Garden, Geneva.*

PHILESIA BUXIFOLIA.

We figure this plant, not as a novelty, but for the purpose of showing what a fine thing it is when grown under propitious circumstances. Generally we see it more or less starved in the greenhouse, and even when planted out in the winter garden its flowers lack the size and richness of colour they attain out-of-doors. It comes from the extreme south of South America, which accounts for its hardihood, and is a near ally of the Lapageria; the latter is remarkable for withstanding even the noxious fumes of the copper smelting works in Chili, and as the Philesia has similar tough leaves, it is probable that it would support the vitiated atmosphere of a town better than most evergreens. In any case there is no reasonable doubt but that if cultivators would take the necessary pains they might select perfectly hardy varieties both of the Lapageria and of the Philesia. As it is we can only call the Philesia half-hardy north of the Thames, while the Lapageria is not even that. The curious Philageria, raised in Messrs. Veitch's nursery and described and figured in our columns in 1872, p. 358, is a hybrid raised between the two genera. For the specimen of Philesia figured (fig. 18) we are indebted to Mr. Dartnall.



Fig. 18.—PHILESIA BUXIFOLIA. HARDY SHRUB: FLOWERS ROSE-PINK.

WINSLADE.

(*Concluded from p. 84.*)

The entrance to the glass department and kitchen garden is at the extreme end of the long terrace, and the former is extensive, and constructed without regard to anything but utility and durability. There are four rows or ranges of plant pits, each over 80 feet long, running east and west, for growing Melons, Cucumbers, and a succession of Pines and Strawberries. The Pines are indeed a very fine sample. There are also Azalea pits, and others for growing autumn-flowering plants, in which everything looks prosperous and healthy. Then there is a range of unequal span-houses (sunk) in three divisions for growing Orchids. The path is up the centre, and the houses are most convenient for working in every respect. In the first division there are good plants of Odontoglossums, many of the Alexandræ type being in flower; Cypripediums, Dendrobiums, and Ferns; many choice varieties, well grown, of Adiantums, Lomarias, Gleichenias, and others. The second division is filled with Cattleyas, Lælias, Epidendrums, and a general assortment of other rare and valuable species; and the third house contains Aërides, Saccolabiums, Phalænopsis, Anthuriums, Nepenthes, and choice ornamental foliaged plants.

At an establishment where there is so much glass and so much that is well done, it is only possible to mention a few of the plants which claim, or rather appear to claim, especial cultural notice. There are no weedy plants kept at Winslade, and this remark applies to every department, whether out-of-doors or in. The Camellia-house is built upon the ridge-and-furrow system, of seven spans, and is in two divisions, in order to accommodate early and late flowering varieties. The collection consists of the best kinds in cultivation. In the late division there are very fine plants of Marchioness of Exeter, Earl of Derby, Duke of Devonshire, and Countess of Orkney. The front stage is gay with flowering plants and some fine plants of Lapageria rosea superba are trained perpendicularly to the roof. The next range runs north and south, and is built in the curvilinear style for Grape and plant growing. The first house, in two divisions, is occupied with Vines—Hamburghs, Muscats, Mrs. Pince and other varieties all growing vigorously and bearing heavy crops; the late Grapes are remarkably fine. The second house is stocked with conservatory plants for summer and autumn decoration, and its next neighbour is filled with a collection of specimen hard-wooded Heaths and other plants. The former consists of Fuchsias, Statice Holfordi, a very fine stock; Abutilons, and Richardia æthiopica var. In the Heath division the specimens average about 3 feet across and, to put it in few words, the collection is a representative one of the very best sorts in cultivation. A speciality of the collection is a group of Boronia elatior, which with Pimeleas and others make a very interesting display among the hard-wooded Heaths. In a division of the same house there are Palms, Cycadaceous plants and Ferns, including a good specimen of Adiantum cardiochlænum. We next come to a range in four divisions with a southern aspect where plant and fruit growing is carried on with the same success as in the houses already noticed. These include Ixoras, a good collection splendidly grown, Rondeletia speciosa, Phænicophorium sechel-

larum and Leea amabilis lately sent out by Messrs. Veitch of Chelsea, and a plant that is likely to prove useful to gardeners. Dracænas are also well-grown, and the old favourite Medinilla magnifica, together with Tabernæmontana coronaria fl.-pl., Lagerströmia indica, Echites boliviensis, a fine collection of trained Allamandas, Clerodendrons, Hibiscus, Bougainvillea glabra, Jacaranda mimosifolia, and many others. The last house of the range is stocked with Vines, bearing the finest crop in the garden, the Vines being remarkably productive and luxuriant.

Leaving this garden we next enter an adjoining fruit garden, where a range of fruit-houses has been recently erected upon the lean-to principle, in which the crops are an undoubted success in every department. The returns are, indeed, so good within so short a time that it is surprising why there are so many unproductive walls, where, with a covering of glass, there might be bushels of fruit obtained every season. The first house is unheated, and is planted with Peaches, Nectarines, and Plums, upon transverse trellising along the front border. The varieties that are fruiting best are Denniston's superb, Coe's Golden Drop, and Kirk's Seedling; the Peaches, too, are quite a full crop. The second division is planted with Peaches and Tomatos, and the third and fourth divisions are used for forcing Figs and Apricots—such forcing as the latter will bear. Without going into details, it may be broadly stated that the principle of cultivation and arrangement is the same throughout, and apart from fruit growing the houses also afford shelter for plants during a great many months of the year. Of course, no representative garden would be complete without a Rose-house, and this has also been recently added, besides Strawberry and plant pits, which are now filled with Amaryllis, tuberous-rooted Begonias, zonal Pelargoniums, and other useful summer flowering plants. The fruit garden is not yielding a very heavy crop this season, as, indeed, is the case everywhere; but it does not lack interest for all that. The main walk is arched over with Roses, and the borders are rich in hardy plants. I omitted to mention the glass copings which are fitted to the walls as protections against frost, and several glass cases, relics still left of gardening in times gone by, where Figs and other crops are still grown, more by way of retaining a specimen of old-fashioned hothouse building than anything else. Such gardens as Winslade are, indeed, rare, because few employers are so devoted to horticultural pursuits as their munificent owner, and few gardeners are more zealous and industrious than Mr. Craggs, who also manages other departments of the estate.

AZALEA INDICA.*

Of the many trees and shrubs that come to us from the sunny East to adorn our gardens and greenhouses, the subject of the following remarks has ever since the period of its introduction occupied a foremost place in the estimation of all lovers of flowers. Practical men have taken to its cultivation with an enthusiasm which has only been bestowed on the choicest subjects. The marked success that attended their labours is abundantly manifested by the honourable position assigned by universal consent to their best specimens at all our flower shows, and not only in this country, but in all lands where exhibitions of cultural skill have been instituted.

Those of us who witnessed the first great International Exhibition held in London in 1866 will never forget the magnificent pyramids of colour which graced its grassy slopes. Even in that gathering of horticultural trophies it was its wonderful Azaleas that attracted the greatest amount of attention, and that will live the longest in the memory of the generation of gardeners that looked upon them. Nor should the splendid examples of skill and perseverance which are annually placed on the tables of the Royal Caledonian Horticultural Exhibition by esteemed members of this Association be mentioned but with pride and admiration; and I am proud to acknowledge that in no other locality in the United Kingdom are Azaleas better handled, nor their cultivation better understood than by many of the brethren I see before me, even with all the drawbacks which our cold and often sunless summers impose upon them.

The progenitors of the present race of Azaleas which we cultivate grow in their pristine glory on the cool, moist, hilly regions of India and China, and are well known to be the pride of their native woods as their progeny are of our greenhouses. The Azalea belongs to a family remarkable for the interest, beauty, and the great number of beautiful subjects it furnishes to the cultivator. The Andromedas, the Gaultherias, the Ledums, and the Kalmias of North America; the Arbutus and the Menziesias of Erin, the Heather and the Blackberry on our Highland hills, as well as the Heaths of the Cape, which, by the way, were once the test of a gardener's capacity, but are now, alas! most sadly neglected; the lowly Pyrola, as well as the magnificent Rhododendron of Asia and America, are all classed by botanists in the same family group—the Heathworts, and whose geographical distribution are, as you well know, world-wide.

The Chinese gardeners have cultivated their Azaleas with the same assiduity and success as we now do, very likely for centuries before the Christian era, and some of our best known sorts came to us direct from the hands of the Celestials. The Dutch have also infused their native perseverance into this plant, and have grown it now for nearly two centuries. To them we are also indebted for some of our most esteemed varieties. Its introduction to this country dates only some seventy years back. However, if other nations have been ahead of us in appreciating the native beauty of the Azalea, and turn this happy accident to account, yet we may fairly claim for ourselves the credit of having made fully longer strides in bringing its cultivation to its present state of perfection. We have availed ourselves, moreover, of the experience of our neighbours in adding to our knowledge and our treasures. The great number of foreign names that obtain among the sorts we grow bear witness to the cosmopolitan character of our growers, as well as to the extent to which we avail ourselves of the "resources of civilisation," wherever they originate, while this same fact bears equally impressive witness to what I may call the power of adaptation possessed by our plant, as also to its greater power of gaining the affections and gratifying the purer tastes of widely different races of mankind.

The Azalea is increased by almost every method known to the propagator—from seeds, from cuttings, by layers, and by grafting. Those who may wish to pursue the subject as a source of healthy recreation, and wish to increase the already large number of excellent sorts, must have recourse to seeds, which should be sown as soon as it is gathered in well-drained shallow pans, in a compost composed of equal portions of peat and silver-sand. A layer of the fibry portions of the peat should be spread over the drainage, and filled up to the depth of 2 inches. A layer of the compost, finely sifted, should be spread over the surface, pressed rather firmly and smoothly, and watered with a fine rose. On the bed thus prepared the seed should be sown; sprinkle them over with a dusting of silver-sand, water again with the same fine rose, cover the pans over with a sheet of glass, and place them in the propagating house or on the shelf of a warm greenhouse, where they will be subjected by the careful cultivator to the same careful treatment usually bestowed upon the most delicate seedlings. Raising Azaleas from seed is at best a process that will tax the patience of the grower more than any other method of increase, and should only be taken up by those who have plenty of time to devote to this work. For the hybridist and the raiser of new sorts, however, it is the only available plan, and has a charm about it that cannot be claimed for any other method.

The next mode of propagating that I adverted to is from cuttings. These should be selected from the half-ripened wood any time in summer or early autumn that wood can be got in condition and planted in pots or pans prepared much as I described for seeds, with this difference, that the pots or pans intended for cuttings should have a layer of silver-sand three-quarters of an inch thickness spread over the surface before they are inserted. The preparation of Azalea cuttings does not differ materially from that required in the case of Verbenas, and certainly requires the nicety of handling necessary for the preparation of Heath cuttings; all that I will say on this head is, that when the cuttings are made, planted, and watered, cover them over with a bell-glass, and stand them in a shady corner in a cool house for a month or six weeks. I do not consider it advisable to plung them at once in a bottom-heat, as I have often seen done. This should be delayed until the cuttings have callused; during the interval they should receive every attention in the way of watering, shading, daily removal of bell-glasses, and wiping the same dry before they are replaced. After the interval which I have stated they should be subjected to a brisk bottom-heat of about 80°, when in a few weeks they will show signs of growth. The bell-glasses may now be kept off for longer periods, avoiding, however, too sudden an exposure to air or strong sunshine until the roots have taken a strong enough hold to sustain any demands that may come upon them. When the behaviour of our cuttings indicates that this desirable state has been attained, they should be raised out of the plunging material and left to stand on the surface of the bed, and after a few days raised still nearer the light in order to strengthen their constitution for an independent career of their own by being potted off.

This is an operation that demands, and should always receive, careful preparation beforehand—such as compost of the proper sort and pots and drainage material scrupulously clean. The size of pots should be that known in the trade as large and small 60's (2 and 2½ inches in diameter). The soil should be composed of two-thirds good fibry peat, with the other third of silver-sand; these should be mixed together and manipulated by the operator into the condition suited for the young and delicate roots without the aid of riddles, for I may observe by the way that I do not look with favour on the use of the riddle as an agent in the preparation of composts for any sort of plant, and would only have recourse to it when the materials are too stubborn to yield to a moderate expenditure of time and labour to the operation of handpicking and tearing. It will be quite unnecessary for me to go into the details of potting off, as it is termed. This, like the preparations, has been so frequently described that it would appear like a flagrant waste of time to go over it again. This only will I say in passing: drain well and pot firmly. If a corner can be spared for them in the propagating bed, where they can get a slight bottom-heat, so much the better, but this is not absolutely necessary; still I would strongly advise that they be plunged in some material even though it has no bottom-heat. It will keep the delicate roots in a more equal temperature, as well as a more uniform condition as to moisture—two very essential points to secure what will be the aim of the grower to obtain at this stage—viz., rapid growth. *A. Mackenzie, Warriston Nursery, Edinburgh.*

(To be continued.)

* A paper on Azalea indica, with special reference to early forcing, read before the Scottish Horticultural Association.

HEDGES, USEFUL AND ORNAMENTAL.

Three conditions may be said to be essential to the beauty and prosperous aspect of any particular district or locality, viz., the presence of good roads, fine trees, and well-managed fences or hedges. And the presence of these conditions may generally be accepted as an earnest of superior cultivation in the adjacent pastures and fields. It is to the condition, and management of hedges, however, that we would beg at present to direct attention. The traveller by the highways and byways of this country may generally be made aware of his proximity to the mansions and parks of its wealthy inhabitants by the condition of the hedges, which when in good condition go far to enhance the beauty of the landscape, and to add to the pleasing aspect of the country in general. And it is much to be regretted that well kept hedges should be confined to any particular localities. In some parts of the country this matter appears to be more appreciated and better understood than in others—such, for instance, as in the southern or border counties of Scotland, some parts of the central portions of that country; and in the south and south-east of England, and possibly elsewhere, the subject appears to have obtained something like the attention it so well deserves; while, perhaps, the least attention of all has been given to it in some parts, at least, of the Midland Counties of England, where the practice prevails of allowing the Whitethorn hedges to grow as Nature directs for some ten or twelve years, or until the plants have attained to almost the height of trees—to the great waste and injury of the land, and until the fence has become so thin at the bottom as to virtually form no fence whatever, when the plants are generally layered or splashed as it is termed—that is, the long drawn-up

plants are pulled down, their stems are cut half through, and they are secured by stakes stuck into the soil in a recumbent or horizontal position. From these prostrate stems vertical shoots are soon produced, and a tolerably good fence is the result, which is generally, however, again allowed to follow the dictates of its own will until the time arrives for the next splashing to be repeated. This method has certainly little to recommend it, unless it be that of furnishing material for faggots, which are of course useful in many ways upon a farm.

Hedge-row timber, or at all events too much of it, is decidedly objectionable, as tending to retard the development of efficient hedges, inflicting serious injury upon crops of all kinds, particularly when such species as the Ash and the Elm are used for the purpose, which is frequently the case; while the drip from such trees, and the shade cast by them, tends more or less to keep both public and private roads in a wet and uncomfortable condition, at nearly all seasons of the year, by excluding the influence of the sun and the wind from drying them after heavy falls of rain or snow. As far as the beauty of the landscape is concerned this would be enhanced rather than otherwise by its entire removal, as hedge-row timber generally goes far to convey an unpleasantly stiff and formal aspect to it—although, on the other hand, anything like paucity of trees would no doubt detract from its beauty, but this could be readily obviated by adopting a plan long ago recommended in a little work by, I think, Mr. W. Barron, then of Elvaston, called the *British Winter Garden*, wherein is recommended the planting of small groups or clumps of suitable trees at the corners or the junction of several fields, selecting for this purpose species which would serve the twofold purpose of adding beauty to the landscape, and affording shade and shelter to farming stock of all kinds.

Allusion will now be made to various species of plants and the treatment necessary to render them suitable for the purpose of forming hedges either useful as effective fences against stock, or of ornamental character suited to divide one compartment or portion of pleasure grounds from others, or to act as blinds to conceal unsightly objects, &c., and the plant entitled to be first noticed is undoubtedly.

The Common White Hawthorn (Cratægus oxyacantha), which is indigenous to Britain, is perfectly hardy, and more extensively used for this purpose than any other plant. Without, however, asserting it to be in all respects the best of plants for this purpose—for I am inclined to agree with the author of the *British Winter Garden*, already alluded to, in considering the common green Holly in some respects preferable to it for this purpose—the beauty of hedges formed of the Whitethorn or Quick, as it is called, is during the spring and summer generally appreciated by every one; and every one loves the delicious perfume of the May, as the bloom of the Whitethorn is in some parts of the country designated. But if hedges formed of this plant are properly managed, they will produce little if any bloom; but plants of the Whitethorn in tree form are seldom scarce; and such plants generally bloom profusely. Quick hedges are generally planted upon the face of a sloping bank, formed by the throwing out of a ditch on one side where the hedge is intended to be planted. And the heads of the young plants are usually chopped off before planting takes place. This is no doubt a very barbarous practice, but the Whitethorn is a very good natured plant, and appears to submit to even this by no means tender treatment. The throwing out of a ditch, however, is commendable, as the excavated soil is thrown upon the part where the hedge is to be planted, and consequently gives increased depth of soil to the roots of the plants; and the ditch helps to protect the plants when in a young condition, and the elevated position of the plants tends to free them from stagnant moisture, a condition which is decidedly obnoxious to them.

Although Quick will succeed in any ordinary soil, it nevertheless forms a fence much sooner in soil of good quality than in one of an inferior nature; and in very light and poor soils it can hardly be said to succeed well. In all cases, however, the ground where it is intended to be planted should be trenched to a depth of not less than 3 feet, and should, if found necessary, be well enriched with manure. And instead of cutting off the tops of the plants, and planting the roots on the face of the sloping bank, they should be planted entire on the flat surface at the top, nd at the distance of two or three inches from the angle formed by the ditch, placing the plants at a distance of 6 inches from each other, if only a single line is planted: if a double row is preferred, the distance from plant to plant in the rows may be increased to 9 inches, and the rows should be 9 inches apart. Means should now be taken to prevent the young plants being injured by stock or by ground game. By planting the Quick in an entire state, as it is received from the nursery quarters, with the exception of any slight cutting back which exceptionally large plants may require in either roots or top, root action will at once take place, and the soil will merely require to be kept free from weeds during the summer. Towards the end of the following March when the hedge will have been planted some twelve or more months, and when the plants have become well rooted, they should, with a sharp knife, be cut down to within 2 or 3 inches of the surface of the soil; and soon after this abundance of strong young shoots will be produced, and these will form a good foundation for the fence. Little more will require to be done until the plants have reached the desired height, which in most cases need not exceed 5 or 6 feet, when the fence should be cut into its desired form, which may, of course, vary according to taste, but possibly the best is that of the hog's mane, or wide at bottom and tapering towards the apex so that a section of the fence would be that of an inverted V. In order to keep such hedges in proper condition they should be cut twice during the year, viz., soon after midsummer, and again during the winter. These trimming operations may either be performed with the hedge-shears or the hedge-knife, the latter is, however, by far the best and the most expeditious—as one expert workman with his knife will do more work, and do it better, than two or three men could possibly do a like amount with the hedge-shears. In using the knife the cuts should be all made in an upward direction, and never the reverse. *P. Grieve.*

(To be continued.)

THE KEW ARBORETUM.

The Oaks.

Quercus sclerophylla, Lindl., *Paxt. Flower Garden*, i., 59, fig. 37; DC., *Prodr.*, xvi., 81; *Gard. Chron.* 1874, vol. i., n.s., p. 632.—North China.

This fine evergreen Oak was introduced to this country by Fortune, but it has probably disappeared from cultivation. The Q. sclerophylla of gardens is a totally different plant, viz., Q. glandulifera, Blume, *Gard. Chron.* 1880, 714, fig. 715.

Quercus thalassica, Hance, *Hook. Journ. of Bot.* 1849, p. 176; *DC. Prod.* xvi. 84; *Q. inversa*, Lindl., *Paxt. Flower Garden*, vol. i., p. 58, fig. 36.—Native of Northern China and Japan. Sent to Standish and Noble by Fortune.

I do not know where this is to be found growing in the open air in this country, but it is to be seen in the temperate-house at Kew. It is an evergreen species, with obovate oblong shortly acuminate entire or slightly serrated leaves, deep green above, glaucous tomentose beneath.

Q. lamellosa, Smith in *Rees' Cyclop.*, n. 23; Loudon, *Encyl. of Trees and Shrubs*, p. 892, fig. 1644; Hooker, *Illustrations of Himalayan Plants*, plate xx.—Temperate Himalayas at 5000—8000 feet elevation above sea level. Central and Eastern Nepal, Sikkim and Bhootan.

Cultivated at Kew in the Winter Garden; has always failed in the open at Kew, but there are probably many places in the south-west of England where it would thrive. The foliage is serrated, dark green above, silvery glaucous beneath. In the above mentioned work Dr. (now Sir Joseph) Hooker thus speaks of this fine species:—"One of the commonest trees about Dorjiling, and is certainly by far the noblest species of Oak known, whether for the size of the foliage or acorns, their texture and colour, or the imposing appearance of the tree, which has a tall straight solid trunk, 40 to 60 feet high, and an oblong crown as much above it. As with our common European forest trees the fruit is produced in much greater abundance in some seasons than at others; in the winter of 1848-49 it was so abundant that it was dangerous to ride along the roads near Dorjiling, the hard round acorns causing the horses to stumble." These measure 2½ inches in width by 1¾ inch in depth.

Q. glabra, Thunb., *Flora Japonica*, p. 175, *et Icon. Pl. Jap. Decas.*, iv., tab. 5; Sieb. and Zucc., *Fl. Jap.*, vol. i., p. 170, tab. 89; *Revue Horticole*, 1858, p. 354, fig. 100; *Gard. Chron.* 1880, vol. xvi., p. 785, fig. 153.—Japan.

In its native country this fine evergreen Oak forms a large tree with a straight stem and spreading crown; in this country (at any rate at Kew and elsewhere) it is by no means a quick grower, and generally assumes the character of a compact thick bush. The shoots are glabrous; the wide leathery leaves are from 2—5 inches long by 1¼ to 1¾ inch broad, oblong, elliptic, abruptly and shortly acuminate, entire. The acorns take two years to ripen. The Kew plant does not ripen fruit, but in *Gard. Chron.* 1852, 695*b*, the fact is put on record that acorns of this species were ripened at Bishopstoke, Hants, the residence of the Very Rev. the Dean of Winchester. Q. glabra was introduced to Leyden from Japan in 1830. Acorns were sent packed in clay, and these germinated on their journey to Holland. According to Siebold the Chestnut-flavoured acorns are only slightly astringent, and are eaten throughout Japan.

Var. longifolia is only a form with longer leaves than the type.

Q. cuspidata, Thunb., *Fl. Jap.*, p. 176; Sieb. and Zucc., *Flor. Jap.*, i., p. 8, tab. 2; *Gard. Chron.* 1879, vol. xii., p. 233, fig. 38.—Japan.

This is an elegant evergreen shrub (in its native country it attains a height of 30 or 40 feet) with gracefully drooping branches. It is quite hardy and grows freely in the Coombe Wood nursery of Messrs. Veitch. In Japan its acorns are eaten either roasted or not; its wood is also turned to account. From standing cutting in so well it is generally chosen to plant near their temples by the Japanese.

Var. variegata, *Gard. Chron.*, vol. xii., n.s., p. 233, fig. 38.

Smaller leaves than the last, with irregular blotches of cream colour. A desirable plant for cool conservatory decoration.

The vars. angustifolia and latifolia of Continental nurseries are slight forms, which could at any time be obtained along with what is looked upon as the type from any one seed-bed. Messrs. Veitch's stock show every gradation.

Q. bambusæfolia, Mast., *Gard. Chron.* 1874, vol. i., n.s., p. 632.

This was originally mentioned in *Gard. Chron.* 1860, p. 170, by Mr. Fortune in "Notes on some Chinese Plants recently Introduced into England." Mr. Fortune describes it as a very ornamental tree, 30—50 feet high, and states that it "is probably distinct from the Hong Kong plant published under this name." This has been raised at Kew from acorns sent from Hong Kong, and it is quite different from the Japanese species now under notice. It will not stand the winter in the open air at Kew, whilst the Japanese one flourishes well in not at all sheltered spots at Coombe Wood.

Q. salicina, Blume, *Mus. Lugd. Bat.*, p. 305; Seeman, *Bot. of "Herald,"* p. 415, figured as Q. bambusæfolia, tab. 91.—Hong Kong.

For the differences between this and preceding species reference must be made to Dr. Masters' original description above indicated. This, although not hardy, is worth growing for conservatory work, owing to the black-purple glossy tomentum with which its young shoots and leaves are densely clothed. *Geo. Nicholson, Royal Gardens, Kew.*

NITRATE OF SODA AMONG VEGETABLES.

Whilst agriculturists are busy debating the question whether nitrates are really manures or stimulants only, it seems strange that more of them are not employed by horticulturists. No one denies that they increase the yield of green crops on farms—grass, cereals, roots, all are quickened into larger, heavier yields by the moderate use of nitrates. Among the latest estimates of the results of the use of 1½ cwt. of nitrate of soda per acre is an increase of 10 tons per acre of Mangels. Few agriculturists seem to question or doubt such facts. The dispute among them turns on whether the increase is derived from any manurial value in the nitrates, or whether they only help the plants to take the augmented increase unfairly out of the land. In a word, are nitrates plant-food or mere stimulants, beef or drams?

Important as this question is, it can afford to wait for learned chemists and vegetable physiologists to answer, whilst we proceed to give all the prominence

we can command to the fact, that the yield of green crops may be very much increased in quantity and improved in quality by the moderate use of nitrates. The latter is not only confirmed by experience, but inferred by induction, thus—Nitrates stimulate growth with many vegetables, such as Cauliflowers, Asparagus, Turnips, &c.; the faster they are grown the better their quality. Sweetness, crispness, and tenderness are the chief merits in not a few of them: these qualities are the most prominent in those that are the fastest grown. In the case of root-crops, like Potatos, other conditions, such as maturity of tubers, go to make up a perfect quality; but with many others, including French and Runner Beans and green Peas, rapid growth is one of the main requisites to high quality.

Now that is just what nitrates accomplish. Whether by acting as solvents to manurial matters already in the soil, that cannot be freely liberated without them, or directly stimulating the vital powers of the plant by giving a fresh fillip to the sluggish circulation of its fluids, or by adding something that plant and soil alike were deficient in, the great fact is apparent, that growth is accelerated, and there is a rapid extension alike of root, stem, and leaves.

In kitchen gardens nitrate of soda would probably prove most useful as a solvent. Not a few of these are almost overstocked with the accumulated residuum of incessant manurings. Manures, if accumulated or concentrated in excess, may defeat the purposes for which they were employed. Instead of feeding they may poison or paralyse the roots—the poisonous excretory root has long been abandoned. It is probable, however, that some of the mysterious evils attributed to this theory may have originated in a phethora of stationary food in the soil. Manure-clogged land may be as incapable of feeding plants as that which is water-clogged.

It has been well said, that manure in the wrong place is poison to animal life. Probably it is equally true that manure in excess, or in the wrong state, is equally destructive to vegetable life. The nitrates, by merely lessening its volume, and changing its character, enable it to be absorbed by plants, and so converted into produce.

Horticulturists do not need to be told that plants may perish with hunger on a dunghill if the dung is too gross and strong for use. Dilution, decomposition, new and more attenuated fluids and gases, may have to precede absorption. Just as stagnant water is worse than useless in soils, so may it be with stagnant manure or a surfeit of rank dung. The first may rot the plants but never fully supply their water wants, and the other may hug the roots round with the most nourishing food, of which they cannot absorb a single morsel to any useful purpose. If the nitrates set the food free or enable the roots to eat more of it, they may prove as useful on rich land as drainage is on wet ones. The drains add nothing to, but take much from, the land; and by their removal of water enable the roots to drink the more and to better purpose: and so nitrates, by what some have called exhausting the soil of food, enable the plants to eat a double or a treble portion.

But the exhaustion theory has yet to be proved; and even if proved it may still be found to be the most profitable. The banker's money yields no profit while it lies idle in his vaults or cellars. The more persistently it is laid out, the more freely diffused, the more he is enriched. It is the same with our manure and natural fertility of the land. Left to rest in the earth, it produces nothing; absorbed by the plants—converted into produce—it then becomes wealth, capital, profit. If nitrates enable us to draw this strength out of the soil and quicken its consumers into producers, they become the most valuable allies of the cultivator.

Neither may any fear of exhausting the natural or artificial fertility of the land deter any one from the moderate and careful use of nitrates. No doubt any excessive use is wasteful of the nitrate. From ½ cwt. to 1½ cwt. per acre includes the range of wise and profitable use. It is doubtful, however, whether an excessive dose of nitrate has any permanent evil effects on the land. It is more probable that it simply passes through without greatly impoverishing the soil. But a little at a time is best for the crops, and the most profitable way of using nitrates. If used during dripping weather the effect is more rapid as well as more profitable. A mere sprinkling raked in over Asparagus beds, among Lettuces, Cauliflowers, Celery, Onions, &c., deepens the verdure, enlarges the size, and adds to the vigour of the plants in an amazingly short time.

But little has been done in applying nitrates to fruit, though in small doses it is probable that its solvent power would prove must useful on Vine borders, not seldom manure-clogged beyond the possibility of use. In cases of heavy cropping or a want of verdure in the leaves, infinitesimal doses of nitrate of soda might prove of the greatest service. There might be considerable risk of over-doses among fruit, but its moderate use among vegetables has been found to be as safe as it has proved profitable. *F.*

Foreign Correspondence.

MOSCOW EXHIBITION.—The exhibition in this city, promoted by the Government, is on a very large scale, and the objects exhibited are very numerous and varied. I must confine myself to a brief notice of the horticultural department. The subjects exhibited under this head are placed, some in the open air, some in a spacious conservatory. The implements, models, and other matters that would be injured by exposure, are also placed under cover. The horticultural pavilion is a four-sided building with a central area occupied by fruit trees and implements. Hardy decorative plants are grouped around the pavilions devoted to various branches of industry. The general exhibition will remain open till October, the horticultural section being changed every fortnight. The greater part of the objects now exhibited consist of stove-plants of an ornamental character, especially Palms. The collection of these plants sent by M. Boormistroff, of Nijni Novgorod; M. Immer, of Moscow; and M. Lepeshkine, of Moscow; are specially worthy of attention. The Bromeliaceæ, the Aroids, the Cycads, are shown by several exhibitors: those sent from the Botanic Garden of the University of Moscow are in greatest variety and well cultivated. Prince Tcholokaieff, of Koorsk, shows a collection of Crotons, very well cultivated. The Conifers and Ferns are less numerous than might have been expected. The greenhouse Conifers (hardy for the most part with you in England) exhibited by M. Immer, of Moscow; the hardy varieties shown by M. Koodriavzoff, of Torjok, and by the Forest School at Petrovskoe, near Moscow; as well as the collections of these plants grown for the decoration of apartments by General Aksharoomoff, President of the Horticultural Society of Moscow, demand special mention. Orchids are very poorly represented. Among hybrid Pelargoniums are some shown by M. Tretiakoff of Moscow, of varied colour and good form. In the courtyard of the Imperial pavilion is a large lawn with carpet-beds composed of Golden Feather, Alternantheras, white and blue Lobelias, Echeverias, and zonal Pelargoniums of the ordinary character. Similar beds dispersed throughout the exhibition call for no special remark.

The collections of trees and shrubs are very varied, and give a good idea of our available resources in this way. The sandy soil, however, which was in no way prepared before-hand, is not adapted for the growth of these plants. The Poplars especially look wretched. The Municipal Nurseries, under the direction of M. Dumure, and the School of Forestry at Petrovskoe, are the largest contributors of this class of plants. The Forest Academy in particular shows several new varieties of Poplar and Willow, of which I append some particulars, thanks to the courtesy of Prof. Schroeder. The Roses are not remarkable, but the collection of M. Golofteiff at Moscow is worth note, from the number of varieties shown.

Among fruit trees, Apples and Pears are alone represented; they can only be judged by their appearance, which is very satisfactory. The Apples shown by Mr. Schroeder, trained and pruned in all conceivable ways, are very remarkable.

It is to be regretted, however, that in spite of the great facilities afforded to exhibitors, and the postponement of the exhibition for a year, in consequence of the dreadful catastrophe of March 12, so few exhibitors entered in the horticultural department. The exhibitors are for the most part dwellers in Moscow. The St. Petersburg nurserymen and amateurs shine by their absence. In one of the sections there was only a single exhibit for the whole empire. It is to be hoped that the fruit exhibition in the autumn will be more thoroughly representative. *P. W.*

NEW PLANTS AT THE MOSCOW EXHIBITION.

M. Schroeder, of the Forest School at Petrovskoe-Rasoumovskoe, near Moscow, exhibited a collection of new hardy plants, among which were the following, for notes on which we are indebted to M. Wolkenstein. The descriptions are not sufficient for identification; but they may, nevertheless, in their degree be serviceable. The Russian names given to some of them would be somewhat impracticable in this country:—

POPULUS.

1. *P. Petrovskoe* ×, Schr.—A hybrid between P. canadensis fertilised by the pollen of P. suaveolens. The leaves are large rhomboid, young shoots winged.

2. *P. Rasumovskoe* ×, Schr.—A hybrid between P. nigra, fertilised with the pollen of P. suaveolens. A large tree, leaves roundish, smaller than in the previous variety. Shoots cylindrical.

3. *P. Petrovskoe-Rasumovskoe* ×.—A hybrid between P. laurifolia and P. suaveolens. Leaves rhomboid lanceolate undulate dentate, shoots angular. This much resembles P. Simoni, which Professor Koch received from China, but is distinguishable from it in the wavy and toothed leaves, and by the slightly angular shoots, while those of P. Simoni are markedly angular and winged.

4. *P. odorata* ×, Schr.—Raised from seeds of P. balsamifera, probably fertilised by pollen of P. vetla (Hort. Moscow). It greatly resembles P. balsamifera, but forms a head like P. vetla, and is quite hardy, while P. balsamifera is injured by our winters. The name is given in consequence of the strongly scented buds.

5. *P. moscoviensis* ×, Schr.—A tree of rapid growth, with large leaves, like those of candicans or ontariensis, which it much resembles, but is perfectly hardy while in Russia P. candicans is killed to the root by the frost.

SALIX.

1. *S. Teplouchovi* ×, Schr.—An artificial hybrid between S. lapponum and S. stipularis. It forms a very elegant shrub of moderate size with silvery leaves. Among the seedlings were some with yellow variegated foliage.

2. *S. caprea* × *stipularis*.—A cross between the two species named. Among the seedlings were some with variegated leaves.

3. *S. lapponum* × *caprea*.—A natural hybrid, found by the late M. Djeleznoff in the neighbourhood of St. Petersburg. It is an elegant tree of medium height. The leaves are silvery. P. caprea-lapponum retains the characteristics especially of S. caprea, but this (the reverse cross) is more like S. lapponum.

4. *S. acutifolia* × *stipularis*.—An artificial hybrid of elegant habit, with glabrous leaves.

5. *S. lapponum* × *viminalis*.—An artificial hybrid, with the lower surface of the leaves shining silvery.

6. *S, lapponum* × *filicifolia*.—Natural hybrid, found near Moscow. A tall tree, of elegant habit.

7. *S. depressa* × *amygdalina*.—A natural hybrid, found at the bottom of a pond which had become dry.

CRATÆGUS.

1. *New Species from the Amur River*.—Raised from seeds sent from Amuria by M. Liubensky, under the name of C. sanguinea. It grows naturally on the sloping banks of the river in rich vegetable mould. It is characterised by its very large spatulate leaves and its blackish-violet berries. Its growth is very rapid, its height tall, habit pyramidal, more arborescent than shrubby. It is perfectly hardy, and is useful for planting separately or in groups, but not well adapted for hedges, by reason of its tree-like habit and its short and scanty spines. The Goldis, natives of the district, call it *Dsiarokta galoki kormrue!*

RHAMNUS.

1. *Sp. n. from Ussuri*.—The seeds of this were collected on the banks of the river Oossoori by M. Liubensky, and were received under the name of Prunus glandulifolia, but the plant turns out to be a Rhamnus very like R. catharticus, but of smaller and more spreading habit and with longer spines. The Goldi name is *Sakin kora*.

SPIRÆA.

1. *S. racemosa* ×, Schr.—A hybrid between S. callosa and S. Douglasii, very dwarf; flowers red.

2. *S. constantia* ×, Schr.—A hybrid probably between S. callosa and S. salicifolia. A shrub of moderate size, flowers red, in large racemes.

ROSA.

1. *R. villosa* × *spinosissima*.—A strong growing hardy shrub, with spreading branches, flowers semi-double, lilac. Found among seedlings of R. villosa.

2. *R. lucida* × *cinnamonea*.—Leaves bright green. Flowers solitary. Found among seedlings of R. lucida.

3. R. *spinulifolia* × *spinosisssima*.—Moderate size, flowers semi-double, numerous. Found with seedlings of R. spinulifolia.

THYMUS ROTUNDIFOLIUS.—If a dense and compact growth and great freedom of bloom go some way towards constituting an effective edging plant, then these qualities are found in the subject that heads this paragraph. It forms a most effective margin to one of the beds at Chiswick, and the ring of plants that are as symmetrical in growth as if they had been trimmed into shape, are laden with a perfect mass of pale pinkish lilac-coloured flowers. It is very pretty, indeed, just now; and the simplicity of the plant should be no bar to its effective use.

FORESTRY.

The Forests of Maine, U.S.A.—In a consular report on the forests of Maine it is stated that they are at present about 15,000 square miles in extent. But, notwithstanding the existence of so vast an area of timber-land, experienced persons have lately expressed the opinion that it is high time for taking measures towards preventing the rapid disappearance of these forests, and in particular of the more valuable kinds of timber; for it appears to be generally admitted that during the last fifty years the forest wealth of this State has been wasted in a deplorable manner. The valuable and gigantic white Pine has become an almost rare tree, and has disappeared almost entirely from the banks and the vicinity of the large rivers of Maine and of the St. John River, as well as of most lakes in the State, where during the first quarter of the present century numberless specimens of these magnificent trees might be seen. They have since that period been cut down with great wastefulness by lumbermen, who as a rule have merely used a section of their trunks for boards, and have thrown away into the river the waste slabs, &c., which might have served for making doors and similar articles.

In some parts of Maine specimens of the white Pine [P. strobus ?] may, it is said, still be met with measuring 6 feet in diameter at the base, and 240 feet in height. Trees measuring 4 feet in diameter are said to be comparatively quite common. Previous to the American Revolution every white Pine in this State which measured at least 2 feet in diameter at its base (excepting in a few districts) was the property of the British Crown, and was used for making masts and spars for the Royal Navy. The yellow Pine [P. australis ?], likewise a magnificent tree which grows in Maine, has almost equal dimensions with the former, but its wood is harder and thicker-grained, and is therefore generally employed for making floorings and ships' planks. The Norway Pine (P. resinosa) is smaller in size, but with more spreading boughs; the wood is of closer texture, and the bark rougher. The Pitch Pine (P. rigida) is found in some parts of Maine, and is well adapted as fuel where very hot fires are needed.

Besides these species of Pine, the more important kinds of trees to be met with in the forests of Maine are Hemlock (Tsuga canadensis), Elm, Maple, Beech, and Button-wood (Platanus occidentalis). Next following in size are Oak, Birch, Bass-wood (Tilia americana) and Ash; while the most prominent amongst the smaller trees are Larch, Cedar, Fir, Spruce, Poplar, and black Cherry.

The principal forms in which Maine lumber is sold at present are beams, flooring-timber, and scantlings. First-class Pine boards used in the interior finishing of dwelling-houses, and for similar purposes, are, however, no longer obtainable in this State, nor in any part of New England or New Brunswick, owing to the disappearance of the white Pine, and this class of wood has now to be imported from Michigan. The coarser sapling timber Pine has taken the place of the superior board Pine, and the most valuable timber obtained at present on the banks of the rivers Penobscot, the Kennebec, and other larger waters, are Spruce and Hemlock.

Along the river St. Croix timber of all kinds is said to be becoming scarce, and many saw-mills which used to be at work twenty-five years ago have during the past years been gradually discontinued.

On the banks of the Machias, Narraguagus, and Union rivers, in the north-eastern portion of Maine, large tracts of forests may yet be found; but even here many saw-mills now disused show that the most profitable period of the timber trade of those districts has passed away. It is only in some of the southern parts of this State, more especially in the districts traversed by the rivers Saco and Androscoggin, that greater care appears to have been bestowed upon the preservation of the most valuable kind of trees, and it is stated that here the valuable species of native Pine above mentioned may now be found in greater abundance than seventy-five years ago.

The chief timber market of Maine continues to be Bangor, on the river Penobscot, a town numbering at present about 17,000 inhabitants. Though the quantity of wood bought and sold here in the course of one year is probably as great at present as it used to be ten years ago, when the average annual shipments are stated to have been about 247,000,000 feet, the quality of the timber now brought to the Bangor market has changed owing to the above described causes, and most superior kinds have disappeared. The timber and wood trade of Portland continues likewise to maintain its importance.

DISEASE OF SILVER FIRS.

Lovers of Conifers are often vexed by the occurrence of gouty swellings upon the leading and other shoots of Abies nobilis and A. amabilis, which not only deform the tree, but check its growth, prevent the formation of leaders, and eventually kill the tree. The swellings in question, as we were shown by Mr. Barron, of Borowash, are caused by a woolly aphis, or coccus, allied to that producing American blight on



Fig. 19.—Abies amabilis with gouty swelling.

Apples. Mr. Barron succeeds in killing the pest by applications of Fir-tree oil (see p. 812, vol. xvii.) and the trees, ridded of their parasite, take on new growth, as we had abundant opportunities of seeing in his nurseries a short time since. On microscopic examination we find the epidermis, E, unaffected, but the



Fig. 20.—Section across the swelling, magnified 40 diam.

subjacent periderm cells are swollen, the central cellular corky layers, the phellogen, C, C, the liber, and the outermost wood cells are all enlarged and disaggregated, causing the spongy appearance visible to the naked eye when the swellings are cut open. The chlorophyll-containing cells of the bark, usually oblong, become spherical, the cells of the medullary rays enlarged, the wood cells, O W C, I W C, enlarged and not thickened. The changes, in fact, take place in the growing tissues of the bark and of the young wood, and are the same in kind as those observed by Prillieux in the case of Apples affected by American blight. *M. T. M.*

FLOWERS IN SEASON.

Spiræa lobata (venusta). — "Jack Towel" sends sprays of this beautiful hardy perennial. It is closely allied to the common Meadow Sweet, S. Ulmaria, but is larger in all its parts, and the dense panicles of flowers are of a lovely rose-pink colour. The plant requires a moist rich soil.

Lilium Parryi.—In a little nook at the foot of the new rockwork at Kew this fine Lily has been in good flower for some time, and a figure from the Kew specimen has been prepared for publication in the *Botanical Magazine*. Only six years have elapsed since the species was discovered by the botanist in whose honour it is named — Dr. Parry—who collected it in a marsh, about 4000 feet above sea-level, in the San Gorgonio Pass, South California. When the plates were drawn for Mr. Elwes' magnificent monograph L. Parryi had not found its way to cultivation in this country, and the copied illustration given in that work by no means exhibits the plant in a very favourable manner. The Kew plants have stems more than 3 feet high, and one of these had as many as twenty-four fine glossy yellow trumpet, or perhaps rather funnel-shaped blossoms, with narrow segments sparingly dotted with small red-brown spots.

Bomarea conferta.—Mr. Shuttleworth sends us a flowering branch of this noble species, described at p. 330, September 10, 1881, and figured at p. 187, vol. xvii., 1882. The truss of flowers is not quite so large as in the native specimen figured, but the individual flowers are bright orange-crimson, the petals slightly spotted. It is truly a magnificent plant.

Hesperaloe yuccifolia.—Mr. Smith, of Newry, sends flowers of this to show that the colour is not always of the pale tint described in our last number. The buds before us are indeed of a light crimson colour. It is only fair, however, to state that the specimen shown at Kensington had been in flower for several weeks. Both at Newry and at Tottenham the plant proves to be hardy. We shall shortly give an illustration of it.

Rhododendron camelliæflorum.—From Mr. Mangles comes a flower of Rhododendron camelliæflorum, the first, we believe, that has been produced in this country. The obovate lanceolate leaves are shining green above, ashy-grey and thickly studded with peltate brown scales beneath. The single flower before us has a broad, cup-shaped, ivory-white tube, about three-quarters of an inch long, surmounted by a 5-lobed spreading limb, the lobes oblong, about half the length of the tube. The stamens are of equal length, the brown anthers forming a ring around the interior of the widely open mouth of the tube. The style presents some peculiarities, on which we may make further comment at another time.

Grevillea sulphurea. — Since about March of the present year this interesting and pretty Protead has been flowering against one of the outside walls of one of the plant-houses at Coombe Wood Nursery. The branches are thickly clothed with rigid Gorse-like foliage, which sets off the racemes of pretty pale yellow flowers. This species was first introduced to this country nearly sixty years ago.

Microglossa albescens. — This is a hardy Himalayan Composite of shrubby habit, with leaves green above and white beneath, and large clusters of pretty blue-rayed flower-heads. It is a free-flowering and easily grown shrub, and is well worth a place in any shrubbery. Now in bloom at Kew.

Spiræa palmata alba. — A pure white form of this beautiful red S. palmata is now in flower in the open border at the Coombe Wood nurseries. Cultivated with the typical plant it would afford a most pleasing contrast. It seems a vigorous grower.

Genista capitata.— An old-fashioned dwarf flowering shrub, with downy trifoliolate leaves, the segments oblanceolate, about three quarters of an inch long; flowers in close heads, with a hairy calyx, from which protrudes a bright yellow papilionaceous corolla.

Ptelea trifoliata aurea.—A variety of this common hardy shrub with very brilliant golden-yellow foliage, most effective in suitable situations. From Messrs. Rodger, McClelland & Co., Newry.

The Rosery.

How to Retard the Epoch of Flowering.—Last summer I was dining in town just after the Rose show, and the conversation turned on Roses. An old clergyman present—a Rose fancier—remarked, "I think, gentlemen, I can give you a wrinkle on the cultivation of Roses, from knowledge accidentally acquired." On being requested so to do, he spoke as follows:—"Many years ago I had a living in Herefordshire, which I made up my mind to exchange with a fellow clergyman in Essex. The exchange was to take place in October. Being very fond of Roses, I had a good collection with which I had taken many prizes at the local flower show; I could not make up my mind to leave my Roses behind, so I pulled them up, packed them, and transported them to my new abode in Essex. There I had a trench dug a foot deep, near a north wall, covered them with earth, and let them bide. At the end of the following February, the buds were swelling, so I took them up, root-pruned them, and planted them carefully in good soil, where they were intended to remain. They formed leaves and buds as if nothing had occurred, flowered beautifully, and again I took prizes with them at a flower show. I and my friend, however, neither of us settled down to our new quarters. We each regretted the scenes of our former labours, and at the end of the year determined to return, each to his old parish. Again the question of the pet Roses came to the front, and encouraged by former success, I again took them up (October), carried them back to Herefordshire, and put them in a trench as before. The same success attended the experiment: planted towards the end of February they flowered as well as ormerly, only two or three weeks later, and I again took prizes at the flower show with my twice-moved Roses."

I listened attentively to this clear and straightforward statement of facts, and thought I could apply it to my own case. My garden at Weybridge is peculiarly situated. It lies, as it were, on a staircase landing at the foot of St. George's Hills, which are to the north, there being a descent to the south just beyond my garden. These hills protect us from north winds, and as with north winds there is generally sunshine, in ordinarily cold weather we are warmer than our neighbours, and vegetation is more advanced. When there is an exceptionally cold night, however, as on May 17 last, we feel the exceptional cold at the foot of the hill more than our neighbours on the side r on the summit, and vegetation being more advanced suffers accordingly.

Owing to these local conditions of climate, and to the intensity of the late spring frosts, I can scarcely grow any fruit except the Victoria Plum, which thrives and crops freely every year. I cannot bed out until quite the end of May or early in June, and my Roses are destroyed by the score every year. It occurred, therefore, to me that the experience of my Herefordshire friend might be of use to me. Before leaving for the South I told my gardener to take up all the Roses except the Charles Lawsons, which are perfectly hardy with me, and to lay them in trenches a foot deep as described. This was done in a place sheltered from the sun. Fern leaves were strewn over, and they were left to Nature, never touched all winter. At the end of February they were taken up, the roots pruned to within 4 inches of the stock, and planted in well manured soil in their respective places. It has been a perfect success. We have not had one failure. They are all flowering freely and vigorously. But they did not flower until July, two or three weeks later than usual, and have thus escaped the spring frosts. My gardener and I think that, thanks to the old Herefordshire clergyman, we have discovered the philospher's stone as regards our garden, and luxuriate in the hope of future banks of Roses. Hitherto I have been doomed to perpetually renewed disappointment. In June, however, I should have had no Roses. My garden would have been a blank had it not been for Charles Lawson, which once more saved me. In my poor sandy gravelly soil, if well manured, it grows like a wild Brier, vigorously, healthily, is never injured by the late frosts, and every year flowers freely, magnificently. Although not much thought of as a florists' Rose it is a very lovely one in my eyes, and has a most sweet perfume of its own, *sui generis*. The above facts are, no doubt, thoroughly known to professional gardeners, but may not be familiar to many amateurs, which must be my excuse for reproducing them. *Henry Bennet, M.D., The Ferns, Weybridge.*

Rosa lucida.—This is a charming species, of bushy habit; the young shoots of the year are densely covered with straight, spreading, conical prickles of unequal length, without any glandular hairs interspersed among them. The bark is of a light cinnamon-brown colour. The flowering shoots are of the same colour, slender, entirely destitute of prickles. The oblong-obovate leaves have four pairs of lateral leaflets, and one terminal one; the leaflets are oblong-lanceolate, dentate, perfectly glabrous, dark shining green above, paler beneath, greatly resembling the leaves of the Mountain Ash. The flowers are on slender bracteate flower-stalks; the flower-tube globose, depressed at each end, glabrous, the five sepals dilated at the base, prolonged into long, tail-like points, and thinly beset with glandular hairs; flowers 2 inches across; petals roundish, lilacy-pink. Stamens short, arising from a thin disc; carpels numerous, downy; styles short.

Maréchal Niel Rose.—In a recent number of the *Revue Horticole*, M. Eugène Verdier claims the honour of having made known and distributed the Maréchal in 1864. M. Verdier says that he met with the Rose in question for the first time at an exhibition at Montauban, where it was at first confounded with Chromatella. M. Verdier secured buds, and in 1864 he exhibited flowers at Paris, and placed it in commerce. The actual origin of the Rose in question is still a matter of uncertainty.

Orchid Notes and Gleanings.

Orchids at Leyton.—A nice collection of Orchids is being got together at the Beaumont Road Nursery, Leyton, consisting of some of the more popular kinds, such as Phalænopsis, Odontoglots, and Masdevallias; they are mostly in lean-to houses, facing nearly west. The Phalænopsis are all in baskets suspended near the roof, and are looking very well; the Odontoglossums, most of which consist of O. crispum and O. Pescatorei, are nearer the glass than many people keep them, and are less shaded; they are in excellent condition, bearing stout bulbs of the deepest bronzy colour. The Masdevallias, of which there is also a large and finely grown lot, occupy the front half of the same house in which are located the Odontoglots. This house is only shaded when there is a continuance of sunshine, the blinds not being run down for short bursts. Of Dendrobiums D. Falconeri is grown hung up in the Gardenia-house without a particle of shade, under which treatment it thrives and flowers freely, Mr. Fisher, the manager here, having had 140 flowers at once on a plant so treated.

Unshaded Orchids at the York Nurseries.—Those who for any length of time have been acquainted with Messrs. Backhouse's establishment, or who have read the accounts that from time to time over a number of years have appeared in our columns about the doings of this firm in Orchid culture, need not be told that the treatment these plants are subjected to is very different to that usually followed by cultivators, especially in the matter of exposure to sun. Many years back Orchid growers heard of experiments being carried on at York with some of the hardier kinds by giving them treatment more in accord with that found to answer for other plants often thought to be of a less delicate nature; and not a few of those who heard of these experiments shook their heads in disbelief at any good resulting from such a deviation from the orthodox shady moist condition of the houses in which Orchids were grown, then supposed and still by many looked upon as essential to success. There were others who took a different view of the subject, and did not feel altogether satisfied with the disagreeable way in which valuable plants, after growing luxuriantly for a time, often became a prey to disease, the cause of which was more or less unaccountable. On the other hand, it was frequently urged that Orchids were liable to wear out, and could not be expected to keep on flourishing for an indefinite time. In the meantime the Messrs. Backhouse kept on trying with an increased number of species what effect more light and less atmospheric moisture would have, reducing the amount of shade even in the brightest weather until, now, not only is it dispensed with altogether where rough plate glass is used, but also in their big house, 100 feet long by 30 wide, that was originally used for pot Vines, and which is now filled with species of Orchids, comprising most of the kinds that require an intermediate temperature; a considerable quantity of these are imported plants in medium-sized and also unusually large masses, all of which have, from their first arrival, been subjected to this sun-exposed treatment. Along with them this year have been associated a large number of plants that have been long in the country, and which hitherto have made their growth in houses more or less shaded. It is needless to say that the young growth of Orchids, as that of most other plants, is less likely to withstand full exposure to the sun in its early stages than when more fully developed. In the case of the greater number of species which make their growth in spring, this more tender condition may be reckoned on up to midsummer; we saw them in the middle of June, and there are no doubt many interested in the cultivation of Orchids who have not had an opportunity of visiting York, yet who would like to hear something about the way the plants have stood this sun exposure, for it is well to bear in mind that it is a very different matter growing Orchids under clear glass, unshaded, to what it is under rough plate, as before this practised in the York Nurseries or elsewhere. Amongst Cattleyas and Lælias, which are present in the largest quantities, are numbers of C. Trianæ, many of them in the shape of masses 4 feet across; C. Trianæ Backhouseana, a very large and fine form, 3 feet in diameter; C. Warneri, C. speciosissima, C. Dawsoni, grand masses of C. Sanderiana, C. guttata, with immense bulbs; C. crispa, C. Skinnerii, which has had from ten to twelve flowers on a spike; and C. superba splendens, finer in colour than the old variety; C. Mendelii and C. Mossiæ, in plenty. There is a plant of the latter variety that has had two seasons in this unshaded house, and when we saw it it was bearing six spikes, four of which had four flowers each, and the other two five flowers apiece. We doubt much if another specimen bearing an equal number of flowers on as many spikes could be found amongst all the shaded Cattleya Mossiæs in the kingdom. Lælia elegans and L. purpurata in quantity, some forty masses of the latter being from 3 to 4 feet each in diameter; a single spike was carrying seven flowers—a condition indicative of the strength of the plant. The stock of the lovely Epidendrum nemorale covers a considerable space, bearing a complete thicket of advancing flower-spikes; these are within a foot of the glass, and evidently enjoy the bright quarters. Saccolabium giganteum and Renanthera coccinea, one specimen of which has two growths flowering, and Vanda teres, is equally at home, thriving like a Rush and blooming as freely as any other species. Odontoglossum citrosmum is here in the rudest possible health, the big bulbs almost purple, and carrying flower-spikes 2½ feet long. Oncidium tigrinum appears to be just suited with its sunny home; and amongst hundreds of O. lanceanum the whole are in such exceptionally robust health as we have never before seen this species. Cymbidium eburneum is as stout and vigorous as it is possible for a plant to be, one specimen had on it eleven spikes of bloom. The lovely Barkerias spectabilis and Lindleyana, species which have hitherto beaten not a few growers, have been in this house unshaded for three years, getting stronger the longer they remain in. No material of any kind is used for them to grow in beyond the crocks with which the pots are filled; in these the stilt-like sticks to which the plants are attached are inserted, supporting them high and dry above the crocks, into which the roots descend. There are some Pleiones, along with some Odontoglossum Roezlii and Calanthe vestita, but they are only here to show they cannot stand this bright treatment, their thin leaves not being able to bear exposure to the sun. The different species above particularised are not a tithe of the kinds which in this house are thriving admirably, the whole of which are in such condition for strength and vigour as needs to be seen to be fully understood. Not only are the bulbs and leaves immensely big and thick, but the deep bronzy colour of the edges and upper surface of the leaves are indi-

cative of their ability to retain their vitality beyond their usual time; and, what is of equal importance, the stock so managed are bristling with roots that are able to take an unusual quantity of water. We hear there are more Orchid growers following Messrs. Backhouse's lead in growing many species without, or all but without, shade. Annexed is a list of the different species of Orchids that are in this long house, and succeeding thoroughly under full exposure to the sun :—

Angræcum sesquipedale
Anguloa Clowesii
Barkeria elegans
,, Lindleyana
,, melanocaulon
,, spectabilis
,, Skinneri
Broughtonia sanguinea
Cattleya Aclandiæ
,, amesthytina
,, crispa
,, Dowiana
,, guttata
,, intermedia
,, labiata
,, lobata
,, Mendelii
,, Mossiæ
,, Skinneri
,, speciosissima
,, superba
,, Trianæ
,, Warneri
Cœlogyne cristata
Cymbidium eburneum
Dendrobium aggregatum
,, calceolaria
,, chrysotoxum
,, clavatum
,, Dalhousianum
,, densiflorum
,, Farmeri
,, fimbriatum
,, Freemani
Dendrobium Goldiei
,, macrophyllum
,, nobile
,, moniliforme
,, Paxtoni
,, Pierardi
,, suavissimum
,, thyrsiflorum
,, Wardianum
Epidendrum atropurpureum
,, dichroum
,, nemorale
Lælia elegans
,, peduncularis
,, Perrini
,, purpurata
Lycaste aromatica
Maxillaria Harrisoniæ
Odontoglossum citrosmum
,, Londesboroughianum
Oncidium ampliatum
,, aurosum
,, bicallosum
,, Cavendishianum
,, Kramerianum
,, Lanceanum
,, Papilio
,, stelligerum
Renanthera coccinea
Saccolabium giganteum
Schomburgkia tibicinis
Sobralia macrantha
Vanda teres

CORYANTHES ELEGANTISSIMA. — From Mr. J. Calvert comes a flower of Coryanthes elegantissima, figured recently by us in error as C. macrantha. In the present case the stalk of the lip is dull orange spotted with minute purplish brown spots, but in essential structure the flower is the same as that figured.

The Kitchen Garden.

ONIONS.—This will be a good time to make the first sowing of Onions to come into use in April and May next, and again about the middle of the next month for use in June and July. In order to obtain the best possible results a piece of ground occupying a dry rather than a damp situation, and exposed on every side to the influence of the weather, should be selected for the crop. The ground should be heavily manured and deeply trenched, and subsequently it should be trodden all over, and then roughly raked; and after receiving a surface-dusting of soot should be again raked—this time evenly, and with a finer rake—and the drills drawn 12 or 15 inches apart and 1 inch deep. The seed should be sown somewhat thickly, and be covered and finished off in the same way as spring-sown Onions are, the after-treatment being identical with that given to the latter. The young plants can be thinned out when necessary, as required for salading in the autumn. They should, however, be left sufficiently thick in the rows to make allowance for mishaps to the plants during the winter months. The varieties most suitable for this sowing are the Queen and Early White Naples—two of the earliest and cleanest skinned Onions in cultivation, and come into use in the order in which their names appear. And to these the red and white Tripoli make a good succession. The result of this sowing will fill the blank that would otherwise most probably occur between the bulbs of the preceding and current year's growth, through that of the former becoming flabby, and consequently of little value for culinary purposes, from the bulbs starting into growth in May and June.

ORDINARY WORK.—Next week will be a good time to make sowings of the following kinds of seeds, viz., Wheeler's Imperial Cabbage for early spring use; black-seeded Bath and Hicks' hardy white Cos, and Lee's immense hardy Cabbage Lettuces; and Batavian and Curled Endive to supply the autumn and early winter salading. Another sowing of early Horn Carrot for drawing young should be made in a warm border. Also a sowing of French Beans may still be made, trusting to the chances of a fine autumn to complete their growth. I may remark, respecting seed-sowing in July and August, that the seed should be sown as soon as the ground is dug, and before the soil becomes dry. The ground should be trodden and raked, and the seed sown, covered, and watered (if necessary) in the ordinary way, and a mat or two placed over each bed, which will prevent the surface of the soil and the seed immediately under from being parched up—a condition respecting which there has not been much cause for apprehension of late. Moreover, the more equable temperature and condition of the soil thus ensured will be the means of hastening the vegetating of the seeds. The planting of Broccoli, Savoys, Coleworts (where not already done), Borecole, Veitch's Autumn Giant Cauliflowers (good breadths for late use), also good plantings of Lettuce and Endive. The early plantings of Broccoli, Savoys, Borecoles, and Coleworts will now require to be earthed-up. Advancing crops of French and Broad Beans, as also Cauliflowers, will require attention in the same direction. *H. W. Ward, Longford Castle, Wilts.*

Peaches and Nectarines.

GIVE all the air possible to early houses, and keep the foliage clean by using the syringe or hose very freely, and washing them thoroughly all over twice daily. Keep the roots in inside borders well supplied with water; those outside will have had a thorough drenching with the continual rains we have had of late. Attend to tying down the shoots in succession houses, exposing the fruit as soon as they commence their last swelling. At this juncture give them a thorough watering with liquid-manure, and bring them on (by closing early, &c.) or retard later houses according to the time the fruit are required to be ripe. For keeping up a continual supply I find a number of small houses much better than a few large ones. We had a large house here containing twenty good-sized trees which two years ago I had divided into three compartments, and I find it much more useful in three, containing six and seven trees each, than it was in one large house, when we had a great quantity of ripe fruit at one time—much more than were required, and then probably a gap between it and the later house. Attend to tying-in young shoots in late houses, stopping any terminal or gross shoots. Ventilate freely, and give liberal supplies of manure-water at the roots when they require it. *J. Wallis, Keele Gardens, July 18.*

Plants and their Culture.

STOVES.—Give every possible attention during the next few weeks to the stock of winter blooming plants. Propagation of all kinds of plants grown for this work should be completed without delay. Cuttings put in now of Eranthemum pulchellum will make useful dwarf stuff. Poinsettias may also be struck for a late batch. This operation had better be performed in thumb pots, one cutting to each, then scarcely any check will be experienced when the young plants are potted on into 48's, which should be the largest size for late struck stock. See to the potting of all other plants that are grown in quantity for late autumn and winter display. The pots ought to be well filled with roots by the end of next month, so that the growths may become partially hardened before the dull days of winter set in. Euphorbia jacquiniflora will be found to do well on shelves on a Pine-stove or on the kerbing around the beds, but ought always to be closely watched for water. The finest stock I ever saw of this plant in pots was grown on a somewhat low shelf, along the back wall of a three-quarter span-roofed Pine-stove. In a similar position it is sometimes possible to have a narrow bed of about 10 inches wide, running the length of the house. This would be an excellent place to grow them turned out of pots, the extra supplies of flowers would well repay the additional trouble. The somewhat dry treatment accorded to Pines during the winter months suits this plant to the letter. Where space similar to this is at disposal a goodly number of plants of Plumbago coccinea and rosea might be advantageously grown in the same manner as advised for the Euphorbia. Flowers of the Plumbago are apt to fade quickly after being cut, but when grown in such a place the drier atmosphere will be found favourable to the longer duration of the handsome spikes of blossoms of these plants. The stock of winter flowering Begonias should be in their blooming pots without delay. When established therein, an airy light structure will suit them best. Centropogon Lucyanus will do well under similar treatment. Aphelandra nitens and aurantiaca Roezlii will thrive well on a shelf or along the front stage of the stove proper. These should now be making a luxuriant growth, the better to develope their terminal spikes of brilliant blossoms. Of winter flowering climbers Ipomœa Horsfalliæ is one of the gayest; a good growth ought now to be secured on this plant, and every encouragement should also be given to Jasminum gracillimum to complete as strong a crop of shoots as possible, side growths will then push forth from these, that will yield an abundant crop of flower. Continue to give liberal doses of manure-water to Allamandas, Bougainvilleas, and such-like plants that are now yielding a good supply of bloom, the season of which will thereby be greatly prolonged. If the last-named plant has given an extra abundant supply, a short rest will be beneficial in a cooler house for a week or ten days, then remove to the stove, and water more freely, when young growth will soon push forth. Part of the stock of Eucharis, if kept somewhat cool now, may be induced to throw up their spikes in quantity during the early autumn, when they will be more valuable than during the next month or two.

GREENHOUSE AND PITS.—Give every encouragement to the latest stock of Globe Amaranthus, Browallias, and Celosias, all of which will be found very useful up to the advent of the earlier Chrysanthemums. If they can be accommodated with a close pit a much better growth will be secured. Some Heliotropes in pots (for which purpose White Lady is excellent) should now be looked to and have a slight shift if necessary, keeping the flower-spikes pinched off for a time longer, and endeavour to contrive for them to be of service when the outdoor ones are past their best. If any late sown Intermediate Stocks are to hand, having been pricked off in the open, some of them would come in useful in pots for the autumn. The check they receive in potting up will prevent them making a too luxuriant growth. The present is a good time to sow some Mignonette for late blooming, and the same of Rhodanthe will be of good service. The stock of Tree Carnations for winter flowering should now be filling their pots with roots; keep them in a light airy position out-of-doors. Salvias that are grown in pots should be watered freely. If turned out into rather rich soil they will make too strong a growth; in this case use a spade around them occasionally to check any over luxuriance. Those possessing but a small stock of Campanula fragilis or garganica will do well to increase the same as soon as they are out of bloom. This can be done either by cuttings or division. Both of these with Convolvulus mauritanicus make excellent basket or bracket plants. *James Hudson, Gunnersbury House, July 18.*

The Orangery.

THE various cultural details having been described in previous numbers, such as potting, surface dressing, &c., nothing more need be said on those points at present. It must be stated that the fruit has a tendency to burst about the time that it begins to colour, owing to an excess of juice. This is easily avoided. Withhold the supply of water to the roots as soon as it is noticed; and if the trees are in pots the effect will be speedily apparent. When the trees are planted out cutting off the supply of water to the roots does not have such a speedy effect; but it ought also to be supplemented with a drier atmosphere. Where the fruit is yet a long way from the ripening stage the trees will stand plenty of heat, with atmospheric moisture and syringing at least twice daily. After the house is shut up in the afternoon the temperature may rise to 90° with good effect. If the trees are thoroughly cleaned from scale during the winter months, and are well syringed afterwards, when they are growing freely in a warm house insect pests are not much trouble. Mealy-bug sometimes gets on the trees, and it will also fasten on the fruit, making a sad mess of it. I do not find any better way of getting rid of it than by carefully washing it off by hand. *J. Douglas, Loxford.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	July 24	Opening of the Horticultural Exhibition and Market at the Agricultural Hall
TUESDAY,	Ju'y 25	Royal Horticultural Society: Meeting of Fruit and Floral Committees, at 11 A.M.; Scientific Committee, at 1 P.M.: National Carnation and Picotee Society's Show
WEDNESDAY,	July 26	Newcastle upon-Tyne Horticultural Society's Summer Show (three days). West of Scotland Pansy Society's Show at Glasgow. Horticultural Exhibition at Luton.
THURSDAY,	July 27	Evening Fete at Chiswick.

THE Maidenhair tree—Gingkgo biloba—of which we give an illustration at p. 113—is not only one of our most ornamental deciduous trees, but one of the most interesting. Few persons would at first sight take it to be a Conifer, more especially as it is destitute of resin; nevertheless, to that group it belongs, being closely allied to the Yew, but distinguishable by its long-stalked, fan-shaped leaves, with numerous radiating veins, as in an Adiantum. These leaves, like those of the Larch, but unlike most Conifers, are deciduous, turning of a pale yellow colour before they fall. The tree is found in Japan and in China, but generally in the neighbourhood of temples or other buildings, and is, we believe, unknown in a truly wild state. As in the case of several other trees planted in like situations, such as Cupressus funebris, Abies Fortunei, A. Kæmpferi, Cryptomeria japonica, Sciadopitys verticillata, it is probable that the trees have been introduced from Tibet, or other unexplored districts, into China and Japan. Though now a solitary representative of its genus, the Gingkgo was well represented in the coal period, and also existed through the secondary and tertiary epochs, Professor HEER having identified kindred specimens belonging to sixty species and eight genera in fossil remains generally distributed through the northern hemisphere. Whatever inference we may draw it is at least certain that the tree was well represented in former times if now it be the last of its race. It was first known to KÆMPFER in 1690, and described by him in 1712, and was introduced into this country in the middle of the eighteenth century. LOUDON relates a curious tale as to the manner in which a French amateur became possessed of it. The Frenchman, it appears, came to England, and paid a visit to an English nurseryman, who was the possessor of five plants, raised from Japanese seeds. The hospitable Englishman entertained the Frenchman only too well. He allowed his commercial instincts to be blunted by wine, and sold to his guest the five plants for the sum of 25 guineas. Next morning, when time for reflection came, the Englishman attempted to regain one only of the plants for the same sum that the Frenchman had given for all five, but without avail. The plants were conveyed to France, where, as each plant had cost about 40 crowns, *écus*, the tree got the name of *arbre à quarante écus*. This is the story as given by LOUDON, who tells us that ANDRÉ THOUIN used to relate the fact in his lectures at the Jardin des Plantes, whether as an illustration of the perfidy of Albion is not stated.

The tree is dicœcious, bearing male catkins on one plant, female on another. All the female trees in Europe are believed to have originated from a tree near Geneva, of which AUGUSTE PYRAMUS DE CANDOLLE secured grafts, and distributed them throughout the Continent. Nevertheless, the female tree is rarely met with, as compared with the male; but it is quite possible that a tree which generally produces male flowers only may sometimes bear female flowers only. We have no certain evidence of this in the case of the Gingkgo, but it is a common enough occurrence in other dicœcious plants, and the occurrence of a fruiting specimen near Philadelphia, as recently recorded by Mr. MEEHAN, may possibly be attributed to this cause.

The tree of which we give a figure is growing at Broadlands, Hants, and is about 40 feet in height, with a trunk that measures 7 feet in girth at 3 feet from the ground, with a spread of branches measuring 45 feet. These dimensions have been considerably exceeded in other cases. In 1837 a tree at Purser's Cross measured 60 feet and more in height. LOUDON himself had a small tree in his garden at Bayswater on which a female branch was grafted. It is to be feared that this specimen has long since perished.

We have already alluded to its deciduous character, in which it is allied to the Larch. It presents another point of resemblance both to the Larch and the Cedar in the short spurs upon which both leaves and male catkins are borne, but these contracted branches are mingled with long extension shoots, there seems, however, no regular alternation between the short and the long shoots, at any rate the *rationale* of their production is not understood, though in all probability a little observation of the growing plant would soon clear the matter up.

The fruit is drupaceous, with a soft outer coat and a hard woody shell, greatly resembling that of a Cycad, both externally and internally. Whether the albumen contains the peculiar "corpuscles" common to Cycads and Conifers, we do not for certain know, though from the presence of 2—3 embryos in one seed, as noted by ENDLICHER, we presume this is the case. The interest of these corpuscles, it may be added, lies in the proof of affinity they offer betweeen Conifers and the higher Cryptogams, such as Ferns and Lycopods—an affinity shown also in the peculiar venation of the Gingkgo. Conifers are in some degree links between ordinary flowering plants and the higher Cryptogams, and serve to connect in genealogical sequence groups once considered quite distinct. In germination the two fleshy cotyledons of the Gingkgo remain within the shell, leaving the three-sided plumule to pass upwards; the young stem bears its leaves in threes.

We have no desire to enter further upon the botanical peculiarities of this tree; enough if we have indicated in what its peculiar interest consists. We have only to add that in gardens varieties exist some with leaves more deeply cut than usual, others with leaves nearly entire, and others with leaves of a golden-yellow colour.

—— TELEGRAPH AND TELEPHONE PEAS.—It is not easy to determine in all cases from the pods of these two Peas alone which is which, and this difficulty may have given rise to the assertion that in a recent exhibition at South Kensington Telephone was shown with a Telegraph label affixed to it. At any rate, it was asserted by a correspondent of the *Garden* that such was the case. We are, however, assured by Mr. MILES, the exhibitor, that this assertion is incorrect. Mr. MILES regrets that the opportunity was not given him at the time of exhibition of disproving the assertion said to have been made at the time. Mr. MILES therefore invites the correspondent of the *Garden*, who signs under the name of "Cambrian," to visit the garden where the Peas in question were grown, to examine the plants from which the specimens were gathered, and thus afford him (Mr. MILES) the only means now left of convincing his critic of the error into which he fell.

—— DR. PATERSON'S ORCHIDS. — From Dr. PATERSON we have received a glorious spike of Cattleya Warneri, with a double spathe and three flowers some 9 inches across in longest diameter, sepals reflexed, lanceolate, pale rosy lilac, petals shortly stalked, ovate lanceolate wavy, lip trumpet-shaped wavy, with the throat marged with golden rays, and the anterior part rich violet; also flowers of Disa grandiflora, and the variety superba, the latter well-named from the very rich crimson-scarlet colour of the lower sepals. From the same gentleman comes a part of the raceme of Oncidium Warneri, with flowers about 1 inch across, the small lanceolate sepals dull yellow, the petals of a similar colour, with purplish-brown stripes, and a three-lobed canary-yellow lip with a conical tubercle in the centre near the base.

—— THE HORTICULTURAL EXHIBITION AND MARKET to be opened in the Agricultural Hall on Monday next appears to be of an experimental nature, as the exhibitors are permitted to sell, and there are no prizes offered. The great space at command, and the permanent shelter and effective lighting, are circumstances favourable to the mode of procedure adopted, which should result in a lively bustle, as well as an attractive exhibition. The whole of the immense floor space will, we understand, be covered with horticultural produce and appliances.

—— M. HENRY VILMORIN.—French papers announce that the decoration of the Legion of Honour has been conferred on this gentleman. We do not know the precise grade of the honour conferred; but this we do know—that whatever it is, it has been well earned.

—— SHROPSHIRE HORTICULTURAL SOCIETY.—In looking over the schedule issued by the above Society for their exhibition in the far-famed Shrewsbury Quarry, on August 16 and 17, we notice the liberal prizes offered in the principal open classes, as, for instance, in that for twenty stove and greenhouse plants, not less than ten in bloom, £25, £20, and £15 are given. Such an arrangement as this is calculated to bring out a very different competition than where there is simply a good 1st prize, with a disproportionate falling off in 2d and 3d; for although we are far from supposing that mere money value is the leading motive which actuates exhibitors, yet those who have large collections of big bulky plants to convey long distances cannot afford altogether to shut their eyes to the money consideration. We trust this flourishing Society may continue to meet with the success that has hitherto crowned its efforts.

—— ASIATIC FRUITS.—In a letter dated Tiflis, which appears in the *Garten-Zeitung*, H. SCHARER refers to some Asiatic fruits as "delicious things that are not yet known by anybody in Europe." They consist of two varieties of Pear, two of Peach, and four of Grape. Grafts of nearly all of these varieties have been sent to Berlin.

—— THE ITALIAN FLORA. — The *Compendio della Flora Italiana*, with concise descriptions of Italian plants in the vernacular, and with carefully executed lithographs showing the construction of the genera, has reached its eighty-third plate. The publication is very useful, although its utility is somewhat marred by the perhaps unavoidable length of time demanded by such a publication.

—— L'ORCHIDOPHILE.—The first volume of this periodical, now completed, is dedicated to M. HOULLET, the Curator of the Jardin des Plantes, of whom a small but expressive woodcut portrait is given.

—— QUERCUS HUMILIS. — Some years ago we were indebted to Mr. MAURICE YOUNG for a small plant of this interesting species—a dwarf evergreen Oak, not exceeding 2 feet in height, of spreading habit, and perfectly hardy, inasmuch as we have had it on a cold wet soil for several years. This year it is laden with young acorns. The plant is a native of Southern Spain and Portugal, and is very little known in gardens, though it would make an excellent plant for the rockery. A spray of it is figured in our vol. i. for 1874, p. 112.

—— CURIOUS COTYLEDONS OF BURSERA MICROPHYLLA.—There is a great variety in the size, shape, consistence, and other characters of the seed-leaves or cotyledons of plants, and they are in many instances deeply divided. Dr. ASA GRAY, in a late number of the *Proceedings of the American Academy*, illustrates the extreme case of Bursera microphylla, A. GRAY. This is a Californian shrub, and the cotyledons are biternately or even triternately divided into narrow linear lobes. The leaves of the following pair are simpler, the secondary lobes being fewer and short; the succeeding ones are pinnately divided into seven leaflets, passing towards the adult leaves, which are pinnate, with numerous very small leaflets on an interruptedly margined rhachis.



FIG. 21.—THE MAIDENHAIR TREE IN THE GARDENS AT BROADLANDS. (SEE P. 112.)

—— EDUCATION IN FORESTRY.—A memorial has been presented by the Council of the Society of Arts to the Secretary of State for India, calling attention to the great and growing demand for the services of persons skilled in forest cultivation and analogous occupations, in India and the colonies generally, and to the increasing desire on the part of land agents, land stewards, and bailiffs to acquaint themselves with the scientific and technical treatment of plantations, woods, and forests, as a means of fitting them for the more satisfactory management of landed estates in the United Kingdom. The memorialists believe that no suitable provision exists at any of our great centres of instruction, in this country, for the teaching of natural science in its special reference to forestry, nor for the scientific teaching of sylviculture in any of its branches; and are of opinion that by grafting itinerating classes for observation of the practical method adopted in the regularly worked forests abroad on classes for scientific teaching at home, established in connection with such a school as already exists at Cooper's Hill, satisfactory means could be afforded of enabling students to obtain the requisite knowledge, both theoretical and practical, to qualify them for entering upon the duties appertaining to forest management, whether in India, our colonies, or elsewhere. They therefore express their earnest hope that steps may be taken by the Council to establish a department for the teaching of forestry in the Royal Engineering College at Cooper's Hill.

—— PROLONGED VITALITY OF SEEDS. — In *Coulter's Gazette* it is recorded that seeds of Pyrus coronaria germinated after lying dormant for twenty-three years. If there was no mistake on the part of the observers, these seeds were buried beneath the foundation of a building erected in 1859, and pulled down last spring.

—— EXHIBITING CUT FLOWERS. — In many country shows these are often shown in a most slovenly manner, and it matters not whether it be stove or greenhouse cut flowers—Roses, Dahlias, Pelargoniums, Carnations, and Picotees, &c.—they are often shown in such a loose and untidy way that any value the flowers may possess is greatly sacrificed in consequence. A suitable green stand can be had at a comparatively small cost, and, in the ordinary case, it will last for a long time; but pans and boxes of white sand, without any surface-dressing, bottles, common earthenware dishes, &c., are used, and good flowers are spoiled in effect because so carelessly set up. At the recent exhibition of the Wolverhampton Horticultural Society, the judges had the good sense to make a stand in this matter, and, to the great astonishment of some of the gardeners, actually gave the 1st prize in the class of twelve bunches of cut flowers to hardy herbaceous plants over cut flowers of stove and greenhouse plants, because they were not only of fine quality, but because they were also much better set up. The 1st prize was awarded to Mr. JAMES THURSTAN, a well-known cultivator of Tulips, Pinks, and other florists' flowers. Mr. THURSTAN, having for a few years past noticed a great want of refinement in the cut flowers, and especially in the style of staging them, thought he would set his fellow-exhibitors a lesson in the art of how to do it, and showed his flowers on Tulip stands, bunching them neatly and artistically, and displaying them to the very best advantage. Some judges are apt to display a want of discrimination by awarding prizes to cut flowers of stove and greenhouse plants simply because they are there, and quite irrespective of the mode, or want of mode, in which they may be set up. The Wolverhampton judges wisely seized the opportunity of reading the other exhibitors a lesson of a valuable character, and it is more than probable it will not be lost on them.

—— PEAS.—The Great Eastern Railway Company alone brought 650 tons of Peas into London for last Saturday's market.

—— THE FRUIT CROPS. — From many quarters we have heard complaints of the shortness of crops of small fruits, but that such cannot be the case generally is amply borne out by the immense quantity brought into London for last Saturday's market. The South-Eastern Railway brought 104 railway truck-loads of fruit—Currants, Gooseberries, Raspberries, and Cherries—from their stations between Ashford and Tunbridge alone. We do not know what came from the Maidstone and other districts. Saturday was one of the heaviest days ever remembered in Covent Garden, the railway vans commencing to arrive shortly before midnight, and the unloading not being finished until 1 P.M. Considering the great quantity of fruit to be disposed of, the prices realised have been very good—above the average, but showed a tendency to drop towards the middle of the week, when the large jam manufacturing firms had obtained their supplies. The South-Eastern Company, we hear, brought into the Bricklayers' Arms Station, between July 8 and 15 (inclusive) 90,045 packages of fruit, or an average of about 200 tons per day.

—— RESEDA GOLDEN QUEEN. — With reference to the report of the meeting of the committees at Chiswick on July 7, we are requested to state that this variety was sent for trial by Mr. BENARY, of Erfurt, Messrs. CARTER & CO., Messrs. E. G. HENDERSON & SON, and Messrs. J. VEITCH & SONS.

—— MUSA VITTATA.—In the report of the Trinidad Botanic Gardens for 1880 Mr. PRESTOE gives some interesting information respecting this species, a fine specimen of which is flowering in the Victoria-house at Kew. Nowhere probably in this country has it been cultivated for its fruit, but simply on account of its prettily marked foliage. As, however, the colours get decidedly less distinct, and green predominates when the plants get any size, there has been so much the less inducement to allow them to reach the fruiting stage. Mr. PRESTOE shows that the species is capable of producing "Plantains of unusually superior and delicate quality," and he quotes it as "perhaps the finest instance of a combination of what is useful and ornamental in its rather numerous and important family." When the plants are young they are somewhat delicate, especially those which have the most finely coloured foliage. If carefully and generously treated, however, they soon get a start, and are then as vigorous as any other Plantain. The variegation is produced into the fruit, and from this character the species in Trinidad has been named "striped Plantain. Musa vittata was discovered by ACKERMAN in the Island of St. Thomas, in the Bight of Benin, and by him sent to his employer, VAN HOUTTE, of Ghent. About the same time GUSTAV MANN visited that island, and sent young plants to Kew. Although large numbers of plants were distributed from both these places the striped Plantain does not seem to have become thoroughly established in any of the colonies except Trinidad. Now that its merits as a food plant have been proved its cultivation will probably become more general.

—— THE YORK GALA.—The balance-sheet of the great York flower show and gala held on June 14, 15, and 16 last has just been issued, and shows that £1406 14*s.* 8*d.* was taken at the gates, and £376 17*s.* 5*d.* was derived from other sources of income, making a total of £1783 12*s.* 1*d.* for the year. The sum of £576 9*s.* was paid as prizes and judges' fees, £142 14*s.* 4*d.* for music, and £276 15*s.* 4*d.* for tents, &c. The Society has now £1679 5*s.* in investments and in its banker's hands, and within a month of the date of the exhibition every claim upon the Society has been paid.

—— UNSEASONABLE PRODUCTS.—If we wanted to find, in no sarcastic sense, evidences of the severity of the season, none can be more patent than those seen in the altogether irregular and untoward blooming of Polyanthuses, Primroses, and similar hardy spring flowers in the month of July. If it be essentially to these plants a condition of future strength that they shall have a season of rest, then must the vigour of many of them be just now in the process of absorption by unseasonable growth. We may, however, well doubt whether in this case at least such periods of rest are essential, and probably we shall find in the end that vigorous leafage and irregular blooming in July, even though it is the product of excessive rains and an unusually low temperature, means health and strength for these plants, even if other and far more important plants suffer. We have had here in the South frequent occasion to envy growers of hardy plants in northern and sea-coast regions the luxuriant growth they have always found on their hardy Primulaceæ, whilst in our more arid regions the leaves, under the influence of heat, thrips or spider, have totally disappeared, leaving bare crowns, the majority of which have refused any more to take on leafy clothing. This season we are finding just these northern conditions of temperature and of growth, and the Polyanthuses and Primroses revel in it. We may take it for granted that they will not regret the loss of the season of rest, Nature's holiday, which hot summers have hitherto given them, and will for our own delectation manufacture such strong crowns as shall give both in autumn and the early spring much floral beauty. Amongst other hardy spring flowers that are as a rule very impatient of heat, and often suffer greatly in our summer months, Pansies and Violas may specially be mentioned as being refreshingly and singularly floriferous and beautiful. Their present beauties will probably help much to popularise them with admirers of simple decorative plants.

—— LABEL FOR PLANTS. — The Council of the Society of Arts, on the recommendation of the committee appointed to consider the labels sent in, have awarded the prize of £5 offered by Mr. G. F. WILSON, F.R.S., for the best label, to Mr. E. J. ALMENT, 124, Romford Road, Stratford, E. The committee have also commended three other labels, sent by the following:—Mr. GEORGE LANG, gardener to I. H. ARCHER HIND, Coombe Fishacre House, Newton Abbott; Mr. J. MACDONALD, Angeston Grange, Dursley, Gloucestershire; P. NEILL FRASER, Esq., Rockville, Murrayfield, Edinburgh. The report of the committee will be printed in a later number of the society's *Journal*.

—— FLORAL DECORATIONS.—All through the exhibition season floral decorations in some form or another, and far too often in monotonous and stereotyped forms, are so common that we hail with satisfaction any break away from level dulness or of non-professional mediocrity, let it come from whatever quarter it may. At the large flower show held at Ealing last week there was exhibited a basket florally dressed that was perhaps more truly novel and charming than anything else in the show. The Floral Company, of Haven Green, Ealing, sent for the delectation of the visitors this particular basket, with a superb bouquet of white flowers, dressed with Maréchal Niel rosebuds and with bronzy shaded sprigs of Hazel foliage and Maidenhair Fern. This was singularly pleasing, and excited much attention. There were also crosses, wreaths, &c., of the usual effective but perhaps costly order, but the basket none the less was the most charming feature. It was of the ordinary fancy shape, with a handle perhaps too high, because badly proportioned. The base of the decoration was composed of dark glowing red Roses, closely placed, and from out this sprang thinly small fronds of Maidenhair Fern and flowers of Sweet Sultan and the creamy-yellow Marguerite, both pleasingly harmonising. The chief defect of the arrangement was found in the dressing of the handle with Roses and Fern fronds. That was an obvious mistake, because baskets are made to be carried, and to dress the handle in this unnatural fashion is to decorate at the expense of utility. If it is not intended to utilise the handle of a basket, the best thing to do in such a case is to remove it altogether. As compared with the now too commonly seen epergne or vase, this basket was a feature that merited the widest popularity, and if compilers of flower show schedules would but henceforth give a place for baskets of a similar kind, and of course of moderate dimensions, they would add new elements of interest to their exhibition. In this particular case the basket might have been carried by a lady with ease.

—— GILBERT'S CHOU DE BURGHLEY. — We understand that Mr. GILBERT intends distributing seeds of his valuable Cabbage-Broccoli, now called Chou de Burghley, during the coming autumn. It was Certificated in December, 1878, by the Fruit Committee, and is unquestionably the best new vegetable introduced of late years. We can only hope that Mr. GILBERT has enough seed to meet the demands that gardeners will make for it.

—— WHITE KNIGHTS PARK, READING. — Few estates have a more interesting history than White Knights Park, near Reading, the remaining portion of which *Land* announces as being for sale by Messrs. DEBENHAM. Until a comparatively recent date the property belonged to the Dukes of MARLBOROUGH, who had so splendid a house there that a whole volume was devoted to the description of its beauties, and of the delightful gardens which encompassed it. Some seven centuries and a half ago White Knights was attached to the Hospital for Lepers at Reading. The estate was purchased in 1391 by JOHN SHELFORD. In 1412 it reverted to the Crown, and was

granted to the BEKES. After the BEKES ceased to possess it, the property was in the hands of various owners, including Sir HENRY ENGLEFIELD, and in 1798 it was purchased by the then Duke of MARLBOROUGH. Since White Knights lost its ducal owners it has been cut up into several pretty little properties. There are still the remains of the grand avenue of Elms; while on the portion now for sale are the celebrated Botanical Gardens, clothed with shrubs of rare beauty and luxuriance.

—— A HORTICULTURAL SHOW FOR GRANTHAM.—We understand that Grantham is to have a horticultural show and gala, to be held in the last week in August. For carrying out the show a committee has been some time at work, and from the liberal response which they have met with, they are expectant of its being highly successful. From the many important gardens existing within an easy distance of Grantham, we feel sure there is plenty of material at hand to make a good exhibition, and trust the labours of the committee may in this respect meet with the support they look forward to.

—— ESCHSCHOLTZIA ROSE CARDINAL.—A large patch of this fine and distinct new variety is now in good form at Chiswick. The exterior of the petals is of that bright clear hue of violet-rose one admires so much in a well finished bloom of Proserpine early single Tulip, and it is a marvellous advance on Eschscholtzia rosea of a few years ago. The latter was always to some extent uncertain, and its character fleeting, but the new variety under notice has a strong and invariable individuality, and when the flowers are half expanded the effect is very striking. Inside the flowers the petals are of a soft pale pink hue, for the distinguishing colours of richly toned Eschscholtzias are always on the exterior of the petals. To this charming variety add the brilliant orange-crimson Mandarin, the deep golden Crocea, and the best form of Alba, in which size and purity are combined, and then we get a quartette of Eschscholtzias of singularly fine appearance. Those who require a little more variety may take the double form of E. crocea, the golden-orange E. aurantiaca, and the striped form of E. crocea also, though the last named is by no means so reliable. But they fall behind the others for strongly marked individuality of character and colour. But most gardeners of all degrees commit the common error of sowing Eschscholtzias too thickly. Mr. ANTHONY WATERER has some plants in his flower garden at Knaphill, standing singly, that are of prodigious size. The plants were no doubt raised from seed last autumn. They are large bushes, laden with golden flowers, of a hue so clear and brilliant that they seem to reflect the sun as it looks down upon them in its diurnal course. One needs to see E. crocea with all the brilliance of the noon-day sun shed out of a clear sky, thrown down upon it. It is then incomparable as a golden annual, and seed should be sown in early spring to keep up a succession of bloom till autumn; and it is well if the seed-pods could be kept picked off from the plants during summer. One might have a garden of Eschscholtzias all the summer, and rejoice in the richness shed forth by this garden under the imperishable glow of the summer sunshine. If well done, it would be a thing to talk about and be proud of. Only set it down in a suitable situation, when the eye, full of the glory of the striking tints, would turn to verdant turf and the sober green of shrubbery for relief; and such a garden would not oppress the sense or clog the perception of the beholder, but attract him to it again and again, as a true picture does—the subtle and hidden beauties of which show themselves gradually to the wandering eyes of him who can perceive its beauties aright. Eschscholtzia Rose Cardinal is one of Messrs. JAMES CARTER & CO.'S novelties.

—— IMANTOPHYLLUM MINIATUM.—Fashion in flowers is much less changeable than it is in most other matters, and the reason is not far to seek; if there is a change in the kind of flowers which people buy, the change is brought about by those who wear or use them. In the matter of dress, or other things of a like nature, the wearers have the fashion changed for them by those who best know the reason why. But, nevertheless, change there occasionally is in flowers, especially in the matter of colour, as evidenced of late years by the run there has been upon yellow of some shade or other, from old gold to others more or less decided. Amongst flowers with a yellow tint the well-known Imantophyllums have come into demand, although very few of the market growers have gone in for them, possibly on account of their slow propagation, causing a long time to elapse before any considerable number can be got up. Mr. HART, of the Beaumont Road Nursery, Leyton, possesses as much stock, possibly, as most people will have seen collectively all together elsewhere. The treatment is much like that usually given to Agapanthus—that is, the plants are kept pot-bound, literally appearing to have little besides roots in the pots; in this way they seem to form new crowns as fast as if more space were given, and the foliage being much smaller when so root-pinched, admits of the plants being kept in less room. They are forced to come in soon after Christmas, and keep on pushing up their large umbels of orange-coloured blooms until the London season is far advanced, after which the plants are turned out in the full sun, and receive very little water, except what they get from the clouds, often not receiving any attention in this matter for a fortnight at a time.

—— NEPENTHES.—The stock of these plants at the York Nurseries is in fine order, amongst them the rare and beautifully coloured N. sanguinea is bearing splendid pitchers, the largest of which are 12½ inches long by 3 inches across the mouth.

—— PLATYCERIUM GHELLINCKII.—As grown in the York Nurseries this is a handsome and distinct Fern, the most elegant of all the Stag's-horn species.

—— THE NORTH AMERICAN ASTERS AND GOLDEN RODS.—Dr. ASA GRAY has just published some of the results of his laborious researches into the synonymy and types of the species during his last visit to Europe. Cultivators will be thereby enabled to correct some of the anomalies and contradictions in the nomenclature of the cultivated forms.

—— CHISWICK GARDEN. — On Thursday next Chiswick Garden will be *en fête* in the evening, when the gardens are to be brilliantly illuminated. This ought to prove a success.

—— ASPARAGUS PLUMOSUS AT THE YORK NURSERIES.—In an intermediate-house here are some beautiful large specimens of the above, and a portion of them are treated as climbers to the rafters, for which purpose the plant is in every way adapted. So treated they give a beautiful effect; and, independent of the plant's suitability for being so used, and its elegant appearance in any form, it will be found to stand second to nothing yet employed for mixing with cut flowers, not only for its plume-like form and beautiful colour—pale pea-green whilst young, and deep green when the foliage is matured—but its enduring properties in water are unequalled; even the young leaves when not fully grown will keep quite fresh for two or three weeks.

—— GARDEN CARNATIONS.—We saw the other day growing on Mr. POUPART'S farm at Twickenham, about an acre of seedling Carnations that was literally a mass of flowers and buds. In another place there were already planted out a similar extent of these charming hardy flowers, still from seed, for next year's blooming; and by the simple process of sowing seed in the open ground and in beds in the spring, the supply, though so large, is easily maintained. Not the least remarkable feature of this strain was seen in the small percentage of single flowers, for whatsoever of these there were had been pulled and thrown into the alleys; and on a very fair estimate of the average we concluded that not more than 20 per cent. of the entire breadth had come single. The double flowers, on the other hand, were really good, and many of superior excellence, whilst the variety of colours and markings was so great, that it would not have been difficult to have selected fifty distinct. Mr. POUPART mentioned that the strain was from seed supplied to him by Messrs. WATKINS & SIMPSON, seedsmen, of Exeter Street, Strand, and certainly it is a strain that any firm may well be proud of. The plants grow at Twickenham to a great size, and carry heads of hundreds of blooms and buds. The seed is sown in April, and the young plants put out in broad beds as early as can be in June. In all large gardens, where the supply of cut flowers for house decoration forms an important part of a gardener's duties, a bed of a rod in extent of these beautiful hardy Carnations would be invaluable, the flowers being, both in colour and in form, so admirably adapted to this purpose. Could the growers of "Jacks," or single Carnations, but become possessed of such a strain of double kinds as Mr. POUPART is growing, we think they would not only promote their own interests, but, much more important, would afford to their customers the fullest satisfaction.

—— DISPUTED READING OF A SCHEDULE.—A correspondent, sends us the following cutting from a schedule issued by one of the leading societies in the North of England—"Collection of eight dishes of fruit, distinct varieties, black and white Grapes allowed as separate dishes"—and contends that according to the literal meaning of the words used, an exhibitor may set up and compete in the class with as few or as many kinds of fruit as he thinks proper, providing that he puts up in eight dishes that number of distinct varieties of fruits. The secretary of the Society contends that as the two last words are "separate dishes," not "separate varieties," it is quite clear that this means that two varieties of Grapes and six other kinds or sorts of fruit must be set up to enable an exhibitor to compete in the class. We are asked for an opinion on the point, and at once say that both are to some extent right and wrong—a paradox resulting from the use of the word "varieties" in the schedule, instead of the word "kinds," and from a misunderstanding of the meaning of the words used by both parties. Technically the exhibitor is right in his contention, but as an old exhibitor he must know that to maintain his point is something equivalent to splitting straws, the universal rule with experienced judges being to interpret the word varieties as meaning kinds, and the fact of its being stated that black and white Grapes will be allowed as separate dishes (meaning distinct kinds), leaves no doubt upon our minds that that was the meaning intended by the framers of the schedule, though by using a wrong word they left the matter open to question.

—— THE WEATHER.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending July 17, issued by the Meteorological Office, London:—The weather has again been very showery and unsettled, with frequent thunderstorms over the northern half of the kingdom, and heavy rains in places. The temperature has been a trifle above the mean in Scotland, but below it over the greater part of England and Ireland, the deficit being most marked in "England, S.W." In "Ireland, S.," the thermometer has not risen above 67° all the week, but in Scotland and the West of England it has reached 70° or 71°, and in the eastern, southern, and midland counties it has risen to 73°. The lowest readings reported have varied between 51° in "England, S.," and 44° in "Ireland, N." The rainfall has been more than the mean in all districts. In Scotland and the north-east of England the excess has been small, but in other places it has been very considerable; and in the midland counties, "Scotland, W.," and Ireland, rain has fallen every day. The bright sunshine has been very deficient, the percentage of possible duration being greatest (50°) in "Scotland, E.," and least (only 18°) in "Ireland, N." Depressions observed:—On the 11th a small but well-defined depression passed in an easterly or east-north-easterly direction across the South of England, and in its rear the barometer rose generally, and the wind veered to north-west. On the afternoon of the 12th, however, the barometer began to fall again on our western coasts, and from that time until the close of the period a series of depressions has passed in a northerly direction outside the Irish and Scotch coasts, while numerous subsidiary disturbances have advanced over the country. South-west to southerly winds have consequently prevailed generally.

—— GARDENING APPOINTMENTS.—Mr. JAMES BONE, lately Gardener to the Earl of CRAVEN, Ashdown Park, Berks, has been engaged as Gardener to Lord CHESHAM, at Latimers, Bucks. Mr. BONE is succeeded at Ashdown by Mr. WAKEHAM, Kingston House, Berks.—Mr. T. H. CRASP, late Foreman at Balcarres, Fife, has been engaged as Gardener to Earl SYDNEY, Frognal, Foot's Cray, Kent.

BORDER CARNATIONS.

THE display of these charming and popular flowers in Messrs. Veitch's nursery, Chelsea, will be at their best in a few days, and a rare opportunity will therefore be afforded to all who are interested in the cultivation of so showy and useful a class of plants, of inspecting the collection, which consists of all the newest and best varieties extant. Whatever notions may have hitherto prevailed regarding the practicability of growing these flowers for general decorative purposes in the open air should now be dispelled by the glorious show of flowers in the Chelsea nursery. The florist will no doubt rejoice at the sight, but those to whom these flowers will be most useful are private gardeners and others who have to furnish large supplies of cut flowers during the London season. After the Rose the Carnation is probably the most loved by ladies. In the open border, in pots, or as cut flowers they are welcome both in season and out of season, and are indisputably entitled to the first place among hardy flowers.

The self-coloured red, crimson, or white varieties are equal to the best of bedding Pelargoniums in the flower garden, while their utility for cutting purposes is so far removed beyond that of the Pelargonium, that a fair comparison cannot be instituted. Probably from a practical point of view the best move would be to cultivate those in borders that are chiefly intended for cutting, and to mass two or three distinct varieties in isolated beds in the pleasure-grounds or flower garden. At all events, the grand beds of that charming white variety, W. P. Milner, in the Chelsea nursery, would strike any one acquainted with grouping, bedding, or border plants, that a splendid show could be made by utilising these plants in the herbaceous or flower garden. Then there is the true old crimson Clove, which makes a showy bed, and is equally useful and so highly prized for cutting. Black Knight is a dark crimson, and is superior to the former variety in size, substance, and formation of flower. Virgo is a new white, similar in size to Mrs. Matthews, but having a much better constitution. Daniel Delworth is a striking purple—a colour by the way that is never too plentiful in flower gardens or borders, nor half so plentiful as could be desired for dressing glasses in sitting-rooms. Eveline is another good purple, as also is Walter Warr, which is of a much darker shade than the two former. Sir Archibald Grant is a great advance upon the old Clove, of similar colour, but a much freer bloomer. It was certificated at South Kensington last year. The variety of colours, the habit and vigour of the plants, are indeed remarkable.

The yellows are very delicate and pretty. Mrs. Wheeler (straw-yellow), Lady Rosebery (pure yellow,) and Chromatella are especially fine. Admiral Sir B. Seymour is a grand border variety, the colour is orange-scarlet, and it is semi-perpetual in habit. Other strong growers are Prince of Orange, King of the Yellows, and Solfaterre, which produces bunches of flowers which cover the whole surface of the bed with one mass of floral beauty. The scarlets are very distinct, and of these The Coroner, Heaton Bank, and Fire-eater are among the best. The latter is a tall grower, and is a striking variety as a border plant. Fireman is another good scarlet, and James Wilkins is intense scarlet, having good petals of rare substance, and altogether the variety is a most striking one either for the flower border or for cutting purposes, for which it is specially adapted, owing to its distinct brightness of colour. Large flowers of extra fine quality are represented in such kinds as Dan Godfrey, Lord Rosebery, and several other kinds.

The pink varieties that are most striking are Gertrude Teigner and Mrs. Teigner, a variety of a darker shade than the former. Lothair is a profuse bloomer, and The Bride (a dwarf white) and Royal Purple are also vigorous in habit and free-flowerers. Florence makes an extra fine bed, and Crimson Pet and Magnum Bonum are very bright; the last-named variety has been in flower for a month, and is still a vivid mass of scarlet.

Flakes and Bizarres are growing side by side with the former, and are an exquisite display, probably more interesting to look at than the self-coloured varieties. The best rose flakes are Runner, Lady Florence, Mrs. Hurst, Mrs. Laxton, and Lord Chelmsford; scarlet flakes, Candidate, Dan Godfrey, Miss Bateman, and Bayley Junior; purple flakes, Captain Jinks, Squire Trow, and Florence Nightingale, an old variety and still one of the best. Pink and purple bizarres are exceedingly chaste in appearance, and of these there is a large stock. Sarah Payne, James Taylor, and Princess Beatrice are truly lovely.

The scarlet bizarres include Mr. Dodwell's Douglas, George, Arthur Medhurst (a new variety, which is very fine), and Headley's Albion Pride; Rifleman and Fanny are two of the best crimson bizarres. Rose, red, and purple-edged Picotees consist of the following splendid varieties:—Royal Visit, Lady Boston, Miss Sewell, Miss Nichol, Mrs. Payne, Lady Louisa, Mrs. Somerail, Edith D'Ombrain, Mrs. Raynor, J. B. Bryant, Miss Elkington, Mrs. Dodwell, Delicata, Mrs. Brown, Her Majesty, Baroness Burdett Coutts, Princess Dagmar, Alice, Mrs. May, Woodie (a variety said to possess an extraordinary constitution), Ann Lord, and Red Braes. Such a display of choice and useful flowers, grown under the adverse conditions of an atmosphere at times vitiated and impure, should stimulate those who have better opportunities to popularise a class of plants at once the most showy and striking in cultivation, the favourites of ladies and the most useful for all practical purposes.

KNIGHT'S HEYS.

THIS magnificent country seat is the property of Sir John Amory, Bart., M.P., and is situated upon a commanding eminence about 2 miles from Tiverton. The gardens and grounds have been laid out within the last few years by Mr. Edward Kemp, of Birkenhead, the famous landscape gardener. The drive to the mansion, which is over a mile long, affords pleasant peeps into the parks upon either side and of the surrounding country, which is strangely compounded of hill and valley, and is charmingly picturesque as far as the eye can reach. The mansion is in the Gothic style, and is an immense pile of building, extending east and west, with two projecting wings looking towards the south, having octagon windows. The long, low wing upon the eastern side is devoted to the servants' apartments, offices, &c.; and in front of this there is some ornamental planting carried out, as well as spring and summer bedding, which makes the look-out unusually bright and cheerful. The creepers upon the walls of the house grow with amazing luxuriance, and are composed of Hedera Regneriana, Ampelopsis Veitchii, Ceanothus azureus and divaricatus, creeping Roses, and Honeysuckles. The grounds are terraced upon the south-east and west sides. The south terraces are three in number, the bottom one being the flower garden. During the spring season this garden is very pretty with spring flowers and bulbs. The first, or higher terrace, has some specimens of ornamental Yews, and the slope or wall of the second terrace is covered with an ancient Wistaria, which is a great ornament as well as a peculiar object to look at all the year round. These terraces are made upon the site of an old kitchen garden, hence the position of the Wistaria, the retention of which was a happy idea when the terraces were being made.

The park upon the south side runs out Pear-shape, at the extreme point of which there is a splendid speciman of Pinus insignis. The ground falls away rapidly, and the two sides are picturesquely planted with Oaks, Elms, Beech, and other trees, in front of which there is an irregular band of Cedars, Cratægus, and flowering shrubs; and upon the outer side of these belts there are serpentine walks running through shrubbries for over half a mile, where will be found a magnificent collection of flowering shrubs and hardy flowers. One of these walks has a very beautiful effect from the east terrace, as it curves and bends through so many choice shrubs, and is lost to the eye in a valley of deep green, where the verdure and foliage is characterised by all that luxuriance for which Devonshire is famous. Looking towards the west side of the park the views vary in character; there is a deep valley covered with trees falling towards the Exe, and in this valley there are several ponds which are just visible from the higher terrace. Such views indeed are rarely to be met with. Seldom has Nature bestowed greater charms upon a place, and seldom indeed have such charms been turned to better account. From the east terraces there are extensive views towards the Blackdown Hills, and a tract of country beautifully diversified by hill and dale, dotted with trees of various forms, or herds of the famous Exmoor sheep, and lit up betimes with the golden rays of the setting sun flashing across the deep slopes of the hills from the western horizon. You notice a curving walk near the crest of a gentle slope, and this turns out to be the church walk, beautified with Pinus austriaca, Wellingtonias, and flowering shrubs. Not far from here is the fine tennis lawn, almost enclosed by belts of flowering shrubs, which extend around the deep bank upon the north side of the mansion—Portugal Laurels, Deutzia crenata fl.-pl., Pernettya mucronata, Escallonias, Ribes sanguineum, and others are growing freely and flower in their respective seasons in great profusion.

The grounds between the house and the new kitchen and fruit gardens are laid out partly as American gardens and partly in the free and natural style. Of the former there are beds of choice Rhododendrons, Kalmias, Ghent Azaleas, and other beds composed of different varieties of other flowering shrubs, together with specimen Conifers such as Cryptomeria japonica, Picea Menziesii, Abies cephalonica, Cupressus Lawsoniana and Lambertiana. There is a deep valley north-west from the house, above which there is a steep slope covered with trees, and in the valley the picturesque style of gardening is being carried out in the form of clumps of American plants, rockeries, ponds and waterfalls. By the latter suitable plants are being established of Bambusa Metake, Arundo Donax, Gynerium argenteum, Eulalia japonica, and hardy Ferns; and to these might be added hundreds of others in such a glorious situation where both soil and climate is favourable, and where almost anything will grow if its roots are only planted in the earth. This work is only in process of development, and when completed there will not be many prettier valleys in Devonshire if there will be any to equal it. But of course all depends upon the quality and suitability of the material that is employed in forming the clumps, groups, and rockeries, and the manner in which the single plants are disposed, and their relation to each other, as well as their adaptability to certain situations.

The new gardens, as has been stated, are upon the north side of the house, so that, as will be gathered from the foregoing remarks, there is no break as regards the unity of the whole arrangement. When you see the walls of the garden you are still in the midst of woods, plantations, and shrubberies, which, from the nature of the ground, are extremely pretty, especially the broad slopes of young Austrian Pines and Larch. People say that the first impression formed of anything, be it good or bad, is a lasting one, and surely no practical observer can fail to be struck with the position and surroundings of this fine new garden. The great bulk of our gardens are marred by their miserable surroundings. A grim brick wall at best is not the liveliest of sights to meet the eye upon entering a garden; and it is still less inviting if that is only covered with a few half dead trees. But here it is something different. There are walls, no doubt, but then they are in themselves ornamental, and the approaches to them are garden-like. The garden is laid out upon the slope of a hill, and is a square, or nearly so. It falls to the south and east, so that the walls rise above each other in lengths of about 4 yards, and are ornamented with copings of Bridgwater tiles, brought to an angle at the top. There are round turrets at each corner of the garden, and the new glasshouses rise above each other like terraces from the top of the south wall. But the approaches to the garden are the most pleasing feature.

There is a considerable area of garden enclosed by Laurel hedges outside the walls, and it is this addition which creates the good impression at first sight. You descend a hill, and enter a walk leading to the entrance at the north-west angle, and here, as the walk curves, the spaces upon either side are covered with flowering shrubs of the Gum Cistus, Mock Oranges, Deutzia and Leycesteria formosa. The garden is divided into eight quarters (triangles) in the following way:—It is first of all divided into four quarters by walks, cutting it lengthwise and crosswise. In the cross-walk there are two circles formed with a Mulberry tree planted in the centre of each circle; then there are two walks which cut the garden diagonally from each of its angles. The diagonal walks are grass, and there are flower borders, and iron espaliers running parallel with them. Thus it will be seen that, apart from the more substantial work, which is of itself ornamental, there is no lack of variety in the shape of walks, trees, and flowers. The garden has scarcely been three years made, so that there is not that furnished appearance about it which may shortly be expected if the trees

continue their present rate of growth, which is highly satisfactory for the time they have been planted.

We will now proceed westwards, and ascend the steps to the hothouses, which occupy a position above the south wall, as already described. The first is a range of lean-to houses with three span-roofed structures projecting southwards, one from the centre and two others at either end. The first vinery of the range has good crops of Lady Downe's, Mrs. Pince, Alicante, and Muscat of Alexandria Grapes, and the span greenhouse is filled with specimen Palms, Heaths, Begonias, Fuchsias, Statice profusa, Lantanas, Hydrangeas—plants with large heads in 4-inch pots, Pelargoniums, Lilium longiflorum, Erica Kingstoniana tricolor, Bomarea Carderi, and Lapagerias alba and rosea. The next vinery has fine crops of Muscat of Alexandria and Madresfield Court Grapes, and a small corridor is filled with climbers and Tree Ferns, the former of a very choice character for producing sweet-scented flowers, for which there is a large demand. The plant stove contains some of the finest specimens of their kinds in the country of Carludovica Drudei, Thrinax elegans, Latania borbonica, Cocos Weddelliana, 10 feet high; Pritchardia grandis, a large specimen of Nephrolepis exaltata, and N. davallioides furcans, Bignonia magnifica as a creeper, Alocasia Thibautiana with splendid leaves, probably the finest sample of its kind in the country; Dieffenbachia splendens, Anthurium Scherzerianum, Marattia Cooperi, a strange looking Fern, and a fine object for a show house; Anthurium Andreanum, Cycas siamensis, Encephalartus Frederici Guilielmi, E. villosus ampliatus, Anthurium Warocqueanum, with leaves from 2½ to 3 feet long; and many others of smaller proportions.

In the long Peach-house the trees are trained against the back wall, and upon upright trellising runnning transversely across the house. The early crops are gathered, but there are still splendid samples left of that fine Peach, Violet Hâtive, of large size and beautifully coloured. A Peach called Diamond, that I have seen do well elsewhere, is also a favourite here, as are Early Newington and Pitmaston Orange Nectarines.

The Azalea-house is the last of the range, and contains (for a private garden) an unrivalled collection of specimens upon an average about 8 feet high and 6 feet through. They consist of the very finest sorts in cultivation, and their flowering period extends from the early autumn until far on in the spring, so well selected is the collection. Leaving this range we notice an extensive range of new garden offices erected in the same substantial manner as the houses, and consisting of young men's rooms, fruit rooms, packing and potting sheds, and other offices. What is called the middle range of glasshouses stands opposite to these, and consists of an early and late vinery and Tomato-house, where the chief variety grown is the new Dedham Favourite. We then ascend the higher and last terrace to another range of houses, erected upon the same principle as the first-mentioned, but the spaces between the projecting spans are occupied with low forcing pits, which are found very useful adjuncts in all extensive forcing establishments. The first span of this range is a Cucumber-house, and the lean-to division adjoining has fine plants of Ixora Williamsii, with over 200 blooms; Prince of Orange, 4 feet through, with 150 blooms; specimen Allamandas, Bougainvilleas, a collection of Eucharis and Scutellarias, and other miscellaneous plants. The succeeding division is filled with trained Stephanotis, Dipladenias amabilis and Brearleyana, Ixora Colei, Croton Disraeli, very fine; Croton Weismanni, 5 feet high, and as much through; Croton Prince of Wales, C. Warreni, and many others splendidly grown and coloured. The pineries are well stocked with fruiting and succession Pines, and ferneries, Melon-houses and other structures contain good examples of fruit or plant growing.

Before concluding I must notice a grand lot of flowering Heaths, Chrysanthemums, and single Dahlias in pots for late autumn flowering. The Ericas are simply protected from heavy rains by sashes being placed over them at the base of a north wall, and comprise Erica ventricosa Bothwelliana, E. Lindleyana, E. verna, E. Empress, E. ampullacea, and E. Wilsoni—very fine specimens, in superb health, and flowers of good size are produced in great abundance. Mr. Selway, who has had charge of this fine garden since its formation, well deserves congratulation upon his success.

HARDY PLANTS.

In no other class do we find such a variety of plants, adapted to so many purposes, as here; whether for planting in beds upon lawns for colour effect, in mixed herbaceous borders, along brooks and the margins of ponds, either natural or artificial, in meadows, upon the rugged hill-side or sandy plain, are many beautiful species which readily adapt themselves to these varied soils and positions.

We also find that their period of flowering is much longer than with bedding plants. From the earliest spring, when the beautiful Hepatica opens its azure flowers, to the time when the last Golden Rod or Aster fades in November, there is scarcely a day when we cannot find some new or interesting species in bloom in a well-selected collection. The idea, so prevalent with many, is that hardy perennial plants are nothing more than weeds, and not worthy of a place in a good garden, and we often hear this remark made by persons who should know better.

That a mass of weedy plants is sometimes to be found in gardens under the name of "hardy plants" we must admit, as for instance, some of the weedy Asters, Golden Rods, Toad Flax, Live Forever, Hemerocallis or Day Lily, and some others occasionally seen, but these will never be planted by one who understands their habits, or if planted by mistake will soon be rooted out, when there are so many showy species which are as easily grown and which, either in foliage or flower, are more attractive. The comparative cheapness of hardy plants is an item to be taken into consideration by those whose time and means are limited. No costly greenhouses and their attendant expenses are required, no immediate large outlay for plants or seeds, no necessity of being obliged to procure new stock each season, as with bedding plants; only a few dollars expended judiciously from year to year, either in plants or seeds of the choicer sorts, and in a wonderfully short period a garden well worthy of the name, and one which will be a delight to its owner as well as the visitor, is the result.

In how few of our gardens, either public or private, do we find groups of magnificent Lilies, one constant succession of bloom, from the earliest dwarf Lilium tenuifolium to the latest auratum and speciosum. And yet there are no plants more easily grown. A deep soil, well dug and enriched to a depth of not less than 2 feet, and an abundance of heavy mulching in summer to prevent the sun from burning the bulbs and the soil from drying out, is all that is required to give us the most beautiful and rich shades of colour throughout the summer and autumn months. Such a bed prepared as above, and planted with the various species of Lilies, now much cheaper and more commonly found than formerly, the bulbs planted not less than 6 inches deep, will not need to be disturbed for four or five years; the only attention it requires is to apply a heavy coating of well-rotted manure each fall or spring, and fork it lightly in. We have growing over our meadows and roadsides in this State three species of Lilies, which, though common, are none the less beautiful and worthy of a place in the garden, as there they become much finer.

Nor need we confine ourselves to Lilies for beautiful subjects; take our own wild Orchids, plants scattered over many portions of the Northern States, and which, from their showy as well as curious flowers are attractive to all, surpassing in many instances in beauty those rare species which can only be grown in greenhouses. These are readily cultivated in low moist ground, where they can have partial shade, or even, in many instances, in ordinary garden soil. What is so showy in the Orchid family as our native Ladies' Slipper, Cypripedium spectabile, with its charming white and pink flowers, or its near relative, the Yellow Moccasin Flower, Cypripedium pubescens, both of easy cultivation in spots such as we have described, or the last species even in quite dry soil if it can have partial shade. Besides these we have the pretty little Calopogon pulchellus, Pogonias of several species, Calypso borealis, a rare and delicate plant, whose beauty is seldom seen in cultivation, and Arethusa bulbosa, found in many of our bogs, with beautiful large, rose-purple flowers; the last two require more care and attention than the Ladies' Slippers, but can readily be grown in pots or pans of sandy leaf-mould with plenty of drainage, and kept in a shaded cold frame.

There are also many species of Habenarias or fringed Orchids, with spikes of fringed white, purple or yellow flowers, which appear in summer and early autumn, and are of easy cultivation. We might also mention many of the Orchids found in Northern and Central Europe, and which are as well worth growing as our own, such as the Fly Orchis and Bee Orchis, but enough has been said to show the capabilities and uses of hardy Orchids.

Still another large group of hardy plants must claim a share of our attention, as the species are so readily grown and so showy in flower. This is the Iris, which for beauty of bloom may be compared to that of the Orchis family. From the early-blooming bulbous Irises, like the Spanish, English, Snake-head, and other species, to the large German sorts of nearly every shade of colour, followed by the Japanese Iris lævigata Kæmpferi, there is a constant succession of flowers of nearly every hue, combined in many queer and fantastic associations, like Iris iberica, with large dull purple flowers marked with a velvety black spot on each petal, and Iris tuberosa, or Snake-head Iris, with a queer combination of velvety black and green in its flowers, or Iris sibirica var. sanguinea, with deep rich purple flowers. A choice collection of Irises, with the colours properly arranged in beds or groups in the garden or on the lawn, is a very beautiful sight.

The Mixed Border.—We now come to speak of the different methods of planting. The most common method is in what is known as the "mixed border." This may be described as a bed 5 feet or more wide, and of any length suited to the size of the garden or number of plants used. Such a bed as this allows ample scope for the display of judgment and taste in the proper selection and planting. At the back should be arranged the taller-growing species, gradually sloping to the front edge, where some dwarf or creeping plants are to be used. In planting such a border, care must be taken not to repeat the same species at equal distances, as this gives too formal and monotonous an appearance. A few of the plants adapted to such a bed, and which are perfectly hardy in this latitude, we here enumerate, simply adding that this list could be increased almost indefinitely. For tall-growing plants, Campanula pyramidalis, Delphinium formosum and the finer hybrid sorts of Larkspurs, Iris lævigata Kæmpferi, I. sibirica and its varieties; Lobelia cardinalis, than which there can be no showier scarlet flower; Lychnis chalcedonica, Liatris or Blazing Star in its many fine species; the choicer hardy Pentstemons, such as Pentstemon Cobœa Murrayanus and Torreyi; the best sorts of hybrid Phloxes, Spiræa lobata or Queen of the Prairie; Veronicas or Speedwells, like Veronica candida, grandis and amethystina. These are but a few of the more effective plants for the back of the mixed border. Next in size we will mention Anthemis tinctoria, with its bright yellow flowers and finely cut leaves; Asphodelus luteus, or Yellow Asphodel; Dictamnus fraxinella, or Gas Plant, with its brilliant spikes of red or white flowers, which give off a vapour which is readily lighted and produces a considerable flash, seen easily at dusk; the smaller growing Asters or Starworts, like A. bessarabicus, A. ptarmicoides and A. spectabilis, all showy and not in the least weedy; Dicentra spectabilis, or Bleeding Heart, one of the oldest and best of our hardy plants; Funckia subcordata; perennial Candytufts or Iberis, such as I. coriifolia and I. gibraltarica; Iris florentina, with its large, deliciously fragrant white flowers; Scutellaria macrantha, with purple and white flowers; Aquilegias or Columbines, especially the fine blue one from the Rocky Mountains; A. cœrulea and its relative, the long-spurred yellow one, A. chrysantha; Anthericum Liliastrum and A. Liliago, or St. Bernard's and St. Bruno's Lilies, with their numerous white fragrant flowers. *G. S. Woolson, in Report of New Jersey State Board of Agriculture.*

(To be continued.)

Notices of Books.

Williams' Orchid Album.—The first volume of this serial is now completed, which enables us to say of it as a whole what we have already expressed of it as it came out—that it is an excellent publication. It is sure to find favour with Orchid growers from its faithful unexaggerated representations, and the valuable cultural notes contributed by Mr. Williams. The botanical descriptions by Mr. Moore are accurate and concise, while evident pains have been taken to secure correct nomenclature and synonymy. The volume is dedicated by special permission to the Princess of Wales.

Florists' Flowers.

The Amaryllis. — Many plants are now completing their growth, and the bulbs, which are still swelling rapidly, must not be checked until they have attained their full size. Observant cultivators will have noticed that the bulbs shrink considerably when the flowers appear, and continue to shrink until the flowers are picked off. If in addition to the strain upon the plants to perfect their flowers it is also intended to ripen seeds, the bulbs are further weakened according to the number of seed-pods they are allowed to carry. It will thus be seen that if the plants have not a quantity of healthy leaves upon them after the seed-pods are removed, the bulbs cannot regain what they have lost, and the flowers next year will be few and poor in quality. Let the plants have as much light as it is possible to give them, but the direct rays of the sun have a tendency to scorch some of the leaves. If the seeds saved this season were sown as soon as they were ripe the young plants will now be ready to prick off, and this should be done within three or four weeks of the time the seedlings appear above-ground.

Calceolarias.—Those who are anxious to obtain good large specimen plants will have the young seedlings ready to prick off into small pots—if, indeed, it has not already been done. If the seeds are not yet sown it ought to be done at once. Sow them in pots, or small pans. The bulk of the material may be ordinary potting soil, but an inch on the surface should be fine sifted light mould. Make the surface quite level, and then thinly sow the seeds over it, just covering them with the fine mould, or a little silver-sand. Place a square of glass over the surface, and shade from the sun until the plants appear. The best place for the young plants is a frame or hand-light on the north side of a wall. Cuttings of any choice varieties will also form roots best in a similar position. The cuttings can often be taken from the plants with some roots attached to them, when they will establish themselves more readily.

Chinese Primulas. — The treatment of seedling plants of these is much the same as that recommended for Calceolarias. Our plants have been potted singly into small 60-sized pots. They are also impatient of bright sunshine, but this is avoided by placing the plants in a cold frame, with its back to the south. The sun does not strike the plants directly when they are in that position, and they receive sufficient to promote a stout healthy growth—that is, if they have plenty of air admitted to them. Continue to propagate the double, or best single varieties, from cuttings. They strike freely if they are taken off with a portion of stem attached. Each cutting should be put into a thumb-pot, using fine sandy soil for the potting material. They should be kept close under a glass light, and will be the better for a little bottom-heat.

Chrysanthemums.—These now demand considerable attention, especially those plants that are intended to be trained into specimens. Ours were shifted into the pots they are intended to flower in about the second and third week in June. I like to see all of our plants, for whatever purpose they are grown, potted before July. It is not too late yet, but no time should be lost in getting the potting completed. The Chrysanthemum likes a rich compost to root into, and plenty of pot room; although it is neither necessary nor desirable to pot single specimens of the large flowering section into pots larger than 11 inches in diameter, or Pompons into larger ones than 9 inches. Good yellow loam to four parts of rich manure, and some crushed bones added to it, will grow the plants well. The growing shoots ought to be tied down now, in order to form compact specimens. If the shoots are not tied down now it is difficult to get them down later, as they have a considerable tendency to snap off at the joints. The plants that are trained to single stems in order that very large blooms may be produced, should be tied securely to their sticks as growth progresses, and the side-growths may be pinched out. Each single-stemmed plant ought to produce about three blooms.

Fuchsias. — These and the zonal Pelargoniums come in very useful after this time to keep the greenhouse gay with flowers. The best plants for the purpose are those that were propagated from cuttings very early in the present year. If they have been grown on freely, without any check, they will now be healthy young specimens in 7-inch pots. Such plants as these are now loaded with flowers; and if the seed-pods are removed as fast as the flowers drop, the plants will continue longer to produce a succession of flowers. Large specimens that flowered early in the year should now be placed outside, where they will go through their resting period. See that greenfly is kept from them. *J. Douglas, Loxford.*

Auriculas at Slough.—A lover of Auriculas, naturally enough, finds his way to Slough at the blooming time, for has it not been a prominent home of this fascinating flower for many years past? They grow there with rare vigour; whether it is something in the soil used, the climate, or the method of management, or all combined, the plants make a generous growth and flower freely and finely. And one sees something else there, for a visitor cannot help noticing that Auriculas are never over-potted, rather they are grown in what might be thought under-sized rather than over-sized pots, and there is not the slightest sign of check in their development in consequence. Auriculas are much more over-potted than under-potted—of that there cannot be any doubt; and in that sweet, silken, yellow loam used at Slough the plants appear to find abundant and congenial nutriment, for but little else is added. It is almost superfluous to state that a very large collection both of show and alpine Auriculas are grown at Slough, and the demand is invariably in excess of the supply.

What of novelty is there among the Slough Auriculas? is a natural question to put. A few of the early flowering new varieties were missed, but the following were nicely in bloom at the time of our visit:—Grey-edge: the Rev. F. D. Horner, a fine and promising variety something in the way of George Lightbody, having a good golden tube, clear paste, and dark body colour; fine, bold, well formed pip and truss, and vigorous habit. White-edge: Mr. Brown, a variety that looks as if it was a seedling from Smiling Beauty, was fairly good, medium paste, fine pip, and large flat truss. This variety was seen when it was a little stale, and, therefore, could not be judged of at his best. Green-edge: G. F. Wilson, fine golden tube, good paste, dark claret body colour, good truss, very promising. Green-edge: James Douglas, good tube, clear white circular paste, dark body colour, fine bold pip; promises to make a fine show flower, but does not appear to grow into a big plant. Self Sultana, a very fine variety, may be regarded as a refined Ruby, small golden tube, good clear paste, fine truss, mealed foliage; this promises to make a good exhibition variety. Self Mrs. Bryceson, also a ruby-red self, bright and shining in colour, good tube, medium paste, scarcely circular, mealed foliage, and a good grower—fine truss.

In the way of grey-edges the following varieties were in good condition:—Confidence (Campbell), fairly good tube, good paste, dark body colour, large pip, and fine truss—a clear and bright flower; Lady Sophia Dumaresque, medium tube, dark claret ground colour, fine truss, and handsome foliage; Sir C. Napier (Lightbody), very pretty indeed in all its parts—so much mealed on the edge as to be quite a white edge; Alma (Lightbody), good tube, regular in all its parts—fine pip and habit; General Bolivar, very striking and bright; Privateer (Grimes), a useful old flower, fine dark body colour, a well-shaped flower—makes a good truss; Duke of Cambridge (Dickson), circular tube, good colour, dark ground—very fine circular pip and truss; Frank Simonite (Simonite), a refined Colonel Champneys, bright violet ground — makes a good show variety when caught in good character—tube very weak; Matilda (Dickson), a good and useful grey; George Lightbody (Headley), very fine indeed; Complete (Sykes), fine truss, a good useful flower; Ringleader, a very pretty and useful grey, that appears to keep well when fully expanded; John Waterston (Cunningham), a very useful flower also; comes occasionally a good white, and when in condition can be shown in that class; Unique (Maclean), large, and fairly good tube, heavy body colour, paste irregular; a distinct looking variety, fine pip; Robert Traill (Lightbody), very fine and good; and C. E. Brown (Headley), good tube, dark body colour, fine and taking truss.

Of white-edged flowers there were Lady Sale, very pretty, and fairly perfect in all its parts, but the petals are pointed—large truss; Ne plus Ultra (Smith), a good and useful white, fine pip; Acme (Read), a very pretty and effective white-edge, that has been finely shown this season, and which promises to take high rank as an exhibition flower—a variety that lasts a long time in bloom—good habit and grower; True Briton (Hepworth), a good and useful white, well deserving of culture for exhibition purposes; Beauty (Trail), almost a grey here, at best a faint white—slight dark body colour, fine pip and truss, pale tube; and Smiling Beauty, very pretty and correct, and good truss.

Of green-edges there were Prince of Greens, very fine and correct, in small plants, and with a better tube than is usually seen, good pip and compact truss; Imperator (Litton), very fine in pip, good tube, but too much body colour; Lycurgus (Smith), a pale and pretty bright green, a very useful variety when caught in good condition; Admiral Napier, good tube, fine pip and truss, but too much body colour, pale edge; Anna (Trail), very bright on the edge, but with the usual defect of the body colour breaking into it; Freedom (Booth), very good, as this fine sort invariably is; General Niell (Trail), a somewhat common yet useful green-edge, of good habit; and Prince of Wales (Ashton), bright green, tube fairly good, dark body colour.

Self flowers were as numerous as the greys. Clipper, Mr. Turner's new self, I did not see in flower, but it is spoken very highly of. Others were Metropolitan (Parker), a pretty violet-purple self, with a rough paste; Lord Clyde (Lightbody), a good useful self, but now beaten by Pizarro, Clipper, and others; Formosa (Smith), weak tube, very fine pip, and very attractive in colour; Topsy, beautifully smooth, as it always is, but undersized, as it generally is; Mrs. Sturrock (Martin), nice and bright, though distanced by others of the same colour; Lord of Lorne, very bright and good; Empress (Turner), a useful dark self, tube weak, paste good and very pure, a pleasing flower; Garibaldi (Pohlman), a very fine dark self, good in all its parts, and an excellent show variety; Petronella (Headley), a good and useful dark self; Vulcan (Sims), an old flower, but decidedly pleasing when caught good; and last, but not least, Cheerfulness (Turner), a fine violet self, let out a few years ago, in the way of C. J. Perry, but decidedly better and brighter in colour as seen here, good tube, circular paste, fine pips and truss, and good habit. This makes a good exhibition flower.

The alpines are now a very numerous class, and constant additions are being made. Mr. Turner has this season catalogued ten new varieties, and, in addition, he has many seedlings of great promise. A selection from the large collection at Slough is given, but it by no means exhausts all the fine flowers found there.

Of the new varieties not yet distributed, mention must be made of Unique, rich golden centre, the body colour broad, and of a heavy crimson-rose shaded with crimson—very fine indeed, large flat pip; Susie Matthews, dark ground, shaded with very bright mauve-lilac, white centre, very pretty indeed; Duchess of Connaught, dark ground, shaded with pale violet and lilac, creamy centre; very good and attractive; A. F. Barron, dark maroon, with slight edge of pale cerise-rose, golden centre—very fine; and Mrs. Ball, dark ground, shaded with bright pale rosy-red, gold centre—very fine and attractive.

The following were also among the gems of the collection:—Fred. Copeland, dark crimson, golden centre, very fine; Vesuvius, bright crimson, rich golden centre, very fine and striking; Mrs. Dodwell, deep plum, shaded crimson, and edged with bright purple, creamy centre, changing to white, very fine pip and truss; Mrs. Llewellyn, dark ground, shaded with violet, very bright and effective, pale golden centre changing to cream, very pretty and fine truss; King of the Belgians, very fine indeed, one of the best alpines yet raised, and not a little difficult to beat; Sensation, golden centre, paling to cream—very fine; Marine, dark ring round a pale yellow eye, edged with cerise and purple, very fine pip, and bold truss; Philip Frost, dark ground, shading to bright cerise, pale gold centre—very fine; Thomas Moore, blackish maroon, shaded with crimson, rich gold centre — very fine; William Fowle, shaded maroon, very large brilliant golden centre—extra fine; Picotee, maroon, edged with bright crimson like a Picotee, golden centre—distinct and fine; Phœnix, large dark maroon, fine golden centre—very good; William Bragg, bright maroon, like shining velvet, rich golden centre—very fine; and Slough Rival, dark, shaded with violet, golden centre, large pip; very fine. *R. D.*

The Poultry Yard.

Notes on Pheasants. — As the *Gardeners' Chronicle* is no doubt read on all the principal estates in the country, a few remarks on pheasants may interest many and bring out valuable observations from some. On our "lord and master's" ground about 2000 pheasants are reared artificially annually, and many more are hatched out naturally in the covers; but of them we need not speak, as rearing pheasants in the manner adopted with chickens is now so commonly practised on all gentlemen's estates, that my remarks will be confined to them alone. Of the keepers we need not say much. Probably no class of men are more assiduous in their calling. The majority of those I have known were too much engrossed with their game to attend either church or market, and from this it may be inferred that young pheasants seldom suffer through want of attention, but probably a good many of them are killed with kindness. On the estate here I should say every pheasant must have cost 10*s.* per head by November, or shooting time. This expense is chiefly incurred when they are quite young, or, I might say, before they have got their "second tails." By that time they are of a fair size, and generally inclined to find food for themselves, but previously they are treated to all the dainties the keeper can think of or get hold of. Oatmeal, patent meals (generally from 20*s.* to 30*s.* per hundredweight), eggs, greaves, custards, and rice are only a few of the foods which are placed before them, either mixed together or separately. In much of this we think there is harm. In a wild state hardly one of these foods are supplied, and I think many pheasant diseases may be traced to over-feeding on unnatural food. In this opinion I am strengthened and guided by my poultry experience. If our chicks were crammed with the same dainties I should fear the consequences. While very young such fare might be agreeable, but they can never lay a substantial foundation. Grain is not used enough in rearing young pheasants. In a wild state seeds are almost their sole food, and all must have noticed how well the birds thrive when they get on to the stubble fields when the Wheat and Oats have been gathered in autumn. This is a pretty safe indication as to what food to supply. Whatever the birds will fatten and remain healthy on when large will always nourish them when small.

Another mistake I have often observed in pheasant rearing is the place selected by the keepers for rearing. The covers might be regarded as their natural abode, where they are well sheltered from sun and wind, and have ready access to the insects, which are so plentiful in summer under trees; but those facts are generally ignored, and the young pheasants are kept for three of the first months of their lives and the best months of the season in some field almost void of shelter and deficient of insects, as well as many other natural foods. Could I have my own way in pheasant rearing I would have the mothers arranged in coops along each side of a pathway in one of the covers, and would undertake to rear them here with little or no trouble against every contrivance which could be introduced to help on field-reared birds. The wild birds follow our plan, as they are rarely to be seen spending much of their time on a grass field, but they are seldom observed idle under cover. Indeed, this seems to be the habit of all birds. Our chicks have the choice of a fine woodland run, and also an open grass field, but they only come to the latter to enjoy the sun, all their scratching and food-finding being done under the bushes and among the trees.

Pheasants' eggs hatched out uncommonly well in our part this season, and at first the youngsters were strong and healthy, but when they were a few weeks old many died, and now the pheasant season will be a poor one indeed. One keeper lost 700 in two weeks. Their term of illness did not exceed twelve hours. At first they let down their wings, then they became very thirsty, when diarrhœa carried them off. In all my experience with fowls I have never observed a parallel case. Enquiries have been made as to the probable cause from those who profess to know much of such subjects, but a satisfactory answer has not been obtained. If any reader of this paper has experienced anything of this kind and can give both a reason and cure it is to be hoped they will do so. As I have stated, the way young pheasants are treated as a rule does not correspond with my ideas, but for all that I am much interested in the above case, and would be pleased to see it settled up clearly.

Mounds in Poultry-yards.—Were I making a poultry-yard, no matter whether it was 1 acre in extent or only a few yards square, a high, dry mound would be raised in the centre of it, or in some part more suitable. There is nothing fowls, especially young ones, enjoy more than squatting themselves on a mound. In one of our poultry runs there is a Sweet Bay tree. Some years ago this was layered down to make it more of a "clump," and to do so a good mound of soil was put round and over the branches to the height of about 5 feet, and as soon as the chicks have their meals a general rush is made for this elevation, and the way they appear to enjoy it proves how much provision of the kind would be relished in all yards. In making a mound I would raise a good foundation of stones. Cover them over with 2 feet or more of soil. Plant this with evergreens and turf between. A high pinnacle is not wanted; gentle, sloping sides, and a top slightly inclined, is the best.

Diarrhœa in Chickens.—In wet seasons such as the present this complaint is very liable to prevail in many yards, and when any tendency of the kind is observed anything like sloppy food must be strictly avoided, and green food, if they are in confinement, should be given sparingly. Radical means of stopping this is not approved of by us, as it is so liable to cause inward irritation, and the cure may be worse than the disease. Our main cure is to boil an egg hard, chop it up, and give in reason according to the age and condition of the fowl.

Gapes.—Since camphor was recommended as a cure for this in one of my notes in these pages, I have been pleased to hear of its value in many cases. One nurseryman's wife who has a good yard of Dorkings was talking to me of her success this year, and mentioned that gapes took possession of some of her stock, but after using camphor in their drinking water, as recommended in the *Gardeners' Chronicle*, permanent improvement was the result, and both for her sake and my own I was pleased to hear of this, only I did not tell her she was speaking to *Henwife*.

Home Correspondence.

Hardy Ornamental Trees.—Any one interested in the cultivation of hardy ornamental trees should pay a visit to the "Arboretum," Isleworth, and there have the opportunity of judging for himself the effect—the charming effect—that may be produced by the judicious planting and arranging of ornamental trees and shrubs. The central walk or avenue in the Arboretum, which is nearly half a mile long, and a great source of attraction to the inhabitants of Isleworth, as they pass and repass its gates, affords an admirable example, not altogether of ornamental planting, but of the materials—almost endless in variety and quality—wherewith to execute such a work, but by this remark I do not wish to be understood as depreciating the manner in which the work has been done, but as showing that the stock in trade is represented—well represented—in this particular situation, and so arranged that the visitor can see the individual species and their respective varieties without leaving the walk. Mr. John Webb, the resident manager and veteran arboriculturist, takes great pleasure in showing visitors through the shady walks—walks shaded with rich and diversified foliage of handsome trees, which divide and subdivide his Arboretum into ornamental sections, and explaining on the way thither the characteristics of the respective species. Perhaps the best time in the year for making such a visit is during the months of August and September, although, if the visitor be a lover of pretty and graceful trees—trees which are beautiful not only in habit of growth and diversity of colour and form of leaf, but also on account of their great variety and distinctiveness of character—he will, go when he will, always find sufficient variety in the Messrs. Lee's unique collection to interest and reward him for his visit, and where also he may pick up a few practical hints respecting the treatment of the trees which form the subject of this notice. *H. W. W.*

Friendly Sparrows.—"I. A. H." in last Saturday's *Gardeners' Chronicle* speaks of the sparrows clearing his Roses of aphis. I grow Pansies, Violas, and Polyanthuses by the thousand, and although the sparrows destroyed a great quantity of Polyanthus buds and flowers in the early spring, and pulled out early transplanted seedlings from sheer mischief, I am now much inclined to condone their misdeeds for what they have been doing lately. Pansies and Violas in the Midlands have suffered greatly from brown aphis this season, and I have been sorely troubled to keep ours clear, but we have derived some help from the sparrows who frequent the Pansy beds and devour the aphis. *W. D., Florist, Walsall.*

Potato Disease: Lifting and Storing the Tubers.—It is lamentable to see how fast the Potato disease is spreading, and what a hold it has of the tops in some places, and as the tubers soon become affected after the spot appears, the best and only safe way of saving them is to lift and store them, as, so long as they remain in the ground, they are liable to attack, and, once stricken, they are useless except for immediate boiling up and giving to pigs. Before lifting, however, it is necessary to see that the skins are set, before which time the Potatos are unfit to dig for laying by, as, being unripe and immature, they will not keep, but become bruised, turn black, and spoil. All early sorts, such as Myatt's Early Rose, Snowflake, and most of the kidneys, are quite foward enough, as also are some of the rounds, but if there is any doubt, they may easily be tested by rubbing them between the finger and thumb, and if with slight friction the skins do not move, but remain fast, they are sufficiently advanced to be lifted at once. Where there is not time to do this, the next best thing is to cut off the tops, as by doing that the spread of the disease is arrested, and the tubers can then be taken up during a leisure time, or when the weather and conditions are favourable. It is the practice with some when digging Potatos to throw them out, and let them lie on the ground, but beyond leaving them there just sufficiently long to dry, the sooner they are housed the better, as the sun hardens and breaks them, and partly spoils them for use. Those for cooking should not only be got in from the sun and air, but kept dark by either being covered or placed in a cool cellar, in which latter place, if dry, they always keep well. Pitting is the worst of all ways of storing and keeping Potatos, as they sweat and get hot, and not only that, but the close confinement under straw and earth is sure to impregnate them with an unpleasant flavour. Seed Potatos, on the other hand, cannot well be stored in too light or airy a place, as the thing with these is to retard growth to as late a period as possible; and the gradual greening process they undergo does good, as it sets the skin fast, and helps to ripen the tubers. The light and air, too, acts beneficially on the shoots, which, instead of starting early and becoming drawn, as they do in close dark places, push out slowly, and become sturdy and strong. To enable them to do this the tubers should be laid thin on benches made of stout strips of deal placed half-an-inch or so apart, as then currents of air may pass through between, to aid in which the shed or place occupied should be freely ventilated by opening doors and windows whenever the weather is favourable. Many think that because Potatos look clear when lifted that they take disease after, but that is a mistake, for if they show rot the spot must be there before, although it may not show, and no care or pains will stop it or prevent its appearance. All that can be done is to pick out the infected ones as soon as they can be detected, and so prevent them from contaminating or injuring others they touch. *J. Sheppard.*

Curiosities of Grafting: Passifloras and Tacsonias.—My experience in grafting this class of plants has proved that they enlarge at the union so much that they either canker and rot off after they have taken or become very unsightly. What I think should be aimed at is to get the Tacsonia to flower in a smaller and younger state, so that they might be more grown in small greenhouses and in small pots. This I have succeeded in doing, having now many plants showing flower-buds, and which will soon be in full bloom, which are only 3 and 4 feet high. Some which I have planted out on a south wall also show bloom-buds, and I have no doubt they will flower out-of-doors this summer. I have hybridised Tacsonia insignis on exoniensis and with Van Volxemii and sanguinea, and have a great variety of seedlings, the foliage of which all looks very promising. When in bloom I shall have great pleasure in sending you leaves and flowers. *Wm. Smythe, The Gardens, Basing Park, Alton, July* 13. (See p. 103.)

Petroleum as an Insecticide.—I can fully indorse all that Mr. Duffield states in his note, p. 85, as to the efficacy of petroleum as a remedy for many of the insect pests with which gardeners are troubled; and further, I would warn all those who are not practically acquainted with it as an insecticide to be extremely cautious how, when, and where they use it before they are better informed respecting its damaging properties, as the remedy may prove far worse than the evil, as the following instances will show. My own and first acquaintance with this oil

as an insect killer dates back to some fifteen or sixteen years ago. Amongst other plants which at that time were under my charge was a batch of Pelargoniums, and these had become badly infected with greenfly. On observing these when walking through the houses one day, the "*chef*" says, "Well, John, what about that new dodge of petroleum you were telling me about the other day? Supposing we give it a trial on these Pelargoniums." Yes, and so we did, and with the following result:—Two wineglassfuls of the oil were mixed with an ordinary-sized pailful of soft water, and well stirred up. "Now," says the *chef*, "dip them into that, and hold them in for about two seconds, and then lay them down on their sides." In about an hour afterwards the remark was, "Well, John, I think that new dodge of yours has settled the fly." Yes, and sure enough it had; and the following day it was only too plainly visible that the plants were settled into the bargain. Had the plants been syringed, and the now well-known method of mixing the oil and water together been adopted, there can be no question but what the plants would have passed though the ordeal alive, minus greenfly. Two other cases of its damaging effects I may give. The first one was that in which Vines when at rest had been painted over with a view to eradicating the mealy-bug, with which they were infested; the second was one of painting old-established Peach trees infested badly with scale. In each case the insects were placed *hors de combat*, but when new growth commenced in the spring it was seen that half the wood in the Peach trees was dead, Vines ditto. Now, in all three cases cited above, there can be no doubt about the injurious results being due to not properly mixing the oil and water together, or to its having been used too strong. Of what strength the solution was as used on the Vines and Peaches I am unable to say; suffice it to say that I believe it was the main cause of each man being dismissed from his post. Mixing a given quantity of oil with water by simply stirring it up won't do. Our own plan of using it is to put two wineglassfuls of oil with four gallons of water, and mix it precisely in the same way as that recommended by your correspondent at p. 85. For green or black, or any kind of scale, I don't know of anything cheaper or better. This much, however, I feel compelled to say—viz., do not use it too often early in the spring, when the foliage is young and tender, or the consequences will be that the young leaves will fall off before they are half grown, especially in the cases of Peaches and Nectarines—in fact, I would not recommend its being used on anything when the foliage is young and tender, but when it is fully developed little or no injury will result. *H.*

Slow Germination of Whorled Primulæ.—It may not be amiss to draw Mr. Anderson-Henry's attention to the fact that even in the case of P. japonica it only holds good with old seed. If new seed is sown as soon as ripe, say in July or August, it comes up freely the next spring. P. verticillata, so far as I know, grows freely at any time, old or new seed. I have a fine whorled form of P. suaveolens, and it does not differ in the matter of germination from its near relatives. I have also two or three distinctly whorled forms of P. elatior. Neither are they affected in the direction of lengthened germination; and in the matter of Gentians, seed sown as soon as ripe generally grows at once, whereas, just as in the case of P. japonica, if it is kept over till spring it takes time to come up. Many of the splendid plants mentioned by Mr. Anderson-Henry are certainly worth an effort to introduce, and I think that if, instead of their seeds being sent home in paper, the usual way, they were scattered through a mass of soil and headed down in a cask, there would be a fair probability of their waking into life shortly after arrival. *T. Smith, Newry.*

Melons and Cucumbers in the same House.—Referring to the notices in the *Gardeners' Chronicle* of June 3 and July 15 on the above it might be well to observe that the practice is not new. Mr. J. Shannon, gr. to Sir A. Jardine, Bart., Jardine Hall, N.B., has for several years been growing Melons and Cucumbers in this way. Some years ago a small house, 28 feet by 7 feet, was erected for this express purpose, and Melons on one side and Cucumbers on the other have been very successfully grown in it, the plants being in narrow beds on either side of the centre path. As only one crop of Melons and Cucumbers are grown in the season the house, when not so used, has been found to be one of the most useful in other respects for preparing and bringing forward plants for the larger houses. *X.*

Eucharis amazonica.—The season having come round when a good many growers will be dividing and repotting their Eucharis bulbs, a few remarks on their culture may be of some interest. A compost of two-thirds of good turfy loam, one-third of good sandy peat, with a liberal addition of rough bones, charcoal, broken flower-pots, and a little soot (which gives the plants a fine dark healthy appearance) suits them well. The Eucharis is a great water-loving plant, so that the pots or pans should be well drained with broken crocks and a layer of rough bones on the top. Do not pot too hard, as they enjoy plenty of freedom at the roots. Those who have a house or part of one to spare would find it advantageous to plunge them in a bed of tan, with a bottom-heat ranging from 80° to 85°, and a top-heat of from 65° to 70°; should this plan be adopted, and the plants be carefully treated, good results will follow, in the shape of plenty of flowers for cutting during the winter months. The less frequently they are repotted the better, and when pot-bound a little weak guano-water will be found a capital stimulant. Pancratiums will do equally well with the same treatment. *W. Reive, Ockenden Gardens, Cuckfield.*

Barrel-frame Easy Chairs.—We take the following illustrations and letterpress from the *American Agriculturist*:—A large barrel or small hogshead

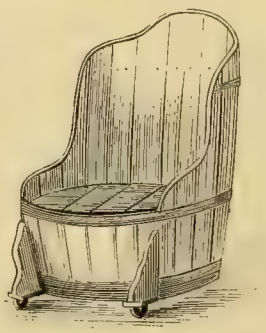


Fig. 22.—THE CHAIR FRAMED.

with iron hoops is cut to the form shown in fig. 22, the hoops being first riveted to the staves. Strips or cleats nailed on the inside at any desired height, support the upper barrel head as a seat. The barrel is mounted on a frame of two pieces of wood with casters underneath. A broader firmer base would be formed of three or four pieces. The supporting brackets are added in front. Fig. 23 shows how the whole may be upholstered with calico or any other material at small



Fig. 23.—THE CHAIR COMPLETE.

cost. All the above work of "easy chair" making may be done at home, and involve very little expense.

Suburban Garden.—A "little bit" in my suburban garden is just now so pretty that I venture to mention its constituents as a guide to those who may be puzzling themselves what to plant. The bit in question is simply the right angle formed by one wall going straight from south to north, and the other from west to east. A straight path with a border on each side runs down from the south, so that the angle in question is in full view of the windows of the house—just an uncompromising London builder's garden—a jack-towel garden, in fact. Now for the planting, which it is fair to say has been to a large extent accidental. First comes, on the right border, a glorious plant of Œnothera Lamarckiana, now in gorgeous bloom, backed up by a pyramid of Thuya gigantea, behind which, and slightly overhanging the path, are some tall sprays of the pink Spiræa venusta in full bloom, and which my gardener (ahem!), in the spirit of tidying up, is very anxious to tie up to a stake, but which procedure is peremptorily forbidden. Then, still proceeding northwards, is a rustic arch thrown over the path, and weighed down with the profuse growth of Felicité Perpetual Rose. This arch forms a frame through which is seen on the one side a standard plant of variegated Negundo, on the other a weeping Purple Birch of great depth of colour, though this would undoubtedly look better if further away from the dark Ivy. These two stand sentinels, one on each side of a miniature rootery, capped with the spreading fronds of the male Fern, and backed up with a dense growth of Irish Ivy, which thickly covers the boundary wall. The whole arrangement is so contrived as to give the effect at a distance of a woodland walk, going no one knows whither, instead of coming to an abrupt termination, as it really does. *Jack Towel.*

Yellow Foxgloves.—Those who know the Alps have often told me of yellow Foxgloves, and I have often tried to get them. The first seed that was given me of them turned out the common Great Mullein, Verbascum Thapsus; but I have also succeeded in flowering both biennial and perennial species of Digitalis, of a dingy colour, called yellow for want of a better name; but the specific name "luteus," "mud-coloured," better describes them. A really yellow Foxglove of the size and habit of our purple native would be very beautiful; but I have never met with one. The nearest approach to it I have seen is now in flower in my garden, and was given to me last year by Messrs. Smith, of Worcester, under the name of D. Lindleyana; it has the appearance of being perennial; another sent me at the same time, called D. gigantea, is not yet in flower. *C. Wolley Dod, Edge Hall, Maplas, July* 14.

The Late Mild Winter and the cold biting east winds in the spring have had a most deleterious effect upon many perennials and shrubs. I do not remember ever to have suffered so much. Tea Roses have been checked and nipped almost as much as if they had passed through a very severe winter. Larkspurs with Pæonies have been hit so hard that many of them have not bloomed at all, and all look more or less sickly. Lathyrus latifolius albus, a large strong plant, has perished altogether, so has L. splendens, of which I had a potful of strong seedlings raised from seed sent me by M. Max Leichtlin; but the plant which has suffered most is a very large specimen of Lathyrus rotundifolius, which has been the glory of my garden in June and July for the last four or five years. It has generally several hundreds of bunches of blooms expanded at the same time. It came up very strong this spring and was covered with buds, but many single bunches have been prematurely nipped and the whole plant presents about as melancholy an example of a thing blasted and blighted by the east wind before it is grown up as could well be found. *H. Harpur-Crewe, Drayton-Beauchamp Rectory, Tring, July* 15.

Mignonette.—Among plants whose flowers exhale sweet odours, none are more highly prized than Mignonette, but valuable as it is for beds and borders, it is doubly so for pots for the embellishment of greenhouses or conservatories during the winter, or to use with other plants in windows in rooms, where, when in bloom, it fills the air with the sweetest and most refreshing of odours. To have in perfection at the season mentioned, preparations should be made now, and the seed sown at once, as success depends mainly on giving the Mignonette plenty of time to become strong before it is placed under glass in the autumn. For general purposes the handiest sized plants are those grown in 6-inch pots, which are the most serviceable for furnishing, but if big specimens are required, 8-inch or 10-inch pots must be used, in which latter sizes there is no difficulty whatever in having masses of a fine pyramidal shape, upwards of 2 feet through. The pots decided on, the next thing of importance is the drainage, which must be perfect, as though Mignonette will take, and requires, a good deal of water, it will not bear a wet, stagnant condition of the soil, which is fatal to healthy root action, and often causes an entire loss of the plants. The best kind of drainage for Mignonette is bones broken up into small pieces, or charcoal similarly treated, but before either of these is used a potsherd should first be placed over the hole in the pot to prevent the charcoal or bones falling through. To make sure of keeping the interstices betweeen the drainage clear and open it is a good plan to scatter a very little dry moss or sphagnum over it in each pot, and then just a sprinkling of soot, which not only acts as an agreeable and powerful stimulant, but helps to keep out worms, to which it is most objectionable, and makes them wriggle and twist and turn out of the soil it is in. This being so, it is as well always to mix a little with the loam before filling the pots, but being of a hot nature it does not do to apply much, and it is far better to apply a decoction from it later on by having a bag of it in water, which is an excellent and safe way of using it, as the roots of the plants can take it up and feed on it at once. The kind of soil that suits Mignonette best is tolerably fresh cut turf with plenty of fibre in it, and if this is chopped up fine and rammed into the pots firm when in a fairly dry state the plants will revel in it and grow luxuriant and strong. Why Mignonette requires such firm soil is

on account of its fine hair-like roots, which in a loose open medium are apt to suffer from sudden changes, and perish from drought. The soil consolidated in the way stated, the next thing is to sow the seed, which should be done thinly and regularly over the surface, and then slightly covered, when the pots should either be stood on a hard coal-ash bottom in a frame where the lights can be kept continuously tilted, or close along under a wall out of reach of the sun. In either situation the seed, if good and fresh, will soon germinate; but to enable it to do this it will be necessary to slightly sprinkle the soil, but on no account must the damping be heavy enough to do more than keep it moist, as Mignonette during its early stages is very impatient of wet. As soon as the plants are up they will be all the better for full exposure, and to prevent them from drawing they should be thinned early, leaving only the strongest and best. For the 6-inch pots five or six plants are sufficient; but for those of larger size double that number may be left, and as soon as they are as long as the finger sticks should be applied, and the plants tied loosely to them, otherwise they fall over and become bent in their stems. It is the practice with some to stop the shoots of Mignonette by pinching out the points with a view to make them branch; but when this is done they never send up such fine spikes of flower as they do when they are left more to themselves, and they always grow bushy naturally and break well from below. To prevent the roots drying while the plants are standing out during the summer, the pots should be plunged in ashes or cocoa-nut fibre, that the sun may not strike the sides, as when it does so the desiccation is great, and the leaves soon show it by the starved appearance they assume instead of keeping the dark green colour so characteristic of Mignonette that has been well fed and cared for. Although Mignonette is tolerably hardy, it is not safe to allow the pots of it to stand out after the middle of October, a time when it should be housed, but it is necessary for it to have a very light situation and plenty of air to keep it from drawing. No place suits it better than a shelf near the glass, where, if not exposed to cold, cutting draughts, it always does well. During winter the plants require careful watering, and should be kept rather dry than otherwise, and when they do have water it is always advisable to have that impregnated with soot, which will go far towards maintaining them in vigorous health, and enabling them to throw out large heads of bloom. Many think it matters not what kind of Mignonette is grown, but there is a vast difference in the sorts, the old Reseda odorata being quite a weed when compared with such as Miles' Spiral, Garraway's or Parson's White, or Barr's pyramidalis gigantea, which are all large bold types, and almost the only varieties out of the many that are really worth cultivating in pots The last-named has more red in it than the others, and is therefore desirable on that account; but, taking all in all, my favourite is Miles' Spiral, which has served me well for years, and always comes good. *J. Sheppard.*

A Wild-flower Show.—I was much pleased with and interested in the article on "A Wild-flower Show," published in your paper of the 15th inst., and fully agree with the author of it as to the great value to children of the study of botany. It is my firm belief that if it were taught to a greater extent in schools the children would be rendered more observant, would have many more enjoyments and interests than they at present possess, and the schools in which it was taught, when compared with others ignoring the study, would be found not only to stand on equal ground with regard to excellence in ordinary attainments, but to be far superior in moral tone and in general intelligence. It is often said that the beauty of a leaf is never fully seen until an attempt is made to transfer a likeness of it to paper, and it is certainly more true that the beauty of the tiniest and most commonplace of flowers is unknown except to the botanist, the lover even of Nature's weeds. At Woodbridge Horticultural Show on Thursday, July 13, I was delighted to see splendid specimens of wild flowers exhibited both by ladies and cottagers. The show is always noted for the excellence of its exhibits in this respect, as in all others. The flowers shown by the cottagers were arranged *en masse* about 1½ feet by 2 feet, and contained all the more common wild flowers, including Poppies (Papaver Rheas), Cornflower (Centaurea cyanus), Corncockle (Agrostemma Githago), Meadow Sweet (Spiræa Ulmaria), field Scabious (Knautia arvensis), Yellow Ox-eye or Corn Marigold (Chrysanthemum segetum), various Umbellifers and grasses, and in addition Heath (Erica cinerea), Mullein (Verbascum thapsus), Viper's Bugloss (Echium vulgare), wild Mignonette (both Reseda lutea and luteola), white Valerian (Valeriana officinalis), and a yellow flower unknown to me, a specimen of which I have enclosed. [Lysimachia vulgaris. ED.] One of the cottagers informed me that all the specimens were gathered for her by little boys, who had scoured the neighbourhood in search of them. The wild flowers shown by the ladies were arranged very tastefully in epergnes. There were about eight exhibits in this class, all of considerable merit, and deserving of great praise. The 1st prize, won by Miss Stidolph, of Woodbridge, was a very light and exquisitely arranged collection of splendid flowers, with a few grasses interspersed. Besides the ordinary wild flowers this exhibit included white and yellow Water Lilies (Nymphæa alba and Nuphar lutea), Orchis latifolia, the Rest-harrow (Ononis arvensis), the Willow-herb (Epilobium hirsutum), Flowering Rush (Butomus umbellatus), a Lythrum, a Campanula, a large species of Myosotis, and the Money-wort (Lysimachia nummularia), the latter, the Money-wort, being arranged all round the upper part of the epergne, and drooping gracefully till it nearly reached the lower part. But these exhibits, though beautiful and interesting, fall far short of those of the boys mentioned in your article of the 15th inst., in that the specimens were unnamed, and probably were unknown to the exhibitors, and certainly conveyed no information to the casual eye. It would be a step in the right direction if special prizes were given at cottagers' shows for the best collections of wild flowers correctly named. This would awaken a lively interest in the children, would lead them to careful observation and thoughtful study, and would probably be of untold good in the future. Before closing I wish to remark that children should be taught in gathering wild flowers not to root up plants unless positively necessary, especially in the case of rare species. *H. M. S.*

Picridium tingitanum.—I often wonder more people do not grow this pretty South European Composite. I was so taken with it when visiting the Island of Minorca, in company with Mr. George Maw a few years ago, that I brought home plants and have cultivated it ever since. It is only an annual, but easily raised from seed, which it produces freely. The plants are much finer and stronger if sown in the autumn, but in this case they require the protection of a frame during the winter. Last autumn a single seedling plant came up in one of my glazed pits; I left it alone, and have been well repaid. Every morning for the last three weeks it has been smothered with several scores of lovely pale lemon-coloured flowers, with a purple centre. The only drawback is that it shuts up soon after noon. Unlike most of its congeners, it is not the least coarse in its growth. It likes a rather hot, dry, sunny situation. In Minorca it was growing in almost pure sand, on hilly ground close to the sea. *H. Harpur-Crewe, Drayton Beauchamp Rectory, Tring, July 15.*

The Peach on Outside Walls.—There are at Syndale Park, Faversham, upwards of thirty trees in various stages of development, and most of them are in a healthy thriving condition, and bearing heavy crops. The walls are about 12 feet high, and a wood coping projecting out 2 feet is put up for protection, when the trees are in flower. This cultural treatment consists of regular attention to disbudding and thinuing of the fruit, which are reduced in number when about the size of peas; again, before stoning, and afterwards if the crop is thought too heavy, and strict attention paid to nailing in next year's fruiting-wood, the object being to get it thoroughly matured by the autumn. But the chief feature in Peach growing is, an abundant supply of water, with copious syringings overhead; they get it here by the means of a ¾-inch hose-pipe, the water being pumped by steam-power. The borders are cropped with early vegetables, which are generally cleared off by July, and a mulching of long dung put on. *H. L.*

Fuchsia Venus de Medici. — Growing in a raised bed in a lean-to house in the gardens at Bagshot Park, are a few specimens of this old favourite and very free-flowering Fuchsia. They are on single stems, trained arch-wise across the house, and are remarkable, not only by reason of their great size—the stems being nearly 12 inches in circumference—but also on account of the profusion of flowering-shoots which they supply for decorative purposes, and for which use, Mr. Burdon, the steward and gardener at Bagshot Park, informed me that they are in great demand. They certainly make a pretty picture in the house in which they are growing, the pale green foliage and puce and white flowers which embellish the trailing shoots having a pleasing effect. *H. W. W.*

Crystalised Soft Soap as an Insecticide.—I have invariably found Pansies and Violas infested with brown aphis season after season, and during the dry weather a few weeks since, and the prevailing cold easterly winds we then had, our Violas and Pansies were so terribly attacked that I despaired of getting them clean again. At other times I have used petroleum oil, and other insecticides have been used, but I was recommended this season to try crystalised soft soap, which we can buy at 6*d.* per pound. I use it in the proportion of about 4 oz. to a gallon of water, using warm water for making it into solution, and after twice dressing the plants we now have them—and they number many thousands—quite clean, and getting into vigorous growth. All Pansy growers know that the aphis gets into the young growth even close to the ground and underneath the foliage, so it is necessary to get on to your knees and work in the soft-soap solution with a small painter's brush. It never hurts the growth, and it is the cheapest, best, and most safe insecticide I have yet met with. *W. D., Florist, Walsall.*

Reports of Societies.

Woodbridge Horticultural.—This Society held its annual exhibition in the Abbey Grounds on the 13th, under less favourable auspices than it has been accustomed to as regards the weather. Large as the five tents were this year they were full to overflowing, and the productions all through were exceptionally good, the fruit particularly being of a high order of merit, and especially that in the collections shown by Mr. Allan, gr. to Lord Suffield, of Gunton Park, and Mr. Bethell, gr. to Sir Richard Wallace, of Sudbourn Hall, who were placed in the order in which their names appear. The competition was a close one, every dish being good, but the splendid finish of Mr. Allan's Figs, Peaches, and Hunt's Tawny Nectarines carried the day. Mr. Fisher, gr. to Lord Waveny, had to be content with a 3d for a very fine lot; and in the class for Peaches Mr. Allan was again 1st, and the same for Nectarines, with superb fruit of Hunt's Tawny, large and perfect in colour. Mr. Bethel, gr. to Sir R. Wallace, and Mr. Fisher, gr. to Lord Waveney, had also fine fruit in both classes, and came in 2d and 3d. For the best four bunches of Grapes, two black and two white, Mr. Bethel was 1st, and Mr. Fisher, gr. to Lord Waveney, 2d. In the class for three bunches of black, Mr. Allan was again to the fore, beating Mr. Mill, gr. to Lord Rendlesham, by a very few points. White Grapes were poorly represented, the 1st prize going to some small but highly-coloured Muscats shown by Mr. Tibbenham, gr. to Lady North. For the heaviest two bunches, Mr. Mill, gr. to Lord Rendlesham, had the coveted award with large-berried Alicantes; and for a good pot-Vine, Mr. Wood, gr. to Dr. Veitch, secured the 2d prize. For Figs, Mr. Allan was 1st, with Brown Turkey, and Mr. Catlin 2d with the same kind. Melons were in great force; but where the committee make a mistake is in not having separate classes for red and green fleshed kinds, as the latter are almost sure to shut out the others, which are seldom, if ever, equal in flavour, and it was so in this case, as the prizes all went to the greens, the 1st being won by Mr. Fisher for a well-ripened fruit. Strawberries made a fine show, as they always do at Woodbridge, the premier award for the best collections going to Mr. Irving, gr. to the Duke of Hamilton, who had a large well-arranged box of all the principal kinds. For the heaviest thirty-six, the prize was won by Mr. Allen, gr. to Lord Suffield, and that for the best fifty for flavour fell to Mr. Mills, gr. to Lord Rendlesham, who had the old inimitable British Queen, which, when well coloured, as these were, by full exposure to sun and light, has no rival in richness. The days of big Gooseberries are not yet over, as at Woodbridge those shown for weight were simply prodigious; and Currants were also remarkable both for size of bunch and berry, the black being more like Cherries than what are usually seen. Raspberries, too, were unusually fine, the best being the Falstaff, which might with advantage supplant all the others.

In the vegetable department, Potatos, Peas, and Cucumbers monopolised a great deal of room, and the former, as is generally the case at this season, gave the adjudicators some trouble, but the 1st award was finally made to Telephone, which, judging from the large number of exhibits, is fast becoming the chief favourite among growers. This is not to be wondered at, as it is not only a remarkably productive variety with well-filled pods containing big Peas, but they are tender and delicious when cooked, and without that tightness of skin peculiar to many. Ne Plus Ultra came 2d, and this is a Pea that will always be grown, as for quality and general excellence it is second to none on the list. Next to Peas most people are concerned more about Potatos than anything else; but unfortunately the kinds that are best for show purposes are the most indifferent for table, as those taking the prizes at Woodbridge were International and Birmingham Prize, which, though handsome in appearance, are not equal in flavour to the old Ashleaf and others. Among the round sorts Fiftyfold was a taking variety, and Porter's Excelsior is a nice flat-eyed smooth-looking sort. In the class for the best collection Colonel Long's gardener took the 1st prize for a very clean lot, and Mr. Lovely 2d. For a collection of vegetables Mr. Irving, gr. to the Duke of Hamilton, was 1st, and Mr. Bethel, gr. to Sir R. Wallace, 2d.

Plants throughout were well shown, the six stove and greenhouse contributed by Mr. Bethel, though not large, being perfect in freshness and finish. The most telling among them were a splendidly bloomed Bougainvillea glabra, Ixora Williamsii, Dipladena profusa, Allamanda cathartica and Eucharis amazonica, with twenty spikes of its pure Lily-like blossoms. Mr. Payne, gr. to E. Packard, Esq., of Birkfield Lodge, near Ipswich, had a very fine half-dozen in the same class, his Allamanda Hendersoni being the finest plant in the whole exhibition. The Messrs. Gilbert of Ipswich came in 3d, their finest plants being Erythrina crista-galli and Erica Cavendishi, but both past their best. The class for stove, greenhouse, or other plants grouped in the best taste, in a

space forming a semicircle 12 feet long, by 3 feet 6, was a most interesting one, and brought many competitors, who made a fine show, but there was no getting away from the lot contributed by Mr. Mill, gr. to Lord Rendlesham, as they were not only arranged in good style, but were choice and of great value. The group shown by Mr. Bethel, gr. to Sir R. Wallace, commanded much notice, as the plants were highly meritorious, and great taste was displayed in putting them up.

It is rarely that Fuchsias are seen in the state of perfection they were on this occasion, the plants being perfect pyramids, many of them standing upwards of 6 feet high, and measuring from 3 to 4 feet through. For six fine-foliage plants, Mr. Bethel was 1st for a fine lot, consisting of a Chamædorea graminifolia, Phœnix reclinata, Croton angustifolium, Cissus discolor, and Asparagus plumosus ; and the same gentleman was also 1st for the six stove and greenhouse in 12-inch pots.

In the cut flower department Roses were the chief feature, and, as usual, the well known Mr. B. Cant, of Colchester, was 1st in the large open class, in which the Rev. H. A. Berners, of Harkstead, came 2d, and Mr. Powell, of Drinkstone, 3d. The prize for the best twelve was won by Mr. Bethell, gr. to Sir R. Wallace, and that for the twelve best Teas, offered by Mr. Prince, of Oxford, was carried off by the Rev. H. A. Berners, in which class Mr. Palmer and Mr. Bethel had to be content with 2d and 3d.

Next to the Roses herbaceous cut flowers came in for the greatest share of admiration, and well they deserve it, for they are rich in colour and gorgeously beautiful. The stand of the Messrs. Gilbert, which took 1st, contained fine bunches of Gladiolus Bowiensis, Lilium testaceum, Galega persica lilacina, G. persica alba, Coreopsis lanceolata, Dianthus striatiflorus, and Chrysanthemum Madame Pecoul. In the smaller class for twelve Mr. Cooper, gr. to Colonel Long, of Hurt's Hall, was 1st, and Mr. Leaver, of Ipswich, 2d. For the best and most tastefully arranged table decoration of fruit and flowers combined Mr. Palmer was 1st, with a very beautiful stand ; and in the class for one with cut flowers only, to be competed for by ladies, Mrs. Gilbert was 1st, and in the class confined to the lady subscribers of Woodbridge the highest award fell to Miss K. Morley. Exquisite as these were, the one made up entirely of wild flowers and grasses, exhibited by Miss Alice Stidolph, ran them very close, and showed what may be done by the exercise of taste in the handling and putting together of what many regard as common material. The bouquets, both bridal and ball-room, were light and elegant, as they should be, instead of packed in the way one often sees them, when the form and beauty of the flowers are lost.

Not the least noteworthy part of the show was a large tent entirely devoted to cottagers, who came out strong, and displayed some excellent and praiseworthy productions of both hardy fruit and vegetables, as well as collections of wild flowers, which are commented on in another page. The bringing together of cottagers and their children at such meetings as horticultural exhibitions must do an immense deal of good, by enlarging the ideas of such toilers and giving them fresh interests and a stronger love for their gardens.

Ealing, Acton, and Hanwell Horticultural.—The annual summer exhibition of this prosperous suburban Society was held on the 12th inst. in the charmingly elevated park attached to Hanger Hill House, Ealing, the residence of E. M. Nelson, Esq., and in weather of the most delightful kind. As usual at Ealing some fine groups are arranged by the trade, and these alway constitute striking features. The Messrs. Lee & Sons, of Hammersmith, sent the beautiful group of hardy ornamental foliage shrubs and trees specially mentioned last week, as also a large group of tender decorative plants, scarlet Kalosanthes, and rich-coloured Coleus, specially figuring in it ; also a fine lot of cut Roses of rich colours and great variety. Mr. J. Laing, of Forest Hill, sent a fine and very striking group of his superb Begonias dressed with Crotons, Caladiums, &c., and added some boxes of fine cut Roses. Messrs. Fromow & Sons, of Turnham Green, added to a very interesting group of ornamental Conifers and shrubs in pots, had a handsomely arranged group of house plants. Messrs. J. Veitch & Sons, of Chelsea, sent boxes of superb Roses that were most attractive. Mr. G. Weedon, of Ealing, had a large and very interesting group of plants, very effectively arranged ; and there was also a pleasing collection sent by Mr. Howell, of Hammersmith.

From private growers there came, not for competition, groups of plants, one especially from Gunnersbury Park, sent by Mr. Roberts, gr. to the Baroness Rothschild, was very effectively lit up with clumps of that charming white early Gladiolus Colvillei albus, a capital variety for pot culture, and specially for forcing. A striking group of plants came from Mr. Huntley, gr. to C. N. Peal, Esq., Ealing, amongst which were some small but neatly trained Lantanas, which indicated that these will make admirable specimen plants. Louis Beau, deep orange-crimson ; Comtesse de Becourt, rosy-pink ; and Toison d'Or, creamy-yellow, were specially striking. Lantanas ought shortly to become popular summer exhibition lants.

The gardens attached to Gunnersbury House, the residence of H. J. Atkinson, Esq., always furnish very prominent aids to the Ealing show, and, as usual, Mr. Hudson was placed 1st with nearly all his exhibits. He had a very charmingly arranged decorative group, taking the 1st prize, was also 1st with six foliage plants, having noble Crotons undulatus and Weismanni ; a monster Alocasia metallica, Cycas revoluta, Dracæna indivisa Veitchii, and Phœnix reclinata. With six huge Ferns Mr. Hudson was also 1st, having Gleichenias flabellata and Mendelii, Dicksonia antarctica, Davallia bullata, &c., and took the 1st place also with six flowering plants, having good specimens. The 2d prize for group arrangement was taken by Mr. Smith, gr. to T. Nye, Esq., Ealing, and Mr. Fountain, gr. to Miss Wood, Hanger Hill, came 3d. With foliage plants Mr. Page, gr. to E. M. Nelson, Esq., was placed 2d, having good Alocasias, Pandanus Veitchii, &c., and was also 2d with six Ferns showing admirable specimens. With four foliage Mr. Smith came 1st, having good Crotons majesticus and Weismanni, Dieffenbachia Bauseii, well coloured ; and Dracæna Youngii. Mr. Fountain was 1st with four Ferns, having some clean bright specimens. The best Fuchsias came from Mr. Wright gr. to G. Greenfield, Esq., Hanwell, which were really well-grown and freely-flowered pyramids. They comprised Arabella, Brigadier, De Cazes, and Charming. The best single specimen, also from this exhibitor, was a handsome pyramid of Arabella. There were numerous collections of Gloxinias, Begonias, Pelargoniums, Caladiums, and other foliage plants ; and in the single-handed gardener's classes—always well contested at Ealing—the contributions were numerous and good. Amateurs have also some twenty or more classes to themselves, in all of which there is good competition. In some special classes Mr. R. Dean, Ealing, was placed 1st, with six hardy plants, having ornamental foliage ; also with six bunches of hardy flowers, with Antirrhinums, and also Sweet Williams, all of choice strains. Miss Dean took the 1st place with six ornamental grasses of elegant varieties, pleasingly arranged. For the Society's open prizes for twenty-four cut Roses in trebles, Mr. C. Turner, of Slough, came 1st, having in his boxes superb blooms of A. K. Williams, Mrs. Harry Turner, Dr. Andry, The Colonel, La France, Alfred Colomb, Countess of Oxford, Souvenir d'Elise, &c. ; Mr. W. Rumsey, of Waltham Cross, took the 2d prize, having of other kinds good flowers of Marie Baumann, Pierre Notting, Baroness Rothschild, and Paul Jamain. In other collections previously mentioned were striking flowers of Duke of Edinburgh, Madame C. Wood, John Stuart Mill, Le Havre, M. Boncenne, Marie Rady, and Paul Néron. In the gardeners' classes there was good competition, as also in the various classes for cut flowers of Pelargoniums, miscellaneous, &c. Table decorations were largely displayed, the prevailing feature in most of the stands being a tendency to crowd the material, and, in some cases to produce pyramid rather than light pleasing arrangements. Mr. Hudson kindly arranged a table having upon it three charmingly dressed stands, with numerous other accessories, and upon it also was staged as dessert his 1st prize collection of six kinds of fruit, having fine black and white Grapes, Humboldt Nectarines, handsome Queen Pine, Melon, and fine Cherries. With two bunches of his superb Madresfield Court Grapes Mr. Hudson was placed 1st in the class for blacks, Mr. Smithson, gr. to W. Lindell, Esq., Drayton Green, coming 2d, with good Hamburghs. In the class for whites some fine and strikingly coloured bunches of Foster's Seedling, shown by Mr. Clements, gr. to C. A. Daw, Esq., Ealing, was placed 1st, Mr. Hudson coming 2d, with Buckland Sweetwater. Strawberries, Melons, Cherries, and other fruits brought good competition.

Vegetables were well shown in the numerous classes, the general good quality showing that the season had proved highly favourable for these products. An exhibit which attracted considerable attention was a collection of Peas of remarkably fine samples, as also a dish of the Leviathan or Aquadolce Longpod Bean. These were kindly sent by Mr. Miles, of Wycombe Abbey Gardens, as examples of high-class culture.

Any report of this Society's show would be incomplete without reference to the remarkable display of cottagers' produce exhibited. These exhibits were shown in twenty-eight classes, inclusive of two for six dishes of vegetables, one for four dishes and yet another for three kinds ; as also others for the collections of fruit, Potatos, cut-flowers, plants, &c., and single dishes in great variety. The prizes in each class range from four up to eight, the larger number being most frequent, and even where now and then superior merit stood out prominent, the competition for smaller prizes was remarkably keen. Some idea of the clerical work attached to the cottagers' department only, may be gathered when it is stated that the entries in the twenty-eight classes amounted to 334, and all in garden products, there being no wild flower or other extraneous competitions ; still farther, the absurdities commonly seen at exhibitions under the designation of model gardens here meet with no encouragement, the aims of the Society being strictly utilitarian. In one class only in this department were there no entries—that for supers of honey. That is a result much to be deplored, and points to the fact that in Middlesex bee culture is not receiving that attention which is bestowed upon it in other counties. Middlesex has no Beekeepers' Association to instruct the uninitiated in the apiarian art, but the locality of Ealing and Hanwell is not without eminent teachers. The bulk of the cottager exhibitors at Ealing grow their products in allotments, where perhaps it would be unsafe to keep bees, but there should be many cottage gardens none the less suitable for the purpose.

Rose Show at the Lower Grounds, Aston, Birmingham : *July* 13 *and* 14.—The above show was opened under very adverse conditions, for it rained in torrents ; but the arrangements were first-rate. The show was held in the skating rink—a grand place for such a purpose, it being 120 yards long and 26 yards wide, and well lighted and ventilated. The prizes offered were very liberal, and brought forward some spirited competition. The principal prizes in the nurserymen's class, open to the United Kingdom, were won by Messrs. Paul & Sons, Cheshunt, and the Cranston Nursery Company, Hereford, who showed remarkably well, as also did the local nurserymen, especially Messrs. Perkins & Sons, of Coventry, whose various stands of flowers were very fine, clean, fresh, and well put up. This firm took the leading prizes open to the adjoining counties ; they also took the 1st prize for a new Rose with H.P. Constantine Tretiakoff, a grand flower, colour bright rosy-carmine. The amateur collections were also very meritorious, especially those shown by E. R. Whitwell, Esq., Barton Hall, Darlington, whose flowers were grand. Seldom has a more meritorious lot been shown than these were ; they easily obtained the leading honour. Several other amateurs and gentlemen's gardeners exhibited from the neighbourhood of Birmingham, most of them showing well, considering the unfavourable weather experienced in this part of the country lately. Some good bouquets of Roses were shown, including one by Mr. F. Perkins, Leamington, which was very fine and easily 1st, although the one which was 2d, shown by Messrs. Perkins & Sons, Coventry, was also very good. Mr. Perkins, Leamington, exhibited a basket of a new Pelargonium of the Regal section called Madame Marie Knight, a grand free-flowering kind ; flowers pure white, except the two top petals, which are slightly dashed with rose. This was awarded a First-class Certificate. Mr. Vertegans, of Edgbaston, showed groups of miscellaneous stove and greenhouse flowering plants, and a collection of herbaceous plants, and in the former group were some fine pots of Gladiolus Colvillei, The Bride, a grand plant for groups and decorative purposes. The whole arrangement of the show reflects great credit upon both the Secretary, Mr. Smedley, and Mr. Reeves Smith, the manager of the establishment. We trust, under Mr. Smith's able management, these grounds will recover their lost laurels. The various classes of Roses were divided by nice neat groups of foliage and flowering plants from the houses of the establishment, and some grand groups of Palms and Tree Ferns adorned various parts of the hall, producing a fine display ; and we believe it is the intention of the manager to encourage and produce some good shows during the ensuing year. (*From a Correspondent.*)

Royal Manchester and Northern Counties Botanical and Horticultural : *July* 14 *and* 15.—A Rose show of a very attractive character was held here on the above dates. The display of hybrid perpetuals, considering the unfavourable state of the weather of late, was exceedingly good, and of Tea Roses perhaps a better lot has never been seen at Old Trafford. The highest honours in the nurserymen's classes fell to Messrs. Paul & Son, Cheshunt—1st for seventy-two single trusses ; The Cranston Nursery and Seed Co., Hereford—1st for forty-eight varieties, three trusses of each ; and Mr. George Prince, Oxford—1st for twenty-four trebles, and for eighteen Teas or Noisettes ; amongst the other prize winners being Messrs. Davison & Co., Hereford, and Messrs. G. Cooling & Son, Bath. In the amateurs' class for thirty-six singles Mr. John Burrell, of Darlington, beat the Rev. Canon Hole, Caunton Manor, and Mr. G. P. Hawtrey, Slough, who were respectively 2d and 3d. With eighteen trebles Canon Hole held his own, beating Mr. Hawtrey, who with Teas and Noisettes, however, turned the tables on the Canon by taking 1st honours. In the new Rose class Messrs. James Dickson & Son, Chester, came in 1st, beating the Cranston Nursery and Seed Co., and Messrs. Paul & Son. The amateurs' classes for district grown Roses were well contested, and the 1st prize for twenty-four singles was won by Mr. W. Brockbank, Didsbury ; for twelve singles, by Mr. E. J. Thompson, Timperley ; and for six singles, by Mr. W. L. Palfrey, Millington, Altrincham.

Messrs. Dickson & Robinson, of Old Millgate, showed a collection of Roses, not for competition, and also a number of choice herbaceous plants. Messrs. Dickson, Brown & Tait, of Corporation Street, also sent a collection, which, like the one just mentioned, included not only Roses, but also herbaceous plants, among which were Liliums and two or three varieties of Spiræa. Messrs. E. Cole & Sons, Withington, and Mr. S. Schloss, Bowdon, contributed numerous stove and greenhouse plants, the dark foliage of which served admirably to set forth the brilliantly rich tints of the "queen of flowers." A fine display of Persian Ranunculi was exhibited by Mr. S. Barlow, of Stakehill, near Middleton, and for which the Society's Medal was awarded. The Ranunculus is so pretty that it deserves wider appreciation among florists, notwithstanding the difficulties attending its successful cultivation. The collection sent by Mr. Barlow was made up of side blooms, and constituted in itself an emphatic protest by a floral gem against the neglect to which it is now subjected.

Scottish Horticultural Association.—The ordinary meeting of this Association was held in 5, St. Andrew Square, Edinburgh, on Tuesday, July 4, Mr. Robertson Munro, Vice-President, in the chair. A paper on "Seed Sowing," by Mr. Isaac Anderson-Henry, of Hay Lodge, Trinity (see p. 69), was communicated by Mr. Robert Lindsay, of the Royal Botanic Gardens.

Mr. J. Grieve, of the Pilrig Park Nursery, next read a paper on the "Cultivation of the Pansy," and referred to the history of the Scottish Pansy Society, which was established in 1859. He said that this Institution had done a great deal in infusing a wide-spread taste among all classes for the cultivation of this favourite florists' flower.

Mr. Charles Taylor, Pinkhill Nursery, read a letter on the cultivation of Tea in India, which was written by Mr. Colin M'Lean, Cahir, India. Messrs. Dicksons & Co. received a Certificate for a new pure white seedling Pink

named Mrs. Wm. M. Welch; they also obtained a Certificate for a seedling fancy Pansy named James Bruce, and exhibited a variety of other flowers. Messrs. Thomas Methven & Sons received a Certificate for a new Begonia named Miss Minnie Methven, a seedling from Chelsoni, and exhibited a collection of Pelargonium flowers, among which were Countess of Rosebery, Royalty, Electric Light, &c. Mr. James Begg, Wardie Lodge, exhibited Miss Hope's Mule Pink, a seedling Delphinium, of a light blue colour, and a variety of Orchis. Miss Isabella Leggat, Musselburgh, exhibited Œnothera marginata, Aquilegia of sorts, and Scabiosa caucasica. Mr. Robertson Munro exhibited Orchis foliosa and Orchis maculata superba, and Mr. Chapman, Easter Duddingston Lodge, exhibited a bouquet of Sweet William, which was made up of twenty-five different varieties.



STATE OF THE WEATHER AT BLACKHEATH, LONDON

FOR THE WEEK ENDING WEDNESDAY, JULY 19, 1882.

MONTH AND DAY.	BAROMETER. Mean Reading Reduced to 32° Fahr.	BAROMETER. Departure from Average of 18 years.	TEMPERATURE OF THE AIR. Highest.	Lowest.	Range.	Mean for Day	Departure of Mean from Average of 50 years	HYGROMETRICAL DEDUCTIONS FROM GLAISHER'S TABLES 6TH EDITION. Dew Point.	Degree of Humidity. Sat. = 100.	WIND. Average Direction.	RAINFALL.
July	In.	In.	°	°	°	°	°	°			In.
13	29.64	—0.18	65.5	55.0	10.5	58.7	— 3.8	53.0	81	S.W. : W.S.W.	0.03
14	29.47	—0.35	74.0	57.5	16.5	63.8	+ 1.2	55.8	76	S.W.	0.02
15	29.33	—0.48	71.5	55.5	16.0	61.1	— 1.6	58.3	92	S.W. : S.S.W.	0.26
16	29.53	—0.32	73.0	54.5	18.5	61.6	— 1.1	51.6	70	S. : S.S.W.	0.00
17	29.66	—0.14	73.0	55.3	17.7	61.7	— 1.0	51.8	70	S. : S.S.W.	0.00
18	29.75	—0.05	70.5	57.0	13.5	61.5	— 1.1	55.0	79	S. : S.S.W.	0.05
19	29.92	+0.12	71.5	54.0	17.5	60.5	— 2.0	53.1	76	S.S.W. : W.S.W.	0.07
Mean	29.61	—0.20	71.3	55.5	15.8	61.3	— 1.3	54.1	78	S. : S.S.W.	0.62

July 13.—A dull morning, fine bright afternoon and night.
— 14.—A dull morning, fine bright warm day. Fine cloudy night.
— 15.—A dull morning, fine afternoon, sun shining at times. Fine night.
— 16.—Fine day, deep blue sky. Fine night.
— 17.—A very fine bright day. Rain all the evening.
— 18.—A fine day, sun's place visible. Rain began to fall at midnight.
— 19.—A very fine bright day, sun shining. Fine night.

LONDON: *Atmospheric Pressure.*—During the week ending July 15, the reading of the barometer at the level of the sea increased from 29.60 inches at the beginning of the week to 29.70 inches by midnight on the 10th, decreased to 29.42 inches by midnight on the 11th, increased to 29.97 inches by midnight on the 12th, and was 29.54 inches at the end of the week.

The mean reading for the week at the level of the sea was 29.67 inches, being 0.03 inch lower than last week, and 0.33 inch below the average of the week.

Temperature.—The highest temperature in the shade in the week was 74°, on the 14th. On the 11th the highest temperature was 62°.5. The mean of the seven high day temperatures was 68°.2.

The lowest temperature in the shade in the week was 49°.5 on the 10th; on the 14th the lowest temperature was 57°.5. The mean of the seven lowest temperatures was 53°.6.

The greatest range in one day was 17°.5 on the 10th; the smallest was 10° on the 11th. The mean of the seven daily ranges was 14°.6.

The mean temperatures were—on the 9th, 58°.5; on the 10th, 56°.8; on the 11th, 56°.3; on the 12th, 59°.2; on the 13th, 58°.7; on the 14th, 63°.8; and on the 15th, 61°.1; and these were all below their averages, excepting the 14th, which was 1°.2 above its average, by 3°.6, 5°.4, 6°, 3°.2, 3°.8, and 1°.6 respectively.

The mean temperature of the air for the week was 59°.2, being 0°.3 lower than last week, and 3°.2 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo, placed in the full rays of the sun, was 137°.5, on the 10th; the highest on the 11th was 80°. The mean of the seven reading was 117°.

The lowest reading of a minimum thermometer with its bulb placed on grass and fully exposed to the sky was 44°.5, on the 11th. The mean of the seven readings was 48°.9.

Rain.—Rain fell on every day to the amount of 0°.97 inch in the week, of which 0.48 inch fell on the 11th.

ENGLAND: *Temperature.*—During the week ending July 15 the highest temperatures were 82° at Sunderland, 76°.8 at Nottingham, and 75° at Cambridge. The highest temperature at Bolton was 66°.8, at Truro 68°, and at Bristol and Wolverhampton 69°. The general mean was 71°.9.

The lowest temperatures in the week were 44° at Hull, 44°.5 at Wolverhampton, and 44°.7 at Nottingham and Bolton. The lowest temperature at Plymouth was 54°, at Brighton 52°.7, and at Truro and Sunderland 50°. The general mean was 48°.2.

The greatest ranges of temperature in the week were 32°.1 at Nottingham, 32° at Sunderland, and 30° at Hull. The least ranges were 16°.1 at Plymouth, 18° at Truro, and 18°.8 at Brighton. The general mean was 23°.7.

The mean of the seven high day temperatures was highest at Sunderland, 73°.1, at Cambridge 71°.3, and at Hull 70°.6; and was lowest at Bolton, 62°.8, at Wolverhampton 64°.5, and at Bradford 64°.7. The general mean was 67°.4.

The mean of the seven lowest night temperatures was highest at Plymouth, 55°.5, at Brighton 55°, and at Truro 54°; and was lowest at Bolton, 49°.4, at Hull 50°.3, and at Wolverhampton 50°.4. The general mean was 52°.5.

The mean daily range was greatest at Sunderland, 20°.9, at Hull 20°.3, and at Nottingham 19°.1; and was least at Plymouth, 10°, at Bristol and Liverpool 11°.6. The general mean was 14°.9.

The mean temperature for the week was highest at Sunderland, 60°.8, at Brighton 60°.7, and at Cambridge 60°.3; and was lowest at Bolton, 54°.2, at Wolverhampton 55°.5, and at Bradford 57°. The general mean was 58°.1.

Rain.—The largest falls were 2.54 inches at Bristol, 1.82 inch at Truro, and 1.55 inch at Wolverhampton. The least fall was 0.65 inch at Hull, 0.69 inch at Sunderland, and 0.81 inch at Leeds. The general mean fall was 1.21 inch.

Thunder was heard on the 9th and 12th at Cambridge; 9th, 10th, and 13th at Hull, 11th at Sunderland.

Thunderstorms occurred on the 11th at Camridge, on the 12th at Hull and Bradford.

SCOTLAND: *Temperature.*—During the week ending July 15 the highest temperature was 71°.8, at Leith; at Edinburgh the highest temperature was 66°.6. The general mean was 69°.8.

The lowest temperature in the week was 43°, at Greenock; at Aberdeen the lowest temperature was 49°.9. The general mean was 47°.

The mean temperature for the week was highest at Dundee, 60°; and lowest at Edinburgh, 57°.4. The general mean was 58°.9.

Rain.—The largest fall was 2.35 inches, at Glasgow; the smallest fall was 0·64 inch, at Aberdeen. The general mean fall was 1.40 inch.

JAMES GLAISHER, F.R.S.

Obituary.

THE death at Hyères of M. GERMAIN DE SAINT PIERRE is announced. M. Germain was well known in the botanical world as the collaborateur of M. Decaisne in several botanical works relating to the flora of the environs of Paris, as the author of a Dictionary of Botany, and of various memoirs on vegetable teratology. M. Germain's pencil was as busy as his pen, and his drawings of plants are as remarkable for their fidelity as for their artistic facility. Latterly, M. Germain contributed spirited articles to the *Journal des Roses*, and he was an occasional contributor to these columns in matters connected with botany and vegetable teratology.

—— We have also to record the death, on the 15th inst., at 16, Albyn Terrace, Aberdeen, of GEORGE DICKIE, M.D., F.R.S., Emeritus Professor of Botany in the University. Dr. Dickie was one of the few botanists of this country who had any extended acquaintance with Algæ.

—— We also much regret to announce the death, on the 15th inst., after a long and painful illness, of WINIFRED MARY, wife of Mr. Robert Parker, of the Exotic Nursery, Tooting.

—— On the 18th inst., at his residence, 7, Dover Terrace, Old Trafford, aged 58 years, Mr. MATTHEW BROWN, of the firm of Dickson, Brown & Tait, seed merchants, Corporation Street, Manchester.

Answers to Correspondents.

BIGARREAU: *L. M.* The name has, no doubt, the same origin as *bigarré*, streaked, parti-coloured; and this again is thought to be derived from the Latin *bis*, twice, and *varius*, varied, by some of those changes and suppressions of letters which words in the course of their evolution undergo.

COVENT GARDEN PRICES: *One Who Has Sent.* The Grapes are deficient in flavour, and very much rubbed by the packing. If those you sent to Covent Garden were no better in these respects we are not surprised at your only getting a low price. Black Hamburghs of the best quality are plentiful at this time of year, and fruit of second-rate quality cannot be expected to realise satisfactory prices.

CUCUMBERS: *Primus.* Your plants are suffering from a bad attack of the well-known Cucumber disease, for which there is no remedy but clearing out root and branch, and starting again with a change of seed, soil, and manure.

GORSE, &C.: *H. H., Bournemouth.* Cut the Gorse down at once. You will get a new growth this season, but it would have been much stronger had you cut the plants down six weeks ago. Put the Ivy cuttings in moist sandy soil on a north border. The Escallonia must be layered.

GROUND FOR FORCING: *A. V. C.* should advertise for what he wants. We cannot undertake to find out where land is for sale.

INSECTS: *J. T.* The insect you have sent, stating that it is eating your Carnations by wholesale, is one of the Rose beetles (Philanthus laminatus or æneus). We think you must be under some mistake as to the real depredator, as the larger Rose beetles destroy worms and other insects. *I. O. W.*

MAIDENHAIR FERN FRONDS: *J. F. M.* Cut the number of fronds required for use at any particular time a few hours beforehand, and throw them into a water-tank. Young fronds require immersing for an hour or two longer than fully matured ones.

SLUG: *A. Caldwell.* The worm-eating slug which you send is the ear-shaped Testacella haliotidea, a very useful garden scavenger, which is easily distinguished by its pale yellow colour and the small external ear-



FIG. 24.—THE SHELL-BEARING SLUG.

shaped shell on its tail, as seen in the annexed illustration (fig. 24). It lives chiefly on worms and other animal matter, and on no account should be destroyed.

MIGNONETTE: *H. R. T.* Send us a few of the insects in a quill. No doubt they came in the manure, and are not likely to attack anything else in the garden that is not growing in the same border.—*Kilbravock.* The plants do not appear to have made roots in proportion to the leaves, and the balance being destroyed the leaves have withered. We cannot suggest any other explanation.

NAMES OF PLANTS: *Mrs. H. E. T.* Chrysanthemum segetum.—*M. C.* 1, Not sent; 2, Lastrea Filix-mas; 3, Pteris cretica albo-lineata; 4, Doodia caudata; 5, Phlebodium aureum; 6. Blechnum cognatum.—*F. P.* Your Heaths are—1, E. Fairreana; 2, E. ferruginea superba; 3, E. Jubana rubra; 4, E. ampullacea obbata; 5, E. Aitoni turgida; 6, E. insignis. — *T. W.* Tacsonia exoniensis, a garden hybrid between T. mollissima, male, and T. Van Volxemii, female. See *Gard. Chron.* 1872, p. 1653, where the distinctions between it and mollissima and Van Volxemii are pointed out. — *G. W. Cummins.* Lycaste fulvescens. —*W. P.* Orchid from Natal, Lissochilus speciosus; Plumeria acutifolia.—*D. B. C.* Dracunculus vulgaris.—*H. McM.* Fuchsia procumbens, and Jasminum floridum. —*T. B.* Spiræa uriæfolia, and Lysimachia ephemerum.—*P. J.* 1, Sedum album; 2, Saxifraga rotundifolia; 3, send another specimen with lower leaves.—*E. B.* Solanum cornutum; an accidental introduction.—*W. K.* 1, Claytonia perfoliata; 2, Sidalcea oregana.—*S. H.* Pleroma macranthum.—*S. Finney & Co.* The Cut-leaved Alder (Alnus glutinosus, var. laciniata.—*H. M. S.* Lysimachia vulgaris, Thalictrum flavum, and Myosotis, probably sylvatica; specimen rotten.—*J. McR.* Rubus odoratus.

PASSION FLOWERS: *T. W.* The monograph you refer to is in the *Flora Brasiliensis*, a costly work, which you can see in the Lindley Library, or other botanical library. The list of garden species is given in the *Journal of the Royal Horticultural Society*, vol. iv.

SCHEDULE: *J. McI.* See p. 115.

SEEDLING PEA: *T. W., Harrow.* Your white, delicate, mauve-tinted seedling Pea is very pretty, and well worth growing, but whether there is anything like it we cannot say.

SPIRÆA: *Ferndene.* We cannot say much from the specimen you send, which seems to be in the way of Spiræa filipendula, but with larger flowers.

STOVE AND GREENHOUSE PLANTS: *James Gilbert & Son.* Bougainvillea glabra is not a greenhouse plant

in the ordinary acceptance of the term, and you were perfectly justified in protesting.

THE BAGSHOT SHOW. —In our report of this show, at p. 89, it was erroneously stated that Mr. Ward's collection of vegetables included Leeks, which can hardly be said to be in season now.

VARIEGATED ELDER: *Bedouin.* It is often seen variegated, as in the shoot sent, but it is not nearly so good as the Golden Elder.

COMMUNICATIONS RECEIVED: — Dick Radclyffe & Co. — D. B. C.—J. Hart (many thanks).—H. M.—S. C. O.—A. L. —J. Leman.—H. E.—I. O. W.—W. R.—B. F.—H. McM. —N. E. B.—S. H.—P. W.—G. T. M.—C. Y. M.—H. M.— W. S.—The Cranston Co.—G. C.—M. J. B.—H. J. V.—H. H. D.—John Evans.—F. v. M.—E. S. D.—H. G. E.—J. G. B.—J. H. M.—P. & H.—H. Cannell (many thanks).—G. N. —F. M.—W. W.—T. S.—Capt. V.—P. G.—G. F. G.—A. T. —J. G. P.—T. M.

DIED, on July 15, WINIFRED MARY, the beloved wife of Robert Parker, Exotic Nursery, Tooting, Surrey, in her fifty-ninth year.

Markets.

COVENT GARDEN, July 20.

Heavy supplies have reached us during the week, and prices, though lower, have been good. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Cherries, ½-sieve	6 0	16 0	Lemons, per 100	5 0	7 0
Currants, Black, per ½-sieve	4 6	5 0	Melons, each	2 0	4 0
— Red, per ½-sieve	3 0	4 6	Peaches, per dozen	6 0	12 0
Figs, per dozen	6 0	..	Pine-apples, Eng., lb.	3 0	4 6
Grapes, per lb.	1 6	4 0	Raspberries, per lb.	0 3	0 6
			Strawberries, per lb.	0 6	1 0

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, per doz.	3 0	6 0	Garlic, per lb.	1 0	..
Asparagus, English, natural, per bun.	7 0	..	Herbs, per bunch	0 2	0 4
— Fr. Nat, bun.	1 6	6 0	Horse Radish, bund.	4 0	..
— Sprue, per bund.	1 0	..	Lettuces, Cabbage, per score	1 6	..
Beans, French, English grown, p. 100	1 6	2 6	Mint, green, bunch	0 4	..
— French, per lb.	0 9	..	Mushrooms, p. baskt.	1 6	3 0
Beet, per doz.	1 0	..	Onions, per bushel	4 0	..
Cabbages, per doz.	1 0	2 0	— Spring, per bun.	0 6	..
Carrots, per bunch	0 4	0 6	Parsley, per bunch	0 4	..
— French, per bun.	1 0	..	Peas, per qt.	1 6	..
Cauliflowers, English, dozen	2 0	4 0	Radishes, per doz.	1 6	..
Celery, per bundle	1 6	..	Rhubarb, per bundle	0 6	..
Cucumbers, each	0 6	1 0	Small salading, pun.	0 4	..
Endive, per doz.	2 6	..	Spinach, per bushel	5 0	..
			Tomatos, Fr., doz.	2 0	..
			Vegt. Marrows, doz.	6 0	..

Potatos.—Kidneys, foreign, 9*s.*; do., English, 10*s.*; Kounds, 8*s.* per cwt.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldii, doz.	12 0	24 0	Ficus elastica, each	1 6	7 0
Arbor-vitæ (golden), per dozen	6 0	18 0	Foliage Plants, various, each	2 0	10 6
— (common), dozen	6 0	12 0	Fuchsias, per dozen	4 0	9 0
Balsams, per dozen	4 0	8 0	Gloxinea, per dozen	12 0	18 0
Bedding Plants, doz.	1 6	3 0	Heliotrope, per doz.	4 0	9 0
Begonias, per doz.	6 0	12 0	Hydrangea, doz.	9 0	12 0
Calceolaria, doz.	4 0	9 0	— paniculata, doz.	18 0	48 0
Cockscombs, dozen	4 0	6 0	Lilium, in var., doz.	30 0	60 0
Crassula, or Kalosanthes, per dozen	18 0	24 0	Marguerite Daisy, per dozen	9 0	18 0
Cyperus, per dozen	6 0	12 0	Myrtles, per doz.	6 0	12 0
Dracæna terminalis	30 0	60 0	Palms in variety, each	2 6	21 0
— viridis, per doz.	12 0	24 0	Pelargoniums, doz.	9 0	24 0
Euonymus, various, per dozen	6 0	18 0	— scarlet, per doz.	3 0	9 0
Evergreens, in var., per dozen	6 0	24 0	Rhodanthes, doz.	6 0	12 0
Ferns, in var., dozen	4 0	18 0	Spiræa, per dozen	9 0	18 0

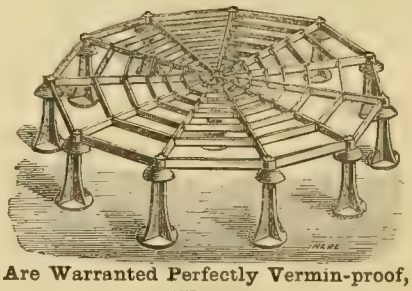
CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 blooms	0 2	0 4	Pelargoniums, 12 sprays	0 9	1 0
Arum Lilies, per doz.	4 0	6 0	— zonal, 12 sprays	0 4	0 9
Bouvardias, per bun.	1 0	1 6	Pinks, 12 bunches	2 0	6 0
Calceolaria, 12 bun.	6 0	12 0	Primula, double, per bunch	1 0	1 6
Campanula, 12 bun.	6 0	18 0	Pyrethrum, 12 bun.	3 0	9 0
Carnations, 12 bun.	3 0	9 0	Rhodanthe, 12 bun.	9 0	12 0
Cornflower, 12 bun.	2 0	4 0	Roses (indoor), per dozen	1 0	3 0
Eucharis, per doz.	4 0	6 0	— (outdoor), doz.	0 6	1 0
Fuchsias, 12 bunches	6 0	8 0	— Coloured, doz.	1 0	2 0
Gardenias, 12 blms.	3 0	8 0	— Moss, 12 bun.	9 0	15 0
Gladioli, 12 bun.	6 0	12 0	Spiræa, 12 bunches	0 0	12 0
— brenchiensis, 12 sprays	3 0	6 0	Stephanotis, 12 spr.	3 0	6 0
Heliotropes, 12 sp.	0 6	1 0	Stocks, 12 bunches	4 0	9 0
Lapageria, white, 12 blooms	4 0	6 0	Sunflower, 12 blooms	1 0	3 0
— red, 12 blooms	1 0	3 0	Sweet Peas, 12 bun.	3 0	6 0
Lilium longiflorum, 12 blooms	3 0	6 0	Sweet Sultan, 12 bun.	6 0	9 0
Marguerites, 12 bun.	4 0	6 0	Tropæolum, 12 bun.	1 0	2 0
Mignonette, 12 bun.	3 0	6 0	White Jasmine, 12 bunches	6 0	12 0
Pansies, 12 bunches	1 6	3 0			

SEEDS.

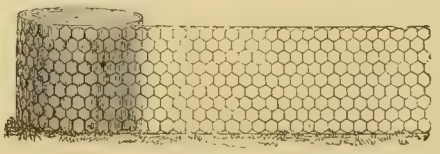
LONDON: *July* 19.—The seed market to-day was thinly attended, with scarcely any business doing. New French Trifolium now offers freely, but the quality of the samples is indifferent. Some choice English Rape seed, of this season's growth, is now selling on Mark Lane. As regards Canary and Hemp seed, the tendency of values continues upwards. Feeding Linseed is firm. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

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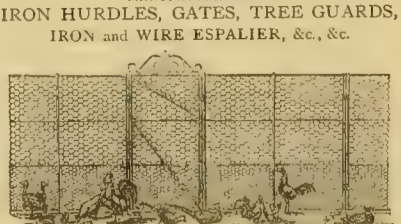
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B. & Son have always a large stock in London of 20-in. by 12-in., 20-in. by 14-in., 20-in. by 16-in., 20-in. by 18-in., in 16-oz. and 21-oz.; and also large sizes in all qualities for cutting-up purposes, in 200-ft. and 300-ft. cases.

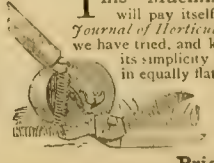
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43, Commercial Street, E.
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Horticultural and all kinds of Glass having so much advanced, we are compelled to withdraw our prices, but on receipt of application the prices will be forwarded, but will be only from day to day until the market is in a more settled state. We have some bargains in 21-ounce, from 9×7 to 14×10 and upwards; sizes sent if required. Propagating Glasses, Hand Frames, Cucumber and Horticultural Glass; genuine White Lead, best Linseed Oil Putty, Paints Oils, and Colours.

HORTICULTURAL SHEET GLASS,
21 oz. Foreign, of the following sizes, in boxes of 100 and 200 feet,
3ds and 4ths qualities always kept in stock:—

14×12	20×12	20×14	20×16	20×18
16×12	16×14	20×15	22×16	22×18
18×12	18×14	18×16	24×16	24×18

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GLASS, LEAD, OIL and COLOUR MERCHANTS,
34, St. John's Street, West Smithfield, London, E.C.

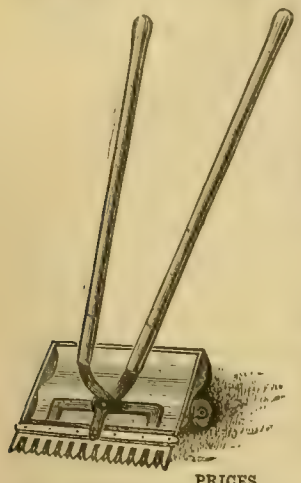
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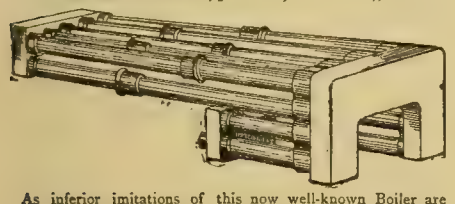
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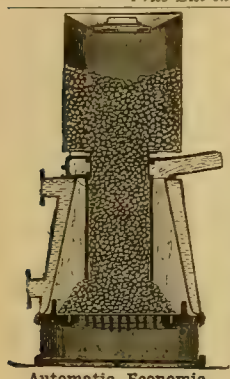
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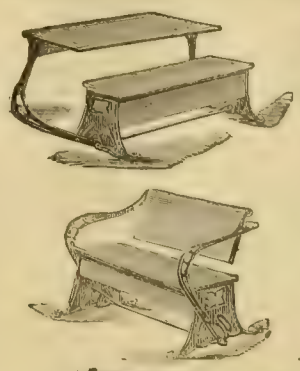
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Cannot get out of Order.
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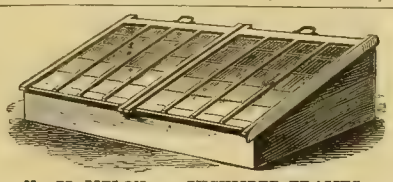


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Under 5 feet, 2 iron supports; 6 feet and above, 3 iron supports.



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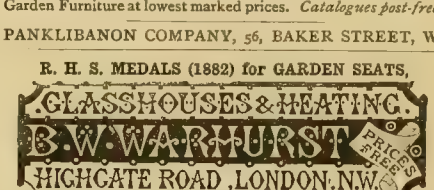
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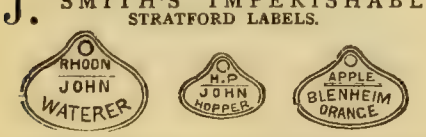
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WANTED, a thoroughly active, industrious WORKING GARDENER, to Force and Grow thoroughly; keeping everything in perfect order on the place.—Apply with full particulars and wages to W. A. GLYNN, Esq., Seaview, Isle of Wight.

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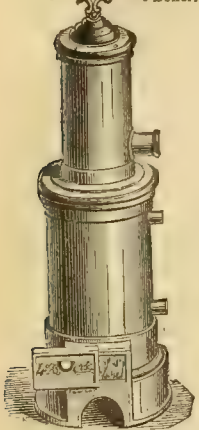
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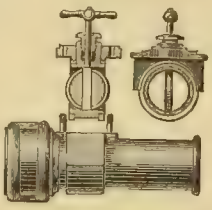
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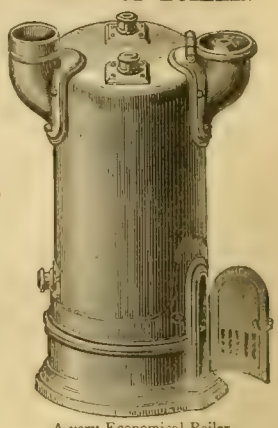
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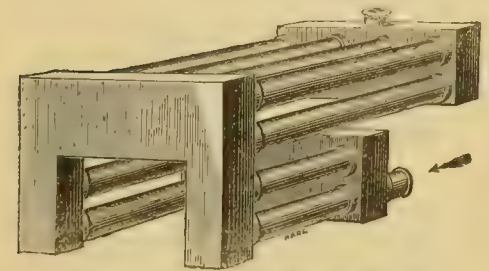
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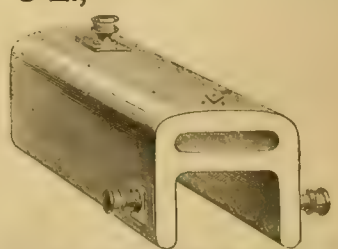
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THE

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C. G. VAN TUBERGEN, JUN., Haarlem, Holland.—Wholesale CATALOGUE now ready, and may be had free on application to
Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, London, E.C.

CREEPERS for WALLS, TRELLISES, &c., in great variety. See Descriptive LIST. Most of these plants being in pots, may be moved now.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Valuable Imported Orchids.—Special List, No. 59.

THE NEW PLANT AND BULB COMPANY beg to inform their Friends that the above NEW LIST is just published, and will be sent post-free on application. Lion Walk, Colchester.

To the Trade only.

E. H. KRELAGE AND SON, NURSERYMEN, SEEDSMEN, and FLORISTS, Haarlem, Holland. The Wholesale CATALOGUE (No. 358A) of Dutch Flower Roots and Miscellaneous Bulbous and Tuberous-rooted Plants for 1882-83 is now ready, and may be had free on prepaid application, by Nurserymen, Florists and Seedsmen.

CABBAGE, and all other VEGETABLE and FLOWER SEEDS of best possible quality, for present sowing. Post and carriage free.
JAMES DICKSON AND SONS, 108, Eastgate Street, Chester.

FOR SALE or EXCHANGE, a fine, clean plant of ALLAMANDA HENDERSONI, in a pot 16× 16, well set in bud, and nicely trained to wire cage, 3 feet high and 3 feet through.
J. MAYO, The Nurseries, St. Mary's Road, Oxford.

WANTED, 25,000 FRUIT TREE STOCKS, of various kinds. Quotations will oblige.
J. R. PEARSON, Chilwell, Notts.

Notice to Senders.

WANTED, Queen PINES, fine PEACHES, MELONS, TOMATOS. Also, STEPHANOTIS, EUCHARIS, GARDENIAS, and good ROSES in quantity.
WISE AND RIDES, Fruit and Flower Salesmen, Covent Garden, London, W.C.

JOHN MOIR AND SON (Limited) are prepared to CONTRACT for SUPPLIES of STRAWBERRIES for next season. These to be kinds recommended by themselves, suitable for Preserving purposes. For particulars apply to
The SECRETARY, 148, Leadenhall Street, London, E.C.

CARTERS' CASH PRIZES, to be Competed for at the Show of the ROYAL HORTICULTURAL SOCIETY, August 3.
For the best Six Pots of TOMATOS, selected from the following varieties:—Carter's Green Gage, Carter's Holborn Ruby, Carter's Golden Drop, Carter's Dedham Favourite, Carter's Grapeshot, Carter's Red Currant, President Garfield, Vick's Criterion. 1st Prize, £3 3s.; 2d, £2 2s.; 3d, £1 1s.; 4th, 10s. 6d.
IMPORTANT REGULATION.—All exhibits to be staged in 24-sized pots (8 inches in diameter, inside rim), and the special label attached that has been distributed with each packet of seed. All exhibits without it will be disqualified.
(Open to Gentlemen's Gardeners and Amateurs only.)

CARTERS, THE QUEEN'S SEEDSMEN, By Royal Command to the Prince of Wales, 237 and 238, HIGH HOLBORN, LONDON, W.C.

CHR. LORENZ, SEED GROWER and MERCHANT, 100 to 103, John Street, Erfurt, Germany, requests his Friends to visit his Seed Grounds, where the highly beautiful GAILLARDIA PICTA VAR. LORENZIANA, raised and introduced by him last year, is now in full flower.

ED. PYNAERT VAN GEERT, The Brussels Gate Nurseries, Ghent, Belgium. AZALEAS, CAMELLIAS, and PALMS, by thousands. Moderate prices. Price LIST free on application.

LILY OF THE VALLEY.—Best quality for forcing, single crowns. Apply to SEEMANN AND GOEPEL, Wandsbeck, near Hamburgh.

LAPAGERIA ALBA, well-rooted plants, 10s. 6d., 15s. and 21s. A few extra specimens, size and price on application.
LAPAGERIA RUBRA, superb, 7s. 6d., 10s. 6d. and 15s. A few extra-sized specimens, size and prices on application.
W. HOWARD, Southgate, N.

BULL'S choice PRIMULAS (alba and rosea), Herbaceous CALCEOLARIAS and choicest CINERARIAS.—150,000 of the above at 1s. 4d. per dozen; 7s. per 100; 60s. per 1000, all good, strong, and healthy. Terms cash with all orders.
T. FLETCHER AND SON, Florists, &c., Chesterfield.

To the Trade Only.

TEA ROSES, on own roots, extra strong, out of 4½-inch pots, £2 per 100, for cash.
MAIRIS AND CO., Weston-in-Gordano, Bristol.

Christmas Roses.

BUDDENBORG BROTHERS, BULB GROWERS, Hillegom, near Haarlem, Holland, are now booking orders for the above. Prices will be given on application.

To the Trade.

TEA ROSES.—Fine Plants, in 48-pots, also a few extra size, leading varieties.
EDWIN HILLIER, Winchester.

TWO HUNDRED THOUSAND HERBACEOUS and ALPINE PLANTS for Borders, Rockwork, &c. See Descriptive LIST, giving colour, height, time of flowering, &c., free by post for 1d. stamp.
Selection of 100 good showy varieties for 25s.
R. SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Hyacinths, Tulips, &c.

BUDDENBORG BROTHERS, BULB GROWERS, House Bloemswaard, Hillegom, near Haarlem, Holland. Wholesale CATALOGUE now ready, and will be sent, post-free, on application.

PINES.—Eighteen Fruiting and strong Succession Smooth Cayenne and Ripley Queen—four in fruit. For price apply,
BELL AND SON, 10 and 11, Exchange Street, Norwich.

Strawberry Plants.—In consequence of

H. CANNELL AND SONS being located in the midst of hundreds of acres of the above (runners are this year unusually fine and early), they would be pleased to quote price for any quantity and any sorts.
Swanley, Kent.

STRAWBERRIES.—Strong roots for present planting and for fruiting next year, 4s. per 100. Descriptive LIST and price for plants in pots for forcing on application. — RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

STRAWBERRY RUNNERS. — Strong, healthy, and well-rooted, from all the best market varieties. Sample and Price LIST post-free. Manual on Strawberry Culture, 6d.
W. LOVEL AND SON, Strawberry Growers, Driffield.

STRAWBERRIES.— Strong healthy PLANTS from Ground, also in pots, are now ready. Descriptive and Priced List of all the best kinds will be sent post-free on application.
THOMAS RIVERS AND SON, Sawbridgeworth, Herts.

CAULIFLOWER, BRUSSELS SPROUT PLANTS.
VEITCH'S AUTUMN GIANT, 3s. 6d. per 1000.
BRUSSELS SPROUTS, 3s. per 1000.
Packages 3d. per 1000 extra. Order of
R. BATH, Crayford; or J. BATH, 34, Wellington Street, Covent Garden, W.C.

SALES BY AUCTION.

Wednesday Next.

LÆLIA ELEGANS, PHALÆNOPSIS STUARTIANA. PHALÆNOPSIS MANNI.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W C , on WEDNESDAY, August 2, at half-past 12 o'Clock precisely, by order of Messrs. Hugh Low & Co., a grand lot of imported plants in the finest possible condition of LÆLIA ELEGANS, L. PURPURATA from a new locality—amongst these are wonderfully fine masses, one measuring 9 feet in circumference : CATTLEYA INTERMEDIA, varieties, amongst them masses measuring 6 to 10 feet in circumference ; C. DOWIANA, AERIDES LEEANUM in quantity, DENDROBIUM HETEROCARPUM PHILIPPINENSE, several hundred extra strong LYCASTE SKINNERI, specially selected masses ; ZYGOPETALUM MAXILLARE, best variety, VANDA ROXBURGHII, CYPRIPEDIUM SPICERIANUM, PHALÆNOPSIS MANNI, &c. At the same time will be offered established plants of PHALÆNOPSIS STUARTIANA, several hundred of ODONTOGLOSSUM ALEXANDRÆ, specially worth attention, healthy plants, not yet flowered in this country, some more showing spikes ; O. ROEZLII and many other choice ORCHIDS.

On view morning of Sale, and Catalogues had.

Cattleya Whitei.

MR. J. C. STEVENS begs to announce that the plant, in flower, and the only one received of the above provisionally named very lovely CATTLEYA, which was awarded a First-class Certificate by the Royal Horticultural Society July 25, will be included in the SALE at 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, August 2, by order of Messrs. Hugh Low & Co.

Thursday Next.

CATTLEYA DOWIANA, LÆLIA ELEGANS.

MR. J. C. STEVENS has been instructed by Mr. F. Sander to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, August 3, at half-past 12 o'Clock precisely, fine importations of CATTLEYA DOWIANA and LÆLIA ELEGANS : also a splendid lot of ODONTOGLOSSUM ALEXANDRÆ, ONCIDIUM PAPILIO, LYCASTE SKINNERI, various ODONTOGLOTS and ONCIDIUMS, together with other importations.

On view morning of Sale and Catalogues had.

4, Temple Sheen, Mortlake, Surrey.

SALE, THURSDAY, August 3, 1882. By order of Executor, without Reserve.

MESSRS. F. AND W. PIGGOTT will SELL by AUCTION, on the Premises as above, a collection of about 40 choice CAMELLIAS.

Auction and Estate Agency Offices, George Street, Richmond.

Preliminary Notice.

By order of the Executors of Mr. R. A. Osborn, deceased.

FULHAM, SUNBURY, and HAMPTON.
VALUABLE FREEHOLD ESTATES.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from the Executors to SELL by AUCTION, at the Mart, Tokenhouse Yard, City, E.C., on THURSDAY, October 5, the following properties :—

FULHAM.—An attractive and almost unique FREEHOLD BUILDING ESTATE, known as Messrs. Osborn's NURSERY GROUND, situate in Munster Road, Fulham, about five minutes' walk from Parson's Green Station, possessing commanding frontages to existing roads, known as Rectory, Munster, and King's Roads, of nearly 2000 feet, and additional frontages of 3274 feet to proposed new roads. Also the detached Brick-built Residence and newly-erected Conservatory attached.

SUNBURY. — About ten minutes' walk from the station. The desirable and extremely productive FREEHOLD ESTATE known as OSBORN'S OLD NURSERY, containing 17a. or. 11p., together with the Goodwill of the Nursery and Seed Business established so many years, and enjoying a world-wide reputation. There is also a detached Eight-roomed House, thirteen newly erected Greenhouses, heated upon the most improved principles, Pits, Sheds, Stabling, and other Outbuildings. The property possesses important frontages of 174 feet to Walton and Nursery Roads, which could be profitably utilised for Building purposes without interfering with the remainder of the land for carrying on the present business.

HAMPTON.—Ten minutes' walk from Fulwell Station. A compact FREEHOLD ESTATE, known as OSBORN'S NURSERY, Broad Lane, Hampton, containing an area of 5 acres. It is now cultivated and cropped with Fruit Trees and other Nursery Stock, but is also adapted for building purposes.

Particulars and Plans of the several Estates are in course of preparation, and may be had when ready of Messrs. WALKER, BELWARD, AND WHITFIELD, Solicitors, 8, Southampton Street, Bloomsbury ; or of the Auctioneers and Surveyors, 8, New Broad Street, and Leytonstone.

N.B.—The thriving and well-grown young Nursery Stock, comprising luxuriant Fruit and other trees, Evergreen and Deciduous Shrubs (for which Messrs. Osborn have gained so great a reputation), at the Fulham, Sunbnry, and Hampton Nurseries—if not taken by the purchaser of the various properties at a valuation in the usual way, will be sold by public Auction, of which due notice will be given in future Advertisements.

London, S.E.—(No. 5568.)

TO BE SOLD, by order of the Mortgagees in possession, an old-established NURSERY and SEED BUSINESS, upon which many thousand pounds have been expended. There are 6 acres of land, Dwelling-house, Shop, Conservatory ; eight Greenhouses, and seventeen Pits, all heated by hot-water piping, and adapted kinds of plants, also the requisite Outbuildings. The Stock consists of Hard and Soft-wooded Plants, Heaths being a speciality. Rent £77. Any one with about £2000 at command would be treated with on advantageous terms.

Full particulars of Messrs. PROTHEROE AND MORRIS, 8, New Broad Street, E.C,

Middlesex.—(No. 5708.)

TO BE SOLD, about 17 Acres of rich FRUIT or MARKET GARDEN LAND, abundantly tocked with prolific trees ; capital Residence and numerous Outbuildings.

Terms and particulars of Messrs. PROTHEROE AND MORRIS, 8, New Broad Street, E.C.

Waltham Cross, Herts.—(No. 5627.)

Thirteen miles from Liverpool Street, on the main Cambridge line of the Great Eastern Railway.

TO BE LET, on Lease, about 2 Acres of productive NURSERY LAND, with Cottage, Outbuildings, and about 13,500 feet super of Glass, particularly adapted for Fruit Growing.

Terms and particulars may be had of Messrs. PROTHEROE AND MORRIS, Auctioneers, 8, New Broad Street, London, E.C. ; or of Mr. J. S. BRIDGMAN, Auctioneer, Crossbrook Street, Cheshunt.

Liverpool.—(No. 5707.)

About 6 miles from the Town on the Main Road.

TO BE LET, 2 Acres of LAND, walled in ; good Dwelling-house, and Extensive Ranges of Glass. Rent on application. Stock may be purchased.

Apply to Messrs. PROTHEROE AND MORRIS, 8, New Broad Street, London, E.C.

One of the Good Old-fashioned Family Houses,

with good Gardens and rural surroundings.

TO BE LET, by order of the Executor. Rent £80. A mile from a station on the Epping line ; 12 miles from town. Stabling, Glasshouses, 4 acres, and all accessories of a country home on a moderate scale. A class of property becoming scarcer every day. Was for nearly 20 years occupied by the Testator.

Messrs. DEBENHAM, TEWSON, FARMER AND BRIDGEWATER, 80, Cheapside, E.C.—(35,617.)

TO BE LET, as a going Concern, on September 29, or earlier if desired, a compact NURSERY and small SEED BUSINESS, situated in the best part of Staffordshire, comprising about 8 Acres of well-selected Nursery Stock, also 3 Acres of old Turf Land, and a Dwelling House, a large stock of Hollies in variety, which do well here as does all other Nursery Stock, the Soil being deep Loam, and a never-failing supply of water on the ground. It has been established nearly sixty years, and declining health is the sole cause of disposing of it.

For particulars address R. S., Robert Cooper, Esq., Seed Merchant, 90, Southwark Street, London, S.E.

DESIGNS Made and Works EXECUTED

In the Arrangement of TERRACES, CONSERVATORIES, FLORAL CORRIDORS, ROOF GARDENS on uninteresting Lead Flats, &c., formed with substantial PULHAMITE KERB for the FLOWER BORDERS, JARDINIERE, &c., in TERRA-COTTA or ARTIFICIAL STONE of various colours.

BALUSTRADES, VASES, PEDESTALS, FIGURES, FOUNTAINS, CONSERVATORY and WINDOW BOXES in great variety, suitable for any style of House.

Various Specimens of KERB or EDGING, PULHAMITE PERMANENT GRAVEL PATHING for GARDEN, TERRACE and other WALKS and FLOORS, to be seen at the Horticultural Company's, Regent Street, W. ; at The Orchard, Philip Lane, Tottenham ; and at our Brixton Depot there is the greatest variety of the above to be seen ; also at Agricultural Exhibition till August 5. DURABILITY GUARANTEED.

A Photographic Book of over 200 Illustrations, with Sizes and Prices, sent for Inspection on receipt of twelve stamps.

Address—

PULHAM & SON, The Works, Broxbourne.

(Established in 1837.)

EARLY CABBAGE SEED.—The best and earliest sort is MYATT'S EARLY OFFENHAM.—For price, apply to

F. AND C. MYATT, Offenham, Evesham.

SEEDLING CINERARIAS.—Extra strong plants of the above (Smith's unrivalled strain), at 1s. 3d. per dozen ; also new Seed at 1s. and 2s. per packet.

CALCEOLARIAS, at 1s. 3d. per dozen ; also new Seed at 1s. and 2s. per packet.

PRIMULA SINENSIS FIMBRIATA, Red, White, or mixed, at 1s. 3d. per dozen ; also new Seed at 1s. and 2s. per packet.

CYCLAMEN GIGANTEUM (Prize Strain), at 1s. 3d. per dozen ; also new Seed at 1s. and 2s. per packet.

AURICULAS, from Stage flowers, at 1s. 3d. per dozen ; also new Seed at 1s and 2s. per packet.

PELARGONIUM TRICOLOR, and large-flowered, at 1s. 3d. per dozen ; also new Seed at 1s. and 2s. per packet.

EAST LOTHIAN STOCK. Scarlet, 6d. and 1s. per packet.

Purchasers may rely upon the above being of same quality as hitherto supplied by the late Firm for upwards of thirty years.

CATALOGUE on application.

FRED. SMITH, Jun., The Nurseries, West Dulwich, S.E.

TEN THOUSAND ROSES IN POTS.

On own roots, and Seedling Briers.

TEA, NOISETTE, CHINA, and HYBRID TEAS, a select LIST of the leading varieties.

5-inch pots (1st selection), fine, bushy, 1½, 2 to 2½ feet.
5-inch pots (2d selection), fine, bushy, 1, 1½ to 2 feet.
7-inch pots, suitable for forcing.

CLIMBING ROSES, 5 to 7 inch pots, 4, 5, 6 to 8 feet. Second to none in quality.

GEO. JACKMAN AND SON, Woking Nursery, Surrey.

JOSEPH BAUMANN, NURSERYMAN, Ghent, Belgium, begs to offer :—

100 AZALEA INDICA, with flower-buds, £4, £5, £6, £8.
100 CAMELLIAS, with flower-buds, £6 to £8.
100 ,, stocks, £1.
100 SPIRÆA JAPONICA, 10s.
12 GYNURA AURANTIACA, new, 18s.
100 ,, ,, £3 15s. to £10.
100 FICUS ELASTICA, £5.
100 SKIMMIA JAPONICA, with fruits, £1 10s.

NEW ROSES of 1882, in pots.—Vendors' Selection, 30s. per dozen ; Purchaser's, 36s. per dozen. The above comprise all the best English and French-raised Hybrid Perpetuals, Perpetual Polyantha, Teas, Hybrid Teas, and Perpetual Moss.

ROSES of 1881, of above-named classes, 18s. to 24s. per dozen, in pots.

CHOICE ROSES. — Tea-scented, Hybrid Tea, Noisette, China, and Bourbon, 18s. to 24s. per dozen, strong plants in pots.

Descriptive LIST on application.

RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Forcing Strawberries.

H. CANNELL AND SONS have now several thousands of Sir Charles Napier, Vicomtesse H. de Thury, and President, established in small pots, ready for shifting, 10s. per 100.

Swanley, Kent.

GRAPE VINES and ORCHARD HOUSE TREES in POTS. — GRAPE VINES, extra strong, short jointed and well ripened ; Planting Canes, 3s. 6d. to 5s. each ; extra strong Fruiting Canes, 7s. 6d. to 10s. ORCHARD-HOUSE TREES, fruiting in pots, consisting of Peaches, Nectarines, Apricots, Plums, Cherries, Pears, Apples, and Figs. Descriptive Price LIST for 1d. stamp.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Tuberous Begonias.

JOHN LAING AND CO.'S Gold Medal Collection is unrivalled. They have now in cultivation 100,000 Begonias, which present to the public an unprecedented floral display of single and double flowers. A visit is solicited (Catford Bridge Station, South-Eastern Railway).

Prices, 12s. to 60s. per dozen.

CATALOGUES on application. Address
JOHN LAING AND CO., Forest Hill, S.E.

CAULIFLOWER, BRUSSELS SPROUT PLANTS.

VEITCH'S AUTUMN GIANT, 3s. 6d. per 1000.
BRUSSELS SPROUTS, 3s. per 1000.
Packages 3d. per 1000 extra. Order of
R. BATH, Crayford ; or J. BATH, 34, Wellington Street, Covent Garden, W.C.

PALMS—PALMS.

ARECA LUTESCENS, this year's seedlings, 20s. per 100.
ARECA RUBRA, last year's potted seedlings, 20s. per 100.
CEROXYLON NIVEUM, this year's potted seedlings, 30s. per dozen, £10 per 100.
COCOS WEDDELLIANA, this year's potted seedlings, 30s. per 100.
CORYPHA AUSTRALIS, this year's potted seedlings, 15s. per 100.
,, ,, stronger plants, 24s. to 50s. per 100.
EUTERPE EDULIS, last year's seedlings, 20s. per 100.
LATANIA BORBONICA, last year's seedlings, 6s. per 100, 40s. per 1000.
,, RUBRA VERA, two years' plants, 30s. per dozen, £10 per 100.
PHŒNIX RECLINATA, LEONENSIS, TENUIS, from 15s. to 50s. per 100.
PANDANUS UTILIS, this year's seedlings, 15s. per 100.
SEEMANN AND GOEPEL, Wandsbek, near Hamburgh.

DUTCH BULBS.

DIRECT FROM THE GROWERS.

ANT. ROOZEN AND SON, NURSERYMEN, Overveen, near Haarlem, Holland.

Before ordering Dutch Bulbs, read ANT. ROOZEN AND SON'S CATALOGUE for 1882, which their Agents, Messrs. MERTENS AND CO., 5, Billiter Square, London, E.C., will forward post-free on application.

MEIN'S No. 1 CABBAGE.—The earliest, the largest, the finest in existence. Should be grown by all Market Gardeners. A correspondent writes, under date June 12, 1882 :—"I have cut Cabbages since April 20 from the Seed you sent me last year, and have an abundance of them left, averaging from 4 to 6 lb. in weight."

Price 1s. per ounce (post-free).

Special price per pound on application.

STUART AND MEIN, Kelso, N.B.

Extra Strong

CABBAGE, BROCCOLI, CELERY, and various other plants for present planting.

Early Oxheart, Enfield Market, Nonpareil, Robinson's Champion Drumhead CABBAGE and Drumhead SAVOY (the above will be found very useful for filling up gaps in Mangel), 3s. per 1000. Dwarf Green Curled SAVOYS, BRUSSELS SPROUTS, Green Curled Scotch and other KALES, 3s. per 1000. Veitch's Autumn Giant CAULIFLOWER, Veitch's Self-protecting BROCCOLI, 5s. per 1000. Carter's Champion, Cattell's Eclipse, Early White, Brimstone, Purple and White Sprouting BROCCOLI, 5s. per 1000. Red and White CELERY, 5s. per 1000. The above are unusually strong, healthy, and well-rooted plants. To be had in any quantity, delivered free on rail, or 1000 (for a small garden) of the above for 5s. Cash or reference with order from unknown correspondents.

W. VIRGO, Wonersh Nurseries, Guildford.

Bulbs—Bulbs—Bulbs.

SEGERS AND CO., BULB GROWERS, Lisse, near Haarlem, Holland, are now booking orders for Dutch Bulbs of every description. They advise their customers to send orders for them as soon as possible in their own advantage.

CATALOGUES may be had free on application. No Auction Sales or Retail Trade supplied, but the Wholesale only.

☞ Please observe name and address.

CYCLAMEN, CINERARIA, and PRIMULA SEED, from some of the finest show varieties, per packet, 1s. 6d. and 2s. 6d. New PRIMULA, Queen Victoria, 3s. 6d. ; New CYCLAMEN, Duke of Albany, 3s. 6d. A few good Cyclamen bulbs, 5s per dozen. Also a fine collection of PANSIES and AURICULAS, per packet, 1s. As we grow all our own seed we can warrant it true to name and good in quality. CHRYSANTHEMUM Sœur Melaine, good strong plants, 1s. 3d. per dozen. CINERARIA PLANTS, from our First Prize collection, 1s. 3d. per dozen, 8s. per 100.

JOHN ODELL, Seed Grower, Gould's Green, Hillingdon, near Uxbridge.

Novelty.

GRAND NEW BEDDING PLANT.
First-class Certificate Leeds Horticultural Society.

LOBELIA "ANDREW HOLMES.", By far the best dark blue. See Advertisements in June numbers of *Gardeners' Chronicle*. Price, 1s. each, 9s. per doz., 60s. per 100. The usual discount to the Trade.

GEORGE HOLMES, Florist, York.

CUT ROSE BLOOMS and BUDS, for Budding, of very fine quality, H.P. and Teas, 6s. 6d. per 100. Package free. Cash with order.

W. CAUDWELL, F.R.H.S., The Ivies, Wantage.

NOTICE.

SELLING OFF OF NURSERY STOCK.

EWING & CO.,

EATON, near NORWICH.

Great Reduction in Price for Cash Payments, viz.,

15 per Cent. for Cash before delivery.
10 per Cent. for Cash within One Month of date of invoice.
5 per Cent. for Cash within Three Months of date of invoice.
After Three Months no discount can be allowed.

In addition to their immense Outdoor Stock of ROSES; FRUIT TREES, Bushes and Roots; ORNAMENTAL TREES and SHRUBS, they have ready for immediate Sale a very extensive Stock of New and Scarce ROSES in Pots; Tea and Noisette ROSES in Pots; CLEMATISES of best Old and New Varieties, in Pots; Variegated and Choice Green-leaved IVIES, in Pots; AMPELOPSIS VEITCHII, and many other Hardy CLIMBING and CREEPING PLANTS, in Pots, &c.

N.B. Cut Roses, &c., can be supplied at cheap rates, carefully packed for travelling long distances.

A slight extra charge must in most cases be made for packing. Where cash in payment of goods is sent *with the order*, the amount for *package* may be forwarded in stamps *after* despatch of goods.

N.B. Post-office Orders should be made payable to EWING AND CO., at Eaton, near Norwich. Cheques crossed GURNEY AND CO., Norwich.

Trade Terms on application.

CRANSTON'S NURSERY and SEED CO.'S

SPRING CATALOGUE

(Free on application) contains a List of all the

NEW FRENCH and ENGLISH ROSES,

TEA-SCENTED and NOISETTE ROSES

In great variety, now ready for planting out;

STANDARD TEA-SCENTED and NOISETTE ROSES,

Established in Pots;

HYBRID PERPETUAL ROSES

For Greeenhouse Culture;

BEDDING and HERBACEOUS PLANTS

Of all the Leading Varieties;

CLEMATIS, DAHLIAS, &c.

KING'S ACRE, near Hereford.—May, 1882.

A Double First-class Certificate.

Viz., a First-class Certificate as a Decorative Bedding Rose in 1881, *and a First-class Certificate as a Show Rose in* 1882.

The Royal Horticultural Society have Registered their Award, and this unprecedented success has been achieved by

An English Raised Seedling Rose.

H.P. DUCHESS OF CONNAUGHT (Noble).

CHARLES NOBLE, BAGSHOT.

DANIELS' CHOICE SEEDS,

FOR PRESENT SOWING.

Post or Carriage Free at Prices Quoted.

	Per oz.
DANIELS' DEFIANCE CABBAGE.—The most magnificent variety ever sent out, weight 12 lb. to 15 lb., remarkably early, short-legged, and compact, and of the most delicious Marrow flavour. Should be in every garden. .. .. .. Per packet 1s. 6d.	s. d. 3 6
From Rev. E. P. CAMBRIDGE, *Warmwell Rectory, July* 21.—"Daniels' Defiance Cabbage has turned out the finest and most delicate flavoured I have ever eaten."	
ONION—Daniels' Golden Rocca, magnificent variety, equal to the finest imported onions, per pkt. 1s. 6d.	..
,, Daniels' Giant Rocca (true), splendid variety, frequently weighing 2 to 3 lb. each	1 0
,, Large Red Tripoli	1 0
,, ,, White	0 8
,, White Lisbon	0 6
,, ,, Spanish	0 6
,, New Queen	1 4
LETTUCE—Black-seed Bath Cos	1 0
,, Wheeler's Tom Thumb	1 6
Hardy Hammersmith	1 0
PARSLEY—Daniels' Queen .. .. Per packet, 1s.	..
TURNIP—Daniels' Improved Snowball	0 6

Special quotations for larger quantities on application.

DANIELS BROS.,

Royal Norfolk Seed Establishment, Norwich.

SEGERS BROTHERS,

BULB GROWERS,

Beg their Customers to send their Orders as soon as convenient, because it is now the proper time for ordering.

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THE

Gardeners' Chronicle.

SATURDAY, JULY 29, 1882.

STRATHFIELDSAYE.

THE farm which won the Royal Agricultural Society's first prize this year is situated in the parish of Strathfieldsaye, on the River Loddon, which runs through the Duke of Wellington's park, and 3 miles from that plain, yellow-tinted house of Queen Anne's time, which, with a fine estate, the nation conferred on the Iron Duke after Waterloo. After visiting the farm I reached Mortimer, and drove thence through an Oak-wood country, past a few scattered houses, and into the park by the lodge near the church, which stands within the park. The Duke and his successors have retained the old house, with little alteration, for the three-score years of their ownership. But they have very much improved the pleasure gardens Strathfieldsaye is an old residential property owned formerly by a family named Saye, as Strathfield Turgis and Strathfield Mortimer belonged to persons named Turgis and Mortimer Strathfield is supposed to have been originally Streetfield, and to have taken its name from the great Roman street which passed through the adjoining Roman town of Silchester. Passing to history of more recent date, the Duke's predecessors were the Pitts. Sir William Pitt, ancestor of Lord Chatham, bought this place in the reign of Charles I., and the representatives of Lord Rivers, his descendant, sold it to the nation in 1815. The park extends to 1500 acres. Some owners of land have a natural taste for arboriculture, others unfortunately do not acquire that civilising art. The Pitts were good gardeners, Lord Chatham was pre-eminent, and Sir William Pitt, having the same keen perception of beauty in natural objects, planted a fine avenue of old English Elms three quarters of a mile long on the north approach to the house.

Mr. Bell, the Duke's head gardener, gave me some interesting details of the Elms. Some of them were blown down last winter at the age of 250 years, being then quite sound, and measuring in one case 482 cubic feet of timber. An avenue of such great trees must needs be grand, but its beauty is very much marred by a number of impertinent little round Horse Chestnuts growing between the big Elms. Of course, a trained arboriculturist would not have planted these poor little pigmies, in a situation where they are quite unable to attain fair proportions, and where their sufferings are obvious and their presence painfully incongruous. The park surrounding the ducal residence is grand in size but rather level, or at least sufficiently so to derive much of its beauty and dignity from the timber. The landscape around the house is particularly gentle. There is first a gentle slope before the windows, and then the river,

"The Lodden slow, with silver Alders crowned."

Then there is another gentle slope from the river, where the view is soon lost among the superabundant trees. The soil is a good sample of London clay, well suited for bearing timber, and especially for the Oak. Elms and Thorns

are numerous, and an excellent crop of Mistleto grows upon the latter. The park might be very much improved by a judicious thinning of the timber.

Except on the east front, the house is closely environed with avenues and beltings. Avenues lead to the front door from the north and west, and one of these, which forms a continuation of the Elm avenue, consists of thick banks of aged but very vigorous Yews mixed with Elms, leading directly to the house, with the kitchen garden concealed on the right, and a shrubbery and lawns on the left, reaching to the house. In 1830 or 1831 Mr. Loudon came to Strathfieldsaye, and described the shrubbery in the *Gardeners' Magazine*. The fine clump of Cedars of Lebanon mentioned by Mr. Loudon is now remarkable for the height of its specimens, reaching, as they do, 110 feet. A Hemlock Spruce noticed by him is a still better specimen now, and one of the largest in the country. Silver Firs do well here. A pet Sequoia (Wellingtonia) gigantea, planted in 1857, is now 50 feet high by 10 feet girth at 5 feet from the ground, and although the habit of the Wellingtonia gigantea is not particularly graceful, the vigour of this specimen and its heavy foliage render it a tree of unusual ornament and interest. Mr. Bell has managed it well, planting it in made earth on a slight mound, and feeding it occasionally with a sprinkling of mould. A smaller tree of the same kind was planted near the last on June 22, 1875, by the Princess of Wales, and is flourishing. Another magnificent ornament of the lawn is a Taxodium sempervirens, planted in 1840, and already measuring 70 feet by 7 feet girth. Every kind of tree flourishes here. Among a number of exotic Conifers there are some many-branched Weymouths, some Larches, Limes, Tulip trees, a yellow-flowered Pavia, a Scotch Fir with ten stems, Oaks, and all the other native timber trees; a large deciduous Cypress, near the conservatory, on the south-west side of the house, and a group of three old English Elms, tall trees, containing a great deal of timber, and measuring in one case 13 feet 9 inches at 5 feet from the ground. The glory of the shrubberies, so far as colour is concerned, is found at the proper season in the masses of Rhododendrons. Their greatest curiosity is the Nyssa biflora—if that be the proper name—a tree from North America, columnar in shape, with its lower branches long and pendulous, drooping to the ground, and the leaves an exquisite light green at this season of the year and bright crimson inautumn. There are 36 acres of shrubberies.

The kitchen gardens, 2¼ acres in extent, are famed for the growth of Pines, which other engagements prevented my seeing, but I passed with Mr. Bell through five Grape-houses and two Peach-houses, and looked into his pits, where Peaches and Nectarines are trained close to the ground, on the old Dutch plan—an admirable and economical method, at any rate for small growers, requiring only a moderate outlay, and not much fuel. Four well-grown specimens of Araucaria imbricata attract notice outside the garden walls; two of these are a pair, male and female, and fertile seed is produced in good years in the enormous cones. The trees are thirty years old. Near them, and bounded by the stables, the kitchen garden and the belting of Yews of the north approach road, is the little paddock where Copenhagen spent his last years, receiving, it is said, a daily allowance of bread from the hand of the Duchess, who wore a bracelet made of his hair, and where he was buried with military honours. Some workmen were fixing a massive memorial stone at the time of my visit, with the following inscription, now published for the first time:—"Here lies Copenhagen, the charger ridden by the Duke of Wellington the entire day at the Battle of Waterloo. Born 1808. Died 1834." Remembering the subject and the honour due to the Duke's favourite charger I copied the verses from the memorial stone, though they are not perhaps of striking interest. They are:—

"God's humbler instrument, though meaner clay,
Should share the glory of that glorious day."

An iron fence surrounds the grave, and a Turkey Oak was planted in the centre at the time of the burial, and has not been much damaged fortunately by three Cypresses which have since been crowded in, and are now happily nearly dead. They have been beaten in the struggle for existence, and would now make a decent faggot for the oven. On the Reading and Basingstoke road, close to the Heckfield Lodge, where I left the park, there is a monument to the Duke himself, erected by his son, and by the tenants, servants, and labourers on the estates, in 1863. It is a bronze statue by Baron Marochetti, on a granite column, and at the end of a perfectly straight road crossing Heckfield Heath, at the distance of a mile, are the entrance gates to Heckfield Place where the late Speaker, Lord Eversley, resides in a good house on a capital site, with an excellent soil for gardening and timber, and has added taste and skill to his other advantages, which have often been spoken of in these columns. *H. E.*

New Garden Plants.

PHALÆNOPSIS FASCIATA, *n. sp.**

This is like Phalænopsis sumatrana in the shape of the light yellow sepals and petals, which have numerous cinnamon bars. The lip has sulphur-colour lateral divisions, which are retuse, and have a blunt keel with a knob parallel to the anterior margin. Between both on the disc is a number of retrorse toothletted orange plates, and two conical papulæ terminating in bristles stand before the base of the median partition. The latter is oblong ligulate (blunt), with a deep, abrupt, membranous keel. The anterior part of it is light purple, the superior orange. There is no cushion of hairs, as in P. sumatrana and Lüddemanniana; hence, according to artificial characters, it might be regarded as nearest to Phalænopsis violacea, yet the shape of the sepals and petals is markedly different. The sepals have no median keels outside. The top of the lip is totally distinct also. Leaves and roots are said to be quite like those of Phalænopsis Lüddemanniana.

As it is, we cannot now but regard it as distinct, though quite prepared to have one day a rebuke by the occurrence of some intermediate type. *H. G. Rchb. f.*

Saccolabium fragrans, *Par. and Rchb. f.*

A tiny dwarf plant, with a few oblong acute leaves, full of rugosities and depressions, reticulate, dark green, with some sordid purple underneath. Two rich racemes bear numerous white flowers, with a curved blunt spur, shorter than the stalked ovary, and a pandurate lanceolate lip. The tops of the petals, sepals, and the whole lip is fine mauve-purple, and the anther burning orange. The whole plant is not an inch high, and the thick leaves do not reach that length. The aërial roots are much thicker than they were represented by the Rev. C. J. P. Parish.

A single plant of this curiosity was gathered on May 14, 1873, by the last named excellent orchidist, and—*horribile dictu*—at a very short distance from the house in which he lived, I believe, eighteen years, and after having passed the spot, perhaps, some thousand times. The dwarf had a most powerful smell of Violets, and its appearance appeared an unsolvable riddle. It was a beloved pet of the Rev. C. J. P. Parish. And now the very same plant has appeared in the big town, with Mr. B. S. Williams. I obtained the gem as a present, and during several weeks I have had the finest perfume of Violets as soon as we had warm weather. Mr. Consul Kienast Zölly admired the plant with me. Ah! we should no longer want those old-fashioned Violets, provided we had a large stock of Saccolabium fragrans.

But, how came it at those places? Nothing easier than to spin out an explanation theoretically, fantastically. Some millions of years ago—no, that will not do!—since Rev. C. J. P. Parish, whose days may still be numerous, to the happiness of his friends, lived only eighteen years in Birmah. Well, some years before leaving Mr. Parish had his elephants near his door, laden with baskets full of Saccolabium giganteum. Now, seeds of Saccolabium fragrans fell on a wall, or a little plant of it fell down, and one of the brown servants felt some pity for the dwarf, and put it on a wall to surprise his master. Mr. B. S. Williams imported the lovely gem with some Saccolabium giganteum, and it is to be hoped that Rev. C. J. P. Parish may now feel satisfied to know how the plant came in his hands. *H. G. Rchb. f.*

Vanda Vipani, *n. sp.**

A very curious Vanda, much like the typical Vanda bicolor, but distinct in colour, in the very long narrow leaves, in the sepals and petals running equally, not being abrupt and stalked. Both the sepals and petals are blunt rhomboid, a little undulate, narrower towards the base. White they are outside, but how can I describe the mysterious washed colours inside? The base is light, and marked with short parallel brown-purple lines. The remainder is for the most part of a certain brown colour verging to olive-green in the sepals, more to ochre in the petals; and at a distance you have a certain impression, as if they were striped altogether. If you look nearer it is so indeed, and there are dark bands, now remote, of a certain colour. I may be excused the expression, "purple-brown-mauve." I would like to add blackish! The side auricles of the lip are of the finest camboge-yellow, the middle lacinia is light olive-green, the mouth of the spur white, with numerous minute reddish dots under the column and two stripes, consisting of dark purple spots, on each side. Before the base of the middle lacinia stand two small calli, so often seen. The conical spur has no hairs inside. The column is white at the base, mauve at the top. The leaf is very narrow, far less thick than that of Vanda Roxburghi, with two long and unequal blunt teeth at the apex thus much in the way of Vanda Wightiana.

This fine curious Vanda was discovered in Burmah some few years ago by Captain J. A. M. Vipan, whose name it justly bears. *H. G. Rchb. f.*

Grevillea annulifera, *F. v. Muell.*†

A small plant of this handsome species is now in flower at the Royal Gardens, Kew. It is an ornamental glabrous shrub, with rigid pinnate leaves, bright green above, white beneath on each side of the midrib, the segments are narrow, linear, and pungent, pointed; they do not spread in one plane, but are divergent, ascending towards the zenith, forming, when looked at from the apex of the leaf, a row of V's. The handsome terminal inflorescence consists of from three to five rather large many-flowered racemes of milk-white flowers. It is new to culti-

* *Phalænopsis fasciata*, n. sp.—Sepalis tepalisque oblongis obtusis; labelli partitionibus lateralibus divaricatis retusis cum apiculo latere antico callosis, partitione mediana oblongo-ligulata apice obtusiuscule acuta, lamellis in cristulas solutis in basi; lamelli compresso-conicis aristatis in basi, partitionis anticæ carina a basi partitionis medianæ in discum, ibi abruptas; columna basi utrinque dilatata. Barba in labelli apice nulla. Folia et radices Phalænopsidis Lüddemannianæ. Sepala ac tepala sulphurea striis cinnamomeis. Labelli partitiones laterales sulphureæ punctulis pallidis cinnamomeis paucis. Partitio mediana postice aurantiaca, antice pallide violaceo-purpurea. Columna basi utrinque purpurea.—Ex Philipp. insul. Imp. cl. Low. *H. G. Rchb. f.*

* *Vanda Vipani*, n. sp.—Foliis linearibus elongatis decurvis apice inæqualiter longe bidentatis; racemo pauciflore; sepalis cuneato-oblongis obtusis undulatis, tepalis subæqualibus minoribus, nullis omnino abruptis, sed sensim in basin abeuntibus, labelli auriculis semiovatis lacinia antica pandurata, superne latiori antice angustiori, obtusata, biloba, callis geminis is basi laciniæ anticæ, calcari conico acuta. Burmah, Vipan. *H. G. Rchb. f.*

† *Grevillea annulifera*, F. Muell., *Fragmenta* iv., p. 85; Bentham, *Flora Australiensis*, v., p. 460.

vation, having been introduced from Western Australia by Baron Ferdinand von Mueller in 1880, and would make a very desirable decorative plant were it not for its very powerful odour—an odour that resembles a bad-smelling, unventilated sick-room, more than anything else I can think of. In the morning the plant is comparatively scentless, but, as the afternoon advances, the sickly odour gradually increases until it becomes almost unbearable, and that in a very large room. A drawing of the plant has been made for the *Botanical Magazine*. A full description of the plant will be found at the places quoted. *N. E. Brown, Herbarium, Kew.*

RAWLEIGH HOUSE.

THIS beautifully situated new residence and garden is the property of John Miller, Esq., and is situated about 2 miles from Barnstaple. It augurs well for horticulture that gentlemen displaying so much enthusiasm as Mr. Miller are promoting its interests, and it is also gratifying to find such enthusiasm rewarded with such a high measure of success. The short drive to the house is in excellent order, and the lawns in front are kept as neat and trim as it is possible for hands to make them. The shrubbery beds and borders are composed of the best material that could be procured, of weeping trees, Conifers, flowering shrubs, and other hardy flowers, including Fuchsias. The terrace in front of the house is charmingly laid out, and as charmingly planted with the brightest of flowering and foliage plants. Not a blade of grass is out of place, nor a leaf as far as the eye can detect, and the soft shadows of approaching evening and silvery dew-drops rest composedly upon the soft green lawn. This is a truly beautiful garden. It is stocked with plants which are valuable, interesting, and pretty; but it is the tidiness, the general good order of the place that goes so far towards making the garden an exception from a great many where there is not the same means provided to furnish and to keep.

The red and white Valerians grow and flower upon the walls; they are, of course, indigenous to Devonshire, and will grow upon the top or at the base of a dry stone wall with as much luxuriance as if their home was in a bed of loam. Of flowering shrubs the Escallonias are the gems of the garden, and look as if their leaves had been oiled over artificially, so happy are they in their new homes.

The front of the house is covered with creepers, among which there is a vigorous-growing seedling Tropæolum, which brightens up the green leafage, and looks highly attractive in the twilight of the evening. The conservatory faces the lawn and terrace referred to, and is filled with choice and well-grown plants of Begonias, Pelargoniums, Fuchsias, Balsams, and other flowering plants. The sight of the garden is, however, the new vineries and plant stove. People who talk about not being able to grow fruit and plants in the same house should see the show of flowers and Grapes that are grown together in these vineries. The first house is a late vinery, the roots of the Vines being all outside, and the floor of the house is cemented. This space is filled with flowering plants, as also a staging about 3 feet in width against the back wall, and a narrow stage at the front of the house. The back wall is covered with Abutilons and Habrothamnus elegans, and the pot-plants consist of Fuchsias, Balsams, and splendidly grown zonal Pelargoniums. The best of these are Mrs. Whitley, John Gibbons, Samuel Plimsol, Lady Sheffield, and John Fellows; besides Achimenes, Petunias, Gloxinias and tuberous-rooted Begonias. Not an inch of space is lost, nor do the Vines look a whit the worse for the presence of their companions; on the contrary, the crop of Grapes is a heavy one, of average, well-formed bunches.

The second house is a mixed vinery of Muscats, Madresfield Court, Black Hamburgh, Dr. Hogg, and Golden Queen; the bunches average about 3 lb. each, and about fourteen bunches to a rod—such a crop as you may travel over a whole county to find its equal. Golden Queen and the Muscats are exceptionally fine, and the former finishes and hangs well without spotting. The plant stove is at the end of the vineries, and is stocked with Allamandas, Euphorbias for winter-flowering, Begonias, Stephanotis floribunda, Achimenes, and other showy and useful subjects for autumn and winter flowering.

In the walled-in garden there is a new range of Peach-houses, and here again the utilisation of space is the order of the day. The back wall is covered with healthy fruitful trees, and cross trellises at distances of 6 feet apart are covered with trees in a similar condition. Pot trees are then grown between the cross trellising of Peaches, Plums, Figs, or Tomatos. The Alexandra Peach is highly spoken of here; the first ripe fruit was gathered on July 2, without any artificial heat. The walls are stocked with cordon Pears or Plums, or other trained trees, and a succession of plants and other necessaries are grown in pits and frames by Mr. Dark, the gardener, under whose management the results above described are obtained, and who may be worthily complimented upon the general condition of all under his charge.

HARDY FLOWERS FOR MARKET.

THE extent to which these are now grown for cutting for market purposes is really surprising. There has been of late years a wide extension of the subjects grown for cut flowers, and anything that is good and showy appears to be in demand. Mr. H. B. Smith, of Cyclamen renown, has just formed a new nursery at Ealing Dean, and a considerable portion of this is devoted to the cultivation of hardy flowers for the purpose above stated. So good a representative selection is grown here that the supply is kept up during a considerable portion of the year.

Taking first of all the perennial plants, the season may be said to commence with Christmas Roses, large patches of which are permanently planted out, and when they are coming into flower lights are placed over them. Then follow on Myosotis dissitiflora, Narcissus of various types, Hyacinths, Tulips, Anemones, Solomon's Seal, Violets, &c. Of Narcissi, N. poeticus ornatus is largely grown, because it is early, free, and of fine form. The double white variety, which has been appropriately termed the gardener's hardy Gardenia, is also much grown. Of Violets, Victoria Regina is principally grown and some of The Czar. Doronicum austriacum is a capital thing to cut from early, and Mr. Smith is extending the cultivation of this plant as largely as he can. Pansies and Violas are conspicuous features, as they are useful both for selling as plants and also as cut flowers; and in the open, in newly-broken ground, the plants grow without any trace of the mildew that so often disfigures them in summer. A good yellow Viola, named Cloth of Gold; and a fancy Pansy, named Duchess of Edinburgh, large white, with dark blotch, are the leading sorts; while there are blue and purple varieties in abundance. These are now in full bloom.

Of subjects in bloom now, there are large patches of Hemerocallis, such as H. flava, orange-yellow; H. fulva, buff-yellow; and H. Sieboldi, orange-salmon; but not so bright in colour as the two preceding are, therefore not so acceptable; Delphinium formosum, rich blue; double Pyrethrums, which are now pretty well over, but established plants of which have produced a great number of flowers; white and purple herbaceous Phloxes, dwarf and early, which are now in good bloom; Harpalium rigidum, a strong and somewhat tall growing hardy perennial, with large yellow Composite flowers freely produced; various white Pinks, which are very acceptable for cutting from; Myosotis semperflorens, which is in flower nearly all the year round, and always makes pretty bunches; common white Pinks, Anna Boleyn, and one or two showy newer varieties; the golden variegated Lemon Thyme, which is in demand for edgings, &c.; large patches of the variegated Ribbon-grass, as it is termed; Achillea umbellata, which is as useful as the double white Pyrethrum without its somewhat disagreeable perfume; the common Thrift, which is potted in spring and sold in this way; the common Ox-eye Daisy of the fields, which is very useful to cut from early; early flowering Chrysanthemums, &c. Trollius europæus is largely grown for cutting from early, and of Ranunculus the leading sorts are the scarlet, white, and yellow Turban, and mixed varieties. The foregoing list gives the leading perennials grown, without exhausting the list.

Of annuals there are large beds of Ten-week Stocks and Asters in variety coming into flower; Eschscholtzias californica, orange-yellow, and crocea alba; Coreopsis coronata, Drummondii and tinctoria all now fully in bloom and very showy; the yellow Sweet Sultan, and also the white and pink varieties, the flowers of which command a ready sale; patches of double French Poppies, very showy indeed; the double white and yellow annual Chrysanthemums, which are sown as early as possible in spring, and which bloom for a considerable portion of the summer; the large common yellow and double Sunflower, also Helianthus argophyllus with its downy leaves; white Intermediate Stocks; Dahlias, both pompons and single varieties; Mignonette, especially that fine variety known as pyramidata gigantea, which is a strong grower, and throws splendid spikes of bloom; and several varieties of Centaurea, cyanus minor, &c. The last named is worthy of special mention, as, in addition to the purple, blue, rose-coloured and striped varieties, many of the flowers are handsomely margined, and in this character are very attractive. These are sown in the open ground every year in autumn, and are thinned out singly in rows, and the plants will stand unharmed through a great deal of hard weather. The advantage of autumn sowing is, that the plants start into growth in early spring, become large and strong, and bloom early. On no account should the plants be transplanted, as they do not stand at all well as a general rule.

A nursery with these many subjects is at all times an attractive sight, and just now is unique as well as attractive. A great deal of labour is required in the way of picking, bunching, re-planting, cleaning the ground, &c.; but very large quantities of flowers are sent to market during a week, and they fetch remunerative prices. At this season of the year Mr. Smith's nursery is very gay indeed.

NOTES FROM GLASNEVIN.

MR. WOLLEY DOD is troubled about a yellow Digitalis. Has he tried D. grandiflora? This is the best yellow Foxglove I know, and is certainly better than D. Lindleyana. The colour is not very bright, but the markings in the throat are pretty. Philesia buxifolia deserves all the praise bestowed on it in last week's number. In Ireland it is perfectly hardy, but to grow it well it must be in a shady position. If placed in the sun it does not blossom well, and soon dies. Another plant which has a similar love for shade is Fremontia californica. We had two plants at Glasnevin, one in a very shady position, the other in the sun. The latter plant grew very vigorously at first, flowered well in 1879, and was killed in 1880. The plant in the shade did not grow nearly so strong, was only slightly injured in 1879 and 1880, and I now send you some flowers of it. Last winter it passed uninjured through a very trying ordeal. The spout above it leaked, and as the water dropped on the plant it became frozen, the main stem being finally quite incased in ice, which remained round it for three or four days, and which I was afraid to remove in case I might injure the bark. This proves how hardy the plant must be.

I am indebted to Mr. Baxter for what I consider to be the best blue Nymphæa, viz., N. Daubenyana, The flowers are large, pale blue, with a cluster of yellow stamens, each tipped with a blue point. This Nymphæa is a very rapid grower, and extremely floriferous. It produced as many as eleven flowers in four days, which, unlike most of the other kinds, remain open all day and close in the evening. They are nicely scented. The leaves are very handsome, with entire margins, and produce small plants in the angle of the opening, which grow readily. Nymphæa Ortgiesiana, N. versicolor, and N. dentata major are also flowering well. The last named is a grand thing, with flowers from 7 to 9 inches in diameter, pure white, very fragrant, and opening very wide.

In the house with these plants the varieties of Curcuma grow very well; they enjoy the moisture, and flower freely. I send you a flower of C. petiolata.

Crinum latifolium has been flowering well for some time past in the open air. It is planted at the foot of a wall, facing south, in which position it is perfectly hardy. All the protection it gets in winter is a few shovelfuls of leaf-mould thrown round the crown, and a few Yew boughs put round it. Crinum Moorii is not yet in flower, but is now showing its flower-spikes.

It is really wonderful what plants will grow at the foot of a wall. Besides the two Crinums mentioned, the following plants have been for a long time against the same wall, and nearly all flower well:—Crinum Caryanum, C. amabile, Agapanthus umbellatus, Bravoa geminiflora, Bomarea acutifolia, Tupa Feuillei, Kniphofia caulescens, Tritonia aurea, Anomatheca cruenta, Amaryllis Ackermanii, Berberidopsis corallina, Amicia zygomeris, Ixias, Babianas, &c. *F. W. Moore.*

HEDGES, USEFUL AND ORNAMENTAL.

(*Concluded from p.* 107.)

The Common Green Holly (Ilex Aquifolium) is, like the Whitethorn, a native of Britain, and perfectly hardy. It is a plant of great beauty, and has the advantage of being an evergreen, and as a hedge plant affords shelter at a season of the year when shelter is most required; and is even more beautiful in winter, when clothed with its bright scarlet berries, than it is during the summer; and if Quick hedges, to a great extent, could be replaced by those of Holly, the aspect of the country, during winter at least, would be vastly improved, for a more beautiful object than a fine Holly hedge is hardly to be found.

It is not, of course, to be expected that Quick hedges in good condition will be removed in order to be replaced by those of Holly, but instead of replacing old and effete hedges of Whitethorn by the same kind planted on the same site, where they seldom succeed well, in such cases the Holly might be used with great advantage. In some parts of the Eastern Counties this has to a certain extent been done, and has been attended with every success.

The objections to the use of the Holly for this purpose are, its original cost, its supposed slow growth, and a supposed difficulty in its successful transplantation. There is, after all, very little force in these objections. In the first place, the green Holly is far from being an expensive plant, and it would soon be more extensively grown by nurserymen, and would consequently become still more cheap than it is now, if a considerable demand was expected for it. And as regards the second objection, I believe it will be found that a fence sufficiently strong to resist cattle can be raised from Holly in even less time than this can be done with the Whitethorn, and one formed of Holly will be found to be equally enduring as one formed of Quick. And with regard to any difficulty being experienced in the transplanting of young plants of the green Holly, this only exists in cases where such plants have been neglected, by not having been annually transplanted, which should always be done in the case of the Holly, as well as with all other trees and shrubs kept in stock in nursery grounds. Where this necessary condition has been attended to, no difficulty whatever will be found in transplanting it, and the best time to perform this operation is either early in autumn or during the month of April. If the latter period is selected, the plants ought to be kept as short a time out of the ground as possible; and plants of fair dimensions should be selected for the purpose, not less than a yard in height.

Like the Quick, the Holly is not particular as to soil, although it succeeds best in one of medium character—that is, neither too light nor too heavy; but the ground should be duly prepared for the reception of the plants by being trenched to a depth of not less than 3 feet, and if at all poor should be enriched by the addition of manure or leaf-mould.

During the early progress of the fence the more prominent of the side shoots should from time to time be stopped in order to direct the growth of the plants to where it is required, but the top shoots or leaders should not be interfered with until such time as the hedge has attained to its desired height, when it can be cut into its desired form. And if thought desirable strong shoots may at intervals be allowed to form standards, and thus produce a very pleasing effect, more particularly if some of them are grafted with some of the numerous ornamental or variegated foliaged kinds, some of which grow nearly as freely as the common green-leaved variety.

The Common Beech Tree (Fagus sylvatica) very soon forms an effective and handsome hedge, which will flourish on light and poor soils, where even the Whitethorn will not succeed. The plants should be planted at a foot apart, and, with the exception of the strong side shoots, need not be stopped until they have got to their desired height. And when this is done they will soon thicken below, and form, as far as shelter goes, a most effective hedge. The plants when kept low, or in a hedge form, retain their warm-looking russety leaves throughout the entire winter; or, indeed, until they are pushed off by their young successors. The plant, however, being destitute of anything like prickles, it hardly forms, until at least very old, a sufficient fence against cattle. It is, however, exceedingly useful, and is much used in nursery grounds, and wherever shelter is required, as it appears to possess in an eminent degree the power of sifting, as it were, the cold north-east winds, and depriving them of much of their stinging properties. Its young foliage is very pretty in early spring, and a fine Beech hedge is in summer an object of beauty, while in winter it conveys an idea of comfort. It should, like the Whitethorn, be cut soon after midsummer.

The Scotch Fir (Pinus sylvestris) is on some of the very poor light lands in Norfolk and Suffolk, and possibly in other parts of the country, used for the purpose of forming hedges where it is found that the common Quick cannot be induced to grow, or at least to form a fence. And for this purpose the Scotch Fir succeeds pretty well for a few years, and affords considerable shelter; but they ultimately lose their lower branches and become of little value as a fence.

The Common or Norway Spruce (Picea excelsa) is very much better suited for this purpose than the Scotch Fir, although it does not appear to have been so much used. It will grow freely upon the poorest soil, retains its lower branches, and bears clipping well; and when this is properly attended to a hedge formed of Spruce may, at a short distance, be mistaken for one of Yew. In forming a hedge of Spruce, plants of considerable dimensions may be used, and need not be planted very close to each other, but the size of the plants used must regulate this circumstance. The hedge may either be made to take the form of the hog's mane, or the sides may be cut perpendicular, and flat upon the top, so as to present the appearance of a dark green wall of any desired height; but should not exceed 2 feet in width.

The Common Yew (Taxus baccata) is a native of Britain, is exceedingly hardy, and is, of all plants, possibly the most useful for the purpose of forming ornamental hedges or screens; and there is perhaps no plant which submits more readily to the operation of cutting and clipping than the Yew. Of this fact the topiarian, or the decorative gardener of former times, appears to have been well aware, and took ample advantage of the circumstance, and the Yew tree has been compelled to assume many grotesque and extraordinary forms. It will grow and succeed well in any ordinary good soil, and although by no means a plant of rapid growth, it will nevertheless form a hedge in a much shorter time in good soil than in one of inferior quality; while, on the other hand, it is not advisable to place plants intended to be restricted to the form and dimensions of a hedge in very rich soil, and there is possibly no other plant that will remain healthy under such conditions for so long a time; and in various parts of the country very old Yew hedges are to be found still in good condition. In the grounds of a garden establishment in this neighbourhood there are upwards of 2000 yards of evergreen hedges, the greater part of them being formed of Yew. They have been planted more than thirty years; the soil is naturally light and poor, but of the hundreds of plants used for the purpose not one plant of the Yew has failed. They are clipped annually soon after midsummer, and are again gone over about Michaelmas. They are of various heights, cut square, or in the form of walls some 18 inches or 2 feet wide. There is always a difficulty in preventing such hedges in time becoming too wide, so that it is quite necessary to clip them in at each annual cutting as closely as possible; and it is only as an ornamental plant for the pleasure-grounds that the Yew should be used either in the form of a hedge or screen or otherwise, as on account of its poisonous nature it should never be planted where stock of any kind are likely to reach it. Some of the Arbor-vitæs make very pretty and effective hedges, and the plants are mostly of more rapid development than the Yew, and they may in all respects be similarly treated when used for this purpose. Among the most suitable are such species as Thuya Lobbii, Thuyopsis borealis, &c.

The Tree Box forms also a remarkably neat and pretty fence, and will succeed on any kind of soil.

The Common Laurel (Cerasus Lauro-cerasus), being a native of the Levant, is not sufficiently hardy to form satisfactory evergreen hedges in exposed situations in this country, although it is too frequently used for this purpose. And it so happens that we experience few winters which are not sufficiently severe to more or less cripple this plant, which cannot be recommended for the purpose of forming hedges.

The Portugal Laurel (Cerasus lusitanica) is much hardier, and forms in all respects a better evergreen hedge than the former.

The Evergreen Privet (Ligustrum sempervirens) is a quick growing plant, and soon forms a neat and effective hedge, as does also the Sweet Brier (Rosa rubiginosa), and the common Provins Rose (Rosa centifolia); both are very pretty, and the former is highly perfumed.

There are also many other plants which may be, and are sometimes, used for the purpose of forming hedges, none of which, however, can be considered as improvements upon those already mentioned. Hedges of all kinds may, of course, vary as to form. Possibly the best form for those intended to resist stock is that of the "hog's mane"—that is, widest at the bottom and tapering towards the top; while the worst form that any hedge can be allowed to assume is the reverse of this—viz., being allowed to become wider at the top than the bottom. This prevents the production of shoots from the bottom or the lower portion of the hedge, and results in the same becoming weak and thin, and, of course, ineffective as a fence. Hedges formed of Yew readily take the form of a wall—that is, of the same width at the top as at the bottom; and this is possibly the most ornamental form, and, as has been already said, it is only for ornamental purposes, or as a screen to conceal something objectionable, that the Yew can with safety be used. When the Holly is intended for similar purposes it can also, if desired, be made to assume the wall form.

For the trimming of hedges composed of such plants as the Whitethorn, the Buckthorn, the Beech, and the Hornbeam, &c., the hedge-knife is the best and most expeditious implement to use for the purpose; while the hedge-shears must necessarily be used for such soft shoots as those of the Yew, the Privet, &c., and in the case of plants with comparatively large leaves, such as the Holly and the Laurel, in order to avoid their mutilation the shoots may be cut back or trimmed with the clasp-knife. *P. Grieve, Bury St. Edmunds.*

TUBEROUS ROOTED BEGONIAS.

The show of Begonias now on view in Messrs. Laing & Co.'s nursery at Forest Hill is probably the finest ever seen in this or any other country. The plants fill two houses, one 40 feet long, and the other 90 feet. Both houses are span-roofed, and a row of basket plants is suspended from the centre of each. The longest house has a stage down the centre, and two side stages, and the display in this house is something beautiful viewed from one end, with the drooping shoots of the basket plants almost touching the tips of the centre row of specimens. The extraordinary health and vigour of the whole collection is not more surprising than the marked improvement in the size, substance, and even colours of the flowers from that of former years. The Messrs. Laing have bestowed so much care and pains upon the raising, improvement, and cultivation of this lovely class of plants that no one will grudge them such well merited success. What strikes one beyond everything is the adaptability of the plants for all modern decorative purposes. The exhibitor may have his specimens of any size, and as regards plants for the embellishment of rooms they are simply unapproached, and may be grown of any size to suit the sitting-room of a duke, or the much smaller one of the amateur. Then again the prices vary so much according to quality that they are brought within the reach of every one who cares to have a window plant. But of course quality is always worth a little extra, and in no other class of plants are the different degrees of quality more clearly defined than in these lovely Begonias.

It is a difficult matter to make exceptions among so many splendid varieties, but the best and brightest of the singles will be found among the following:—Arthur Soames is a beautiful crimson and a free grower; Annie Laing is the best dwarf white, and makes a fine specimen—it is a compact grower, and has immense large petals, and would make a lovely object for a sitting-room; Reine Blanche is a smaller white, with the flowers well thrown up above the foliage; Souvenir of the Prince of Orange makes a fine specimen, is a tall grower, and would come in well for grouping in show-houses or conservatories among dwarfer plants. Another extra fine variety bears the name of the Hon. and Rev. J. T. Boscawen; it was certificated at Regent's Park last year, and again recently at South Kensington, and is

conspicuous for the size and substance of its petals. It is a "branching-spiked" variety, and bears from five to seven flowers on a spike. Exoniensis is a dwarf scarlet, and Lady Hume Campbell is still one of the best pale pinks, and a very distinct and striking variety. General Roberts is crimson-scarlet; it makes a good specimen, and lasts in flower for over three months. Mrs. Robert Watt is deep rose, and of good habit and immense vigour; its drooping leaves, sometimes covering the pot, are especially suggestive to those who desire a pretty object for a sitting-room. Mrs. Duke is deep magenta, and is in striking contrast to Alba floribunda, which is very correctly named, as also Empress of India, the best yellow in the collection, and of beautiful compact habit. Trocadero is a fine bright scarlet, and Consul Darlington is a good red. Marchioness of Bute is darker than Lady Hume Campbell, a blush-pink; a very striking variety, and a true ladies' colour. Madame Stella is probably the best rose ever seen, and the flowers are of great substance. Sulphur Queen is also a showy variety, having the edges of the petals fringed with white; and Conqueror is well named, as one of the best scarlets, with a shade of crimson.

The doubles are also very fine, and consist of Glory of Stanstead, the most constant of all doubles, Dinah Felix, Davisi fl.-pl. superba, a real gem, of erect habit, and therefore especially useful for decorative purposes; and Clovis, a free, bright scarlet. Among others may be mentioned Davisi fl.-pl. lutea, Marie Limbert (orange-scarlet), Mozart, a peculiar flower of Hollyhock shape, and Rosina, pink tinted with yellow. The seedlings are of such high merit, that unstinted praise might be bestowed upon them. The gem of the whole collection is Queen of the Doubles, which has been recently christened; the flowers are cupped like a Rose, and are exceedingly pretty. There are others with flowers within flowers, white shaded with yellow, and the young half-open buds look as as if they would some day be largely used by bouquet-makers. Others are bright yellow, white, or cream coloured; some have tasseled flowers, and more are circular in form with yellow centre, and the outer petals orange suffused with scarlet. Upon the whole, the seedlings promise to be a stride in advance of their predecessors as regards form, variety of colours, and habit.

But of still greater importance to the million is the fact that at no distant date we are likely to have flower-beds of white, crimson, scarlet and red Begonias, just as we have Pelargoniums of the same colours now. But there will be this difference, that in point of appearance the Begonias with their bright sturdy leaves and immense flowers will leave agitators against bedding-out little to talk about. A bed of Begonias will never be a glare, because leaves and flowers are produced in about equal proportions, while in the case of Pelargoniums all that can be seen is a mass of red or scarlet. The Messrs. Laing made a trial bed last year in which the bulbs have been wintered, and the plants are now remarkable examples with sturdy leaves, short-jointed growths and abundance of flowers. The surface of the bed was covered with cocoa-fibre, and galvanised wire covers were used to keep out the wet. The varieties used for this purpose are General Roberts, Leopold II., Monarch (one of the best early ones), J. W. Farren, Lady Scudamore Stanhope, Emperor, and Baron Hruby. But, of course, when Begonias come to be commonly used in the flower garden, as they undoubtedly will be before long, the practical remedy will be to lift the bulbs in the autumn and store them away like Dahlias, and bring them forward in pots in the spring before planting out. This is no Utopian idea, as any one may see who chooses to inspect Messrs. Laing's collection of 30,000 bulbs planted out at the Stanstead Nursery this season. The accompanying illustration (fig. 25) is of a beautiful double white-flowered seedling, raised this year by Mr. Laing, a miniature only in size, our illustration being nearly twice the natural size of the plant.



Fig. 25.—A miniature double white Begonia.

Cytisus nigricans.—This old-fashioned but very handsome shrub is not nearly so frequently seen as its merits deserve. It is quite hardy, and its wealth of golden-yellow upright racemes make a grand show against a background of Laurel, or any dark-foliaged evergreen. The specific name was given by Linnæus because the whole plant turns black in drying. It is a native of North Italy, East and South-eastern Europe, and is now in flower in the Kew Arboretum.

PLANT LABELS.

We take the following report of the Plant Labels Committee of the Society of Arts from the Society's' *Journal* of Saturday last :—

As was the case last year, a considerable number of labels were exhibited in competition for the medal and prize, some marked by considerable ingenuity, others again showing ignorance of what labels are exposed to in open borders, rockwork, &c.

The committee considered the label of E. J. Alment, 194, Romford Road, Stratford, E., to be meritorious, and to have decided novelty in its construction, they were therefore able to award the prize to it.

They commended the label bearing the motto "*Stans pede in uno*," George Lang, gardener to J. H. Archer Hind, Esq., Coombe Fishacre House, Newton Abbot, as having some originality, as being useful for some purposes, and not expensive.

They commended "The Angeston Label," J. Macdonald, Angeston Gardens, Dursley, Gloucestershire, as having merit, and suggest the stem being made longer, and the label upright.

They considered the label marked "F.," P. Neill Fraser, Rockville, Murrayfield, Edinburgh, the best metal label for rockwork and general purposes, where large labels are not required ; it has not, however, sufficient novelty to justify the prize being awarded to it.

The committee's last year's report concludes with these words :—"Wood is probably the cheapest and best material for cheap labels. It is at present liable to the objections that the part in the ground rots, and the writing becomes illegible. If by some process, such as perfect kyanizing or treatment with paraffin, these objections could be removed, an excellent cheap label would be the result. Such labels, however, would have to be tested in actual use against unprepared labels, before any award upon them could be made." Experiments have been made in this direction with encouraging results ; wooden labels placed in a cool Orchid-house, which when unprepared became sufficiently mouldy to make the writing illegible, when prepared by being steeped for twelve hours in hot paraffin (the white solid paraffin) have remained unchanged after exposure for a considerable time. It seems, therefore, probable, if this process be carried on further, and wooden labels be thoroughly saturated, that we may obtain what is still a desideratum, especially for amateur gardeners, a rough and ready label to be used when potting a number of plants, with short time to do it in ; a label which will last and continue legible for at least five years.

Mr. G. F. Wilson, F.R.S., has renewed his offer of a prize, which offer the Council have accepted for next year. Particulars will be issued later on.

AZALEA INDICA.

(*Continued from p.* 106)

Although I have gone so far into the details of raising Azaleas from cuttings, I must say that there is only one kind of Azalea that I would recommend to be grown permanently from cuttings, and that is amœna and its varieties. I have gone into this matter so fully merely by way of introduction to the next method of increase, viz., grafting. This is the plan that obtains most favour with experts both at home and abroad for the propagation of greenhouse Azaleas, and most deservedly so, for it is by this method that the best results are obtainable. I would not say that good results have not been obtained from plants grown from cuttings—with the original and earlier sorts this was the only method practised ; but with the highly developed race of Azaleas that are now grown I will be bold enough to assert that grafting is the best method of increase. Of course the reason why opens up a wider field for discussion than I propose in this paper ; but I take it that the same physiological and cultural reasons which induce the gardener to graft his choice Apples, Pears, Plums, and Peaches on other Apples, Pears, and Plums of a hardier constitution are exactly of the same nature as those which induce the propagator to graft his Azaleas and Camellias on other Azaleas and Camellias of a more robust constitution. And yet it is not robustness of constitution that decides the matter, for many Azaleas grow quite as freely on their own roots as when they are subjected to the operation of grafting. But whether we can explain all the hidden causes that rule our practice in this and kindred operations, certain it is that grafting brings Azaleas and Camellias, quite as much as Apples and Pears, more immediately under the control of the cultivator, and the primary objects of cultivation are more readily and uniformly produced. But this grafting presupposes stocks, and stocks are mainly produced from cuttings. Before I pass from this part of my subject I may say for the benefit of those who may wish to raise stocks for grafting purposes, that the sorts which are best adapted for this work are indica alba as a stock for whites, and carminata or Sir Robert Napier as a stock for the coloured varieties.

I will now advert very shortly to the *modus operandi* of grafting. One would suppose that a method of increase which required two operations, such as first raising our plants from cuttings, and then reducing them to the condition of stocks for grafting, was not only a cumbrous but also a tardy method of propagation. But experience has abundantly shown that we arrive sooner at the object of our wishes by the double process than by the single, and that, instead of losing, we, in fact, gain time very considerably. Stocks fit for the grafter's use will take from eighteen months to two years, according to the facilities at the command of the propagator to produce them, and should be kept steadily growing from the day they are potted off until they are grafted. Professional men perform this operation at any season of the year, when they happen to have both stocks and grafts in proper condition for working. Speaking generally, however, early spring is the most suitable time, and the operation in itself is simple enough. I will assume that the stocks have been kept growing in a temperature of 60° or 65°, and that you have also the Azaleas you wish to increase in a growing state. The stocks should be cut over at about a foot from the pot, the top stripped of its leaves for nearly 2 inches, and a clean slice cut from the side upwards about an inch in length. The scion or graft should be selected of a medium strength, eschewing the very strong and the very weak shoots, the leaves stripped off its base, and a corresponding slice cut off its side ; fit the two neatly together, taking special care that the inner bark of both stock and scion are placed in close contact on both sides if possible, and bind with soft cotton or worsted yarn. When the operation is finished the subjects should be placed immediately in the propagating-case, and come under the daily routine of airing, shading, watering, &c.—technicalities the experienced understand by a sort of instinct, but which no amount of verbal description can make clear to the novice.

If all goes well in about three weeks you will have the gratification of seeing the grafts beginning to push out fresh leaves, and you will see through the interstices of the binding the cambium, or uniting matter, forming along the edges of the incision in a manner sufficiently clear to indicate that a union has taken place. The ligature may soon be removed, and the young plant gradually inured to light and air, and so soon as they can bear it with impunity they will be taken out of the propagating-case, but still kept in a steady growing temperature. When the scion is pushing vigorously the point should be nipped out to encourage the lateral buds to break ; these may be two, three, or more, according to strength and sorts, which should again in turn be stopped, so as to obtain as many primary shoots as possible, for upon the frame thus produced the future specimen is to be built. Keep them in a growing temperature until after midsummer, when they may be gradually removed to the greenhouse to take their place among their established brethren.

I have thus far detailed the career of our young Azalea, from the cutting up to what I may call the finished production, upon which you will in years to come bestow many an anxious look and wistful pinch before they arrive at the stage of beauty and admiration I sketched in the opening remarks of this paper, or win for their possessors a high place in the annals of our profession. From this short sketch of the subject it is evident that the getting up of a lot of Azaleas is both an exacting and a tedious process, demanding from the gardener much precious time and no small perseverance. Only in establishments where propagation in all its branches is extensively carried on can Azaleas or any other plants of a like nature be multiplied, so that the results may be commensurate with the outlay bestowed upon them ; but, however they are acquired, whether by home production or by purchase, I will suppose the grower who wishes to produce early flowers to be in the possession of a lot of healthy young plants suited to his requirements, and of the right selection of sorts for this special work. The plants need not be large to begin with, say three years grafted, and growing in 5 or 6-inch pots. Plants of this age will have a sprinkling of flower-buds ready to open in March, which month, by the way, we will suppose ourselves to have arrived at. They should be placed in a moist temperature of 65°, where they will soon open their buds. If flowers are in great request I would allow them to flower, but would cut them as little as possible. I would prefer, however, to nip off the flower-buds, and concentrate the energies of the plant on the produce for the following winter. Supposing them to be permitted to remain in heat they should be encouraged to grow vigorously by every art that can be brought to bear upon them. The syringe should be kept at work morning and evening, watered with weak guano-water, or the surface of the pots sprinkled over with a pinch of Standen's manure, or the preparation of our worthy friend, Mr. McAdam. As they are not intended to be shifted this season, such a stimulative regimen will be of use to prepare them for the debilitating process of forcing, for, depend upon it, however carefully we conduct this work of forcing, it impairs the strength of plants such as those we are now considering very much, and the art of the grower will consist in averting this as much as possible. If any shoot threatens to grow beyond the general outline it should be pinched, but this pinching should be indulged in but sparingly, nor prolonged beyond the first week in May, else the result will be disappointing. The drainage must be kept right, and any green matter growing on the surface of the ball picked off ; but, above all, see that the water penetrates through it evenly and thoroughly. They should be, moreover, kept fully exposed to the sun on all sides, and towards midsummer removed to a cooler temperature, say the front stage of a greenhouse or an airy pit. The pots will be quite full of the most delicate roots, in fact pot-bound. To preserve their activity to the full it will be necessary to protect them from the action of the sun. I place the pots at this stage in empty pots a size larger than those in which they are growing. This cool jacket will benefit our plants in more ways than one. It will protect the delicate fibres, whose welfare we have at heart, from the enervating influence of excessive evaporation, which must take place with pot-bound plants fully exposed to the rays of the sun. It will, moreover, save them from the fluctuations of temperature which this same evaporation and its necessary consequent heavy waterings ; which evils, if not obviated by some means or other, will assuredly lead to more frequent visits from their insect enemies than will be conducive to their well-being, or agreeable to the grower.

An idea is very prevalent—or rather, I should say, used to be prevalent, for the chief purpose of our Association is to dispel illusions, and that of all sorts—that Azaleas and such plants, in process of maturation, should receive a reduced supply of water at the roots, the more surely to attain the object in view. I have been under this delusion myself at one time, and its victim as well, but happily I have come to see the evil of my ways. The best and earliest Azaleas I am able to produce are growing all summer in an old greenhouse, where they bask in the summer's sun, and breathe the freest of fresh air night and day, the pot protected as I have described, and copiously supplied with water.

There are two cardinal points, as I take it, wherein the culture of the Azalea differs from that of Camellias, and they are comprised in these—water and shade. The Camellia during its growing period delights in moderate shade ; indeed, as our greenhouses and conservatories are at present constructed, with thin large panes of glass and closed laps, it is well-nigh impossible to preserve their smooth glossy leaves from burns and scalds without a certain amount of shade. Here our Azalea has the advantage ; its smaller foliage, covered with innumerable tiny bristles, enables it to rise above the defective manufacture of our glass merchants, and leaves the rays of the sun to play as harmlessly on their surface as does the lightning around our electrically-protected spires and turrets. Again, when our Camellias have finished their growth it is necessary, not only to dry the atmosphere by which they are surrounded, but we must also reduce the supplies at the root. These points are well enough understood by the experi-

enced cultivator, and I refer to them mainly for the benefit of my younger brethren, and the well-known fact that principles are best illustrated by comparison.

But to return to our Azaleas. We will fancy ourselves to have arrived at the middle of September with a batch of plants, hard as ebony, with buds palpable to the touch, if not to the eye. Those of us who require the better class of flowers to work up with the regular supplies available at this season must now see to their first crop of Azaleas being forthcoming when they are wanted. The stock of plants will be carefully looked over. Those sorts most easily excited, and with the most prominent buds, selected and placed in a structure where they will receive an airy temperature of 65° or thereabouts, and as near the glass as it is possible to place them, so that a ray of light will not be lost to them. Here they will slowly and surely open their buds. In direct proportion as the process of ripening has been perfected in course of the summer, will be the ease or difficulty with which they force. And as with the opening of the buds, so does the relative size, and substance and colouring, depend on the same beneficial influence. The cry of the dying philosopher, "Light!—more light!" was never more devoutly uttered, nor more full of meaning, than on the lips of the anxious and careful Azalea forcer.

We have now travelled in company over another stage in the career of our plants, and have arrived at the point at which we reap as we have sown, so to speak. But there are several points of importance to be considered, to which I have as yet made no reference—the most suitable compost in which to grow them; the shifting, and the right time at which this operation should be performed; the training, without which our Azaleas are among the most scrubby of plants; and the insects which infest them, with the best means to rid them of these pests. The compost I use is composed of three parts sound fibry peat, two parts sound yellow loam, and two parts gritty river sand. These are mixed together and chopped up roughly with the spade. It is important to have it in the proper condition as to moisture, with that satiny, elastic feel about it that the practical man knows so well, but has no words accurately to describe. With all the compost I prepare, whether for Azaleas or any other plant, I like to have them spread out to the sun and frequently turned over, not so much to dry them as to enrich them by exposure to the action of the atmosphere.

The chemists tell us that our cultivated lands have the power of absorbing from the air we breathe some of the finer and most subtle elements that enter into the composition of plant life, and which we inadequately attempt to supply through the agency of chemical compounds. In some feeble sort we can do something for the soils we prepare for our plants. I can say for myself that the more I expose my soils to the atmosphere the better am I pleased with the plants I grow on them. When it has gone through this aërating process to my satisfaction it is taken to the potting-bench and finally prepared for the pots by hand-picking and tearing. If the shift is to be liberal the compost is left rougher than for small shifts. The crocks used in the drainage should be clean, as well as the pots, and the drainage made as perfect as the most experienced can devise. The soil should be pressed as firmly in the pots as possible; in short, Azaleas, as well as others of a similarly rooting character, cannot be kept in health with loose potting, and if the soil is of the proper texture there is little fear of the plant suffering from over-compression.

A. Mackenzie, Warriston Nursery, Edinburgh.

(*To be continued.*)

Convolvulus mauritanicus.—This is an extremely pretty border plant, and is not so commonly used in the flower garden as it might be. The different shades of blue Lobelias, dwarf or otherwise, meet the eye so often as front lines, and are so formal in habit, that anything of the same colour and more natural in form is a welcome sight to the flower gardener. When Lobelias are too dwarf for an edging, and a blue colour is desirable, the plant in question makes an excellent substitute, and looks best overhanging a grass bank, where its straggling growths, covered with cup-shaped blue flowers, look very pretty. The flowers are fragile in structure, and are easily damaged by heavy rains, but a few hours' sunshine brings forth hundreds of fresh blossoms, which give change and freshness and an occasional surprise to those who know when and where to look for fresh beauties from the hand of Nature.

THE ARNOLD ARBORETUM.

After wearisome negotiations and delays a treaty seems to have been finally concluded between Harvard College and the city of Boston (U.S.A.), by the terms of which the Arnold Arboretum passes under the joint proprietorship of these high contracting parties, to the lasting credit and advantage of each. It was ten years ago when an endowment of money and 120 acres of land were made available to the college for a collection, scientifically and systematically ordered, of all such trees as could endure the climate of Boston. It was not in accordance with the spirit of this foundation that an educational force of such magnitude should expend itself solely upon the students and fellows of the university, or upon the specialists who will resort to the Arboretum to enjoy its unrivalled facilities for research and comparison. Instruction of a more popular kind is also offered here, and the teaching is just what is needed and what will be most readily heeded by the people at large. The grounds, too, are accessible, being actually within the city limits.

The college, therefore, proposed to transfer the fee of the property to Boston on condition that the city should (1) add 48 acres to the territory already held; (2) build and maintain a narrow road some 3 miles long through the grounds; and (3) assume police charge of the whole. At a comparatively trifling expense the city thus acquires a spacious park, with pleasantly diversified surface, bold eminences which command broad views, rugged slopes clad with a fine growth of old Hemlocks and natural woodlands, all admirably adapted for purposes of rural recreation, while the great living museum, unique in its comprehensiveness, and having the best science and trained skill of the college behind it, throws open all its dendrological treasures for free public education and enjoyment for ever. On the other hand, the Arboretum gains suitable and dignified approaches, while the land acquired is valuable, not only because it affords a quality of soil needed for the best development of certain tree species, but because it will release a considerable space for experiments in sylviculture which would otherwise be needed for the scientific collection.

With the exception of a thick belt of ornamental trees, rich in variety and full of lusty life, already established along one border of the grounds, none of the permanent planting of the Arboretum has yet been undertaken. Eager friends have chafed at the delay, for long years at best must intervene before the trees will be teaching their mature lessons. It is plain, however, that if they are grouped according to their botanical affinities the entire plan must be complete before a single specimen can be planted where it is certain to remain. The only approach to elasticity in the scheme will be the allowance for probable discoveries which may add to the species already known to science, and these new-comers must find a place among their near relatives in the families where they belong. After each tree is established in the soil and with the aspect best suited to it, holding at the same time its proper botanical position as related to other individuals and genera, it will be practically impossible to revise a part without shifting the whole. The original arrangement must therefore be final and the problem is sufficiently puzzling without being complicated by any possible shifting of the plantation limits.

While the college and city were coming together by slow and formal approaches, the boundaries of the Arboretum remained uncertain, and planting was deferred from year to year. Until the treaty was ratified the actual placing of the collection could not begin. But, after all the delay is hardly to be regretted. The years of study by those who have the enterprise in charge have not been wasted. Ample as was Professor Sargent's equipment for his studies as director five years ago, there can be no doubt that the wide range of investigation he has conducted, and the comprehensive experience he has gained, especially in his labours as special agent of the Census in charge of forestry statistics, will enable him now to map out his work with a still bolder and freer and firmer hand. The importance of this preliminary training can be understood when it is remembered that, unlike other collections which have grown up unsymmetrically from meagre beginnings, the Harvard Arboretum is to be essentially complete in scope and plan from the very outset.

The projected road winds among the wooded hills of the park, rising on easy contour lines to a concourse on Hemlock Hill, and another on a still higher eminence in the natural forest. Through the ground now open its course will be the thread upon which the classified tree groups will be beaded. This part of the work has been designed by Mr. Frederick Law Olmsted, whose counsel has been largely instrumental in bringing about the agreement between the city and the college. It is proposed to plant a certain number of trees, say half-a-dozen, to represent each species and distinct variety, the species belonging to each genus being placed together and the genera united in family groups.

In accordance with this scheme, all the multiform varieties of native and exotic Oaks will be grouped with the different Chestnuts, Beeches, Hornbeams and Hazels, which belong to the same great family. In the section devoted to Conifers, the various genera and subordinate classes in the Yew, Cypress, and Pine families, will be planted in their proper position. The families themselves will be distributed according to their affinities, as determined by the most approved classification, and the visitor in a single circuit of the grounds will be able to inspect the entire arborescent vegetation of the zone, scientifically ranked and graded. In the area devoted to systematic planting, landscape effect will be a secondary consideration, but in time the stately groups disposed about open glades will make an impressive display. Here the landscape artist, the nurseryman, or the owner of private grounds, can study the ornamental value of every variety which will flourish in the climate. The accurate history of each individual, which is made a matter of record from the day when the seed is planted, will show the rate of growth and other particulars. The museum of woods, accessible tables of fuel value, strength and other comparative qualities of different varieties, will afford needed data for students in economical forestry, and in a hundred ways the collection will be a school where trees can be conveniently and satisfactorily studied in all their relations to the wants and comforts and enjoyments of man.

It must not be understood that the Arboretum is making no progress, because of the delay in beginning the systematic planting. Correspondence is carried on with all the leading botanists and learned societies in the world, and with every considerable collector, amateur, professional or commercial. Exchange of specimens is systematically conducted, and propagation, by seed, cuttings, grafting and every other known method, is constantly and most successfully practised. As a result the young collection is one of singular completeness and value. Some 2600 species and distinct varieties are already growing in the nurseries, and the institution can probably show 1000 varieties which no single dealer or collector in the country possesses. Already many noteworthy facts have been established; as, for example, in regard to the comparative hardiness of trees from seeds of the same species gathered in different localities. The marked difference in habit, expression and colour which some Western Conifers show even in the nursery rows, where the same species from seed collected in California, Utah and Colorado stand side by side, is most interesting. Some varieties which seem as tender as a Heliotrope, when raised from seed ripened on the coast of the Pacific, are hardy enough to weather the raw zephyrs of Boston when grown from seed collected on the slopes of inland mountains. The delay in planting has proved a positive advantage, so far as it has enabled the managers to obtain a more complete nursery collection to start with. The danger from the delay lies in the fact that some of the tap-rooted trees may be approaching a size when removal will seriously check their growth.

Not the least instructive of the operations now in progress is the renovation of the old and decrepit forest on a portion of the grounds. These woodlands comprise some 60 acres, and seven years ago a considerable fraction of this area was covered with a growth of scrub Pines, among which cattle had wandered and browsed, to the death of all undergrowth. The old trees were thinned out. Here and there mother trees, white Pines, Oaks, or Chestnuts, were left to supply seeds. In a few places seeds of other varieties were added, and in some of the openings a few young trees were planted. If the cattle had been forced out, and the land left to itself, after a fifty years struggle the place would have been rewooded by a survival of the fittest. But in the long and trying struggle the survivors would be

weakened and crippled. Professor Sargent, therefore undertook to assist nature after the most approved plan, helping her in the matter of selection and helping the fittest in the fight. A suitable amount of undergrowth to keep the ground cool and moist, and to hold the fallen leaves from being blown away, is encouraged. The growing trees are carefully pruned. The process of thinning out is carried on as the thrifty saplings begin to elbow each other for more room, and already the new growth gives fair promise that the old and moribund trees will all be replaced by younger and more vigorous ones within a period which seems remarkably short for the production of a forest from the bottom. It should be added that the gathered wood helps materially to make the experiment pay its way, and it should be remembered, too, that the new wood is the more valuable for fuel or timber because of its more rapid development. Altogether this object lesson in practical sylviculture is worthy of an institution with such lofty aims as the Arnold Arboretum. No one interested in the kind of economical forest culture which is best adapted to the conditions of large portions of the older States, can examine the processes and results of this experiment without profit and practical instruction in directions where instruction is most needed. *New York Tribune.*

PLANTS IN FLOWER AT EDGE HALL.

Francoa ruprestris.—This plant was given to me by Mr. Harpur-Crewe, and I have since saved seed and raised hundreds of them. They do not vary at all in the flower, which is pink, prettily marked with crimson network. The flower-stalk is branched, and about 2 feet high. It is perfectly hardy on a rockery, and last autumn I planted many in the mixed borders, which are now flowering well.

Potentilla nepalensis.—This is one of the prettiest of the genus, most of which are untidy in their habit, spreading and curving their flower-stalks too widely. P. nepalensis is not free from this fault, but the flowers are of such a beautiful rich dark rose-colour that it can be excused. It is sold also as P. formosa.

Potentilla recta, about 2 feet high, with pale yellow flowers, I mention, not because it is beautiful, but because its habit is better than that of any other Potentilla I have seen; the flower-stalk grows quite upright from the root, and the flowers are arranged in a flat umbel. If by crossing with it some of the hybrids could be made to assume this habit, they would be far more welcome than they are.

Delphinium cashmirianum.—After three years' patient trial I can make nothing satisfactory of this plant. Its habit and constitution are good enough, but the flowers are of so dull and poor a colour as to make the plant worthless for ornament. I have raised a lot from seed, in hopes that some would be better, as I had seen it of better colour in other gardens; but here they are all alike, partly owing to the damp soil and climate.

Chrysanthemum atratum.—I expected to find this identical with C. lacustre, but it is dwarfer, being only 18 inches high, bears larger flowers, some of them more than 4 inches across—as good as those of an Ox-eye Daisy. It is three weeks earlier than C. lacustre.

Helenium grandiflorum.—This was raised from Mr. W. Thompson's seed, and is quite distinct. I had before received varieties of H. autumnale under the name. It has been in flower since the beginning of June. The flower-stalk is 18 inches high, and the flower has a rich dark brown centre, the outer rays being golden-yellow, with handsome broad crimped edges. I consider it a great acquisition.

Campanula lactiflora, a very distinct Campanula, 2 feet high, with a branched stalk of large delicate bells, not encumbered by leaves, and lasting longer in flower than most of the Campanulas.

Grindelia hirsuta, raised from Mr. W. Thompson's seed. A yellow Composite of excellent stiff spreading habit, rising not more than 9 inches from the ground, and producing for a long time abundant flowers about 2 inches across; the plant is distinct in habit from anything I have seen; the flowers are like those of Asteriscus maritimus, a half-hardy plant.

Sidalcea candida grows 2 feet high, with good stiff upright spikes of flowers which commence nearly at the ground. They are as white and nearly as large as those of Malva moschata alba, and are better displayed. The plant has the habit of the best form of Sidalcea oregona, of which it may be a variety, but the flowers are much larger.

Lysimachia barystachys.—An improvement on L. clethroides, which it resembles, but it is dwarfer and has a stronger spike of larger flowers, and seems less disposed to run underground.

Anthemis tinctoria.—This well known plant, which grows hardly more than a foot high, and is covered with flowers nearly as large and as bright as those of the Corn Marigold, is a better garden plant than many of the same class which are oftener grown.

Centaurea macrocephala.—One of the grandest plants in my garden; but it has a short flowering period, and requires abundance of elbow-room. Plants 5 feet high, and rather more across, bear about fifty large golden Thistle-like flowers, hardly growing clear of the mass of dark green leaves.

C. aurea.—This is quite distinct from the last; it bears flowers nearly as large and as good in colour, but is in some respects a better plant, as the flower-stalks are branched, the flowers more numerous, and produced in longer succession, and less encumbered with foliage. As it does not ripen seed with me, which the last does, it is rather difficult to increase.

Linaria anticaria [?].—A very pretty close-growing annual Toad-flax, sending out stiff branches horizontally along the surface of the ground, which bear terminal bunches of flowers. These are nearly as large as those of the common Toad-flax, of a transparent white, with two conspicuous bars of bright purple on the lower lip at right angles to the mouth—a very good annual.

Rock Plants.

Campanula Scheuzeri.—Under this name Mr. Frœbel sent me from Zurich what I believe to be an accidental variety of C. rotundifolia, with a duplex corolla, so arranged that the angles of the inner fit into the interstices of the outer, giving it somewhat the appearance of a Soldanella flower. I have three or four plants of it growing on rockeries wide apart, and strangely enough they are all badly worried by short-tailed field mice, whilst plants of other varieties of C. rotundifolia, growing near them, are untouched. I saved seed from this variety last year, and have abundance of seedlings which will flower before autumn, in which the duplex corolla will probably not be continued.

Alyssum argenteum.—This is open to the same objection as Saponaria ocymoides, that it wants too much room. It forms a beautiful mass of small golden flowers through half June and all July, spreading as evenly as the surface of an open parasol. It must not be expected to live long, and small cuttings, by which it is increased, should be taken every year.

Silene saxifraga has nothing to recommend it as an ornamental plant, though its habit is good. The flowers are of a dull white, intermediate in size between those of S. nutans and S. vespertina.

Sedum pulchellum.—This and the following are the two most ornamental rock Sedums in cultivation, excepting, perhaps, S. Sieboldii, which flowers later. S. pulchellum has a rather upright habit, grows about 6 inches high, and produces five flower-spikes, spread like birds' claws at right angles to the stalk. The flowers are of a delicate light rose colour. Care must be taken to propagate fresh plants from the shoots before the flower-buds are formed, as the shoots then root at once; but if this precaution is neglected the plant is easily lost, as all the flowering shoots perish.

S. Ewersii, a prostrate plant, with broad fleshy leaves, and shoots about 6 inches long; the flowers, which are produced in terminal umbels, are vivid rose colour, and very ornamental. This species does not spread fast, and deserves one of the best places on the rockery.

Onosma stellulatum, a poor imitation of O. tauricum, with pale yellow or dirty white flowers, resembling the lighter-coloured forms of the common Comfrey. The plant seems to have a stronger constitution, and to be more easily raised from seed and kept through winter than its handsomer relation, but no one who can grow O. tauricum need wish for O. stellulatum.

Hypericum Burseri has flowers nearly as large as, and resembling in shape, those of H. olympicum, but paler in colour. The plant is dwarfer, has broader leaves and a stiffer habit, but is in most respects inferior to it.

H. empetrifolium.—A charming rock plant, the hardiness of which I have not sufficiently tested. Its name describes the foliage and habit, which is that of a neat dense bush 6 inches high, crowded with flowers the size and shape of those of H. pulchrum, but not quite as good in colour.

H. patulum.—Though the plant generally sold by this name has no right to be considered the true H. patulum of Thunberg, which is said not to be in cultivation in Europe, it is a very pretty hybrid, with large wax-like substantial flowers of very bright yellow, and nearly 2 inches across. It is cut to the ground here in ordinary winters, but as it flowers until the frost, cuttings taken in early summer and kept through winter in a cold frame, make fairly good flowering plants before the end of the next summer.

Androsace lanuginosa.—Packed round with loose pieces of limestone to keep the shoots off the soil, two or three plants, planted out early in May, have been flowering profusely ever since, and are still forming plenty of buds. These Androsaces are best when raised from seed, but many of them are difficult to rear. I can give no better advice than to follow Mr. Correvon's cultural notes, published in the *Gardeners' Chronicle*.

Adenophora.—These, coming under several names, seem to differ but little, and to be all nearly related. The usual type is a tall branching pyramidal spike of flowers, rising more than 2 feet high, in size and colour resembling, but less blue than those of the common Hairbell, and making one wonder why they are not Campanulas. They are easily grown from seed.

Rubus arcticus.—This charming little herbaceous Bramble is now flowering for the second time more freely than it did in spring. I have two large patches of it on the eastern slopes of rockeries, and both are now covered with delicate rose-coloured flowers. In spring it is liable to suffer a little from frosts, but nothing could be healthier than its present appearance.

Pterocephalus Parnassi, called also, I believe, Asterocephalus, a prostrate or dwarf shrubby plant, propagated by cuttings, but not very easily. It is very neat, growing in the recesses of the stone, and bearing flowers of pale or pinkish lavender, almost sessile, in size and form something like the paler varieties of Scabiosa succesa. *C. Wolley Dod, Edge Hall, Malpas, July 24.*

NOTES FROM INGESTRE.

Ingestre Hall, the seat of the Earl of Shrewsbury, is six miles from Stafford, and 1½ from Ingestre and Weston Station on the Stafford and Uttoxeter Railway; it is situated in an extensive, undulating, and well-wooded park, which is watered by the river Trent. The mansion (fig. 26) is of noble appearance, and is in the Elizabethan style of architecture; at the north front is laid out in Box a geometrical garden, and two immense Maltese crosses are formed of Yew, with a specimen in the centre of each, rising to a height of about 10 feet. At the west side, and under a low wall forming the boundary to the last mentioned garden, is a very gay ribbon border, the colours of which are very tastefully arranged in the following manner, starting next the verge:—Lobelia speciosa compacta, Ageratum Countess of Stair, Pelargonium Christine, P. Stella, Dactylis glomerata, and Calceolaria floribunda. The beautiful close-shaven lawn rises abruptly on our right, and extends a considerable distance; judiciously planted upon it are fine specimen Araucarias, Wellingtonias (Sequoias), a beautiful Abies Douglasii, Scarlet Chestnut, a tree which one very seldom sees, but one of the most beautiful of deciduous trees; and in the more densely planted portion of the pleasure-grounds are to be seen four Irish Yews, which, perhaps, cannot be matched in Great Britain.

Passing on to the carriage front we notice two very fine examples of Magnolia grandiflora growing on the walls of the house to a height of 35 feet, and showing a profusion of bloom. Another noticeable feature at Ingestre is a delightful promenade 300 yards in length, and in three levels, rising about 2 feet above the others; at each flight of steps Mr. Gilman is forming an elegant archway of Irish Yew by training a branch laterally from the specimens planted at each side the walk at these points, but without in any way interfering with their leaders, which he will allow to grow several feet above the spring of the arch. Amongst the shrubs right and left of the walk are several large specimens of Acer Negundo variegatum, 25 feet in height, and with dense cylindrical heads, their beautiful white and green foliage presenting an

agreeable contrast to the more sombre hue of the various Laurels, Hollies, Yews, &c., behind them. Situate in this portion of the grounds is an orangery and Camellia-house of large and lofty proportions, containing immense specimens of Orange trees laden with fruit, and Camellias bristling with flower-buds. Occupying the centre of this house is a good example of Cibotium princeps, whilst arranged along the front are numerous plants of Humea elegans, sending forth their feathery inflorescence—a plant, by the way, too rarely used now for conservatory decoration—though eminently suitable for such a purpose.

Entering the walled-in kitchen garden through the north gates, on our right is an extensive range of glass devoted to fruit culture, and the first division we enter is the early vinery, which contains a full crop of keeps his Vine borders well above the ground level, and adds to them as the roots extend, at the same time not allowing them an unreasonable width of border—a practice carried out, I believe, by most of our best Grape growers.

The first Peach-house walked through is the late house, containing Noblesse, Salway, Barrington, and Têton de Venus; the trees are in robust health and vigour, and carrying good crops. In the second Peach-house is a Violette Hâtive, carrying such a crop as it has never before been my lot to see; each Peach being of immense size, and exquisitely coloured, and set as regularly all over the tree as though done by the rule and compass, and looked at through the glass from the outside is a sight not soon to be forgotten. The next compartment is planted with Figs, welfare. In another house is a beautiful lot of ornamental flowering and fine-foliaged plants. The pits contain excellent crops of Melons, amongst which was conspicuous a plant or two of Read's Scarlet-flesh, a handsomely netted fruit, of excellent quality. A large stock of young and robust Poinsettias, with Gardenia florida, and hundreds of tuberous Begonias of various colours, are worthy of special mention.

A large plant of Allamanda Schottii was a sheet of bloom; this was trained along wires the whole length of the pit, and several feet from the glass. Cucumbers are grown in quantity in pits set apart for them all the year round.

The kitchen garden at Ingestre is 7 acres in extent, having a slight fall to the east, of rectangular form, and in a high state of fertility; most of the crops



Fig. 26.—Ingestre Hall, one of the seats of the Earl of Shrewsbury. (see p. 140.)

highly finished Black Hamburghs with the bunches averaging 2 lb. each, and the berries 3½—4 inches in circumference, possessing the hammered appearance and an abundance of bloom—the true index of first-class cultivation. The next division is the Muscat-house, planted chiefly with Muscat of Alexandria, and promising to be as creditable as the preceding. The third vinery contains Gros Colmar, Madresfield Court, and Muscat Hamburgh, all carrying heavy crops of fruit. The latter is set as freely as Black Hambugh, and is worked on that variety. In the late vinery are the usual late kinds, viz., Trebbiano, Lady Downe's, Gros Guillaume, Kempsey Alicante, &c. Six of the Vines in this house were lifted last autumn, and apparently with the utmost success, five out of the six carrying crops that most people would only expect "4-year-olds" to carry. Mr. Gilman principally Brown Turkey and White Marseilles, bearing a heavy second crop; and the last house in this extensive range is the early Peach-house, the fruit being all gathered and the trees fully exposed to the consolidating influences of sun and air. Passing through a doorway, we entered a large and well appointed fruit-room, the necessary adjunct of an extensive fruit growing establishment.

Half way down the kitchen garden we came upon a block of pits and houses for the cultivation of Melons and Cucumbers, Ferns and other decorative plants; and a striking feature in one of the houses in which Ferns are grown was Ficus repens, growing up all the rafters, and hanging down in graceful festoons, thus answering a double purpose—by adding an additional charm to the house, whilst affording the partial shade for the Ferns so necessary for their growing luxuriantly. Autumn sown Onions were very fine, Brussels Sprouts early and extra strong. The first batch of Cauliflowers were nearly all cut on the day of my visit (July 3), the variety grown being Veitch's Early. Peas are grown in large quantities, the standard sorts which Mr. Gilman relies on being well tried and general favourites, viz., William I, Dickson's First and Best, Veitch's Perfection, Dickson's Favourite, Laxton's Supreme, &c. A quarter of excellent Cabbages attracted particular attention. Black Currants are a heavy crop, Apples a fair crop, and a nice lot of Plums. The following varieties of Pears are also carrying a good quantity of fruit, viz, Williams' Bon Chrétien, Louise Bonne of Jersey, Conseiller de la Cour, Marie Louise, and Knight's Monarch. Strawberries for forcing were being layered in large quantities. The general keeping of

the whole place, combined with the high standard of culture of fruits, plants, and vegetables, indicate in the genial and courteous gardener a horticulturist of the first rank. *J. C. S.*

FRUIT NOTES.

ORIGIN OF THE BLENHEIM ORANGE APPLE.—Mr. George Kempster, tailor, who resided at Old Woodstock, on the west side of the road near the mill, and there died September 15, 1773, was the first grower of the Blenheim Orange Apple. When a young man, he observed a plant growing close to the wall of the house; it was so young that he could not ascertain what it was, but liking its appearance, he removed it into a flower-pot, where it became so large, that he transplanted it into the garden. In due time it produced two apples, which proved remarkably fine; the tree continued to thrive, and regularly every year bore fruit. One year its produce amounted to 21 bushels. No person could state how it came there, for nothing like it was to be found around that country; every one was desirous of possessing a Kempster Pippin, as it was at first called; and such was the eagerness to obtain grafts, that large branches were repeatedly torn off in the night-time. The general size of the fruit is that of a large Orange. In shape it resembles a handsome Golden Pippin, as it does also in flavour. Its colour is a bright yellow tinged with red. Its culinary properties cannot be exceeded by any Apple hitherto known, as it will, with proper attention, keep sound and fit for the table until March. Plants and grafts of this tree have been sent to every part of the kingdom. In 1811, Mr. Whitman, the Duke of Marlborough's gardener, prevailed on his Grace to allow them a place on his table, and the Duke highly approving of them, they have since obtained the name of the Blenheim Orange. In 1820 Mr. Cook, fruiterer in Covent Garden Market, sold a bushel of them for 14*s.*, they being before this period unknown in the market. The original tree was standing in 1826. On September 21, 1822, five of these Apples gathered in the garden of Mr. Farrow, of Woodstock, weighed as follows:—

	Weight.	Circumference.
No. 1,	1 lb. 1/2 oz.	13 inches.
No. 2,	1 lb. 5 1/4 oz.	14 1/2 "
No. 3,	15 oz.	14 3/8 "
No. 4,	1 lb.	12 3/4 "
No. 5,	1 lb.	12 1/2 "

Total, 5 lb. 4 3/4 oz. or 84 3/4 oz. When first gathered their total weight was 88 1/4 oz. They were exhibited at the October meeting of the Horticultural Society, where the Banksian Silver Medal was awarded for them; and in the same year Mr. Griffin, surgeon of Deddington, gathered one of these Apples weighing 24 oz. Of the largest of these a model in wax was made, which is now (1882) in my possession. *I. O. Westwood, M.A., Oxford.*

THE APPLE CROP IN DEVONSHIRE.—Not often in the memory of the present generation have Apples been so scarce in Devonshire as they are this season, and cyder drinkers, while admitting that there is a good stock of the favourite beverage still in the country, declare that another season such as this would be extremely inconvenient, and the loss to farmers more than considerable. Anything like a crop is indeed a rarity in the best sheltered gardens, except on such kinds as Lord Suffield and one or two others that seldom fail to bear. One is therefore not a little surprised to see a good crop at a railway station, and in North Devon, too, where the climate is not so favourable. The trees referred to are growing at Umberleigh station, close to the line, and are quite loaded with Apples—at all events, a better crop than we have seen anywhere else.

PLUMS ON WOODEN WALLS.—A very novel, interesting, and to a great many a profitable sight, is that of witnessing a crop of Plums growing upon the face of a broad wall. And the information will no doubt be regarded as more interesting, when it is stated that the variety is the well-known Green Gage. The trees are growing in the Pilton Nursery of Mr. William Ireland, near Barnstaple, on a south aspect, and at a high elevation without a particle of shelter. The wall is made of planks, cut in about 7 feet lengths, with their ends inserted in the ground and fastened together with strips of wood at top and bottom, running horizontally. Better crops need not be wished for anywhere, and those who have a garden at all, or even own a plot of ground, need not hesitate to invest a small amount in a few boards and fruit trees, by which means a good supply of fruit may be procured, and interesting employment made for those who care to undertake the management of their own garden.

Orchid Notes and Gleanings.

WORK IN THE HOUSES.—The growing season up to the present time has been dull and sunless, and where the shading of the plants has been carried to excess young growths will be in a more than usually sappy and tender state. To remedy this during the next two months should be the object aimed at, as without well ripened growths it is impossible to have a full crop of perfect flowers. During the remaining part of the growing season use no more shade over the East Indian and Mexican houses than is absolutely necessary to save the plants from scorching; and if the weather continues dull and clouded be sparing in the use of water about the houses, so as not to create an unnecessary amount of atmospheric humidity. Ventilate freely in every house during settled weather, and sufficient air should be left on during the night to keep the atmosphere buoyant; but beware of creating draughts through or over the plants. Much attention will now be required in watering the plants, as the many different stages of growth now to be found in an Orchid-house will render it necessary to keep the mind on the work in hand, as anything approaching carelessness in this matter amongst the Cattleyas, Lælias, and East Indian Orchids will soon do irreparable mischief. Where very fibrous material has been used in potting the plants, as recommended in former Calendars, there will not be so much danger from an over-dose of water as when a mass of close material has been packed about the roots. In the latter case the watering must be done very carefully. Any of the East Indian plants or Cattleyas that may be looking yellow in the leaf should be resurfaced with clean sphagnum, to assist them in regaining a more active circulation of the sap. The latest flowered plants of Lælia purpurata and Cattleya Warneri should at once be carefully top-dressed, before the young growths are much on the move. The earliest started Cypripediums, such as C. Sedeni and C. villosum, will now be growing freely, and will take liberal supplies of water at the root. Some of the later forms will only just be commencing growth, and where they are just fresh potted less water will be required, but at no time should they be allowed to get too dry, or the plants will suffer in consequence. The late flowering Oncidium Lanceanum will now be making up its growths, and will soon be showing for flower, and the spikes should be guarded against cockroaches. Another good autumn-blooming Oncidium is O. Forbesii; this will be rapidly making its bulbs, and should have a light position close to the glass. The earliest started Pleiones will begin to show signs of going to rest, and a little less water at the roots will now meet their requirements, at the same time keep them in a position close to the glass, to get their bulbs well ripened. Calanthes now in full growth must not be overcrowded, and a little weak manure-water at the root will be beneficial to them now that the pots are full of roots. Keep them close to the glass in a stove temperature. *J. Roberts, Gunnersbury.*

ODONTOGLOSSUM HASTILABIUM.—A remarkably good specimen of this desirable Orchid is now in flower in the collection at Gunnersbury Park. Mr. Roberts is right when he designates this a capital summer-flowering Orchid. It produces its spikes of bloom from June to August, and is, therefore, very useful for exhibition or summer shows. The example at Gunnersbury Park appears to be a good variety, and has large flowers of a purple, green, and white colour. Mr. Roberts states that it lasts a long time in bloom when kept cool, and the prevailing colours are well sustained.

BULBOPHYLLUM LOBBII.—This curious and interesting Orchid we lately saw flowering in a private collection near Exeter. The labellum is poised upon a point, and if slightly touched will keep moving for several seconds. The flowers are buff in colour, and may be said to be more curious than pretty.

DENDROBIUM FORMOSUM GIGANTEUM.—This is one of the showiest of Dendrobes, but while this is acknowledged by all, the variety does not appear to be nearly so largely grown as its merit deserves. From one point of view the reason is obvious. Orchid growers are apt as a body to eulogise the latest introduced variety or species. Something new catches the eye of the specialist, but to the great body of cultivators there are certain flowers which are more useful than others. For dressing small glasses the above variety is a real gem, and with a spray of Maidenhair will set off the margin of a dinner-table to perfection.

The Flower Garden.

ROCKERY.—Amongst the many eligible plants for rockwork which is carried out on an extensive scale there has been none more conspicuous for its striking appearance and abundant blooming qualities than the Hypericum calycinum, or St. John's Wort, sometimes called the Rose of Sharon. The admirable way in which it adapts itself to the clefts and interstices of the rocks is very noticeable, but as it spreads very fast care must be taken annually at the spring regulating to reduce it to its proper bounds. The rooted pieces thus displaced may be planted in bare places in the woods and plantations, where they will form excellent cover if required. A few plants should also be introduced among the pockets in the rocks of the beautiful Evening Primrose, Œnothera macrantha, also Œ. prostrata—well adapted for the higher elevation, so as to hang down. The Flame Flower (Tropæolum speciosum), trailing about very gracefully, may be seen from a long distance; some of the best varieties of the common Nasturtium, planted at the back, trail very gracefully down, and assist variety. Another very excellent plant to be introduced here and there into the pockets is Sedum spectabile, which also has the desirable property of flourishing and blooming well in the shade, and which is very useful for shady borders and under trees, as well as a good rock plant. Sedum acre is just now very conspicuous for the brilliant yellow of its blossoms, and for the excellent manner in which it creeps over the surface and through the clefts of the rocks. Monarda didyma, with its whorls of scarlet blossoms, is very fine; it appears to like thorough drainage, and succeeds well in the elevated parts of the rockery.

MIXED HERBACEOUS BORDERS.—These borders will require to be kept constantly trim and neat, without which there is a muddled appearance produced which is far from pleasing in a department from which a very great amount of interest and display is not only expected, but possible, with the very varied amount of materials which we have at command, and there will always be something advancing into beauty. At the present time the herbaceous Phloxes are very conspicuous, as is also Agrostemma atrosanguinea, or the Rose Campion—a very showy plant, requiring seed to be sown every year; the Spiræa venusta and palmata, both contribute their share to the general display, and should be carefully tied out, to guard against winds; some of the earlier planted will be going off, and the old stems should be removed. Seed of choice varieties should be secured as it ripens, and the vacancies thus made in the general furnishing of the borders may be made good by planting the young seedling plants of the Canterbury Bells, Antirrhinums, Sweet Williams, for flowering next season; but for future use it is well to prick out a good stock in the reserve garden.

PROPAGATION.—Before it is too late the propagation of choice sorts of rock plants for the spring should be carried out at once. Slips are easily obtained now, and propagate freely of such plants as Alyssum, Arabis, Iberis, Dianthus of various sorts independently of the florist varieties, which are not suitable for rockeries; and of such things as are propagated by division of the roots a good stock placed in the reserve garden will always be useful. The mule Pinks and choice double Sweet Williams would come under this head. The layering of choice Carnations and Picotees should be carried out at once, also choice florists' Pinks by pipings. The work of propagating for stores for another season will, I fear, have to be done piecemeal. Owing to the inclement weather and heavy rains of late, many of the plants have made very little progress; and Pelargoniums have only just begun to furnish a few cuttings at a time, as it would not be advisable to strip the beds, and we can always resort to potting up the old plants in the autumn, and we have the consolation of reflecting that such plants, when well hardened through the winter, will in the spring furnish an almost unlimited supply of much more reliable cuttings than the soft and succulent autumn growth. Many of the popular tricolor class, such as Lady Cullum, Sophia Dumaresque, Mrs. Pollock, &c., are so slow growing as to necessitate potting the old plants from year to year, as they afford cuttings very slowly. *John Cox, Redleaf.*

The Hardy Fruit Garden.

The continued showery weather is causing excessive growth to start on most fruit trees, especially on Pears and Plums that are bearing little fruit, and such trees require to be again attended to in the removal of breast wood. Fasten in shoots that are required for extension, and keep the unnecessary growths closely pinched back. Espalier trees will require the like attention, and pyramidal trees must have their leaders tied up as they advance in growth. Young trees will merely need to have any weak and unnecessary growths removed, also all ill-placed and crossing ones, and to be assisted in shape where necessary by ties and stakes. The stopping of those branches required to form the frame of the tree may be, with advantage to the vigour of the tree, left until the winter pruning. Older trees may have all necessary shoots reduced to the required proportions, and others cut back to form spurs to two to four leaves, according to the sort and individual vigour of the tree.

Nets, being removed from early Cherries, can be at once placed on the Morello walls, to protect the quickly changing fruits from birds, which assail them long before they are ripe. The uncovered trees can now be thoroughly cleaned from any insects that have established themselves during the time the ripe fruits have prevented the forcible application of water to the foliage. All second growths that have started should be at the same time removed, the points of extension assisted with additional nails, and the growths generally left uncrowded and free for the sun to exert its influence in ripening the wood and perfecting the buds for another year. The nets can now be removed from all but the latest Strawberries, and, if not required elsewhere, should be carefully housed when in a thoroughly dry condition. Any further runners wanted for planting ought to be secured at once, so as to allow of the removal of the rest from the plants on all breadths that are to be continued another year. Where ground cannot be at present spared, or where from other causes it is not convenient to plant at once, it will be well to secure runners, and prick them off in beds for future use, rather than to longer delay the general cleaning of the plants. Let the hoe be afterwards run through amongst them to destroy any small weeds that may be starting, and to loosen the surface of the ground after the trampling consequent on the removal of the crops.

Much attention is now necessary on walls devoted to Peaches and Nectarines to keep all the shoots, which have grown with extreme rapidity during the late wet weather, securely laid in. Continue to pinch in laterals as soon as formed; and it may be also necessary to check the vigour of some of the stronger shoots, and to preserve the balance of the tree by pinching their points. Apricots have been greatly assisted in swelling their fruits by the dripping weather, but now require some warmth and bright sunshine to hasten their ripening, and to impart that flavour which otherwise will be lacking. An active use of the hoe amongst fruit quarters is more than usually necessary this season, and ought not to be neglected.

See to the protection of small fruits for a late supply; and it will be well where they are grown together on a break—as a portion should in all cases be—to erect such a framework to support the nets that the fruit can not only be gathered with comfort, and without unnecessary loss of time, but that the fruit may be exposed to the circulation of air to dry it, and enable it to resist decay as long as possible. *R. Crossling, St. Fagan's.*

Peaches and Nectarines.

Early Peaches.—We have to-day (July 19) gathered a dish of Early Rivers Peach from a tree on the open wall, and, judging from present appearances, it will be quite a month before any other kinds, favoured with the same aspect, are ripe. The fruits are fairly large, but very pale in colour, and not of good form, as most of them are very flattened and depressed at the apex. But what tells most against this variety is the liability of its fruit to drop prematurely through splitting at the stone—a failing it seems very subject to, as during the few years we have had it we have lost several, and I have heard of it behaving in the same way with others. As yet Beatrice and Louise have not fruited with us out-of-doors, but from what I have seen of the first-named in houses, it is quite as precocious as Early Rivers, and is a nice-looking high-coloured sort, but much too small, and deficient in flavour. Hales' Early and Alexander seem to be the chief favourites in America; and the latter is said to be the best of all the known early kinds. If so, its reputation will soon be established, and there will be a great run on nurserymen for young trees of it, as almost every one who grows Peaches will plant it. *J. S.*

The Kitchen Garden.

NOTES ON VEGETABLES.

Peas.—This has been the finest season for Peas I ever remember, the cool weather, with frequent rains, having just suited them, as may have been seen by the growth they made, and the way they distended and filled up their pods. With us Telephones have been the best, but then they have had every chance, as we sow the rows 10 feet apart, and utilise the space between by planting Celery, which likes the slight shade, and does well. By cropping in this way the Peas have plenty of light and air, under which conditions they grow robust and strong, and bear freely almost down to the ground. There appears to be still some confusion about Telephone and Telegraph, but they are easily distinguishable, for though they are alike in habit and height, the one has green pods and Peas and the other pale. Telephone is by far the better Pea of the two, as it is more tender and sweet, and although the Peas are much whiter when shelled they boil green, and are delicious and melting when cooked. Telegraph has a tougher skin and lacks flavour, and with these drawbacks it cannot hold its own long. Ne Plus Ultra will yet compare favourably with any, and will take a good deal of beating, as it is good at all points, and a first-rate kind to breed others from. Till Telephone came out, this and British Queen were the only two taller sorts we grew; and if Telephone will withstand mildew as well as the last-named, and turn in late, it will replace the old Queen. As to dwarfs, none are equal to Veitch's Perfection for summer, but to have it fine the seed should always be sown very thin, as it is a stout branchi ·rt that requires plenty of room. Dr. McLean comes next to it in point of size, but is not nearly so good, as the Peas soon get old and very tough in the skin. John Bull we have grown for the first and last time, as he is not so portly and swollen out in the pod as to justify the name, and the quality is inferior to that of the Doctor. Marvel has nothing marvellous about it, and may go the same road, as the pods are small and the Peas are not good. Stratagem I like the look of much, and have no doubt but that it will become one of the principal favourites. In appearance it might pass for a dwarf Telegraph, as the pods are about the same in size and colour, but the Peas are a trifle more tender and sweet. *J. S.*

Grapes and Vineries.

Houses in which Grapes are ripe must be kept cool and dry; a damping down on bright mornings occasionally will benefit the foliage, but it must be done early when there is abundance of air on, so that it will dry up before the air is reduced for the night. Later houses that are colouring must be kept at a night temperature of 68°, with a rise of 10° by day. Keep a little fire-heat in the pipes night and day until the fruit is ripe, when it may be steadily reduced, and if the wood is well ripened can be dispensed with. Water the borders when dry with clear tepid water. The latest house of Hamburghs that are swelling must have liberal supplies of tepid manure-water at the roots, and a little fire-heat used on cold and sunless days; but in bright weather fire-heat can be done without. When fire-heat is used turn it on early in the morning for a few hours to raise the temperature, when it can be turned off again, and do not use any through the night if the thermometer does not fall below 65°. Admit air early in the morning, and close early in the afternoon. Stop the laterals as they require it, to prevent the foliage becoming too crowded. Houses in which Muscats are ripe must still have a little fire-heat in dull weather; in bright weather they will be better without it, and they should have sufficient water at the roots to keep the berries plump and in good order. Water at a temperature of 65° to 70° will be hot enough for these now, and they must have abundance of air on bright days. Those that are still swelling their fruit must have liberal supplies of tepid manure-water at a temperature of 85°, and be kept at a night temperature of 70°, with a rise of 10° by day. If red-spider is troublesome, paint the pipes as recommended in previous Calendars. Late varieties of Grapes can be kept at a night temperature of 65° to 70°, with a rise of 10° by day. Give abundant supplies of tepid manure-water at the roots when required, and plenty of atmospheric moisture until the berries can be seen changing colour, when the atmosphere can be kept drier and air be admitted with more freedom. Keep sufficient heat in the pipes to keep the air light and buoyant, and on bright days the house can be damped in the early part of the day: give air on the front ventilators when they commence to colour. Newly planted vineries must have plenty of heat and air, to ensure an early growth and that the wood may be thoroughly ripened in the autumn. Those that are making their second year's growth will now have reached the top of the house, and can have the leader stopped and the laterals stopped as they require it. Pot Vines, now that the pots are filled with roots, must have plenty of tepid manure-water, and if they are crowded they must be stood thinner to admit sun and light freely among the foliage, or the wood will not be properly ripened in autumn. *Joshua Atkins, Lockinge Gardens, Wantage.*

The Pine Stove.

Attend to the moving of succession plants, so that they may get plenty of room and light. Charlotte Rothschilds and Smooth Cayennes starting now will succeed the last lot of Queens, or other spring-started varieties. Continue to stake all fruits as soon as they are set, as before advised. Attend to the watering of plants in different stages, and see that the soil does not get soddened during dull wet weather. Turn out a succession plant to correctly ascertain the true state of the ball, for nothing can be more injurious than over-watering. The end of this month and the beginning of next is the best time for taking off and potting autumn suckers; it gives them time to establish themselves before dull winter sets in. At the same time do not allow the plants to become too pot-bound before spring. This can be prevented by giving them a shift late in the autumn if they require it. Syringe fruiting plants and succession according to the weather, and when water is standing in the axils of the leaves discontinue it for a few days, especially at the present time. Where Queens are grown suckers are plentiful, but only choose those that are sturdy and that have been fully exposed. Suckers of scarce varieties should be taken care of, and the stools treated as before advised. The stools so treated, or when cut up into eyes, should not be kept too wet, as they are liable to rot. Where suckers are objected to, growing in the soil, the best plan is to shorten back the leaves of the plants, and plunge them thickly together, as before stated. If any of the young plants are inclined to draw give a little extra air. Keep newly potted suckers close for two or three weeks, afterwards more air may be given. Now is a good time to take stock, as it were, of the number of each variety intended to be grown next year, as it is useless to keep a number of young plants through the winter if they are not required. Give a little liquid-manure to succession plants at each alternate watering, as the roots should now be getting to the sides of the pots. In making up new beds do not use too much new tan at one time, and especially over hot-water pipes. When replunging use the empty duplicate pots, as before advised, which prevents the leaves from getting broken or otherwise damaging the plants. Close up the houses early in the afternoon, but the houses should be damped as soon as they are closed. If the crowns of fruiting plants are inclined to get too large reduce the atmospheric moisture. The water for syringing and watering should not be used under 83°. A late batch of plants may be shifted into fruiting pots this month, and kept growing all through the winter. Successive pottings are the only means of keeping up a succession of fruit all the year round. All young rooted suckers should be kept growing and not allowed to get pot-bound. *D. Wilson, Castle Hill, Devon.*

APPOINTMENTS FOR THE ENSUING WEEK.

Wednesday, Aug. 2—Flower Show at Weston-super-Mare.
Thursday, Aug. 3—Opening of British Bee-keepers' Show, at South Kensington (3d to 8th).
Saturday, Aug. 5—Liverpool Horticultural Association Show, in Sefton Park.
Gooseberry Show at Alexandra Palace.

THE successful exhibitions which have been held at the Royal Horticultural Society during the now waning season by the various Special Societies, beginning with the Auricula Society, and ending for the present with the satisfactory display made by the Carnation and Picotee Society, suggest some considerations to those who have at heart the welfare of each and all these bodies. In the first place, we are inclined to ask, Where is all this segmentation and specialisation to stop? If Roses are to be deemed a speciality, why not Orchids and Lilies? If Tulips, why not Gladioli? If Gooseberries, why not Currants? If Potatos and Pelargoniums, why not Pine-apples? If Carnations, why not Chrysanthemums? And so on throughout the whole garden flora. Already we hear of a new Dahlia Society, and of another for the benefit of the Pink. In one sense, undoubtedly, the more the merrier—in another sense the more the weaker becomes the body corporate. Seriously, the time has come when the whole subject of special societies demands to be fairly discussed. The cardinal point of the discussion will hang upon the question, whether, on the whole, the special objects which the members of each of these societies set before them are best met by fragmentation, or by co-operation? Is there really anything so very specially connected with the culture of these so-called specialities which a well trained all-round gardener could not just as well undertake as the specialist? And if it be said that the specialisation is all in favour of the amateur, we may well ask whether the amateur would not be benefited by co-operation with the general gardener? We would also ask whether by this multiplication of small societies and this exaltation of special subjects, there is not a chance that labour and zeal and energy may be frittered away, or at least expended to an extent not commensurate with the results obtained? It may be very gratifying to Mr. Cucumis Melo to take the first prize at the Cucumber Society, and the keen competition between him and Mr. Cucurbita Pepo may be beneficial in keeping up the standard of good Cucumbers, and of giving the general public an opportunity of seeing what a Cucumber should be; but may not all these results be obtained equally well without a special society? Has the Cucumber Society, for instance (we improvise a society not in existence at present, in order that our remarks may not appear personal!), has this Society in any way improved the culture of Cucumbers?—has it made known new and better varieties, apart from the mere personal fancy of exhibitors?—has it contributed in any way whatever beyond supplying a pleasing recreation to its members, and keeping alive the interest of the public (important results, no doubt)—to the increase of our knowledge of the natural history of the Cucumber, the direction in which improvement should be sought, and the method of obtaining it the multiplication of Cucumbers, the distribution of the best varieties, not only to the table of the rich man, but to the humble repast of the cottager? Has the Society taught us anything with regard to cultivation, to the diseases of Cucumbers, and the way to prevent, to alleviate or to cure them?

Enthusiastic specialists would, we expect, answer all these questions in the affirmative in all sincerity. But the general horticulturist and the public at large may be pardoned for withholding their assent to this till it is fairly proven.

One reason for the existence of these special societies we have often heard advanced, and it is this, that the Royal Horticultural Society has never fairly risen to the full level of its duties, that it has discouraged rather than promoted these specialities, and that the upgrowth of this neglect on the part of the parent society has been the crop of special societies. We believe that this is a correct statement, but if so it tends rather to show that the Royal Horticultural Society has been negligent, if not indifferent, when it ought to have been sympathetic; it does not show that specialisation, especially when carried to an extreme, is in itself a good thing, but only that it has arisen because and in consequence of the indifference of the parent.

The experience of the past year leads us to hope that the respective positions of the general and sectional societies may be reconsidered and adjusted to their mutual advantage. It is quite certain this season that the special societies have very materially contributed to the pleasure and the interest of the fortnightly meetings at Kensington. Their co-operation has been specially valuable at a time when indications were not wanting that exhibitors are falling off, and that even the fornightly meetings—the very backbone of the Society—have been perceptibly weakened. At such a time the co-operation of the special societies has been particularly valuable. For our own parts we should like to see a special display of some particular flower at each meeting, beginning with the Crocuses and ending with the Chrysanthemums and Christmas Roses. We should like to see encouragement given by the Society to each and all of these plants, and so secure throughout the year an ever-changing exhibition. But we think that, under proper management, all this might be as well done, and at much less cost and trouble, by one society rather than by five-and-twenty. If really requisite, by all means let there be five-and-twenty committees or sections to co-operate with the main Society; let the five-and-twenty each in their turn have the sanction of the main body and the direction of all matters connected with their speciality—of local affairs as contrasted with imperial ones, if we may so say. The five-and-twenty would be the representatives of scores and hundreds of specialists who would contribute to the general fund, while the imperial exchequer should be taxed in support of each speciality to an amount commensurate with the number of specialists and the amount of their respective contributions. A single subscription would then render any one and every one free, not only of his particular section, but of the whole; and any specialist desirous of particularly favouring his special weakness, might do so by contributing funds for special prizes, or by other means. The Horticultural Society has got into its present depressed state in some measure in consequence of the narrow, restricted views its officers have taken of what should be the scope of a national horticultural society. It has unduly favoured some, and passed over others. The specialists not unnaturally resented this. There are many signs that they did so in no spirit of antagonism, and that they are willing and desirous to co-operate with the parent Society if only sufficient encouragement be given them. We believe it would tend greatly to the advantage of both parties if the union could be rendered closer. We believe that the efficiency, power for good, and dignity of all parties, might be materially enhanced, and the necessity for separate subscriptions, which are now so severe a tax upon some well-wishers, materially reduced by co-operation and federation.

—— Mormodes luxatum eburneum.—Sir Trevor Lawrence, writing in our columns on Sept. 28, 1878, writes:—"This is really a grand plant, stately in flower and foliage, delicate in its pale ivory tint and in its scent, and quaint in its twisted, shell-shaped lip. To my eyes it possesses many varied beauties—enough of them to captivate all tastes." We think most people who saw the plant as exhibited at South Kensington on Tuesday last will share Sir Trevor's opinion. It is true that the dislocated position of the parts of the flower, as indicated in the name, might create some prejudice, but in the eyes of the botanist the dislocation in question only adds to the interest, while the veriest stickler for floral symmetry could scarcely deny the beauty of this extraordinary Mexican Orchid. The peculiar distortion, by virtue of which the parts of the flower are twisted out of their natural position, by no means interferes with the beauty of the flower to the general observer, while the expert sees in it only an additional source of interest. This would, however, be intensified if we could see the reason why. Perhaps Mr. Spyers, or those who have had the opportunity of watching the plant during growth, might be able to enlighten us on the point. The structure of the flower was fully described by Dr. Lindley in the *Botanical Register*, and noted in our columns, August 19, 1843, and again by Prof. Reichenbach, September 28, 1878; suffice it to say that the parts of the flowers are normal as to number and as to position in the first instance, but subsequently a twist takes place, by which the column, instead of being posterior or next the axis and the lip anterior, are both twisted to one side. Our illustration (fig. 27) was taken from a noble specimen lately sent us by Dr. Paterson, Bridge of Allan.

—— Corea: Good News for Botanists and Horticulturists.—The news that treaties of commerce have been completed between the United States and other nations and Corea excites lively anticipations among botanists. It is thought that this unexplored country, access to which has hitherto been forbidden, contains many interesting Lilies and other plants, as, without doubt, it is the source of many of the plants that have long been cultivated in Japan.

—— Malta Flower Show.—Mr. Cannell obligingly sends us the report of the exhibition held on May 6—8, by the Société Economico-Agraria, of Malta. The exhibition appears to have been open to the same objection as that pertaining to most colonial exhibitions, viz., that it was an attempt to copy too servilely the flower shows that may be seen in European cities. Instead of developing the resources of the island, of growing to perfection the plants and flowers native to or best suited to the country, Begonias and Coleus, Pelargoniums and Cinerarias, and monster bouquets, seem to have formed the staple of the exhibition, and are likely to do so so long as the cylindrical silk hat and the hard outlines of the stiff felt head-gear, form, as they appear to do in the admirable photograph of the show, the coverings of the residents and natives of Malta.

—— Garden Peat.—Among the exhibits now on view at the Agricultural Hall, Islington, are several samples of peat from Messrs. G. Gatterell & Son, of Bisterne, Ringwood, Hants, which are of such excellent quality that it may be useful to plant cultivators to mention it. The selected sample for Orchid potting is a solid mass of fibre, indeed a better sample has seldom been submitted to public inspection. There is also a sample of bog peat exhibited, to show the difference of quality between what is frequently sold as plant peat and the genuine article. One is simply a body of muddy paste-like material, the other open and fibrous. That a good article in peat is badly wanted no one will deny, and if Messrs. Gatterell can furnish large quantities of peat equal to their sample they are sure to get plenty of sale for it.

—— The Stanstead Park Nursery Employés.—We learn that on Friday last, the 21st inst., about fifty of Messrs. John Laing & Co.'s *employés* from the Stanstead Park Nurseries spent the day at Chislehurst, where they amused themselves at cricket and other games, and were afterwards entertained at dinner at the hotel.

—— Cut Roses at Regent's Park.—The exhibition of cut Roses held in the Royal Botanic Society's Gardens, Regent's Park, by the Cranston Nursery Company, of Hereford, during the past week has enabled visitors to inspect and admire a rare



FIG. 27.—MORMODES LUXATUM EBURNEUM: PORTION OF SPIKE: FLOWERS IVORY-WHITE. (SEE P. 144.)

exhibition of the queen of flowers. The exhibition was held in the new corridor. The stands of cut blooms were arranged in single file the full length of the building, and only separated from each other by a few Palms and Ferns. The background was also composed of Balsams, Myrtles, Coleus, Ferns, and Palms, and there were bouquets of Roses intermixed with the plants. The display of cut blooms was throughout of great excellence, the flowers being fresh and highly coloured, as well as being large, and the petals of great substance. The finest blooms were of La Duchesse de Morny (rose), Madame Charles Wood (rosy-crimson), Beauty of Waltham, Victor Verdier (deep rose), and Princess Mary of Cambridge (pale pink). The light and dark colours were so blended together that the effect was charming, and the fragrance delicious. Marie Baumann (carmine-crimson) is very telling in effect beside Elie Morrell (lilac-rose), and Captain Christy (blush), a superb Rose. There were also splendid blooms of Duke of Edinburgh (velvet-crimson), Abel Carrière, and the old favourite Général Jacqueminot, as brilliant as ever. Comtesse de Sereneyi, a Rose with a blush centre and beautifully cupped, is one of the very best light Roses, and Dr. Andry (rosy-crimson) is also very striking. It is difficult to name the best out of a collection where all are so fine, but still many of the old names given in the preceding remarks are conspicuously to the front. Others, both old and new, that are especially fine are Baroness Rothschild, Alfred K. Williams, Boule de Neige (so useful for cutting), La France, Xavier Olibo (velvet-crimson), Hippolyte Jamain (rosy-carmine), and Mrs. Baker; and of newer sorts, Countess of Rosebery, Constantine Tretiakoff (cerise-red), Mdlle. Isaac Perier (rose shading to purple), and Sir Garnet Wolseley. There were also several stands of one variety among which nothing looked better than the rosy-crimson Madame Charles Wood. Crimson Bedder is a free flowerer, bearing half a dozen buds round an expanded flower. This variety is destined to become very popular, its habit and colour being such as will suit the public taste, while its profuseness of flowering will soon establish it as a favourite everywhere.

—— THE MARKET PEA CROP.—We have nearly got through the green Pea season, having had one of the best known for many years. There has been ample moisture at the roots to keep the plants growing, and as a result the later blooms have podded right out, and the produce has been very large. Earlier in the season heavy showers induced perhaps too much growth, and with a lack of sunshine the pods filled slowly, still they filled in time. No one makes a fortune out of Peas, because the competition with the crop is too keen; but then it is a profitable one, and is not long about. As a farinaceous product also it takes from the soil diverse elements to some extent to those needed for roots or for green stuff, so that it is not a costly crop in respect of manuring. Seed presents to the large grower usually a costly item, and if Londoners will occasionally complain that market Peas lack the flavour that is usually found in those grown in private gardens they must put the fact largely to the account of the cost of seed, for wrinkled marrows are always dear, and last season, owing to the wetness of the late summer, were rendered scarce, and an indifferent sample. Large growers, too, are bound to have some regard to hardiness, for firm round Peas will always endure climatic perversities and damp cold soils better than wrinkled Peas will. Of course good marrow Peas will always obtain much the better price in the market; but the first heavy cost of seed, and the risk, make growers shy of sowing them largely or early. The season has been one of special benefit to the pickers, who make of the Pea season a good harvest. Almost universally the charge of 6*d.* per bushel prevails, and when husband and wife, with perhaps three or four big children, gather twenty-five or more bushels per day, they are doing well, and earning far more money than can be obtained in any other labouring vocation.

—— THE POTATO DISEASE.—A constant succession of small showers is, by the promotion given to the diffusion of the Peronospora spores in the Potato plant, very rapidly bringing about the defoliation of early sorts, and with many kinds hardly a green leaf is left. With the second early sorts the black spot is very abundantly visible, whilst the later kinds, having stout robust growth and vigorous leafage, exhibit evidences of the fungus only here and there. Naturally growers are seeing these disease aspects with considerable alarm, and their fears are not allayed by the too frequent evidences of the presence of the disease in the tubers found on lifting the roots. The theories so ably propounded by Mr. JENSEN have naturally set intelligent growers thinking, and though many have found it too late this year to test his plan of protective moulding, yet they have tested it so far as to ascertain whether the spots of disease now too evident in the tubers bore evidence of external or internal attack. Our own experience so far has resulted in the finding of the disease spots chiefly upon the tubers nearest to the surface, and on the upper sides, except in cases where the basin that inevitably exists around the stems earthed-up in the customary fashion has facilitated the carrying of the water down into the nest of tubers at the base of the stems, and there disease has been found in various places on the tubers, some small ones being entirely affected. With our crops in their present somewhat diseased state, the ordinary practice with many growers would be to pull the haulm and remove it; but there now follows the danger that the loosening of the soil consequent upon the pulling of the tops and the inevitable drawing of the tubers nearer the surface is calculated to do more harm than good. Disastrous results, too, have so often followed upon very early lifting and storing, that it renders Mr. JENSEN'S advice, to allow the tubers to remain buried until the fungoid spores are no longer active in the air, as of momentous importance. It cannot, however, be too clearly understood that such advice is intended to apply to crops that are moulded as he advises.

—— BEGONIA SANDERSONI.—People who have any fancy for trained Begonias should lose no time in obtaining the above variety, which makes a lovely plant for a trellis if properly handled. As in all cases of plant growing where the shoots are tied to formal trellis work, the last touch is that which is the most important. The best cultivation in the world may be spoilt in training. To tie the shoots of a plant closely down to a balloon trellisis but a poor attempt at the artistic. But given a good base—a groundwork—of green, and then allow the shoots to grow naturally about 6 inches from the trellis, and a delightful effect is obtained, providing, of course, that the foliage is healthy and the flowers numerous enough to show off the leaves. A grand plant was lately seen at Downes, near Crediton, Devonshire, in Colonel BULLER'S new garden, where plant growing is well carried out by Mr. BULL, the gardener. The flowers are a pretty shade of pink, and even smaller plants would be useful in the show-house.

—— VARIEGATED ACERS AND BLUE DELPHINIUMS.—The brilliancy of the above plants when brought into contact with each other needs only be once seen to make a lasting impression upon the mind. Hundreds, nay thousands, of the former may be seen all over the country, an odd plant perhaps in a shrubbery bed or border, or a line of them under the shade of taller trees where their true colour is never seen at its brightest nor their true loveliness half brought out. In Battersea Park there is a bed which is quite charming at present, the Maples being intermixed with blue and purple Delphiniums. Either blue or purple goes very well with the variegated leaves, but both give greater variety, and probably there are no other plants more capable of giving rich effects in extensive pleasure grounds than those above mentioned. Already we have too many shades of green, which are undistinguishable the one from the other a few yards off.

—— ONLY GOLDEN FEATHER.—It is surprising how severely the hand of fashion deals with old favourites when the public grow tired, or rather use a plant until its presence becomes absolutely offensive. A short time back the little Golden Feather was so largely used in the public parks and in private gardens that everybody seems to have had enough of it, and now but comparatively few plants are grown. Strolling through Battersea Park one evening lately we were attracted by a very showy bed by the walk side near to the lake, and hastened to find out the cause of the exceptional brightness, when to our surprise the plant that created the show turned out to be only Golden Feather. There are half circles by the margin of the bed, the lines of which are formed of Golden Feather, which also enclose bands of the green Mentha, and broad bands of the yellow also enclose figures of Alternanthera. There are other yellows in the same bed, and many other tints and shades of colour, but as yet there is nothing to equal the little Golden Feather.

—— CRINUMS AND PANCRATIUMS.—Mr. HART cultivates these most chaste, elegant, and highly-perfumed flowers in quantity in the Beaumont Road Nursery, Leyton, of which it may be said there never yet was a bouquet made, no matter how choice its materials or tasteful its arrangement, but was improved by the presence of one or other of these flowers. Of Pancratiums, the shorter petalled form of P. fragrans is the kind grown; they are in comparatively small pots, single bulbs in each, kept in brisk heat during the growing season, under which treatment the bulbs thrive and increase fast. The species of Crinum cultivated is C. ornatum grandiflorum, which as here managed is a remarkably free flowerer, the strongest bulbs frequently pushing up two spikes at a time. These also are kept in warm quarters with plenty of light. One important matter with these plants is, that although a considerable quantity may be grown, they rarely give too many flowers at once, coming on in succession over a length of time.

—— DARLINGTONIA CALIFORNICA.—In a cool house in the York Nurseries Darlingtonia californica, one of the most singular and distinct of all cultivated plants, yet so often killed by the mistake of giving it warm treatment, is in grand condition; the largest pitchers are 2½ feet long, and splendidly coloured, the whole plant being a picture of robust health.

—— BOUVARDIAS at the Beaumont Road Nursery, Leyton, are being this season tried planted out down the middle of a large span-roofed house. They are old plants, 4 to 5 feet high, and are planted so as to form a dense thicket, like a wide Quick hedge, in which way they keep on bearing a profusion of flowers as full as a bed of Verbenas, from which hundreds of trusses are daily gathered. The sorts are the old Hogarthii, red, and Vreelandii, white; the soil is peat and loam, half and half, with some manure. Where the plants are quite free from the worst insects, such as mealy-bug and scale, this is evidently a good way of growing them; but if at all affected with these pests they would quickly become unmanageable, from the difficulty in getting at them.

—— EUROPEAN WEEDS IN NORTH AMERICA.—We have often alluded to the rapid spread of European weeds not only in North America, but also in extra-tropical South America, in Australia and in New Zealand. These weeds of cultivation and domestication accompany the emigrant to the most remote regions wherever the climate is suitable. Wherever the same cereals and other plants are cultivated, there, sooner or later, the weeds are much the same. A writer on the same theme in an American contemporary states that he well remembers how in Rockford, Illinois, for instance, say twenty years ago, the indigenous plants of the prairie and Oak-opening sprang up on every side in close proximity to the beaten paths of busy man, and there was no limit to the plants within reach of the industrious young botanist. Now they have to go miles out into the country for material, and count themselves lucky, even then, if the little vestige of the native flora which last season afforded them a dozen specimens has not since been swept away by the plough; while in the central portion of the city scarcely a single native species remains to dispute possession with street weeds mostly of European descent and training.

—— PURPLE CLEMATIS AND EVERLASTING PEAS.—Nothing is better calculated to produce an artistic effect than the intermixing of strong contrasting colours when they are suited to the situation. Look at those lines of Sweet Peas supported in the ordinary way—straight lines with which no one could be fascinated even for a moment. They are useful as cut flowers, and this is all that can be said for them. But in the Clematis (Jackmanni, or any of the hardy purples) and white Everlasting Pea we have two striking flowers, conspicuous for substance as well as colour, and which, if lightly supported, will give a most pleasing effect. The large purple flowers of light and dark shades overhang or droop over the rich white spikes of the Pea, which should be allowed to grow naturally, and if these are mixed with a little pink, and there is a substantial background of green, the effect will be considerably enhanced.

—— Ligustrum lucidum.—As a common shrub, growing, say, between choice Conifers or upon sloping banks, this Privet deserves a place in every park and garden. It is a large-leaved variety, and bears a profusion of branching flower-spikes of a creamy-white colour. In the neighbourhood of London and in the parks it succeeds very well, and flowers as freely as could be expected; but in a better soil and climate it has a different appearance. In the flower garden at Luscombe Castle, Devonshire, the leaves are so large and so highly coloured that they might be mistaken for Camellias, but the plants have the advantage of exceptional shelter, as well as a finer climate. Anyhow, they are well adapted for large or small gardens, especially peeping out of a nook with a few scarlet Pelargoniums in front of them.

—— Flowers in Hedges.—Travelling between Dorchester and Wareham a few days ago we were attracted by a beautiful hedge, which turned out to be of common Privet, overrun for several yards with flowering Peas of different shades of pink, which looked remarkably pretty. The district is a poor one as regards soil, and evidence of this is but too evident in the starved-looking vegetation and the miserable crops which abound in the neighbourhood. Still there was that one touch of Nature as a redeeming feature, proving that even in poor soils, if there is the will, flowers may and can be cultivated by following in the footsteps of Nature, who herself leads the way.

—— Ixora Williamsii.—As a very showy free-flowering variety this hybrid, taken altogether, is perhaps unsurpassed. It has a compact and yet free growth, and quite small plants take on a bushy character, and bloom with great freedom, producing large trusses of finely coloured flowers. It is a good gardeners' plant in one respect—that it has a very fine constitution, and does not require so much heat by 10° or 15° as I. coccinea and other older and less robust kinds. A good companion to this is I. Pilgrimi, which was produced from the foregoing, and, like it, is robust in constitution; in fact, has all its good qualities with added brilliancy in the colour of the flowers.

—— A Promenade Flower Tent for the Cricket Field.—On the occasion of a match between Yatton and eighteen gentlemen of Southampton and district, played at Yatton, near Bristol, last week, a grand promenade flower tent was erected by Mr. Tankerville Chamberlayne, which added much to the enjoyment of the game. The tent was supplied by Messrs. Edgington, of London, and its interior arrangements were designed and stocked by Messrs. Parker & Sons, of Bristol. The size of the tent enabled these gentlemen to lay out a remarkably pleasing ornamental garden, consisting of handsome groups of large Palms, Crotons, Pandanus, Pancratiums in splendid flower, interspersed with Gloxinias, Caladiums, Ferns, mosses, &c., all planted in large raised mounds with turf banks. In the centre of the tent a large piece of rockwork was formed of immense blocks of ice, and filled in with Alocasia macrorhiza, Cyperus alternifolius variegatus, with Ferns and Isolepis round the bottom. Over and creeping between the huge masses of ice was Selaginella arborea, its beautifully steel-blue-tinted fronds having a charming appearance against the crystal-white of ice. At the back was placed a large mirror which, besides reflecting the ice, reflected also the field and players, making a very pretty picture. A couple of large pieces of rockwork of Cheddar stone, and filled in with Gloxinias, Fuchsias, Coleus, Pancratiums, Palms, Ferns, mosses, &c., were placed in suitable positions at either end, and looked very imposing. Standing alone and in groups were specimens of Latania borbonica, Areca lutescens, Seaforthia elegans, Pandanus utilis and Vandermeerschii. At one end a group of Aloes and Yuccas had an exceedingly handsome appearance. There were also three of the largest Myrtles we have ever seen growing in tubs, and measuring 12 feet through and 41 feet high. The poles of the tent were covered with young Vines, and through the centre were hanging baskets of flowering plants and silver globes. Chairs, and tables covered with fruit and flowers, were placed in different parts of the tent, the fruit being entirely at the disposal of visitors. Altogether the idea was liberally conceived and admirably executed, and what with the excellent game, the beautiful ground, having Yatton Church and the green Somersetshire hills in the background, a most enjoyable outing was prepared for the numerous visitors who attended this most interesting meeting, and who were all liberally provided for by the princely hospitality of Mr. Tankerville Chamberlayne.

—— Sambucus nigra aurea.—The golden leaved variety of the common Elder is a most valuable ornamental leaved plant, bold in foliage and striking in colour. It deserves to be noted as an excellent suburban tree, growing freely and colouring well in forecourt gardens in the suburbs of London, and making itself a conspicuous feature among the evergreen trees. It is a good roadside tree, because the dust deposits from dry roads do not disfigure it as they do evergreens; and though it may dim to a small degree the lustre of its beauty, yet it does not disfigure it. In the London parks it does well; in a line of shrubbery near to the Marble Arch it is highly attractive, and therefore it may be regarded as a good town plant. It is also a good habited plant, making a somewhat dense growth, and keeping close at home.

—— Novel Features at Cottagers' Exhibitions.—At the exhibition of the Buckingham Horticultural Society on the 25th inst. two or three features of undoubted novelty were introduced into the schedule. Three prizes were offered for the best pair of trussed fowls, and though some dozen competitors entered the lists, and the majority of the exhibits looked very good, the judges were so exacting that they withheld the 1st prize on the ground that there was not sufficient merit forthcoming. Generally the fowls were trussed in excellent style, and we were informed that the competitors have no difficulty in disposing of their fowls after the show closes. Another class was for the best dozen eggs. Here also there was a numerous and very good competition, and all were most attractive to the eye. The 1st prize went to a dozen eggs of perfect shape and snowy whiteness; some admirable Cochin China eggs being 2d. The ultimate test was weight. The effect of these competitions is not only to encourage cottagers to keep fowls, but to acquire good breeds of fowls. It need scarcely be stated that the tables on which the fowls and eggs were exposed were crowded by the good housewives and others, who discussed both with an earnestness that reminded one of some Lancashire florists at an Auricula or Tulip competition. The class for the best floral design for a triumphal arch, the prizes for which were given by the mayor and one of the aldermen of the town, brought but one competitor, Mr. R. Garrett, of Addington. His arch, which deservedly won the 1st prize, was executed with great taste and fitness: a square arch resting on four columns within an appropriate framing. The flowers were wisely chosen and nicely arranged, and some pretence to architectural skill guided the hand of the workman. The collections of wild flowers were truly marvellous; one cottager, George Syrett, of Adsbrook, who has the reputation of being a good botanist, staged not less than 138 species and varieties, and, though a labourer, he takes great interest in botanical pursuits. There were six collections competing for some special prizes given by Mr. Alderman Ridgway, and the weakest among them was far in advance of what is generally seen in shows of this character. George Syrett, in common with others, had named every one of his bunches with great care and most commendable accuracy. If each bunch could have been better displayed it would have been better, as the crowded trays gave a confused appearance to a most interesting feature.

—— The Wellington Statue at Hyde Park.—It was a long, very long time ere Temple Bar disappeared, but at length it has gone. Shouts of ridicule assailed the Griffin that took its place, but the Griffin still holds on. There are hopes that even it may some day disappear, for at last there is a movement afloat, backed by architects and Academicians, to remove the monstrosity from the arch on Constitution Hill, where nothing but obstinacy and blindness could have sanctioned its being placed. Like the Griffin it was the butt for the raillery and objurgations of all disinterested bystanders, but the remonstrances of the thoughtful and the ridicule of the wits availed nothing, and we had fancied our successors were to have the opportunity of criticising their forefathers' want of taste when, lo! there is a serious talk of removing it to a more suitable site, and of restoring the arch, which of itself is by no means an unsatisfactory work, to its original beauty of proportion. At the same time it is proposed, not one day too soon, to make a new road or roads in that locality, so as to do away with the block of the traffic, which the four roads converging at Hyde Park Corner now creates. So long as no part is built on there need be no apprehension if the Green Park be traversed by one more road in the interest of the public convenience.

—— Bath and West of England Society.—The meeting of the Society for 1884 will be held at Maidstone.

—— Gardeners' Royal Benevolent Institution.—We are asked to state that about 8000 collecting cards have been sent out in view of the general collection in aid of the Pension Augmentation Fund, to be made on Monday next. Any one who has not received a card, but who desires to have one, will be gladly supplied by the Secretary, Mr. E. R. Cutler, 14, Tavistock Row, Covent Garden, W.C. We may add that we trust every gardener in the kingdom will consider it his duty to give something to the Institution on this occasion. A penny a head even from all the gardeners, young and old, of the country, would amount to a very large sum. We shall be pleased to receive and transmit any sums that may be sent to us.

—— Publications Received.—*Elementary Botany.* By Henry Edmonds (Longmans).—*The Larch: a Practical Treatise on its Culture and General Management.* By C. Y. Michie (Blackwood).—*Vegetable Technology.* By B. D. Jackson (The Index Society, Longmans).—*Micro-Fungi.* By Thomas Brittain (Manchester: Heywood).—*Country Rambles and Manchester Walks and Wild Flowers.* By Leo Grindon (Manchester: Palmer & Howe).

—— The Weather.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending July 24, issued by the Meteorological Office, London:—The weather has been continuously showery and unsettled over all our more western and northern districts, but in the east and south there were two or three fine days at the commencement of the period. Thunderstorms occurred in many parts of England at the close of the week. The temperature has been a little below the mean in all districts excepting "Scotland, E.," and "England, N.E." In the grazing districts, and also over the east of Scotland, the thermometer has not been above 70° all the week; and over central and southern England it has not exceeded 72°. The lowest night readings have varied between 43° in some parts of "England, N.W.," and "Ireland, N.," to 48° in "England, N.E." The rainfall has been considerably more than the mean in all the grazing districts, and slightly more in "Scotland, E.," but less in the eastern, southern, and central parts of England. Bright sunshine has been more prevalent than it was last week, especially in "England, E.," where the percentage of possible duration has been 58. In "England, N.W.," the percentage has been only 33. Depressions observed:—At the commencement of the period large depressions were passing along outside our western coasts, and the winds were consequently south-westerly. In the course of Wednesday, however, the series of disturbances passed away northwards, and an anticyclone formed over France, so that the wind veered to the westward generally. On Friday the anticyclone gave way, and gentle depressions appeared in the west, accompanied in many instances by small subsidiary disturbances, which passed across England and occasioned somewhat variable breezes.

—— Gardening Appointments.—Mr. Robert MacMillan, late Gardener to Hans Sloane Stanley, Esq., Paulton's Park, Hants, has been appointed Gardener to Sir George Stucley, Bart., Moreton House, Bideford, North Devon. Mr. A. A. Cook, late Gardener to J. Pain, Esq., Audley Wood, Basingstoke, has been engaged as Gardener to the Hon. H. E. L. Penryn, The Cedars, East Sheen, Mortlake. Mr. John Thompson, late Gardener at Kilkeran, Ayrshire, and from Messrs. Dickson & Co., nurserymen, Edinburgh, has been appointed Gardener to the Duke of Grafton, Wakefield Lodge, Northampton.

THE PILTON NURSERY.

ANY one who is at all interested in horticulture, and who has an hour to spare in the capital of North Devon (Barnstaple), may spend it both agreeably and profitably in the nursery of Mr. William Ireland, which is situated near the main road between Barnstaple and Ilfracombe. The headquarters (for there are two other branches) of the establishment is famous for its stock of Conifers and ornamental trees and shrubs, which are cultivated with great care, and are arranged with much good taste and judgment. Within the gates there are fine specimens of the Weeping Ash, Araucarias, and Yucca gloriosa; while the Retinosporas, Golden Yews, and Thuyopsis borealis variegata are so highly coloured as to render them more than ordinarily attractive. The situation is high and open, and probably to this fact may be ascribed the high colour which is conspicuous everywhere among the coniferous plants. The two principal borders of the nursery are good examples of arrangement; there is a sprinkling of weeping trees, which is a great relief to the arrangement, and the different tints and changing foliage are so fresh and bright, that a very harmonious effect is produced, and a capital example of grouping, from which a useful lesson might be taken for the embellishment of private grounds in winter where there are so many naked beds and bare earth to be seen after the leaves have fallen. The specimens are, of course, of various sizes, and many of the more valuable kinds are among the largest in the country. The colours of the different plants are so beautifully blended that probably they make a more favourable impression upon one than if they were planted anyhow. Be that as it may, some Purple Oaks, Retinospora obtusa gracilis aurea, Biota elegantissima, the Golden Elder (Sambucus aurea), Thuyopsis dolabrata, the grand specimens of Quercus Fordii, and Juniperus chinensis aurea, make such a display as cannot fail to gratify all who are interested in this class of plants.

As has been already pointed out, it is the manner in which the trees are disposed and intermixed that creates the attraction. For example, there are specimens of the variegated Willow (Salix caprea tricolor), of Glyptostrobus pendulus, Sciadopitys verticillata, Weeping Ash, Cedrus Deodara, Thuyopsis borealis, Cupressus Lawsoniana elegantissima, Acer polymorphum rubrum, the Weeping Birch, Osmanthus illicifolius, and Aralia Sieboldi, so judiciously intermixed and arranged that the effect is not far behind a display of subtropicals. The Sea Buckthorn (Hippophae rhamnoides) grows to an immense size here, and its silvery leaves are very effective where they come in contact with the green Osmanthus, or Conifers of a greenish glaucous hue. There are also large specimens of Taxus elegantissima and others, beautifully grown and of handsome proportions. In the grounds there are large breadths of Caucasian and other Laurels, brakes of fruit trees, of Peaches dwarf trained, Apples and Pears grown as standards, and thousands of Gooseberries, Currants, Raspberries, and other small fruit trees. The Apple trees are a very remarkable collection; one particular lot, only three years old from the pip, have made such astonishing progress that they have this season been stopped at 4½ feet from the ground, and are now forming nice heads, thus saving a season's growth. The varieties are Blenheim Orange, Lord Suffield, King of the Pippins, Hawthornden, and Dumelow's Seedling, or Wellington, by which the variety is more commonly known.

Flowering and other shrubs are also well grown—Spiræas, Deutzias, Berberis, the Sea Purslane, Jasmines and Loniceras, hardy Heaths, a rare stock of Althæa frutex, the Gum Cistus, and herbaceous plants in variety. There is a neat flower garden in Box laid out in front of the glass-houses, where there is a good show of bedding plants, and where the behaviour of all new bedding plants is tested before being sent out. The different styles of planting, such as carpeting, &c., are also carried out in order that visitors may see and judge for themselves the plants and method of planting which pleases them most. In the plant-houses the stocks consist of Fuchsias, Hydrangeas, Pelargoniums, Palms, Ferns, Dracænas, and seedling and choice named Begonias. The greater portion of the home nursery is stocked with dwarf and standard Roses, which are very fine; fruit trees and splendid samples of Larch from one to three years old.

The Blakewell Nursery, which is a mile off, is mainly kept for growing Rhododendrons and forest stuff, and owing to the elevated nature of the situation the trees and plants are perfectly hardy, which, together with cheap labour, is a great advantage in carrying on an extensive out-of-door nursery business.

HARDY PLANTS.

(*Concluded from p.* 117.)

COMING toward the front the following sorts may be used:—Dicentra eximia, or Plumy Bleeding Heart; Dianthus plumarius, or old-fashioned Cushion Pink; Mertensia virginica, or Virginian Lungwort, with beautiful blue flowers in very early spring; Silene pennsylvanica and S. virginica, pink and scarlet Catchflies; Anemone Pulsatilla, or European Pasque-flower, and its rarer but equally fine companion, A. Nuttalliana, of our Western prairies; Iris pumila and other dwarf species; Gentiana acaulis and G. cruciata, two of the finest and most easily grown of the genus, and producing flowers of the most intense blue; Armeria vulgaris, or common Thrift, Arabis alpina, or Rock Cress, and the beautiful variegated variety, both producing myriads of deliciously fragrant white flowers in early spring; Adonis vernalis, with finely divided leaves and large deep yellow flowers; Campanula carpatica, or Carpathian Harebell, with broad, bell-shaped, handsome blue flowers, freely produced all summer; Epimediums, especially E. alpinum and E. macranthum, with curiously hooded flowers in early spring, followed by the beautifully delicate tinted leaves; and Viola cornuta, or horned Violet, equalling in beauty and often in size the fine varieties of Pansies, and able to bear our hot summer sun without injury. Lastly we come to the outside of the border, where such plants as the Moss Pink, both the white and purple, together with the many new seedling varieties now being introduced, can be used; Achillea tomentosa, with moss-like foliage and brilliant yellow flowers; Aubrietias, with evergreen leaves clustered in little rosettes and numerous bright purple flowers in early spring; our native Viola pedata bicolor or Pansy Violet, with beautiful deep purple flowers, the two upper petals of which are of a dark rich velvety texture; Silene maritima and its double variety, with pretty inflated calyxes and pure white flowers, forming a dense mat on the ground; Sempervivums or House Leeks, well adapted for dry borders; Hepaticas of many sorts, including the double blue and red, together with Anemone nemorosa and A. vernalis. From such a list as the above it would not be difficult to arrange a border of any size with plants which would be attractive both in flower and leaf, and one which would always have the charm of novelty about it. We might mention a much longer list of really desirable hardy plants for such a border, but it is needless to multiply names. A bed like the above, if thoroughly well prepared and made rich by the addition of well-rotted manure first, will need but little attention except to keep weeds down during the summer, and in spring or autumn removing the dead flower-stems, and giving a light dressing of fine manure on the surface every season to keep the soil in good condition. Such a border may have the choicer species of Lilies set between the taller plants, so that their flower-stalks will not show, as when planted separately, and only the flowers appear.

Another plan which will commend itself to many, is the planting of the various ornamental grasses in beds or circles, beginning in the centre with such plants as Arundo Donax and the variegated form, following with a circle of Eulalia or Erianthus Ravennæ, then with the beautiful Panicum virgatum, and finally ending with Stipa pennata, or Feather-grass, and Festuca glauca. A bed arranged in this manner is very showy, especially in late summer and autumn, and when well prepared and enriched, and the plants given plenty of room, it will form an attractive feature upon a large lawn. The same plan may be followed in the arrangment of a bed of Lilies, Phloxes, Delphiniums, Irises, &c.

A very effective method, and one which is easily executed, is to select some free-growing flowering plant and set in masses in beds or circles, using only one sort in each. One of the most useful plants for this purpose is Œnothera missouriensis, or Missouri Evening Primrose, which flowers freely all summer, and its large, bright yellow blooms and silvery edged leaves make a beautiful show throughout the season.

A bed of the large Californian Rose Mallow, Hibiscus californicus, or even our own Hibiscus Moscheutos, seen so abundantly in the marshes along our seacoast, do finely in ordinary garden soil. Some other plants well suited to this plan are Gillenia trifoliata, with delicate white flowers borne upon stems so slender that they seem, at a little distance, as if they were floating in the air. Clematis Davidiana, a new erect species with light purple fragrant flowers, borne in large clusters and somewhat resembling those of a Hyacinth; Sedum spectabile, or rosy Sedum, with large flat corymbs of rosy-purple flowers, and well suited for dry soils; Platycodon grandiflorum, with large purple and white bell-shaped flowers; Thalictrums, or Meadow Rues, of several species which are attractive, both in foliage and flower, are useful, and adapted to this style of planting.

THE ROCKERY.—We will here mention the artificial rockwork, where can be grown the various plants found upon the mountains of our own and other countries, and which require a spot somewhat raised above the general level, to give thorough drainage, and at the same time furnish little cosy nooks in which the delicate early blooming plants may be protected from the cold blasts of early spring or partially shaded from the fierce heat of our summer sun. We would here say that by rockwork we do not mean a pile of whitewashed stones laid up carefully and regularly like the foundation of a bridge pier, as we have sometimes seen, and on which a few Geraniums, Verbenas, Portulaccas, or other tender plants were allowed to live or die according to the season, but an irregular mound raised above the general level according to the extent of the design, and where the stones are placed as naturally as possible without any attention to regularity, but so as to form spaces in which may be planted delicate alpine plants, in sunshine or partial shade, according to the requirements of the plant. You will readily see that with the addition of a natural brook, together with the partial shade obtained by planting trees or shrubs where the grounds will permit, that a charming spot may be made, and one which will always present some new or attractive feature. On such a rockwork, made up of leaf-mould, loam and sand in almost equal proportions, may be grown most of our mountain plants, such as the various species of Antennarias, or Mountain Catfoot, the smaller-growing Columbines, the rare and delicate Campanulas, or Bell-flowers of our own and European mountains, the alpine Gentians; and in half-shaded moist spots the numerous sorts of Primroses so common in European gardens but so seldom seen here; the scarlet Windflower, small species of Scillas, Narcissi, and even the rarer Lilies and Orchids, the modest little Twin Flower, Spring Beauties, the pretty dwarf Phloxes, Potentillas, and many others rarely seen in cultivation, but which only require such a situation to become in a short time firmly established and more attractive each season.

PROPAGATION.—As to the propagation of hardy plants and bulbs, we would say that it is easily accomplished by division of the roots in early spring or fall, or in cases where the roots are not suitable, by seeds sown in shallow boxes of rich soil in a shaded cold rame as soon as ripe; in most cases these germinate at once, and weeding, with an occasional watering when dry, is all that is required until the seedlings are large enough to transplant into other boxes; after this, when the plants are large enough to transplant to the open ground, which is usually the following year, they are to be treated exactly as the plants set out in the mixed border. Many hardy plants are readily grown from cuttings, but the two methods given above are best for amateurs. *G. S. Woolson, in "Report of New Jersey State Board of Agriculture."*

THE DAISON

LIES a mile and a half north of Torquay, and is justly celebrated for its fine gardens and commanding situation, which give it a local prestige exclusively its own. Mrs. Chatto, the proprietor, takes great interest in her garden, which is what the new school of horticulturists would call old-fashioned in many respects. Those who love old-fashioned plants and flowers, rockeries and hardy ferneries, arches and bowers of Roses, will find all represented at The Daison, and modern gardening as well. But let us begin at the beginning. The entrance is off the Upton Road, and there is something like 40 acres of private grounds enclosed by walls. Upon the right of the entrance there is one garden enclosed by brick walls, and here will be found many old-fashioned plants in the borders and about the walls. There is an old conservatory in the corridor style, which is brimful of interest; it is furnished with Fuchsias that

everybody knew a score of years ago, such as Rose of Castile, Sir Colin Campbell, and other free-growing sorts. They cover the back wall, and hang from the roof in graceful clusters, which in point of appearance would be hard to equal at the present moment. They are growing in 9-inch pots, and have rooted through the pots into the border. The stems measure 14 inches in circumference near to their base, and there is no appearance of old age or decay yet visible, nor are there any symptoms even of declining health. The pot plants consist of the usual stock of flowering plants, including some Tropæolums and Carnations, the pink Souvenir de la Malmaison bearing flowers of remarkable size and rich in colour.

In the adjoining wood a good collection of hardy Ferns is established, which are largely used for cutting during the summer months, when the choicer collections indoors are making growth which is tender and fragile in a cut state. In the genial West people as a whole make better use of hardy plants and Ferns than their *confrères* of the North. But upon this point we need not enlarge. The kitchen garden division is stocked with vegetables of the usual variety and quality, and very fine crops of Sir Joseph Paxton Strawberry. This variety does well upon the limestone, and is a good sort to grow in light gravelly soils, where it succeeds better than most other kinds and yields fair average crops. There is a late supply of Grapes grown in this garden and a stock of winter-blooming plants. The finest Apple in the garden is Lord Derby, which exceeds Gloria Mundi in size, and is the only variety that is bearing anything like a full crop this season.

Herbaceous plants are both choice and numerous; some of the best are Campanula persicifolia fl.-pl., Hedysarum coronarium, Funkia Sieboldi, Matricaria inodora, fl.-pl., Pulmonaria variegata, Campanula pyramidalis, and hedges of the old Fuchsia gracilis, Jasmines, and Honeysuckles, which are peculiarly attractive and pleasing to look upon. Between this garden and the house there is a second garden, situated upon the crest of a hill, where fruit and plant growing are more extensively carried on. Fern growing appears to be a speciality, and the collection is a very good one indeed. Cutting is the order of the day; but there is no lack of specimens and half-specimens, and made up baskets for house furnishing, which are pretty and well grown. The bulk of the collection consists of Adiantum cuneatum, concinnum and concinnum latum, trapeziforme, gracillimum, and setulosum, which is largely used for dressing cork baskets, which are very pretty for sitting rooms, or they will answer equally well as hanging baskets. The pieces of cork are fastened with copper wire, and small plants are inserted between the spaces, which grow and cover the entire surface of the basket. Adiantum mundulum is a favourite kind for cutting, and Adiantum Capillus-Veneris var. cornubiense is another favourite, probably because of its local origin. It is a Cornish Fern, and was discovered when the new line of railway was being made between Hayle and St. Ives.

The Daison Maidenhair is another local celebrity; it has lighter fronds than A. Capillus-Veneris, and was raised from spores by the late Mr. Chatto. A small hardy fernery has recently been added to the tropical house, which is beautifully lined with moss and furnished with Ferns. It may be interesting to relate that a wren has built its nests in this little house and hatched her young without displaying any fear at the presence of workmen or visitors. In the vineries there are good crops of Grapes both late and early, and specimen Ferns, of which Microlepia hirta cristata is beautifully grown for house furnishing. The plant stove contains foliage and flowering plants and showy creepers trained upon the roof. The mansion is but a short distance from here, and stands upon a commanding eminence, from which there are extensive views of the surrounding country. It was originally a square running north and south; but another large wing has been added, which runs east and west, as well as a private chapel which faces the east. The carriage entrance is still upon the east side, and a fine conservatory and fernery, erected by Messrs. Weeks & Co., have only lately been added to the extreme west side, or rather end of the new wing, which have much improved its appearance.

From the south front there is a splendid prospect towards Torquay, Berry Head, Brixham, Paignton, and towards the west the range of the Dartmoor hills. The conservatory is a lofty oblong structure with a flooring of ornamental tiles, and the plants disposed in groups having centres of Tree Ferns and Palms surrounded by a glorious display of flowering plants, and the front staging also gay with similar subjects. The fernery upon the north side of the conservatory is undoubtedly the great attraction of the garden. There is a steep bank of rockwork in which Woodwardia radicans, Polypodium aureum, Pteris longifolia, and Asplenium bulbiferum are the chief objects, the groundwork of course consisting of smaller Ferns and mosses. There is a constant trickling of water among the rocks descending into a little pool at the base of the rockery, and in the centre of this stands a fine specimen of Alsophila excelsa. There are common grasses and small Ferns and mosses creeping over the stones, and by the margin of the narrow path which appears very natural to the eye, and upon the whole a more artistic piece of workmanship it would be difficult to conceive. The rare health of the plants, and the splendid colour and development of the fronds, of course, add much to the beauty of the whole arrangement, and Mr. Pender, the gardener, may be congratulated upon his success in the management of a garden which abounds in so many objects of beauty and interest.

FLOWERS IN SEASON.

Geranium anemonifolium.—A noble herbaceous perennial, flowers of which are sent us from Ireland by Miss Owen. The lower leaves are on long cylindrical stalks, the glabrous bright green blades deeply palmatisect, each of the five lobes being again divided, so that the foliage is very handsome. The flowers are numerous, in much-branched, erect, sticky panicles, bright magenta coloured.

Hypericum patulum, pseudo-patulum, or Gumbletonii, as it is variously called, improves on acquaintance. "The largest bush here," writes Mr. Smith, from Newry, "is about 4 feet across by 2½ feet high, and is a dense mass of flowers and buds. I should think there must be thousands of them, so closely are they packed. These will continue to open for months to come. It likes a generous soil, with a fair supply of moisture and a warm and sheltered position. Thus circumstanced it developes as above, which represents three years' growth."

Anthemis tinctoria.—Messrs. Dicksons & Co., Waterloo Place, Edinburgh, send flowers of this handsome perennial, which is sometimes found in a semi-wild state on ballast heaps. Its finely cut leaves and bright yellow flower-heads are very attractive. In cultivation Messrs. Dicksons find it very ornamental, and the more desirable in that it remains in bloom all the summer and autumn.

Primula mollis.—From Miss Owen come flowers of this charming Primrose. The radical leaves are on long stalks, the blade cordate roundish, obscurely palmately lobed, the whole surface covered with sticky white hairs. The flowers are lovely magenta coloured, in whorls or tiers, as in P. japonica. The plant is a universal favourite, and our correspondent informs us that it stood out last winter in Ireland on the rockery, as, indeed, it did also near London.

Lespedeza villosa.—A hardy shrub with slender rod-like branches, trifoliolate green glabrous leaves and erect racemes of violet papilionaceous flowers. Mr. Smith finds that the plant, though hardy, does best against a wall.

Campanula pusilla alba.—It is seldom one sees this beautiful little Hairbell so thoroughly at home as we witnessed it the other day in the gardens of Mr. Whitehead, Deighton Grove, near York. There is a complete belt about 12 inches broad, surrounding a circular flower-bed about 5 yards in diameter. The whole of the Campanula is a perfect sheet of bloom, the effect of which is charming. The soil in which it is growing is a sandy loam with a tinge of peat.

Ceanothus Arnoldi is a fine ornamental shrub, with large bold foliage, and beautiful panicles of pale lilac flowers. It makes a handsome companion plant to C. Gloire de Versailles, and other of the fine blue-flowered garden hybrids raised on the Continent, as also the white-flowered C. americana, the New Jersey Tea. This latter plant, according to Gray's *Manual*, has acquired its English name from the fact that its leaves were used for tea during the American Revolution. This manufacture, Dr. Gray tells us, has been recently revived in Pennsylvania. C. Arnoldi, and several other species, as well as garden hybrids, are now blooming in the picturesque Coombe Wood nursery of Messrs. Veitch.

Indigofera Gerardiana is a charming shrub, which, with the shelter of a wall, will almost bid defiance to an English winter; indeed, in the open border—at any rate in many places in the South of England—it will pass unscathed through an ordinary winter. It produces its rather long racemes of rosy-red flowers in great profusion, and affords a colour almost unique amongst the hardy or half-hardy shrubs now in flower. It was first sent to this country more than forty years ago from the Botanic Gardens at Saharunpore. In a wild state it is found in temperate and sub-tropical West Himalaya, at elevations of from 2000 to 10,000 feet above sea level. It is sometimes met with in gardens under the name of I. coronillæfolia. Now in flower in the Kew Arboretum.

Ozothamnus rosmarinifolius is a lovely ornamental shrub from Tasmania and South-east Australia. It will succeed well, and flower freely, in the open, and its white flower-heads, though very small individually, are produced in such profusion that their number amply compensates for their minuteness. The foliage, which is small, and, as its specific name implies, somewhat like that of the common Rosemary, is almost hidden by the tiny flower-heads. Like Olearia Haasti, and several Compositæ from the same quarter of the world, it is sure to become a general favourite either for corridor or cool conservatory decoration, or for the front of the mixed shrubbery outdoors. Now flowering at Kew.

Lysimachia nummularia. — Londoners who are accustomed to see this common favourite hang from the sills of their windows with an odd flower dotted here and there upon a growth from 12 to 18 inches long, would be surprised to see it in many parts of Devonshire with its leaves almost hidden among a mass of golden-yellow flowers. Climate makes all the difference.

Periploca græca—For nearly three centuries this handsome and interesting climber has been in cultivation in British gardens, for old Gerard has left it on record that, "my loving friend, John Robin, herbalist, in Paris, did sende me plants for my garden, where they flower and flourish." The hardiness of this species, its quick growth, glossy leaves, and peculiarly velvety lurid brown flowers, render it a desirable plant for covering the bare stems of trees or for clothing an old wall, arbour, &c. According to Loudon, however, "the odour of the flower is considered unwholesome and even dangerous to those who are long exposed to it." The milky exudation from the stems of P. græca have been used in the East for poisoning wolves. A specimen of this species grown round two or three stakes in the open, at Kew, has developed short, stumpy branches, which have been literally laden with axillary cymes of remarkably formed and coloured flowers—so different from those of any other hardy shrub.

Jacaranda mimosifolia.—This is one of the most useful plants in cultivation, but it is not so hardy as is generally imagined. It is a plant, the proper treatment of which is somewhat misunderstood. In out-of-the-way districts gardeners grow it as a stove plant, and subtropical men declare that it is hardy enough for the flower garden. The precise condition under which the plant is most at home is about half way between these two extremes. Last year it succeeded beautifully in the subtropical beds at Battersea Park, but this season it looks rather sickly, and so far it can hardly be called an ornament. The low temperature that we have experienced lately has militated severely against the well-being of all tender subtropicals, and once the lower leaves of a plant are disfigured it no longer looks itself. In warm seasons it will succeed very well out-of-doors if not planted out too early, but generally speaking it requires an intermediate temperature. Those who wish to cover the back wall of a vinery or plant-house cannot do better than plant out one or two plants which under very ordinary care will grow with amazing rapidity. But gardeners will find the plant best adapted for furnishing or table work, for which purpose it is most generally useful.

Home Correspondence.

Young Vines Losing their Bottom Leaves.—At this season of the year it is not unusual for young Vines to show symptoms of what appears to a great many a disease. Their lower leaves get soft at the base of the leafstalk, and in the event of strong sunshine the leaf itself gets burnt up or dries away, leaving nothing but the bare leafstalk, which also disappears in the course of time. We have seen young gardeners cover a vinery with mats where the Vines were so affected, and even old practitioners have ordered Vine borders to be water-drenched, in consequence of the same appearances. Others have imagined nocturnal apparitions of the Vine Phylloxera from the same cause, and a great many more have suspected myriads of demon grubs as plentiful as the ocusts of old as being the originators of the mischief. Now let us endeavour to trace the supposed disease to its proper and genuine source. We grow or buy a Vine or any number of Vines, which are no thicker than, say, a stout Willow-twig. These Vines, though small, are short-jointed, and thoroughly well ripened. The reason of their being small is in general terms because they have been grown in pots that are smaller than those commonly used for purposes of Vine growing — say in pots from 8 to 9 inches in diameter. Very well; they are cut-back some time before planting, and when turned out of their pots will be found to be well furnished with small, or in common parlance fibrous, roots. These roots are the natural outcome of restricted pot-room, and of a compost that is not over-rich. Well, the Vines are planted in rich or medium rich borders—whether rich or not, at all events they have a large body of compost to grow in. By-and-bye the Vines begin to grow, and the growth at first is in character with the previous season's wood, for the well-known reason that it is the law of Nature for Vines and other deciduous plants to hybernate upon what gardeners call stored-up sap. To put the matter pointedly and briefly, the Vine does not make any young roots for a considerable time after it is planted, and the first growth that it makes is simply the outcome of such stores of sap as it contains from the growth of the previous year. If we plant a Vine no thicker than a Willow, we do not expect the first foot of growth to be very much stouter; but after a while the roots find out the new, fresh compost, hosts of fresh roots are made, and you can see the canes increase in length and thickness daily. If the border is at all rich, the character of the roots is changed from what they were when the Vines were grown in pots; they, too, grow more thick and vigorous, and in proportion to their power of sustaining and supplying the food the top of the Vine thickens. It is nothing unusual for a Vine after it has made 2 or 3 yards of growth to be much thicker at that distance from the ground than it is at its base. The roots are now in full motion, and the sap is rapidly propelled upwards by increased vital force, the stem gradually expands, and this expansion from above causes a partial severance of the outer rind with leaf attached at the Vine's base, and the sap no longer nourishes the lower leaves as before. The leaves, therefore, through lack of sufficient nourishment, gradually decay and drop off, but the symptoms are only present in the case of strong-growing, vigorous Vines, and no evil results will follow. It is noticeable that Vines that are trained perpendicularly are more affected in this way than those that are bent at the bottom of the rafter, because the sap is forced with greater power upwards by the roots than if the Vines had been trained in such a way that the flow of sap would be checked in its upward course, as it is more or less by the ordinary method of training. *W. H.*

Telegraph and Telephone Peas.—I quite agree with your remarks at p. 112 regarding the difficulty oftentimes experienced of distinguishing the difference between the Peas Telegraph and Telephone—the two will always come from one sort, more especially from the green variety. I made a sowing of what I thought a good sample of Telegraph early in January, and another towards the end of February. Strange to say, although the Peas were taken from one lot, those sown in January produced a great proportion of the light variety known as Telephone, These were of every shade of light green up to white, and could have been shown for either variety. This was not all: the same rows produced the other varieties of Telegraph in abundance, Stratagem and Pride of the Market. This will bear out the remarks made in your columns a short time since, that if the four sorts had been mixed together, it would have been difficult to have separated them. The remarks were correct to my thinking, especially if the sorts had been well grown. I noticed at p. 88 that Mr. Sheppard almost made an apology for Telephone and Stratagem, because Ne Plus Ultra was placed before them at Ipswich; if they were all well grown, I cannot see how this should be, because if twenty-four pods of either of the two sorts, if well grown, would produce a third more weight than Ne Plus Ultra, and the quality of all the sorts is equally good. I have a seedling which I think is a great improvement on Ne Plus Ultra; the cross is between Culverwell's Prolific Marrow and Ne Plus Ultra; the produce is larger and more prolific than the old sort. When ready I shall send it to the committee at South Kensington. *William Culverwell, Thorpe Perrow.*

Puccinia rubigo-vera, DC., which used to be known as P. straminis, Fcke., and P. striæformis, Wesld., has made its appearance this year in great profusion on the Wheat. In early spring the rust upon Wheat considerably alarmed the farming community, lest they should suffer again from mildew, as they did last year. The Uredo of P. rubigo-vera appears much earlier in the year than that of P. graminis, and so do the teleutospores. The two species are quite distinct, and the structure and physiology of both are well known. The Æcidium of P. rubigo-vera occurs on various boraginaceous plants. The Uredo and telentospores are now exceedingly abundant upon Rye, upon Holcus lanatus, Bromus sterilis, and several other grasses. *Charles B. Plowright, King's Lynn, July 20.*

Garden Chair.—We have copied this design (fig. 28) from a sheet of illustrations sent us by Messrs.

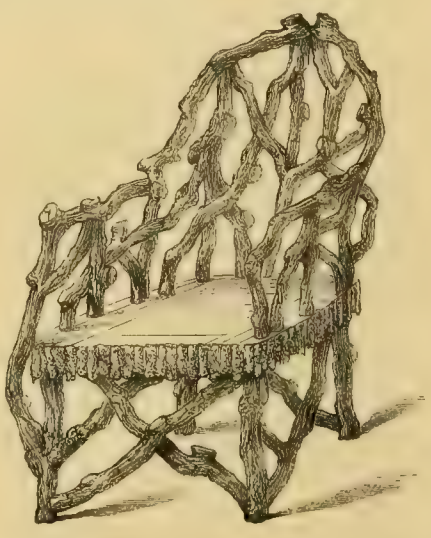


Fig. 28.—Rustic arm chair.

Barron, of the Borrowash Nurseries, Derby. It is pictural and easily constructed, and an attentive cavalier or servant can readily increase its comfort when it is required to be used by a lady by the addition of a rug.

Horticultural Impostors.—Under this title some gardening papers have given an abstract of a lecture delivered at Chicago by Mr. Peter Henderson, describing the operations of certain travelling dealers in plants in America, who have been particularly successful in duping Englishmen. I am afraid that some of them have been in England, and that some of our leading nursery firms have been taken in by them. I can account in no other way for getting very common plants under the name of scarce ones from respectable dealers. A favourite plant with these itinerants, and one in which they deal largely, both in root and in seed, seems to be that well-known weed (and a pretty flower enough in a wild place), Campanula rapunculoides. This came to me this spring from nurserymen by four different names, none of them its own: they were Adenophora Lamarckiana, Campanula americana (an appropriate name enough), Phyteuma campanuloides, Campan-Bononiensis, and in seed as Campanula Tenori! Of this last rare and delicate alpine, I have a fine crop of seedlings raised from seed kindly sent by Mr. G. Maw, and collected by Mr. Laciata in the North of Italy. It is to be hoped that nurserymen will be more on their guard; a certain well known London auction-room is by no means proof against the impostors described by Mr. Henderson, as I know by experience. *C. Wolley Dod, Edge Hall, July 24.*

Lilium Harrisii.—This is a novelty of decided merit, brought out last fall by Mr. W. K. Harris, of Philadelphia. It resembles the old longiflorum very much, the flowers being of the same shape—merely somewhat larger, and more fragrant; the colour is likewise pure white. The peculiarities in which surpasses the L. longiflorum are—1, its great precocity when forced (blooming in January); 2, its being more floriferous, first size bulbs giving five and even eight flowers; 3, its being very prolific in the reproduction, scales producing flowering bulbs in one year, and small bulblets of pea size flowering the first year already. This Lily has been tested last winter in the cities of New York and Philadelphia by the most prominent growers of cut flowers. Another Lily was put on the market at the same time under the name of floribundum. Some American houses state their belief that there is no difference between the two, and it is true that in some cases Harrisii was delivered when ordered as floribundum, but there is a difference between the two and a decided one, according to my knowledge (not belief), obtained from personal observation. The true L. Harrisii is dwarf (12 to 20 inches high) and early flowering; the floribundum is tall (4 feet and above) and flowers nearly four weeks later. As such, the Harrisii is of special value to those who grow for market gardening. Both Lilies came originally from Bermuda. The Harrisii was all propagated from one bulb, and runs as such, uniform and true. The stock of floribundum is grown from a collection of sundry bulbs, and cannot, as such, run uniform. *Winfried Rolker.* [We have heard a great deal of this Lily, but have reserved our judgment till we have personal opportunity of examining it. The peculiarity of its producing flowers by anticipation, as Linnæus would have called it, from the young bulbs of the year, is a very interesting circumstance, botanically as well as horticulturally. We hope to have the opportunity of examining plants later on; meanwhile there is nothing inherently improbable in the statement. Of course the plant has been imported into Bermuda. Ed.]

Hollyhock Disease.—Herewith I send you a collection of the disc-shaped fruits of common Mallow gathered this afternoon (July 25) by me in waste places near gardens at Isleworth. They are sent so that you may confirm my statement that they are in a far worse state as regards fungus infection than anything illustrated or described by me in the *Gardeners Chronicle*. They show the extreme rapidity of the growth of the fungus, and also that the fungus grows with the growing plant. The fungus attacks every part (including petals) from the cotyledons to the fruit. Such badly infected fruits as these must perish on or in the ground, as in the case of my Hollyhock seeds, described elsewhere. Fruits or seeds slightly tainted reproduce the disease next year. Gardeners should carefully destroy these nurse plants. There can be no good chance for Hollyhocks at Isleworth whilst the Mallows (their close allies) are in this state. Malva moschata and its white variety were once frequent at West Drayton. I have seen it year by year get less and less frequent under the disease, and now I cannot see it at all in its former places as known to me. All the Mallows, to say nothing of the Hollyhocks, for wide stretches at north-east London, have vanished. *W. G. S.*

Economical Cucumber and Melon Growing.—I was pleased to see in your issue of July 15 the illustration of the Cucumber and Melon house at Newbold Revel, but I can fully endorse the statement made by your correspondent, "X.", at p. 120, that there is nothing new in the plan. As visitors to Combe Abbey are well aware, Mr. Miller has practised Cucumber and Melon growing, combined with the best possible results, for a number of years, and such a thing as a failure is unknown. Mr. Miller's plan is to take two crops of Melons and one of Cucumbers from each forcing pit in the season, clearing them not later than the end of August, and then filling them with winter-flowering plants for cutting, &c. *F. Prince, Dartry Castle, Co. Monaghan.*

Gilbert's Chou de Burghley.—Permit me to say a word concerning Mr. R. Gilbert's Cabbage-Broccoli, *alias* Chou de Burghley—an esculent now becoming widely known to the horticultural world, and destined, I believe, ere long to lift its head high enough to be crowned king of the Brassica tribe. I have grown it during the past twelvemonths from plants obtained from Mr. Gilbert, and found it superior to anything of either the Cabbage or Broccoli kind. In fact, I consider it the nearest approach yet attained to animal marrow in the vegetable kingdom. It will be a boon to the cottager when he becomes possessed of a vegetable that will defy the rigours of winter. I have now, in July, beautiful specimens of it becoming hard and white, of a conical shape. *H. Knight, Stamford.*

Reports of Societies.

Royal Horticultural: *July* 25.

Scientific Committee.—Sir J. D. Hooker in the chair.

Rastelia lacerata.—Specimens of Hawthorn thickly covered with this fungus, supposed to be connected in some way with the jelly-like Orange fungus of the Juniper, were exhibited by Dr. Masters.

Hybrid Tacsonias.—Flowers of the hybrid Tacsonia raised by Mr. Smythe, and described at p. 103, were also exhibited by Dr. Masters.

Rhododendron camelliæflorum.—Mr. Mangles exhibited a spray of this late-flowering species, a native of Sikkim, growing on trees and rocks with a pendulous habit. It was remarkable for bearing but one flower, as the figure given by Hooker shows two together, this possibly being its habit in India; but if Mr. Mangles' suggestion be correct, that R. sparsiflorum (Booth) be the same species, it possibly produces but one flower at a time in Bhootan. In foliage it resembles R. Maddeni or calophyllum. The blossom closely resembles that of R. lepidotum or that of the Tea plant or small Camellia, whence the specific name.

Hollyhock Disease.—Mr. W. G. Smith reported the results of planting healthy seeds of Hollyhock and such as were affected with Puccinia. He planted twenty tainted seeds; of these only two germinated, one of these sickened and died in two days after appearing above-ground, the other seedling remains alive and unaffected. Of fifty healthy seeds every one germinated and appeared above-ground in a healthy condition in a fortnight; after the third week the ground round the seedlings was covered with broken up leaves of Mallow affected with Puccinia malvacearum; in less than a week forty-six of the seedlings had sickened and died. The experiments seem to show that the fungus of the Hollyhock disease, either in its Uredo or Puccinia form, is capable (without the intervention of an Æcidium condition) of immediately causing disease and death in the seedlings. Mr. Smith did not, however, deny the possibility of an Æcidium state of Puccinia. In reference to this subject the Rev. J. M. Du Port, of Matteshall, Dereham, had written to say that he has examined Hollyhocks at Matteshall, and found the leaves of seedlings to be covered with the pustules of the disease.

Floral Committee. — G. F. Wilson, Esq., F.R.S., in the chair. The largest exhibitor of new or rare Orchids at this meeting was Sir Trevor Lawrence, Bart., M.P., whose grower, Mr. Spyers, received four First-class Certificates. These were a plant shown as Comparettia falcata vera, with reddish orange-coloured flowers, with a very broad lip, and a long slender spur; we suspect that this may be the C. speciosa described by Professor Reichenbach, October 26, 1878; C. falcata having purplish-red flowers. Oncidium stelligerum, a species described in our columns in 1873, p. 1398, with numerous flowers, loosely arranged in very long spikes; the sepals and petals are lanceolate, green heavily barred with brown; the lip three-lobed, the lateral lobes white, the central one larger, rounded and clear, lilac in colour. Renanthera matutina, a species which flowered for the first time in England at Chatsworth, in December, 1842. The stem is erect with two-ranked strap-shaped leaves; and long loose spikes of flowers, produced from the young shoots as well as the old; the flower segments are linear, deep red, spotted with reddish-brown; the two lateral petals bent downwards and united together to form a lip, the true lip being very small and inconspicuous; and Grammatophyllum multiflorum, with flat pseudobulbs, bearing at the top bold or long bright-green leaves, and at the base long arching racemes, about 2 feet long, with very numerous flowers, each about 2 inches across, the segments greenish heavily barred with brown. Comparettia macroplectron was shown by Mr. Heims, gr. to F. A. Philbrick, Esq., Q.C., Oldfield, Bickley. It is a species from New Granada, described by Professor Reichenbach in our columns for October 26, 1878. It has long racemes of flowers, the segments oblong and the lip broad, two-lobed, lilac, with numerous minute spot, and a very long spur. Messrs. Veitch & Sons had Begonia gogoensis, a new species recently described in our columns, with peltate ovate acute leaves, velvety-green above, wine-red beneath; the flowers small, pinkish, in loose panicles; and Lilium auratum virginale, a pure white variety. From Mr. W. Thompson, Ipswich, came Phacelia campanularia (see p. 51). Messrs. Hugh Low & Co. sent Cattleya Whitei (hort.), a presumably new species, with dull lilac sepals and petals, lip magenta with the centre orange. Messrs. Veitch & Sons also showed the new Cattleya Chamberlainiana ×, a hybrid between C. Leopoldii and C. Dowiana, with sepals and petals dull reddish-lilac, the lip three-lobed, the basal lobes erect, acute, the central lobe broad, crumpled, all rich magenta in colour. Lælia calistoglossa, with linear pale lilac sepals, and a deep magenta lip. Lilium gloriosoides, with globose flowers, the segments reflexed, with reddish-orange tubercles. Phalænopsis intermedia Brymeriana, with white segments, the lateral lobes of the lip erect, the central one flat, ovate-acute, all pink in colour. Among Orchids shown by other exhibitors were Odontoglossum vexillarium Bathianum, a very pretty variety, with white flowers faintly tinged with lilac in the centre. Peristeria graveolens, with close racemes of egg-shaped flowers of a pale cream colour, thickly sprinkled with minute purplish spots. Cattleya Sanderiana, with sepals narrow, the petals broad, and both lilac, the lip magenta with yellowish spots, and orange throat. Gonatanthus sarmentosus, an Aroid with stalked, heart-shaped bright green leaves and long primrose-coloured spathe, contracted and bent below the middle, hence the name. The peculiar bulb-bearing branches, for which this species is so remarkable, were not developed in the specimen exhibited. Phalænopsis fasciata, a small-flowered species, with yellowish segments transversely barred with brown (see p. 134). Messrs. James Carter & Co. showed their grand new bedding Nasturtium Empress of India, a remarkably bright crimson-scarlet, very dwarf, and very floriferous. In bouquet Dahlia Gem Mr. Turner had a very beautifully formed flower, of a bright crimson-scarlet colour. Mr. R. Dean contributed some pretty Antirrhinums; and Messrs. Wm. Paul & Son cut blooms of the fine new pink H.P. Rose Queen of Queens. A Cultural Commendation was deservedly awarded to Mr. C. Bennett, Kilmiston House, Shepperton, for a well-grown plant of Dampier's Glory Pea, Clianthus Dampieri, a specimen with five main shoots, the tallest not more than 2 feet high, clothed with its silvery-grey villose leaves to the rim of the pot and bearing fourteen drooping racemes of its striking flowers. This Clianthus is one of the most difficult plants to grow, so that such dwarf, well flowered examples as that under notice are not often seen, and Mr. Bennett's success in its cultivation is all the more remarkable, inasmuch as he is "a city man" and from home all day. A handsome specimen of Aërides affine superbum, with nine fine spikes of flowers came from Mr. Heims, and a vote of thanks was accorded to it.

The awards made were :—

First-class Certificates.

To Sir Trevor Lawrence, Bart., M.P., for Comparettia falcata vera.

To Sir Trevor Lawrence, Bart., M P., for Oncidium stelligerum.

To Sir Trevor Lawrence, Bart., M.P., for Renanthera matutina.

To Sir Trevor Lawrence, Bart., M.P., for Grammatophyllum multiflorum.

To Mr. H. Heims, for Comparettia macroplectron.

To Messrs. Veitch & Sons, for Begonia gogoensis.

To Messrs. Veitch & Sons, for Lilium auratum virginale.

To Mr. W. Thompson, for Phacelia campanularia.

To Messrs. Hugh Low & Co., for Cattleya Whitei.

To Messrs. James Carter & Co., for Nasturtium Empress of India.

To Mr. C. Turner, for Bouquet Dahlia Gem.

Fruit Committee.—H. J. Veitch, Esq., in the chair. The specimens submitted to the judgment of the committee upon this occasion consisted of Pines, Grapes, Tomatos, and several new kinds of vegetables. Mr. Wilson, gr. to Earl Fortescue, Castle Hill, South Molton, Devon, showed fourteen splendid fruits of Smooth Cayenne Pines, weighing in the aggregate 104 lb. 8 oz., which were awarded a Silver Flora Medal, though a gold one was never better deserved. The fruits averaged from 7 to 9 lb. in weight, and for the number exhibited were remarkably well coloured, and the crowns of uniform size and proportionate to the fruits. Good samples of red Currants were sent as grown by Mr. C. Turner, Slough, the clusters of fine red fruits having a good appearance upon the branches. The variety is evidently a highly prolific one. The prizes offered by Messrs. Hooper & Co., of Covent Garden, for Tomatos were won respectively by Mr. R. Phillips, gr., The Deodars, Meopham, Kent; and Mr. L. Castle, The Vineyard, West Lynn, Norfolk. The variety was Hooper's Abundance. There were also shown good samples of Trophy, Acme, and Perfection, the latter being a cross between the two former. Best of All Cucumbers were sent by Mr. George Weeden, St. John's Nursery, Ealing; and Richard I. main crop Pea and Early Prolific Longpod Bean by Mr. T. Laxton, Bedford. Mr. Eckford, The Gardens, Sandywell Park, Cheltenham, sent a seedling Pea, which, in accordance with established custom, will no doubt be sent to Chiswick for trial.

Late in the afternoon, after the meeting had dispersed, a very interesting consignment was received from M. Girardin-Collas, Horticulteur, Argenteuil, comprising two baskets of very fine fruits of the Figues Blanches d'Argenteuil, which seems to be the same as what is known in this country as White Marseilles, also bearing shoots of the same variety; and Violette Dauphin, clustered with large and fine fruits. A basket of Apricots Plein-Vent d'Argenteuil, very large and fine, with a deep rosy-red hue, almost unknown in this country, remarkably beautiful. A basket of roots of the Cerfeuil Bulbeux (Tuberous Chervil), about the size of Early Horn Carrots, finer than we ever remember to have seen it; and several examples of the one-year-old Asparagus plants, particularly strong Asparagus culture being a great speciality of M. Girardin-Collas.

National Carnation and Picotee (Southern Section): *July* 25.—The verdict of the florists on the display in the Royal Horticultural Society's conservatory on Tuesday was that there had been larger shows, but none at which the quality was so high; and, indeed, it was evident on inspection that better flowers could not have been seen at any show. Mr. Douglas, as usual, was in strong force, but his great rival, Mr. Turner, was in better form still, and for the first time in five years, the highest honours—the 1st prizes for twenty-four Carnations, twenty-four Picotees, twenty-four fancies or yellow grounds, and for twelve plants, went to Slough. But the premier Carnation and Picotee both came from the Loxford collection; and it is a remarkable fact as regards the latter that three flowers were selected from Mr. Douglas' 3d prize stand to compete for premier honours—a fact which speaks volumes for the great excellence of the 1st and 2d prize stands staged respectively by Mr. Turner and Mr. Dodwell. The progress which has been made in the development of the Carnation and Picotee during the last four or five years has been truly remarkable. Six years ago Admiral Curzon (Easom) and Daniels' Dreadnought were the only scarlet bizarres that could be depended upon to give flowers of the highest class, and that could be depended upon to take a premier position. Then the two were so mixed that only Mr. Dodwell, Mr. Simonite, and one or two others could separate them, and they were weakly in constitution to boot. Now we have varieties equal to either of these in quality, and possessing good habits and strong constitutions. Last year Mr. Dodwell's Fred gained the highest award, as being the best Carnation in the show. This year Robert Lord, by the same raiser, is placed in that enviable position. There is no standing still with Mr. Dodwell; "Onward" is his motto, and onwards he marches. A new flower in the scarlet bizarre class, named Alfred Hudson, gained the 1st prize in its class as a new seedling, and also the award of a First-class Certificate. It is a large, full flower, with the richly coloured petals of Dreadnought, the guard petals broad and of fine form, white, puce, maroon, and scarlet—very rich. Master Stanley, raised and exhibited by Mr. Dodwell, received the 2d prize in this class; it is well formed, full, with good petals, but lacks the rich colour of the other variety. In the crimson bizarre class the only two flowers deserving of notice were W. H. Hewitt, a fixed sport, from rose flake James Merryweather, exhibited by Mr. Douglas. The flower has the good qualities of the rose flake, with the rich colour of Simonites' J. E. Hexall. This received the 1st prize and the award of a First-class Certificate. Mr. Douglas was also awarded the 2d prize with Mephistopheles (Dodwell), a richly-coloured flower, which does not please the fanciers, owing to the impurity of the white, but it will be very popular with the general public. In pink and purple bizarres the 1st prize and First-class Certificate were awarded to William Skirving (Gorton), exhibited by Mr. Douglas. The three blooms exhibited were of large size and grand quality; the pink and purple evenly distributed, and white good. Mr. Dodwell was awarded the 2d prize for Thos. Moore, Jun., a fine flower worthy of a high place; it is almost a crimson with rich purple, regularly disposed on broad, well-formed petals; the flower forms a high symmetrical crown. In scarlet flakes a good flower, exhibited by Messrs. Dodwell and Douglas but raised by the former, named Henry Cannell, was overlooked by the judges. It is a good variety, very distinct, with the best formed petals of any in this class. It will probably receive a First-class Certificate when it comes to be examined. There were no seedling purple flakes, but in rose flakes Tim Bobbin (Gorton), exhibited by the raiser, and Messrs. Dodwell and Douglas; but Mr. Dodwell's flower being the best, he received the 1st prize for it, and the flower received a First-class Certificate. It is a richly-coloured variety, with large flowers and well-rounded petals. Mrs. Hewitt (Dodwell), exhibited by Mr. Douglas, a paler-coloured flower of good quality, evidently a seedling from John Keet, gained the 2d prize. Rob Roy (Gorton) is also a first-class rose flake, that is bound to receive more favourable notice at no distant date. It was exhibited by the raiser and Mr. Douglas.

Picotees have also been receiving considerable attention from raisers, and progress has been very great, the most recent flowers having obtained the highest positions. Mrs. Payne (Payne), a splendid heavy rose-edged

flower, again obtained "premium," but not without a severe scrutiny and lengthened discussion by the judges. Seven flowers were selected for the highest award, but five were rejected, and the contest was then between Simmonite's Mrs. Gorton and Payne's Mrs. Payne, the last-named sort ultimately winning by the highest number of votes. Mrs. Gorton is a new flower, and a grand light red-edged Picotee. It won for the exhibitor, Mr. Douglas, the 1st prize as a seedling; and also received the honour of a First-class Certificate. The only other new Picotees exhibited were Esther Minnie (Dodwell), a very fine heavy rose-edge, a seedling from Fanny Helen; but a larger, brighter coloured, and fuller flower than Mr. Niven's fine rose-edge; more cannot be said in its praise. This won for Mr. Dodwell the 1st prize in its class, and also a First-class Certificate. The 2d prize was awarded to Mr. J. P. Sharpe for Miss Sharpe, a very pretty flower, which was not fully developed; it will be heard of again probably. Among what may be termed fancy or border carnations, Mrs. Page, exhibited by Mr. Duffield, received a First-class Certificate. It is of fine form; prettily fringed, and of a pleasing flesh colour. The same award was also given to J. A. Wallington, Esq., for Florence, a really pretty border flower, fringed full, and of a colour which is best described as soft apricot. Mary Morris, exhibited by Mr. H. G. Smyth, 17A, The Coal Yard, Drury Lane, W.C., was commended by the judges; it is a well formed flower, of a deep pink colour with a paler tint at the edge. There were numerous new flowers exhibited by Messrs. Turner and Douglas in the fancy and self classes, most of them are sports and some seedlings; many of them are grand border flowers.

The following is the prize list:—

Carnations.—Twenty-four blooms, not less than twelve, dissimilar.—1st, Mr. Turner, Slough, with Fred, scarlet bizarre; John Keet, rose flake; John Bull, scarlet flake; James Taylor, pink and purple bizarre; Admiral Curzon, scarlet bizarre; Florence Nightingale, pink and purple bizarre; Matador, crimson bizarre; Rev. F. Symons, crimson bizarre; James McIntosh, scarlet bizarre; Mrs. Matthews, white clove; John Hines, scarlet bizarre, &c. 2d, Mr. James Douglas, gr. to F. Whitbourn, Esq., with Robert Lord, scarlet bizarre; Florence Nightingale, pink and purple bizarre; William Skirving, pink and purple bizarre; Rob Roy, scarlet bizarre; Tim Bobbin, scarlet bizarre; Mrs. Stocklees, Joseph Crossland, scarlet bizarre; Sarah Payne, pink and purple bizarre; Sportsman, scarlet flake; John Keet, rose flake; Sporting Lass, purple flake; Arthur Midhurst, scarlet bizarre; Crimson Banner, scarlet bizarre; James Douglas, pink and purple bizarre; Henry Cannell, scarlet flake; John Simonite, crimson bizarre; and Apollo. 3d, Mr. E. S. Dodwell, Stanley Road, Oxford; 4th, Mr. J. Hines, Ipswich; 5th, Mr. H. Hooper, Bath.

Twelve blooms, dissimilar.—1st, Mr. Douglas, with William Skirving, pink and purple bizarre; Dreadnought, scarlet bizarre; Sarah Payne, pink and purple bizarre; John Keet, rose flake; Florence Nightingale, pink and purple bizarre; Sportsman, crimson bizarre; J. D. Hextall, crimson bizarre; James Henry, sport; Earl of Stamford, pink and purple bizarre; Admiral Curzon, scarlet bizarre; and Annihilator, scarlet flake. 2d, Mr. E. S. Dodwell, with James Douglas, purple flake; Henry Cannell, scarlet flake; Master Fred, scarlet bizarre; Harry Matthews, scarlet flake; Benjamin Simonite, scarlet bizarre; Tim Bobbin, rose flake; Florence Nightingale, pink and purple bizarre; Alfred Hudson, scarlet bizarre; Rifleman, scarlet flake; Admiral Curzon, a sport; Arthur Medhurst, scarlet bizarre; and Squire Llewelyn. 3d, Mr. J. Hines, with John Bull, scarlet flake; Eccentric Jack, crimson bizarre; Mrs. Matthews, Rifleman, scarlet flake; Sarah Payne, pink and purple bizarre; Mrs. Tomes, rose flake, Admiral Curzon, scarlet bizarre; James Douglas, purple flake; Squire Llewelyn, and Florence Nightingale, pink and purple bizarre. 4th, Dr. Abercrombie, Cheltenham; 5th, Mr. J. Buxton, Clapham; 6th, Mr. F. Cattley, Bath.

Six blooms, dissimilar.—1st, Mr. J. R. Sharpe, Perry Bar, Birmingham, with Arthur Medhurst, scarlet bizarre; Sybil, rose-flake; Florence Nightingale, pink and purple bizarre; James Taylor, pink and purple bizarre; Sarah Payne, pink and purple bizarre, and a seedling; 2d, Master Stanley Dodwell, with Robert Lord, rose flake; H. K. Mayer, scarlet flake; Mrs. Gorton, Master Stanley, scarlet bizarre; Florence Nightingale, pink and purple bizarre; and James Merryweather, rose flake; 3d, Mr. James Slack, Chesterfield.

Single Specimens.—Scarlet bizarres.—1st, Mr. Turner, with Jessica; 2d, Mr. E. S. Dodwell, with Tim Bobbin; 3d, Mr. Douglas, with Rob Roy; 4th, Mr. R. Gorton, Eccles, with Rob Roy; 5th, Mr. Douglas, with Rob Roy. Crimson bizarres.—1st, Mr. Douglas, with Sportsman; 2d, Mr. Turner, with Matador; 3d, Mr. Douglas, with Sportsman; 4th, Mr. E. S. Dodwell, with a sport from John Keet; 5th, Mr. Douglas, with Sportsman. Pink and purple bizarres.—Mr. Douglas, 1st, with Earl of Stamford; 2d, with James Douglas; 3d, with Earl of Stamford; 4th and 5th, with Florence Nightingale. Purple-flake.—1st and 2d, Mr. Douglas; 3d and 5th, Mr. Turner; and Mr. John Hines 4th, all with Sarah Payne. Scarlet flakes.—1st, 2d, and 3d, Mr. Douglas, with Rifleman; 4th and 5th, Mr. E. S. Dodwell, with H. K. Mayer. Rose flakes.—1st and 2d, Mr. Douglas, with Admiral Curzon; 3d, Mr. Douglas, with Edward Adams; 4th and 5th, Mr. Turner, with Admiral Curzon and Robert Lord.

Premier Carnation, selected from the whole exhibition.—Robert Lord, scarlet bizarre, shown by Mr. Douglas.

Picotees.—Twenty-four blooms, not less than twelve dissimilar.—1st, Mr. Turner, with Mrs. A. Chancellor, heavy purple-edged; Baroness Burdett Coutts, medium purple-edged; Constance H. Fellowes, Her Majesty, light purple-edged; Mrs. Bower, light red-edge; J. B. Bryant, heavy red-edged; Louisa, heavy rose-edged; Princess Dagmar, heavy purple-edged; Queen of Summer, medium red-edged; Eveline, Clara Penson, light purple-edged; Portia, Madame Corbin, John Smith, heavy red-edged; Mrs. Payne, heavy rose-edged; Muriel, heavy purple-edged; Mrs. Gibbons, Royal Visit, heavy rose-edged; and Imosene. 2d, Mr. E. S. Dodwell, with Mrs. A. Chancellor, heavy purple-edged; Ethel, medium rose; John Smith, heavy red-edged; Tinnie, light purple; Mrs. Payne, heavy rose-edged; Countess of Wilton, Lizzie Soames, Lady Louisa, Daisy, Edith D'Ombrain, heavy rose-edged; Dr. Epps, heavy red-edged; Royal Visit, heavy rose-edged; Mary, light purple-edged; Clara Penson, light purple-edged; Esther Minnie, heavy rose-edged; Medina, heavy purple-edged; Mrs. Wilson, heavy red-edged; and Muriel. 3d, Mr. Douglas, with Princess of Wales, heavy red; Mrs. Gorton, light red-edged; Mrs. Payne, heavy rose-edged; Jessie, Her Majesty, light purple-edged; Brunette, heavy red-edged; Thomas Williams, light red-edged; Baroness Burdett Coutts, medium purple-edged; Norfolk Beauty, heavy purple; Violet Douglas, light red-edged; Mrs. Allcroft, light rose or scarlet-edged; and Mary, light purple-edged. 4th, Mr. J. Hines; 5th, Mr. H. Hooper.

Twelve blooms, dissimilar.—1st, Mr. E. S. Dodwell, with Tinnie, light purple; Clara Penson, light purple-edged; Ethel, medium rose; Dr. Epps, heavy red-edged; Mrs. Payne, heavy rose-edged; Zerlina, heavy purple-edged; Mary, light purple-edged; Esther Minnie, heavy rose-edged; Mrs. A. Chancellor, heavy purple-edged; Edith D'Ombrain, heavy rose; Medina, heavy purple-edged; and Master Norman, medium red-edged. 2d, Mr. Douglas, with Her Majesty, light purple-edged; Brunette, heavy red-edged; Jessie, Royal Visit, heavy rose-edged; Mrs. Payne, heavy rose-edged; Mrs. Gorton, light red; Norfolk Beauty, heavy purple; Anne Lord, light purple; and Mrs. A. Chancellor, heavy purple-edged. 3d, Mr. J. Buxton, with Royal Visit, J. B. Bryant, Lennie, Alliance, heavy purple-edged; Delicata, Mary, John Keynes, Dr. Epps, heavy red-edged; and Alice, light purple-edged; 4th, Mr. J. Hines, 5th, Dr. Abercrombie.

Six blooms, dissimilar.—1st, Master Stanley Dodwell with Medina, heavy purple-edged; Royal Visit, heavy rose-edged; Mrs. Payne, heavy rose-edged; Master Norman, medium red-edged; Tinnie and Miss Lee, light rose-edged. 2d, Mr. J. Slack; 3d, Mr. Sharp.

Single Specimens.—Heavy red-edged: Mr. Turner 1st, with Henry; Mr. Douglas 2d, with Princess of Wales; 3d and 4th, with Brunette; and 5th, with Princess of Wales. Light red-edged.—1st, Mr. Turner, with Thomas William; 2d, Mr. Douglas, with Mrs. Gorton; and 3d, with Violet Douglas; 4th, Mr. Dodwell, with Thomas William; 5th, Mr. Turner, with Thomas William. Heavy purple-edged.—1st, Mr. Turner, with Muriel; 2d, Mr. Douglas, with Mrs. A. Chancellor; 3d, Mr. Turner, with Mrs. A. Chancellor; 4th, Mr. Douglas, with Alliance; 5th, Mr. Turner, with Zerlina. Light purple-edged.—1st, Mr. Dodwell, with Mary; 2d and 3d, Mrs. Turner, with Clara Penson and Mr. Tutton; 4th and 5th, Mr. Dodwell, with Mary. Heavy rose or scarlet-edged.—1st and 2d, Mr. Douglas; 3d and 4th, Mr. Turner; and 5th, Dr. Abercrombie, with Mrs. Payne. Light rose or scarlet-edged.—1st and 2d, Mr. Turner, with Evelyn; 3d and 4th, Mr. Douglas, with Miss Lee and Mrs. Allcroft; 5th, Mr. Turner, with Lady Carrington. Yellow grounds.—Mr. Douglas, 1st, 2d, 3d, and 4th, with Ne Plus Ultra; 5th, Mr. H. Hooper, with Sir F. Roberts.

Premier Picotee, selected from the whole exhibition.—Mrs. Payne, heavy rose-edged, shown by Mr. Douglas.

Selfs, Fancies, or Yellow Grounds.—Twenty-four blooms, not less than twelve dissimilar.—1st, Mr. Turner, with Jessica, W. P. Milner, Robert Scott, Etna, Fred, Lady Stamford, Unexpected, Lady Rosebery, Albert, Rosa Bonheur, Elegant, Sybil, Géant des Battailles, Duchess of Connaught, Rose Perfection, Harry Bertram, Constance, Lord Lewisham, and Matador; 2d, Mr. Douglas; 3d, Mr. H. Hooper.

Twelve blooms, dissimilar.—1st, Mr. Dodwell, with Sarah Payne, Dr. Hogg, Harry Matthews, Shirley Hibberd, Robert Logan, King of Yellows, James Merryweather, Diana, Mercury, Mrs. Tomes, John Soper, and Purple King; 2d, Master Stanley Dodwell; 3d, Mr. G. Duffield, gr. to H. K. Mayer, Esq.; 4th, Dr. Abercrombie; 5th, Mr. Cattley.

Twelve blooms of yellow-ground Picotees.—1st, Mr. Douglas, with Mrs. Coleman, Alice, Prince of Orange, Ne Plus Ultra, Eleanor, Princess Beatrice, and Lightning; 2d, Mr. H. Hooper; 3d, Mr. Cattley.

Twelve specimen plants in pots.—1st, Mr. Turner, with Miss Small, Jupiter, Constance Heron, John Bull, Mrs. A. Chancellor, a heavy red-edged seedling; Mrs. Payne, Queen of Summer, Louisa, Admiral Curzon, Lady Barton, and Her Majesty; 2d, Mr. Douglas, with Mrs. Coleman, Prince of Orange, Queen of Sports, William Spood, Mayor of Nottingham, Brunette, H. K. Mayer, Zerlina, J. Crossland, and Rose of Stapleford.

Messrs. James Veitch & Sons, Chelsea, showed several fine stands of border Carnations and Picotees; Mr. Turner, Slough, an excellent display of Dahlias for the date. Pansies came from the Vine Nursery, Widcombe Hill, Bath; and Mr. T. S. Ware, of the Hale Farm Nurseries, Tottenham, had a good exhibition of single Dahlias, Pentstemons, and summer flowering Chrysanthemums. Mr. Ware had a good stand of the single Dahlia White Queen among his collection. From Messrs. Wm. Paul & Sod, of Waltham Cross, came some splendid stands of cut Roses, the best of which were Madame Sophia Fropot, Charles Lefebvre, May Quennel, Alfred K. Williams, Etienne Levet, and Louis d'Or. Mr. Paul showed two stands of cut blooms, all of which were raised at the Waltham Cross Nursery, and of these the following were in best form:—St. George, Countess of Rosebery, Duchess of Bedford, Pride of Waltham, Masterpiece, Elizabeth Vigneron, Lord Macaulay, and twelve blooms of Marie Baumann, of intense brightness, and of good size. From Mr. Cannell, of Swanley, came a fine collection of named Verbenas of beautiful colours—crimson, lilac-striped, lavender, pink, purple, and various other shades, and of remarkable size and freshness. Mr. Barron contributed two fine collections of plants from the Society's gardens, Chiswick, consisting of tuberous-rooted Begonias, Ivy-leaved Pelargoniums—the latter a splendid show; Mignonette, a collection of named Achimenes, of great interest to plant growers; Lilies, and other plants.

Edinburgh Botanical: *July* 13.—The Society met in the class-room, Royal Botanic Garden; Professor Isaac Bayley Balfour, President, in the chair.

Dr. Cleghorn read an obituary notice of Deputy Surgeon-General W. Jameson, C.I.E., for many years superintendent of the Government Botanical Gardens in the North-West Provinces of India, and one of the oldest members of the Society. Mr. Jameson, it was stated, was born at Leith, and educated at the High School and University of Edinburgh, where his uncle long filled the chair of Natural History. Among his other claims to remembrance were his efforts for the promotion of tea culture in Northern India; and his name would always be associated with the successful establishment of this new industry.

Deputy-Surgeon General Andrew Fleming exhibited and presented to the University Herbarium a collection of plants made by him in 1851 on the Murree and Cahmurr Hills, a series of ranges rising from the north-west of of the Punjaub. The plants, he explained, were collected in camping about during the summer, and he thought they gave a very good idea of the flora of that part of the country. The collection, he fancied, was the first ever made at Murree. One great peculiarity was the paucity of Ferns. He did not suppose that in the whole 300 to 400 specimens there were more than half-a-dozen Ferns; whereas in the Eastern Himalayas in a few weeks one could gather 150 to 200 Ferns. Another point was the scarcity of Rhododendrons. Everybody knew the abundance of those plants in the Darjeeling district; but he only found one in the whole season. Several specimens of Primula and Androsace, specially A. incisa, attracted notice.

"On the Æstivation of the Floral Envelopes in Helianthemum vulgare." By Professor Dickson. Professor Dickson stated that it had been known for long that the three large sepals and the petals in this plant are convolute in the opposite directions. It did not, however, appear to have been previously noticed that the contortion or convolution of these floral envelopes is alternately to right and left in the flowers along the false axis of the scorpioid cyme. This fact Professor Dickson pointed out is of considerable interest in connection with the theory of the scorpioid arrangement as the result of heterodromy of the leaf spirals in the successive axes of which this cyme is made up, of the truth of which theory still more conclusive evidence was afforded by the late Professor Hofmeister, who showed that in the flowers of Boraginaceæ, such as Echium and Cerinthe, the calycine segments of the successive flowers on the cyme form an alternately right and left-handed quincuncial arrangement.

"On a Monstrosity in the Flower of Iris Pseudacorus." By Professor Dickson. In a specimen gathered recently at an excursion to Longniddry the outer perianth segments were normal, but of the inner ones only two were normal, whilst the third one was nearly completely metamorphosed into a stamen with distinctly formed filament and anthers containing pollen, the extremity of the anthers ending in a petaloid expansion. In each of the three young flowers of the same inflorescence there was a fourth stamen of somewhat smaller size than the three normal ones and similarly taking the place of a segment of the inner perianth. Examples of an advance in metamorphosis such as this are of rare occurrence, although cases of retrograde metamorphosis, such as conversion of stamens into petals, are very common.

"On Pitcher-like Developments of the Leaves of Pelargonium and Cabbage." By Dr. James Sidey: communicated by Professor Dickson. These consisted of two leaves of Pelargonium exhibiting development as peltate funnels or pretty deep cups, and of an example of Cabbage-leaf with stalked funnels springing from the upper leaf-surface.

A report on the vegetation in the garden of the Royal Botanic Institution, Glasgow, for May and June last, prepared by Mr. Robert Bullen, Curator, being a continuation of the similar report read at the May meeting of the Society, was communicated by Mr Taylor, Assistant-Secretary. There had been twenty-three dry days recorded in May, but the weather generally was unfavourable to the growth of hardy plants and culinary vegetables. No frost had been recorded during the month, the lowest temperature being 33° on the 1st. The highest temperatures occurred on the 17th, 18th, 19th, and 20th; and the average was 69° During the first eight days of June the dry weather of May con-

tinued, and Pansies died by hundreds, while hardy Violas, bedding-out plants in general, and garden annuals had a starved appearance, but during the last fortnight of the month sunshine and rain intervened, bringing a pleasant floral change. Out of a large collection of spring-sown hardy annuals the following only were in bloom at the end of June :—Malcolmia maritima, Silene pendula, Gypsophila elegans, Limnanthes Douglasii, Oxalis rosea, Lupinus affinis, Lasthenia californica, Nemophila atomaria, N. insignis, Gilia tricolor, G. achilleæfolia, Bartonia aurea, Collinsia bicolor, C. candidissima, Linaria bipartita, Platystemon californicum. The lowest temperature occurred about the middle of the month, 37° being the minimum. The highest was registered on the 29th, and reached 73°.

Mr. John Sadler, Curator, exhibited and commented on a table of flowering plants in the Royal Botanic Gardens, Edinburgh, from 1850 to the present year. Last year up to the present date 572 species and varieties flowered in the rock garden, whereas this year 710 had flowered already.

Mr. Sadler also gave "Notes on Memorial Trees in the Royal Botanic Garden of Edinburgh." There were between twenty and thirty such trees in the garden, the measurements of which were given, and a statement made that such reports would be periodically presented to the Society.

Mr. Sadler also laid on the table a specimen of Carthamus sp., from 200 miles inland from Cape Town, in 1881, which was now being examined in the pharmaceutical laboratory of the University by Dr. M. Hay, for a bitter principle in its leaves.

The President exhibited a monstrosity of Trifolium repens, obtained during a class botanical excursion to Millport this summer.

Mr. John Campbell, Ledaig, Argyllshire, sent Orobanche rubra, growing with him.

Mrs. Bain, Napier Road, Merchiston, exhibited a fine truss of Cacalia alpina, grown in her garden from seeds obtained near Geneva.

Dr. Paterson, Bridge of Allan, sent a magnificent spike of Vanda suavis ; also dried fronds of Platycerium grande.

From a communication sent by Dr. Campbell, a former Secretary of the Society, it appears that the Botanic Garden, Georgetown, Demerara, is now being irrigated, steam pumping machinery having been erected for this purpose.

The Society now adjourned to the laboratory, when the President, by the aid of the magic lantern with the limelight, gave[a series of spectroscopic illustrations of the physical properties of chlorophyll, in further elucidation of his introductory address.

Amongst the plants in flower on the table were Senecio speciosus, Arctotis aspera arborescens, Cyananthus lobatus, Parnassia nubicola, Campanula hederacea, C. barbata, Saxifraga propaginea, S. diversifolia, S. caroliniana, Linum viscosum, Lychnis coronata, Primula floribunda, Allium urceolatum, A. stramineum, Hæmanthus cinnabarinus, Genista spathulifolia.

Horticultural Exhibition at the Agricultural Hall.—The great exhibition of horticultural produce, implements, and other garden requisites, which was opened at the Agricultural Hall, Islington, on Monday last, the 24th inst., and which is to continue open for another week, is in many respects a novelty in horticultural enterprise. The immense capacity of the great hall as an exhibition room, as well as the varied nature of the exhibition, should attract hosts of visitors from all parts of the metropolis, as well as from the country. The charge for admission is also so moderate, that no better opportunity need be desired by the masses, of inspecting so comprehensive a collection of garden paraphernalia and other household requisites. An exhibition that consists of conservatories, greenhouses, and frames, boilers and heating apparatuses by water, steam, and other means, garden statuary, fountains, and Fern-cases, window-boxes, &c., cannot be said to lack interest in the eyes of a scrutinising public. And these are but a few of the many articles to be found within the great hall ; for in addition there are rockeries and waterfalls, summer-houses and garden seats, lawn mowers, verge cutters, garden tools of all kinds, wire-netting, dried flowers, grasses, artificial plants and flowers, seeds, bulbs and roots, manures and insect destroyers, and innumerable other articles which do not come within the category of horticultural necessaries. But notwithstanding the great labour involved in bringing together such an exhibition —many of the exhibits coming from remote distances —it would be idle to conceal the fact, that upon the morning of the opening day the arrangements were in a very crude state, and, indeed, there was little appearance of anything like a consummation of order during the day. There were few symptoms of that energy and perseverance which are characteristic of properly organised horticultural exhibitions, nor was there any visible sign of hurry and bustle among the exhibitors which is so commonly seen elsewhere. Everybody seemed to take his or her own time, and to jog along leisurely. Reporters dropped in one by one, only to gaze listlessly at the flags of all nations hanging from the roof of the great building. The horticultural man paced up and down, evidently looking about for some one to speak to, for to him at least the dozen or more new patent systems of glazing, patent boilers, &c., are familiar sights. His contemporaries from the "dailies" are not so fortunate —the new systems of hothouse building, glazing, &c., are being explained with great minuteness, and in some cases "rubbed in" in case he should forget them. Even well known faces that are known for their accustomed vivacity, look grave, and altogether there were but few signs of that animation which should characterise the opening of a great exhibition. There is, however, abundance of material, and upon either side the centre walk the show is diversified and exceedingly interesting.

First there is a display of Gothic seats, garden arches, window boxes, and hanging baskets, by Mr. Trotman, of Holloway, and a good show of Fern cases and window boxes from Messrs. Ewart & Son. Messrs. J. J. Thomas & Co., of Queen Victoria Street and Edgware Road, have a grand as well as useful show of wirework ; and Messrs. F. Lawrence & Son, of Datchworth, Stevenage, Herts, exhibit their new patent system of glazing, by which zinc bars are used of any length and strength, and wire clips are used to keep the squares of glass in position, and the bars are capped with zinc covers to throw off the rain. Watson's new patent boiler is exhibited close to the latter, and Mr. Cutbush of Highgate comes next, filling a space 66 feet by 12 with an interesting collection of plants. The outer lines are made of green grass turf, neatly cut, and a wire arch is fixed at one end, over which Vines are trained, and at the opposite end wire stands are filled with pot plants, at the back of which are some tall variegated Maples. In the centre of the space a Rose temple is placed, and the remaining space is broken up with tall Box trees in tubs, standard Bays, Palms, &c., and, of course, the vacancies between are filled in with plants of suitable sizes. There is an exhibition of cut Roses upon a table fixed under one of the arches, which looks natural and pretty, and the collection altogether is a representative one. A collection of plants from Messrs. Laing & Co., of Stanstead Park, Forest Hill, is only divided from Messrs. Cutbush's collection by a specimen of the £10 Nottingham greenhouse, exhibited by Mr. Paul Metz, 10, Jewin Street, London, and other horticultural appliances from Mr. W. H. Lascelles, of Bunhill Row, London.

The Messrs. Laing have two fine groups of plants, one consisting of Palms, Dracænas, flowering plants, and cut flowers ; and the other of Conifers and ornamental shrubs, with a sprinkling of summer-flowering Chrysanthemums. Messrs. Laing also show Grapes, well grown and coloured. Messrs. Jeffrey & Co., of the West London Wireworks, have some new designs in Rose temples ; and Messrs. Smith & Williams exhibit teak-wood Orchid baskets, with plants growing in them, so that visitors may purchase the baskets ready filled if they choose to do so. But perhaps the most interesting exhibit in the hall is the rockwork by Messrs. Pulham & Son, of Broxbourne, and the alpine garden in miniature in front of it. One sample represents a rockery for an indoor fernery, and is planted by Mr. B. S. Williams, of Holloway ; and another, an arrangement of rocks of brown stratified sandstone, which is well furnished with hardy plants, also supplied by Mr. B. S. Williams. The little gravel path between the alpine garden and the rockery of hardy plants is very effective, as also the water trickling from the rocks among the tropicals. The Messrs. Pulham also exhibit fountains, vases, and a "ferndelabra" with twelve spaces at the outside of the water basin, which, when all is in working order, are intended to represent little brooks. Messrs. Deane & Co., of King William Street, have garden tools of all kinds, from a lady's watering pot to the ponderous garden engine ; and Messrs. Dick Radclyffe & Co. rustic houses, Fern cases, &c. There are garden tents of many shapes and sizes, one umbrella tent of scarlet or crimson, fringed with white, appearing to take the popular fancy above all others. The other exhibits are arranged in the same fashion from one end of the hall to the other, with walking space between. Messrs. Stroud & Sons, of Lordship Park Nurseries, Stoke Newington, have a good collection of plants tastefully grouped, and Mr. Charles Burley, nurseryman, Brentwood, has a fine display of cut flowers arranged in baskets, vases, and ornaments for the dinner-table. Messrs. G. Catterell & Son, of Bisterne, Ringwood, Hants, exhibit some splendid samples of Orchid peat, and Messrs. R. Jentle & Son, of the Whittington Nursery, Highgate Hill, are strong in plants, garden seats, and flower stands.

Then there are samples of Austrian bent-wood furniture, grotesque enough in form and numerous enough in quantity to please any and everybody. Messrs. Tracy & Son, horticultural builders, Ilford, Essex, exhibit samples of their work, showing that their system of glazing is perfectly water-tight. The glass is fitted in zinc bars, and kept in position by means of wire clips. The squares of glass overlap each other, and the wire clips are fixed in cross-bars about an inch in depth. Water is then conveyed by means of an iron pipe attached to a stand-pipe in the hall, and there is a continual flow of water down the glass, in order to give a practical illustration of the genuineness of the work. Boilers and rustic garden furniture are here innumerable—of the former of course there is the "latest out"—boilers that will consume anything, from Irish peat to limestone chippings, and specimens of the best forms of boiler that are well known to everybody.

Messrs. Rendle & Co. exhibit their patent houses and baby garden frames, from 18 inches long to any length you like ; and F. Rosher & Co. have rustic woodwork, statuary, vases and edging tiles. From the Weston-super-Mare Potteries Mr. John Matthews sends a splendid collection of garden pottery, the newest thing being his Albany or Leopold vase. The exhibition is representative in some respects, and in a great many others there are shortcomings, which are, perhaps, more or less incidental to new undertakings.

Buckingham Horticultural: *July* 25.—This was the fifty-sixth exhibition of this Society, and it was held as usual in the grounds of G. R. Ellis, Esq., the entrance to the show being right in the heart of the grounds. On the show day the town is very gay, and the townspeople keep high holiday. On this occasion an additional interest was added to the show from the fact that an exhibition of bees, bee appliances, and illustrations of bee driving was held by the Berks, Bucks, Herts, and Oxfordshire Bee-keepers' Association, of which the Rev. H. R. Peel, of Thorndon Hall, is the President. At this show the greatest interest centred in the division open to all England, and in which some liberal prizes are offered, the leading class being for twelve ornamental-foliaged plants. On this occasion there was a good trial of strength between Mr. Miller, gr. to R. Loder, Esq., M.P., Whittlebury, and Mr. J. Parker, Rugby ; and though the former had a little the best of the competition, the judges thought it the best, under the circumstances, to award equal 1st prizes. In Mr. Miller's group was a very fine Areca sapida, a large and well-grown and coloured example of Acalypha musaica, Phyllanthus roseus-pictus, capitally developed ; Cissus discolor, Latania borbonica, a good Croton interruptus. Mr. Parker had a fine piece of Kentia Fosteriana, Latania borbonica, Croton Youngi, C. Weismanni, &c. In the class for six plants, Mr. Hoskins, The Gardens, Stowe Palace, was 1st, his best subjects being Croton variegatus, C. angustifolius, Alocasia Lowii, and Pandanus Veitchii. The best specimen foliage plant was Alocasia metallica, from Mr. Hoskins, an excellent specimen with finely developed leaves ; a nice piece of Pandanus Veitchii, shown by Mr. W. Smith, gr. to A. Byas, Esq., taking 2d prize. Mr. Miller had the best six Ferns, Blechnum corcovadense, Neottopteris nidus and Adiantum farleyense being the chief examples ; and Mr. Miller was also 1st with a similar number in another class, staging Blechnum brasiliense, Gymnogramma chrysophylla, A. farleyense, A. gracillimum, very fine, and two others. In the open class for six plants in flower, as also in that for members, Mr. Parker was 1st, staging plants which, on the whole, lacked freshness. He also took the 1st prize with a specimen plant in flower in two classes, staging in one case a finely coloured piece of Bougainvillea glabra, and in the other Statice imbricata.

In the class for a group of plants arranged for effect, Mr. Hoskins was a good 1st, with a very tastefully arranged collection ; Mr. Mayo being 2d, with a group in which Hyacinthus candicans in pots was a leading feature. From Claydon Park, Sir Harry Verney's residence, came a very nice group of plants not for competition ; and Mr. Lindsay sent a nice collection of Coleus in great variety. Begonias in flower were a peculiar feature, and some good collections were staged ; and one collection of three Balsams was very fine for the season. Pelargoniums, Petunias, &c., were of moderate quality.

In the open classes for cut flowers, the best twenty-four varieties of Roses, three trusses of each, came from Mr. J. Mattock, New Headington, Oxford, who had very good blooms of Duke of Edinburgh, A. K. Williams, Dupuy Jamain, Marie Baumann, Sultan of Zanzibar, Charles Lefebvre, Auguste Rigotard, &c. In the class for twelve varieties, single blooms, Mr. W. Garroway, Oxford, had 1st, his best flowers being Alfred Colomb, Xavier Olibo, Annie Wood, Sénateur Vaisse, Reynolds Hole, &c. In two classes Mr. Parker was 1st, with boxes of cut stove and greenhouse plants ; in one of them the chaste Gladiolus Colvillei albus, Francoa appendiculata, and Ixora regina were especially noticeable. In a box shown by Mr. Prewett, Hammersmith, Passiflora racemosa was a leading feature. Stocks were well shown, generally in the form of plants with the soil washed from their roots. Such things as Dahlias, Carnations and Picotees, Marigolds, Zinnias were, owing to the season, much below the usual mark. Cut herbaceous Phloxes were very fine. Fruit was one of the weakest points of the show, and the classes contained nothing worthy of remark save the Gooseberries, which are shown in dozens in four varieties. These were generally very fine. The best came from Messrs. R. W. Munday and W. J. Gough.

The cottagers' tent was a truly marvellous show. Throughout the vegetables were very fine. A few surrounding villages are included in the parliamentary borough of Buckingham, and in these vegetables are grown with great success. There was a class for six varieties of Potatos, and fourteen collections contended. There was scarcely an indifferent lot among them. E. Ball was 1st with Beauty of Hebron, Grampian, International Kidney, Trophy, Garibaldi, and Giant King ; George Hutt was 2d. In the classes for single dishes Giant King and Early Oxford were the best white rounds, Grampian and Emperor the best red rounds, International the best white kidney ; indeed, it seems to be universally grown, and was shown very finely ; and Trophy and Garibaldi the best-coloured kidneys. Peas, Broad Beans, Cabbages, Onions, &c., were all very good in the amateurs' classes, as well as those for cottagers.

West of Scotland Rose Show.—The eighth annual exhibition was held on the 20th inst. at Helensburgh. The display of Roses was very fine. Messrs. A. Dickson & Sons, Newtonards, Ireland, secured the Gold Medal for forty-eight distinct sorts, while Mr. H. Dickson, Belmont Nursery, Belfast, won the 1st prize for thirty-six distinct sorts. A new feature in the exhibition this year was the introduction of show and fancy Pansies and Pinks. Those staged by Messrs. Wm. Paul & Son, Crossflat Nurseries, Paisley, were much admired for their size and beauty. There were entered for competition 1408 Roses and 468 Pansies and Pinks. The following are the principal awards :—

Roses.—Forty-eight blooms, distinct varieties.—1st (gold medal), Alexander Dickson & Sons, Newtonards, with magnificent blooms of most of the best varieties ; 2d, T. Smith, Stranraer ; 3d, W. Montgomery, Cardross ; 4th, D. Robertson, Helensburgh. Thirty-six blooms, distinct varieties.—1st, Hugh Dickson, Belfast, who had some lovely flowers ; 2d, W. Parlane, Roselea Gardens, Row ; 3d, A. McCallum, Cairndhu Gardens,

Helensburgh. Thirty-six blooms, distinct varieties (open to Scotch growers only).—1st, Silver Medal and £3, W. Parlane, with a beautiful stand of flowers; 2d, John M'Coll, gr., Row; 3d, W. Montgomery. Twenty-four blooms of Roses, distinct varieties (open to Scotch growers only).—1st, W. Parlane, with fine blooms; 2d, W. Montgomery; 3d, T. Brown, gr., Cardross. Sixteen blooms of Roses, distinct sorts.—1st, J. Kidd, Rothesay; 2d, D. Wallace, Rothesay; 3d, J. Mitchell, Helensburgh. Twelve blooms of Tea or Noisette Roses, distinct varieties.—1st, A. H. Gray, Dunkeld; 2d, G. P. Hawtrey, Aldin House, Slough.

Pansies.—Twenty-four fancy Pansies, distinct varieties.—1st, William Paul & Son, Paisley, with large brilliant-coloured flowers of the best known sorts; 2d, D. Findlay, Campsie; 3d, James Barr, Paisley. Twenty-four show Pansies, distinct varieties.—1st, James Barr, with neat blooms; 2d, W. Paul & Son; 3d, D. Findlay. Twenty-four show and fancy Pansies, distinct varieties (open to gardeners and amateurs).—1st, D. Findlay, with splendid blooms; 2d, R. Millar, Paisley; 3d, D. Malcolm, Kirkintilloch.

Pinks.—Twelve blooms, distinct varieties.—1st, W. Paul & Son, Paisley, with large double flowers, beautifully laced; 2d, W. Parlane.

Florists' Flowers.

The Auricula.—I find many of the growers are still greatly exercised as to the best time to pot their plants. I can speak now from a considerable experience with our own collection; and decidedly say pot in May, not that our own are potted in that month, they are not, for we cannot find time to do it, but if I could find time every plant would be done before the month of May is out. I remember having a conversation with Mr. Meiklejohn, when I visited him at Stirling on this subject, and he also said "Pot in May." He goes steadily to work to pot his own collection in that month at the rate of fifty plants per day, and it just takes him a month to complete the work; his collection numbers over 1500 plants, and from them he is not satisfied if he does not propagate 500 plants annually. I have just finished potting our own plants, they are placed in the cold frames behind a north wall, and they do not seem to suffer anything from the roots being cut back considerably. At p. 779 of the last volume instructions as to potting were given. The seed is now ripe, and should be sown at once; that is the way we do with our own. Sow thinly in 4-inch pots, draining the pots well. Some of the seeds will vegetate in two or three weeks after sowing it; but the largest proportion will not appear above-ground until the spring of the following year. As the leaves decay they ought to be removed, and if any greenfly appear, as probably they will, either fumigate the frames with tobacco-smoke, or dust the plants with tobacco-powder. I have also found dipping each plant separately in soft-soapy water a most effectual remedy. Let the plants be fully exposed night and day, but put the lights on if it rains heavy; a gentle shower will do the plants good.

The Carnation and Picotee.—As I write our whole collection is in full flower, and as it comprises every type and variety of the family, Carnations in every flake and bizarre, selfs of the most delicate rose tints, deep purples and maroon; Picotees, white and yellow ground, with the narrowest wire edge, and also the heaviest edges of rose, purple, red, &c.; altogether, we cannot have fewer than 5000 blooms out at one time, the whole forming a floral picture, beautiful in the extreme, and a source of genuine delight to all who love flowers either for their sweetness or for their marvellous beauty. The florists have provided this treat for an ungrateful public, and they are taunted with being narrow-minded, and accused of throwing away the best of their seedlings and retaining the worst. A man may have a love for what is termed florists' flowers—he may be, in a word, a florist, and yet not exactly be a fool. A considerable portion of the florists' work from the middle to the end of July is to attend to the opening flowers. Some of the best of them have a tendency to burst their pods; these should be aided by splitting the pods down a little at the upper side, and tying the pods with a strip of matting. If seeds are wanted, go over the flowers with a small brush, removing the pollen from one flower to the stigmatic portion of the other. As soon as possible after flowering is over layering should be commenced. I like to have every layer pegged down before the second week in August.

The Dahlia.—One cannot pen a line about the Dahlia at this time without deeply regretting the serious illness of Mr. Geo. Smith, of Ven Villa, Hedge Lane, Edmonton; he was honorary secretary of the great show to be held at the Crystal Palace in September; he has had to give up his duties in connection with the show, but every florist will yet hope to see him at the exhibition he has done so much to promote. Those who are intending to exhibit must lose no time at this season to do all that the plants require. If buds or growths want removing, pinch them off with the fingers; twenty-four hours' delay in attending to this work may be injurious to the plants. See also to the destruction of thrips, earwigs, slugs, &c. Mulch the ground round the roots of the plants with short stable-manure. If the side sticks have not yet been put to the plants they ought to be placed at once, so that the growths may be tied to them before they receive any injury or are snapped off by the wind. The lateral growths should be pinched off from these side branches to throw all the strength into the main shoots. All mis-shapen buds must be removed as well. All the coarse growing varieties with large flowers and petals should be allowed to carry many more blooms on a plant than the small or medium-sized flowers.

Pansies.—One of the greatest attractions in our garden during the months of April, May, and part of June was a long bed of more than a hundred varieties of the best varieties of these. The cuttings were put in during the month of August of the previous year, and the winter being mild they formed vigorous plants, and flowered early. During severe winters many plants die out, leaving sad blanks in the beds; our plan is to pot up a reserve stock of all the varieties, and if the losses are few it is easy to dispose of the plants in another part of the garden. The Pansy delights in a moist rich light loam, deeply trenched; cow-manure is the best. *J. Douglas.*

The Pink.—There is much reason to fear that this once popular florists' flower has rapidly declined in the public esteem. When a once leading grower like Mr. Turner ceases to publish a list of named varieties, it may be regarded as certain that the Pink is not in anything like the demand it was a few years ago. It has fallen into the rear of the Carnation and Picotee, and yet many, perhaps, could grow Pinks who could not grow Carnations and Picotees. It is the finely laced Pinks to which reference is being made, and though a few florists in the Midland and Northern districts continue to grow this flower, their number is decreasing. Can any one name a Southern flower show at which Pinks are shown in anything like the form we were wont to see them twenty years ago? Time was when a fierce controversial battle raged among Pink fanciers as to how many petals a good flower should possess. Some went for fifteen as an average number, others for twenty-one petals. The Midland Counties principle, used to be "Plenty of petals without confusion," and so a larger number than twenty-one would to allowed in a flower provided it was symmetrical. In Lancashire, when the flowers were reduced to fifteen petals or so, by taking out any that were imperfectly laced, the blooms were very thin, but generally highly refined. But both Midland and Northern growers ridiculed the "London mops," as they were termed—large full flowers with all the petals they could carry.

Then their own contentions as to the colour of the lacing, and in the North there was always a great outcry against "mongrel-laced" varieties, and the growers then held the opinion that the nearer a purple lacing approached to a rich dark purple, and a red laced to a bright red, the nearer was the approximation to perfection in colour. Many Southern flowers were condemned because "mongrel-laced," and the Northern growers would not cultivate them. The old battle raged also round the point whether there should be a white margin beyond the lacing. Some regarded this as a property imparting beauty to the flower; others as detracting very much from its beauty; and they stated that the colour should run out and completely cover the edge as in the case of a perfectly feathered Tulip. Alas! little is left now but the echo of these sturdy battles, for fashions change, and floriculture is no exception to the rule. Who knows but that the floral revival which has floated the Auricula up on to a higher level of interest, may one day exalt the Pink? It is a flower possessing so many good qualities, that it were a pity were it to fall aside altogether from cultivation. *R. D.*

Achimenes.—Always presenting to the visitors to the Royal Horticultural Society's meetings some special element of interest, Mr. Barron, with his able assistant, Mr. Hemsley, arranged at one end of the conservatory on Tuesday last a very effective and interesting group of Achimenes and of allied species, Tydeas, &c. It was a feature worthy of special note that almost the whole of this collection were grown in small 48's, and the handsome heads of foliage and bloom produced were relatively much finer than is usually got from out of large shallow pans. Probably deep pans 9 inches in width would form the very best sizes out of which to get a fine head of bloom, whether needed for exhibition or conservatory decoration. In this particular case nearly all the roots were sent to Chiswick by Messrs. Van Houtte, of Ghent, and Vallerand, of Paris, and though inclusive of some newer kinds, yet there were many old ones well known and universally grown. It is unfortunate that nearly all the large flowered section should produce, if pleasing, yet largely inconspicuous hues. The most striking in this section are the white or veined forms, whilst not a few have heavy, almost leaden colours, though very free to bloom, and in the bright sunlight not unpleasing. The brightest colours are found in the small-flowered section, of which Dazzle and Gem are such conspicuous examples, and the wish is but natural that some expert hybridist should take these diverse sections in hand, and strive to engraft upon the larger flowers some of those singularly striking lines which render the small flowers so attractive. In the Chiswick collection, the following small-flowered kinds were very beautiful:—Purpurea elegans, rich magenta; Dazzle, vermilion-carmine; Gem, rosy-carmine; Madame de Parpart, rosy-violet; Camille Brozzoni, rosy lilac; and Rosea elegans, rosy-pink. Very much resembling these in habit and size of flowers, are the Warscewiczii, lilac; and Candida, white. Of the large-flowered kinds one of the most striking, because it is of light colour, is Diamond, ground white, heavily veined with purple; this makes fine heads of bloom. Nearly allied to this, but less veined, is Edmund Boussier, and the best pure white is Margerita. A charming compact habited kind is the old Longiflora alba with its rosy throat. Coccinea pymea, rosy-magenta, is a very pleasing flower; Sir Treherne Thomas, bright rosy-crimson; Carl Wolfarth, rosy magenta; Cassiopea, fine form, good substance, rosy-purple in colour, very striking; Adèle Delahaute, cherry-pink, a very pleasing flower; Louis van Houtte, deep rose; Baumanni, rosy-purple; longiflora, bluish purple; were all striking sorts and producing handsome heads of bloom. The group comprised also many of the taller growing section, but these not only possess an undesirable habit, but have generally less striking colours in the flowers, and are not so floriferous. In Begonias, Gloxinias, and Achimenes, all tuberous-rooted, we find summer blooming plants that are singularly useful for conservatory decoration; and we trust ere long they will all find much wider representation, not only at our flower shows but in all gardens.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
For the Week ending Wednesday, July 26, 1882.

Month and Day.	Barometer. Mean Reading Reduced to 32° Fahr.	Barometer. Departure from Average of 18 years.	Temperature of the Air. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 30 years	Hygrometrical Deductions from Glaisher's Tables 6th Edition. Dew Point.	Degree of Humidity. Sat = 100.	Wind. Average Direction.	Rainfall.
July	In.	In.	°	°	°	°		°			In.
20	29.98	+0.19	74.0	51.5	22.5	59.9	— 2.5	56.5	84	S.	0.00
21	29.79	+0.01	74.0	51.2	22.8	61.5	— 0.8	53.7	76	S.	0.00
22	29.63	−0.15	67.0	57.0	10.0	60.3	— 2.0	56.2	87	S.W.	0.08
23	29.48	−0.29	72.0	54.0	18.0	60.1	— 2.1	53.5	79	S.:S.W.	0.04
24	29.64	−0.13	68.2	53.0	15.2	58.5	— 3.7	52.2	79	S.:S.W.	0.18
25	29.73	−0.04	69.0	53.0	16.0	57.3	— 4.9	54.4	90	S.W.:S.	0.13
26	30.17	+0.41	70.0	53.0	17.0	58.8	— 3.4	49.7	72	N.: N.W.	0.00
Mean	29.79	−0.00	70.6	53.2	17.4	59.5	— 2.8	53.7	81	S.W.	0.43

July 20.—A fine bright day and night.
— 21.—Fine bright warm day, fine night, but overcast.
— 22.—A dull overcast day and night.
— 23.—A little rain early in the morning. Fine day: windy.
— 24.—Fine bright morning; thunder heard at 11 A.M.; heavy rain from noon. Fine night.
— 25.—A dull rainy morning: fine day and night.
— 26.—A fine bright day; blue sky, sun shining. Fine night.

LONDON: *Atmospheric Pressure.*—During the week ending July 22, the reading of the barometer at the level of the sea increased from 29.54 inches at the beginning of the week to 29.87 inches by 3 P.M. on the 17th, decreased to 29.82 inches by midnight on the 17th, increased to 30.20 inches by 9 A.M. on the 20th, and was 29.79 inches at the end of the week.

The mean reading for the week at the level of the sea was 29.93 inches, being 0.25 inch higher than last week, and 0.05 inch below the average of the week.

Temperature.—The highest temperature in the shade in the week was 74°, on the 20th and 21st. On the 22d the highest temperature was 67°. The mean of the seven high day temperatures was 71°.9.

The lowest temperature in the shade in the week was 51°.2 on the 21st; on the 18th and 22d the lowest temperature was 57°. The mean of the seven lowest temperatures was 54°.4.

The greatest range in one day was 22°.8, on the 21st; the smallest was 10°, on the 22d. The mean of the seven daily ranges was 17°.5.

The mean temperatures were—on the 16th, 61°.6; on the 17th, 61°.7; on the 18th, 61°.5; on the 19th, 60°.5; on the 20th, 59°.9; on the 21st, 61°.5; and on the 22d, 60°.3; and these were all below their averages by 1°.1, 1°, 1°.1, 2°, 2°.5, 0°.8, and 2°, respectively.

The mean temperature of the air for the week was 61°, being 1°.8 higher than last week, and 1°.5 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo, placed in the full rays of the sun, was 145° on the 20th; the highest on the 22d was 90°.5.

The lowest reading of a minimum thermometer with its bulb placed on grass and fully exposed to the sky was 44°.5, on the 21st.

Rain.—Rain fell on three days, to the amount of 0.19 inch.

ENGLAND: *Temperature.*—During the week ending July 22 the highest temperatures were 77° at Cambridge and Sunderland, and 75°.9 at Nottingham. The highest temperature at Bolton was 67°, at Bristol 67°.1; and at Plymouth 67°.2. The general mean was 71°.2.

The lowest temperatures in the week were 46°.5 at Wolverhampton, 47° at Bolton and Hull. The lowest temperature at Plymouth was 54°.5, at Bristol 52°.2, and at Bradford 51°.6. The general mean was 49°.7.

The greatest ranges of temperature in the week were 28°.7 at Cambridge, 28°.3 at Nottingham, and 27° at Sunderland. The least ranges were 12°.7 at Plymouth, 14°.9 at Bristol, and 17°.7 at Liverpool. The general mean was 21°.5.

The mean of the seven high day temperatures was highest at Cambridge, 74°.9, at Sunderland 73°.8, and at Blackheath 71°.9; and was lowest at Bolton, 63°.9, at Plymouth 65°.2, and at Liverpool 66°.2. The general mean was 68°.7.

The mean of the seven low night temperatures was highest at Plymouth, 56°, at Brighton 55°.5, and at Bradford 54°.9; and was lowest at Wolverhampton, 50°.1, at Bolton, 50°.5, and at Hull 51°.2. The general mean was 53°.2.

The mean daily range was greatest at Sunderland, 22°, at Cambridge 21°.6, and at Hull 20°; and was least at Plymouth, 9°.2, at Bradford 11°.7, and Bristol 11°.8. The general mean was 15°.5.

The mean temperature was highest at Cambridge, 62°.2, at Blackheath 61°, and at Sunderland 60°.9; and was lowest at Bolton, 55°.3, at Wolverhampton 56°.6, and at Liverpool 57°.6. The general mean was 59°.1.

Rain.—The largest falls were 1.46 inch at Sheffield, 1.42 inch at Bristol, and 1.31 inch at Bolton. The least fall were 0.09 inch at Cambridge, 0.18 inch at Cambridge, 0.18 inch at Hull, and 0.19 inch at Blackheath. The average number of days was five, but it fell on every day in the week at Leicester, Sheffield, Liverpool, Bolton, Bradford, and Leeds. The general mean fall was 0.73 inch.

SCOTLAND: *Temperature.*—During the week ending July 22 the highest temperature was 69°.8, at Leith; at Glasgow and Paisley the highest temperature was 66°. The general mean was 67°.9.

The lowest temperature in the week was 47°, at Dundee; at Leith the lowest temperature was 51°.6. The general mean was 49°.4.

The mean temperature for the week was 58°.4, being 0°.5 below that of the week immediately preceding, but 1°.1 above the corresponding week of 1881, and was highest at Leith, 60°.3, and lowest at Greenock, 57°.2. The general mean was 58°.4.

Rain.—The largest fall was 2.70 inches, at Greenock; the smallest fall was 0.13 inch, at Aberdeen. The general mean fall was 1.07 inch.

JAMES GLAISHER, F.R.S.

Enquiries.

He that questioneth much shall learn much.—BACON.

GOAT'S RUE.—What is the plant so named in South Devonshire?

HOCKEN'S BOILERS.—*Inquirer* asks if any reader has personal experience of this apparatus in heating private houses?

ROSE DE MARIE.—What is this? Can any reader refer me to the book in which, if I am right, William Howitt speaks of this variety? *M.*

Answers to Correspondents.

BIGNONIAS: *Enquirer.* Bignonia radicans major and B. grandiflora are both greenhouse plants, and should be allowed in a collection of stove and greenhouse plants at an exhibition.

BOOK: *J. B.* Johnston's *Agricultural Chemistry.* New edition by Cameron.

DRYING ORCHIDS: *D. B. C.* Try this plan:—Get a dozen pieces of coarse sugar paper, of a suitable size, stitch them together to form a pad. Make three or four such pads, heat them before the fire, then place the specimen in a sheet of thin paper between two of the pads and place the whole under pressure. Shift the specimens into hot dry pads every day for a few days, and less frequently as the flowers become dry.

FUNGUS ON ORCHIDS: *W. S.* The particular state in which some of your Orchids are now has been known for some years; and experienced growers say that liberal ventilation prevents and drives away the fungus, which is fostered by hot wet air. Mr. W. G. Smith has never seen anything but a Diplodia on it, but he will examine your leaves closely.

LIQUID MANURE: *J. L.* If it is used without being run through a fine sieve, no doubt maggots might follow.

NAMES OF PLANTS: *A. B. C.* Linum grandiflorum rubrum.—*W. K.* 1, Gnaphalium luteo-album; 2, Francoa appendiculata, probably; 3, Mimulus cardinalis; 4, Aconitum Lycoctonum; 5, Epilobium angustifolium; 6, Campanula glomerata.—*T. S.* Oncidium Janeriense.—*J. Leman.* 1, Geranium pratense, fl.-pl.; 2, Teucrium pyrenaicum; 3, Anthemis tinctoria; 4, Scabiosa alpina; 5, Achillea filipendulina; 6, Campanula glomerata var. alba.—*T. Smith.* Lespedeza bicolor; Hypericum Scouleri; H. reptans; Spiræa (we are unable to make this out).—*G. E.* 1, Linaria purpurea; 2, Galium verum.—*H. C. R. B.* Lycium barbarum.—*T. M., Edmonton.* Kyllingia monocephala.—*H., Liverpool.* Eryngium alpinum, and Pyrola rotundifolia, var. arenaria. Address quite correct.—*S., Bournemouth.* Dimorphotheca annua.—*W. H., Cirencester.* 1, Pellæa hastata; 2, Nephrolepis cordifolia; 3, Pteris serrulata; 4, specimen execrable—probably Francoa ramosa; 5, Euonymus japonicus variegatus; 6, specimen too bad to name.—*T. G.* 1, Adiantum pedatum; 2, Lastrea tenericaulis; 3, Nephrodium molle; 4, Asplenium lucidum; 5, Polystichum angulare proliferum; 6, too imperfect—probably a seedling Lady Fern; 7, Asplenium Fabianum; 8, Pteris cretica; 9, Adiantum hispidulum; 10, A. Capillus-Veneris, variety; 11, Pteris cretica; 12, Adiantum decorum, apparently, but a poor specimen; 13, Doodia media; 14, D. caudata; 15, Adiantum caudatum. Our correspondent must be moderate in future; we do not undertake to name more than six at a time.—*A. Morrison.* Genista tinctoria flore-pleno.—*W. A.* Bromus asper.

POTATOS ON HAULM: *S. H.* Very common. Often figured in these columns.

REGULAR AND IRREGULAR FLOWERS: *C. M. O.* In both cases the flowers are regular, without any real tendency to irregularity. The appearance you mention is only due to the spirally imbricate arrangement of the petals in the bud.

RIPENING OF GRAPES: *B.* All the time the berries are green they act as leaves do, but when they begin to colour their work changes also. They no longer give off oxygen, but they retain it, and by its aid the acids are partly destroyed, the sugar is more or less changed also by a process of fermentation into alcohol, which latter, uniting with any acid that may be left, forms "ethers," to which the peculiar "bouquet" of wine is due.

SEEDS: *A Young Seedsman.* It is not possible to name the species with certainty, but we can tell you the genera. No. 1 is a Polygonum; 2 is the carpel of a Ranunculus; 3 is Carum Carui, or something very like it; 4 is the seed of an Arenaria; 5 is doubtful; 6 is an Avena; 7, unknown; 8 is a Medicago.

TEST PLANTS FOR CLIMATE: *T. T.* Subject to individual peculiarities, and various other circumstances, we still hold to the belief that the plants themselves are the most reliable thermometers. An elaborate report is in preparation, under the auspices of the Royal Horticultural Society, but in the present financial condition of that body we fear there is no speedy prospect of its publication, which is little less than a misfortune for horticulture.

TWIN CUCUMBER: *W. Williamson.* The occurrence of twin Cucumbers is such an ordinary event that there is nothing to "notice" in connection with them.

VINE: *E. R. H.* The leaves are covered with red spider. As soon as the Grapes are cut syringe them night and morning with cold water, until you have cleaned them. Dip the Ferns in soft-soapy water, mixed at the rate of 4 oz. to the gallon.

WIREWORMS: *H. R. T.* Put some Carrots in the border, and look them over every morning, by which means you will soon reduce them to small numbers.

*** Correspondents are specially requested to address, post-paid, all communications intended for publication to the "*Editor*," and not to any member of the staff personally. The Editor would also be obliged by such communications being *written on one side only of the paper* and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Letters relating to ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the Publisher, and* not *to the Editor.*

☞ FOREIGN SUBSCRIBERS sending Post-Office Orders are requested to make them payable to William Richards, at the post-office, King Street, Covent Garden, London, and at the same time to inform the Publisher at the office of this Journal.

CATALOGUES RECEIVED.

R. & G. CUTHBERT, Southgate, N.—Dutch Flower Roots.

L. SPATH, 154, Köpnickerstrasse, Berlin—Dutch and Other Bulbs.

THOMAS W. ROBINSON, Dennis Park Ironworks, Stourbridge—Boilers, Hot-Water Fittings, &c.

ANT. ROOZEN & SON, Overveen, near Haarlem—Dutch and Cape Bulbs, &c.

IRELAND & THOMPSON, 20, Waterloo Place, Edinburgh—Dutch and French Flowering Bulbs.

COMMUNICATIONS RECEIVED: N. E. B.—W. S.—C. M. O.—J. G. B.—P. J.—D. R. & Co.—P. & S.—J. P.—W. S.—Connon & Reid.—G. P.—H. E.—M. M.—G. C.—C.—C. W. D.—C. B. P.—W. T.—W. B. H.—J. S.—J. A. H.—A. Purdie.—Otago, New Zealand.—L. H, Assam.—E. R., Ghent.—G. L.

Markets.

COVENT GARDEN, July 27.

The bulk of the soft fruit has now reached us, and prices are much firmer. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Cherries, ½-sieve	6	0–16 0	Lemons, per 100	—	5 0– 7 0
Currants, Black, per ½-sieve	—	4 6– 5 0	Melons, each	2	0– 4 0
— Red, per ½-sieve	3	0– 4 6	Peaches, per dozen	6	0–12 0
Figs, per dozen	6	0– ..	Pine-apples, Eng., lb.	3	0– 4 6
Grapes, per lb.	1	6– 4 0	Raspberries, per lb.	0	3– 0 6
			Strawberries, per lb.	0	6– 1 0

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, per doz.	3	0– 6 0	Herbs, per bunch	0	2– 0 4
Asparagus, English, natural, per bun.	7	0– ..	Horse Radish, bund.	4	0– —
— Sprue, per bund.	1	0– ..	Lettuces, Cabbage, per score	1	6– ..
Beans, French, English grown, p. lb.	0	8– ..	Mint, green, bunch	0	4– ..
Beet, per doz.	1	0– ..	Mushrooms, p. baskt.	1	6– 3 0
Cabbages, per doz.	1	0– 2 0	Onions, per bushel	4	0– ..
Carrots, per bunch	0	4– 0 6	— Spring, per bun.	0	6– ..
Cauliflowers, English, dozen	2	0– 4 0	Parsley, per bunch	0	4– ..
Celery, per bundle	1	6– ..	Peas, per qt.	1	6– ..
Cucumbers, each	0	6– 1 0	Radishes, per doz.	1	6– ..
Endive, per doz.	2	6– ..	Rhubarb, per bundle	0	6– ..
Garlic, per lb.	1	0– ..	Small salading, pun.	0	4– ..
			Spinach, per bushel	3	0– ..
			Tomatos, per doz.	2	0– ..
			Vegt. Marrows, doz.	4	0– ..

Potatos.—Kidneys, foreign, 9s.; do., English, 10s.; Rounds, 8s. per cwt.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldii, doz.	12	0–24 0	Ficus elastica, each	1	6– 7 0
Arbor-vitæ (golden), per dozen	6	0–18 0	Foliage Plants, various, each	2	0–10 6
— (common), dozen	6	0–12 0	Fuchsias, per dozen	4	0– 9 0
Balsams, per dozen	3	0– 6 0	Genista, per doz.	8	0–12 0
Begonias, per doz.	6	0–12 0	Gloxinea, per dozen	12	0–18 0
Calceolaria, doz.	4	0– 9 0	Heliotrope, per doz.	4	0– 9 0
Cockscombs, dozen	4	0– 6 0	Hydrangea, doz.	9	0–12 0
Crassula, or Kalosanthes, per dozen	10	0–15 0	— paniculata, doz.	18	0–48 0
Cyperus, per dozen	6	0–12 0	Lilium, in var., doz.	18	0–42 0
Dracæna terminalis	30	0–60 0	Marguerite Daisy, per dozen	9	0–18 0
— viridis, per doz.	12	0–24 0	Myrtles, per doz.	6	0–12 0
Euonymus, various, per dozen	6	0–18 0	Palms in variety, each	2	6–21 0
Evergreens, in var., per dozen	6	0–24 0	Pelargoniums, doz.	6	0–12 0
Ferns, in variety, per dozen	4	0–18 0	— scarlet, per doz.	2	6– 6 0
			Rhodanthes, doz.	6	0–12 0
			Solanum, per doz.	9	0–12 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 blooms	0	2- 0 4	Pelargoniums, 12 sprays		0 9- 1 0
Arum Lilies, per doz.	4	0- 6 0	— zonal, 12 sprays	0	3- 0 6
Bouvardias, per bun.	0	9- 1 6	Pinks, 12 bunches	..	2 0- 6 0
Calceolaria, 12 bun.	6	0-12 0	Primula, double, per bunch	..	1 0- 1 6
Carnations, 12 bun..	3	0- 9 0	Pyrethrum, 12 bun.	3	0- 9 0
Cornflower, 12 bun.	2	0- 4 0	Rhodanthe, 12 bun .	9	0-12 0
Eucharis, per doz ..	3	0- 6 0	Roses (indoor), doz.	1	0- 3 0
Fuchsias, 12 bunches	6	0- 8 0	— (outdoor), doz ..	0	6- 1 0
Gardenias, 12 blms..	3	0- 8 0	— Coloured, doz...	1	0- 2 0
Gladioli, 12 bun. ..	6	0-12 0	— Moss, 12 bun ..	12	0-18 0
— brenchiensis, 12 sprays ..	3	0- 6 0	Spiræa, 12 bunches..	6	0-12 0
Heliotropes, 12 sp. ..	0	6- 1 0	Stephanotis, 12 spr..	3	0- 6 0
Lapageria, white, 12 blooms ..	3	0- 6 0	Stocks, 12 bunches..	4	0- 9 0
— red, 12 blooms..	1	0- 3 0	Sunflower, 12 blooms	1	0- 3 0
Lilium variegatum, 12 blooms ..	3	0- 6 0	Sweet Peas, 12 bun.	3	0- 6 0
Marguerites, 12 bun.	4	0- 6 0	Sweet Sultan, 12 bun.	4	0- 6 0
Mignonette, 12 bun.	1	6- 4 0	Tropæolum, 12 bun.	1	0- 2 0
Pansies, 12 bunches	1	6- 3 0	White Jasmine, 12 bunches ..	4	0- 9 0

SEEDS.

LONDON: *July 26.*—The seed market to-day was exceedingly quiet. New Trifolium, although offered at comparatively low rates, meets at present with but little attention. For sowing Mustard there is a somewhat improved demand. The new Rape seed shows excellent quality. For Canary and Hemp seed full prices are asked. Owing to unfavourable accounts of the growing crops the small quantities of Clover and Trefoil seeds remaining on hand are held for more money. The sale for Linseed is slow. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E C.*

CORN.

At Mark Lane on Monday prices for Wheat ruled *6d.* to *1s.* per quarter under the rates of Monday se'nnight. English flour was unaltered, but foreign showed *6d.* to *1s.* per sack reduction. Maize was dull, and on the week *6d.* lower. Oats met a fair demand, at *6d.* reduction; Beans were up to their value, and Peas were *6d.* dearer. —On Wednesdy Wheat prices tended in favour of buyers, owing to the increased shipments from America, &c. Flour was slow and nominally unaltered; Barley dull; Beans, Peans, and Maize steady, but good Oats weaker, on large shipments.—Average prices of corn for the week ending July 22 :—Wheat, *49s. 2d.*; Barley, *27s. 8d.*; Oats, *24s. 6d.* For the corresponding period last year; —Wheat, *46s. 10d.*; Barley, *27s. 5d.*; Oats, *23s. 4d.*

CATTLE.

At Copenhagen Fields on Monday, with rather larger supplies and a slow demand, prices, except for primest qualities, were barely supported. The sheep and lamb supplies were shorter than last week, and the prices of both were upheld, except, perhaps, for the second qualities of sheep, which in some cases hardly brought late value. Lambs were in moderate demand, and calves dull of sale. Quotations:—Beasts, *4s. 4d.* to *5s. 6d.* to *6s. 2d.*; calves, *4s. 8d.* to *5s. 8d.*; sheep, *5s.* to *6s.*, and *6s. 2d.* to *6s. 10d.*; lambs, *7s.* to *7s. 8d.*; pigs, *4s.* to *4s. 8d.*—On Thursday really prime beasts supported late value, whilst second qualities hardly realised Monday's rates. No appreciable change occurred in the sheep or lamb trade. Calves sold very slowly, but not at quotably lower prices.

HAY.

Tuesday's Whitechapel report states that there were large supplies and a dull trade. Best hay was rather lower. Quotations :—Prime Clover, *120s.* to *140s.*; inferior, *75s.* to *90s.*; new, *90s.* to *110s.*; prime meadow hay, *100s.* to *120s.*; inferior, *55s.* to *90s.*; new, *70s.* to *95s.*; and straw, *30s.* to *63s.* per load.—Thursday's trade was quiet, and prices unaltered. — Cumberland Market quotations :—Superior old meadow hay, *126s.* to *135s.*; inferior, *84s.* to *95s.*; new hay, *70s.* to *105s.*; superior old Clover, *135s.* to *147s.*; inferior, *100s.* to *115s.*; new, *90s.* to *108s.*; and straw, *60s.* to *68s.* per load.

POTATOS.

The Borough and Spitalfields Markets reports state that supplies are moderate and trade steady. Quotations :—Essex Regents, *120s.* to *130s.*; ditto, kidneys, *120s.* to *140s.*; Shaws, *130s.*; Kent Regents, *140s.*; kidneys, *160s.*; Cherbourg rounds, *100s.*; ditto, flukes, *120s.* per ton.—The imports into London last week consisted of :—276 sacks from Dunkirk and 50 bags from Malta.

COALS.

The following are the prices current at market during the week :—Walls End—Hawthorns, *15s. 3d.*; Lambton, *17s.*; Original Hartlepool, *17s. 6d.*; Wear, *15s.*; South Hetton, *17s. 6d.*; Thornley, *15s. 9d.*; Tees, *17s. 6d.*; Hetton, *17s. 6d.*; Hetton Lyons *15s.*

Government Stock.—Consols closed on Monday at 99½ to 99⅝ for delivery, and 99 9/16 to 99 11/16 for the account. Tuesday's figures were 99½ to 99⅝ for both delivery and the account. Wednesday's final quotations were 99½ to 99⅝ for delivery, and 99 9/16 to 99 11/16 for the account. The closing quotations on Thursday were 99⅝ to 99¾, for both delivery and account.

Weeds! — Weeds! — Weeds! — Great success of SMITH'S Celebrated WEED KILLER, the best preparation ever invented for destroying weeds on garden walks and carriage drives. Splendid testimonials
4 gallons, sufficient to make 100 gallons when mixed with cold water, *7s. 6d.*
16 gallons, do. do. do. do. 400 gallons, £1 8s
40 gallons, do. do. do. do. 1000 gallons, £3.
Sent carriage paid. Manufactured only by
MARK SMITH, Chemist, Louth, Lincolnshire
Weeds almost cease to grow where this article has been used two seasons.

GISHURST COMPOUND.—Used by many of the leading Gardeners, since 1850, against Red-spider, Mildew, Thrips, Greenfly, and other Blight, in solutions of from 1 to 2 oz. to the gallon of soft water, and of from 4 to 16 oz as a winter dressing for Vines and Fruit Trees. Has outlived many preparations intended to supersede it. In Boxes, 1s., 3s, & 10s. 6d.

AMERICAN BLIGHT on APPLE TREES CURED by rubbing a wet hard Painter's brush on Gisburst Compound, and working the lather into the infected part.

GISHURSTINE keeps feet dry, softens hard boots, preserves leather, takes a polish. In boxes, *6d.* and *1s.* each.—Wholesale by PRICE'S PATENT CANDLE COMPANY (Limited). Retail by Seedsmen and Oilmen Complaints are made of difficulty in getting Gishurstine. Some leading Nurserymen have put it on their lists, others are requested to do so.

ARCHANGEL and PETERSBURG MAT MERCHANTS and IMPORTERS.—All the usual kinds at reduced rates. Sacks and Seed Bags, new and second-hand, of every description. Raffia Fibre, Netting and Tiffany, Tarpaulins, Rick-covers, Horse-cloths, Ropes, Lines, and Twines. Price LIST on application to J BLACKBURN AND SONS, 4 and 5, Wormwood Street, London, E.C.

Raffia—Raffia—Raffia.

C. E. OSMAN, 14, Windsor Street, Bishopsgate, London, E.C., has just received a consignment of fine quality. Price very moderate.
All HORTICULTURAL SUNDRIES at low prices.

RICK CLOTHS—RICK CLOTHS.
The best and most durable are those made from extra all long Flax Sail Cloth. A quantity in stock, for sale or hire.
SHADING CANVAS, from 2½*d.* per yard, and upwards.
TANNED NETTING, from 1 to 4 yards wide, *1d.* per sq yard.
RUSSIA MATS. RAFFIA FIBRE.
BEST ROLL TOBACCO PAPER.
JAMES T. ANDERSON,
149, Commercial Street, Shoreditch, London, E.

ARCHANGEL and ST. PETERSBURG MATS, RAFFIA, SEED BAGS and SACKS, NETTING and SHADING, &c. Prices on application.

MARQUEES and TENTS, SECOND-HAND GOVERNMENT TENTS, 45 feet round, complete, 35*s.*, suitable for the Garden, Cricket Clubs, &c
W. PETERS, 44, Tenter Street South, Goodman's Fields, E.

HORTICULTURAL SHEET GLASS,
21 oz. Foreign, of the following sizes, in boxes of 100 and 200 feet, 3ds and 4ths qualities always kept in stock:—

14×12	20×12	20×14	20×16	20×18
16×12	16×14	20×15	22×16	22×18
18×12	18×14	18×16	24×16	24×18

Stock Lists and Prices on application.
All descriptions of British and Foreign Glass can be obtained from
GEORGE FARMILOE & SONS,
GLASS, LEAD, OIL and COLOUR MERCHANTS,
84, St. John's Street, West Smithfield, London, E.C.

T. MILLINGTON AND CO.,
43, Commercial Street, E.
PLATE, SHEET, CROWN GLASS.
Horticultural and all kinds of Glass having so much advanced, we are compelled to withdraw our prices, but on receipt of application the prices will be forwarded, but will be only from day to day until the market is in a more settled state. We have some bargains in 21-ounce, from 9×7 to 14×10 and upwards; sizes sent if required. Propagating Glasses, Hand Frames, Cucumber and Horticultural Glass, genuine White Lead, best Linseed Oil Putty, Paints Oils, and Colours.

BELGIAN GLASS for GREENHOUSES, &c.,
Can be obtained in all sizes and qualities of
BETHAM & SON,
9, LOWER THAMES STREET, LONDON, E.C.
B. & Son have always a large stock in London of 20-in. by 12-in., 20-in. by 14-in., 20-in. by 16-in., 20-in. by 18-in , in 16-oz. and 21-oz.; and also large sizes in all qualities for cutting-up purposes, in 200-ft. and 300-ft. cases.

JOHN MATTHEWS, THE ROYAL POTTERY, WESTON-SUPER-MARE Manufacturer of TERRA-COTTA VASES, FOUNTAINS, ITALIAN BASKETS, BORDER TILES, GARDEN POTS, of superior quality, from 1 to 30 inches diameter, stand the frost, and seldom turn green; ORCHID, FERN, SEED and STRIKING PANS, RHUBARB and SEAKALE POTS, &c. Price LIST post-free. Sheet of Designs, *6d* Book of Designs, *1s.*

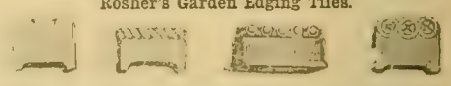
Geometrical Mosaic and Encaustic
TILE PAVEMENTS, for Conservatories, Verandahs, Entrance Halls, &c. Enamelled and Decorated Glazed Tiles, for Wall Linings, Fireplaces, &c.; also Patent Indestructible Terra-cotta Plant Markers. Patterns and Prices sent post-free on application.
MAW AND CO., Benthall Works, Broseley, Shropshire.

DOULTON & CO.,
LAMBETH POTTERY, LONDON, S.E.
VASES, PEDESTALS, FOUNTAINS, GARDEN EDGINGS, &c.,
IN
IMPERISHABLE TERRA COTTA.


Plain and Ornamental Pavings.

Tiles for Lining Walls of Conservatories.
ART POTTERY, including JARDINIERES
AND OTHER
Table Decorations, and Vases, Fountains, &c., for the Conservatory, in
DOULTON WARE, LAMBETH FAIENCE, AND THE NEW SILICON WARE.

Show Rooms, Albert Embankment, S.E.

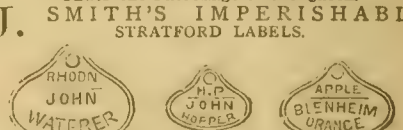
Rosher's Garden Edging Tiles.

THE ABOVE and many other PATTERNS are made in materials of great durability. The plainer sorts are specially suited for KITCHEN GARDENS, as they harbour no Slugs or Insects, take up little room, and, once put down, incur no further labour or expense, as do "grown" Edgings, consequently being much cheaper.


GARDEN VASES, FOUNTAINS, &c., in Artificial Stone, very durable and of superior finish, and in great variety of design.
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Illustrated Price Lists free by Post. The Trade supplied.

ORNAMENTAL PAVING TILES, for Conservatories, Halls, Corridors, Balconies, &c., from 3*s.* per square yard upwards. Pattern Sheet of Plain or more elaborate Designs, with Prices, sent for selection.
WHITE GLAZED TILES, for Lining Walls of Dairies, Larders, Kitchen Ranges, Baths, &c. Grooved and other Stable Paving of great durability, Wall Copings, Drain Pipes and Tiles of all kinds. Roofing Tiles in great variety, Slates, Cement, &c.
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SILVER SAND, fine or coarse grain as desired. Price, by post, per Ton or Truckload, on Wharf in London, or delivered direct from Pits to any Railway Stations. Samples of Sand free by post.
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A liberal Discount to the Trade.

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The above Labels are made of a White Metal, with RAISED BLACK-FACED LETTERS.
The *Gardeners' Magazine* says :—"We must give these the palm before all other plant labels, as the very first in merit."
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Our new CATALOGUE sent gratis on application.
CORRY, SOPER, FOWLER & CO.,
Horticultural Sundries Merchants and Manufacturers,
18, FINSBURY STREET, LONDON, E.C.; and SHAD THAMES, LONDON, S.E.

BY HER MAJESTY'S *ROYAL LETTERS PATENT.*
"ECLIPSE"
CONSTRUCTION and GLAZING of CONSERVATORIES.
Economical, Simple, and Durable No Putty or Perishable Material.
Solely Manufactured by the Patentees:—
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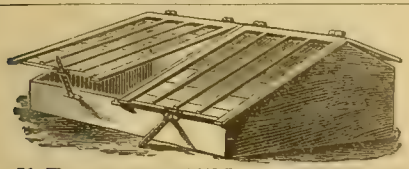
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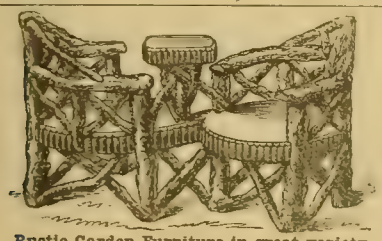


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CASH PRICES—Carriage Paid.

No. 2 size	..	8 ft. long	..	6 ft. wide	..	£4 15 0
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These Frames give greater height in the centre. They are 13 inches high in front, 24 inches high at the back, and 32 inches at the ridge. Front or back lights turn over. Set-opes are provided for ventilating. Are made of the best hard red deal, all painted four coats of best oil colour, the lights are glazed with best 21-oz. English glass. For Testimonials, see our Catalogue, free on application. Carriage paid to any Railway Station in England and Wales, also to Edinburgh and Dublin.
Estimates for Garden Frames, Pit Lights, Sashes, &c.
"Mr. HENRY MCCOMAS, having had 64 ft. of the No. 74 Frame, he considers it very satisfactory."—*Homestead, Dundrum.*

BOULTON & PAUL, NORWICH.



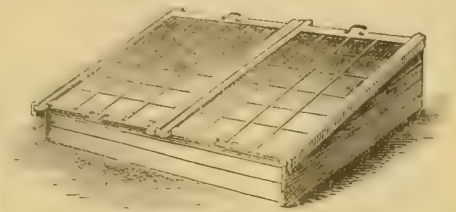
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Garden Seats, Awnings and Tents, Rustic Tables, Chairs, and Flower Stands, Lawn Mowers, Garden Rollers, Water Barrows, Wheelbarrows, Garden Tools, Summer-houses, Sun Dials, Fancy Wirework, Weather Vanes, Hammocks, and all kinds of Garden Furniture at lowest marked prices. *Catalogues post-free.*
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Special DESIGNS and ESTIMATES given for Ornamental CONSERVATORIES, without charge, and for all Horticultural Work of all kinds



GARDEN BOXES and LIGHTS are generally kept in Stock, and WOODEN HOUSES suitable for Store-houses, Tool-houses, &c.
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Cucumber Frames.
R. HALLIDAY AND CO. desire to draw special attention to their Cucumber Frames, of which they always have a large stock, ready glazed and painted. They are made of the best materials, and can be put together and taken apart in a few minutes by any one.
Prices, delivered to any station in England, also Dublin and Belfast:—

	£	s.	d.
2-light frame, 8 feet by 6 feet	3	10	0
3-light frame, 12 feet by 6 feet	5	5	0
6-light frame, 24 feet by 6 feet	10	0	0

The glass is nailed and puttied in. Lights and framing for brick pits at proportionately low prices.
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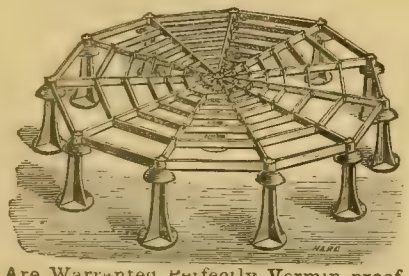
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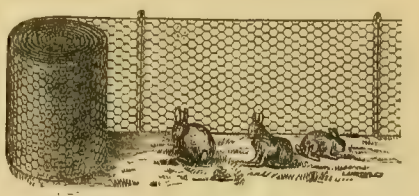
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Are Warranted Perfectly Vermin-proof,
AND WILL
Bear any Weight of Grain that can be placed upon them.
Are so simple in Construction—no Screw, Bolt, or Pin being required—that *an ordinary labourer can put one together in a few minutes without difficulty.*
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N.B.—Orders should be sent at once, to ensure Delivery for the Coming Harvest.

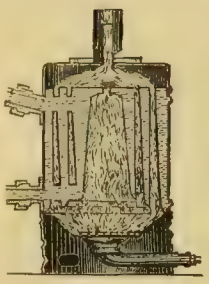
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Automatic, Economic, and Efficient.
Will maintain a uniform temperature of from 12 to 15 hours, and often from 15 to 20 hours, with one small charge of common Gas Coke of the cheapest kind. For economy and efficiency in combination with cleanliness and comfort these Boilers are, beyond the possibility of a doubt, the greatest boon ever offered for the purpose of Heating Conservatories, Halls, and other Buildings, where little attention is required.
Every particular, with most reliable testimonials, given on application to
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With Newly-arranged Air-charging Valves
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Manufacturers of Water Supply Machinery of every description for Wind, Water, and Steam Power, or Animal or Manual Labour, Garden Engines, Pumps, Hose Reels, Hydrants, &c.

ADIE'S PATENT LAWN EDGER.



This Machine, constantly employed, will pay itself in two days. Dr. Hogg in the *Journal of Horticulture* says:—"This Edge Clipper we have tried, and know not which to admire most—its simplicity or efficiency." Mr. Moore writes in equally flattering terms in the *Florist*.
Awarded BANKSIAN MEDAL by the Royal Horticultural Society, May, 1882.
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This useful machine is used for Lawns, Banks, Grass Edgings, Round Flower Beds, and places where the Lawn Mower cannot reach; will trim Shrubs, Ivy, and Creepers. It is not intended to supersede the Lawn Mower, but to supplement its use, and from the many and varied uses to which it can be applied will be found one of the most economical inventions ever offered to the public. It is sent with long handles.

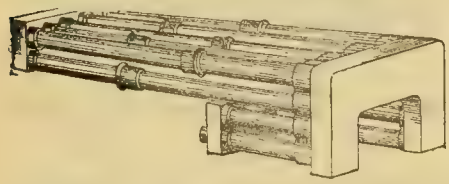
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Unequalled for Simplicity, Power, and Economy.
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As inferior imitations of this now well-known Boiler are being advertised and sold to the detriment of its reputation, C. P. K. & Co. beg to inform Gardeners and the Trade generally that Mr. ROCHFORD has assigned to them the sole and exclusive right for its Sale and Manufacture.

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HOSE—HOSE—HOSE.
PATENT RED-RUBBER GARDEN HOSE.

Stands severe tests of Government Departments, thus proving superiority of quality. Lasts four times as long as ordinary Indiarubber Hose, Lighter in Weight, Greater in Strength, and Cheaper in the long run than any other Hose for Garden Use.

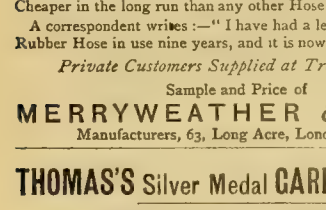
A correspondent writes:—"I have had a length of your Red-Rubber Hose in use nine years, and it is now as good as ever."

Private Customers Supplied at Trade Prices.

Sample and Price of
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THOMAS'S Silver Medal GARDEN SEATS.

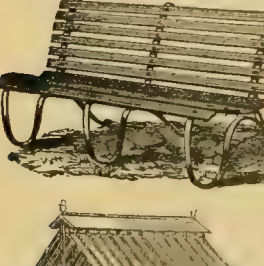
A large collection of Garden Seats, Rose Temples, Tables, Archways, Flower Stands, and other Horticultural Requisites on view at the Agricultural Hall. Stands Nos. 79, 80, and 163.



GARDEN SEAT
No. 366.

5 feet, £1 4 0
6 feet, 1 7 6
7 feet, 1 10 0

Under 5 feet, 2 iron supports; 6 feet and above, 3 iron supports.



GARDEN SEAT,
with awning.
No. 383.

Extreme length, 6 ft. 6 in. Price, £5 10s. Storage Box extra, 8s. Top or Roof to protect awning, as illustrated, 10s. extra. Without awning £3; without awning or arms, £2 15s.

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Threadneedle Street, E.C.; Charing Cross, S.W.; Oxford Street (corner of Vere Street), W.
FIRE.—Established 1710. Home and Foreign Insurances at moderate rates.
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This Day is Published,
THE FORESTER:
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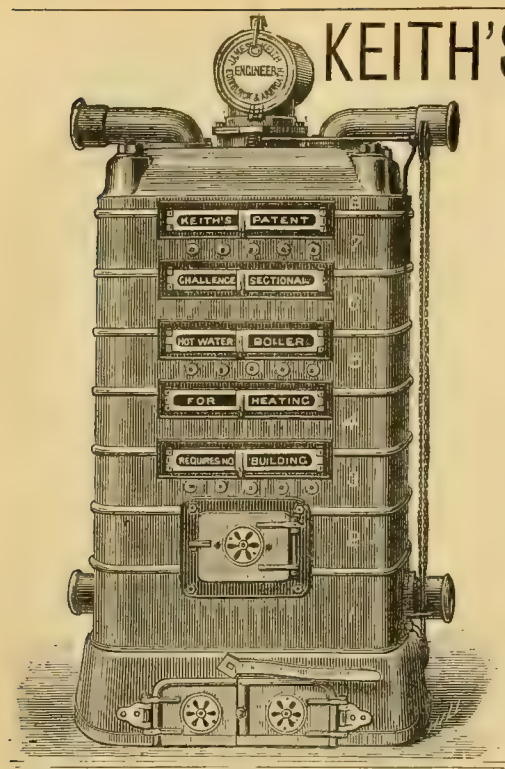
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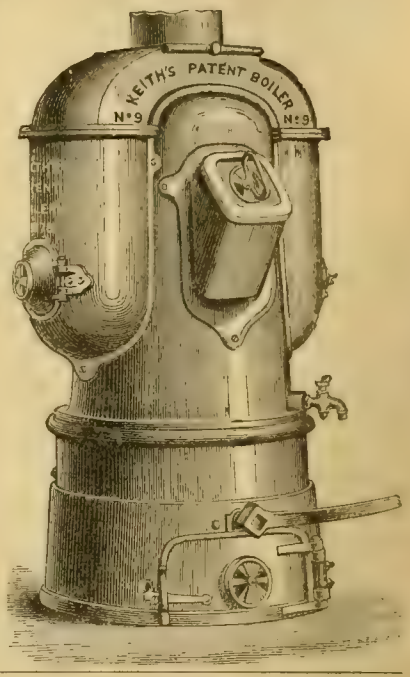
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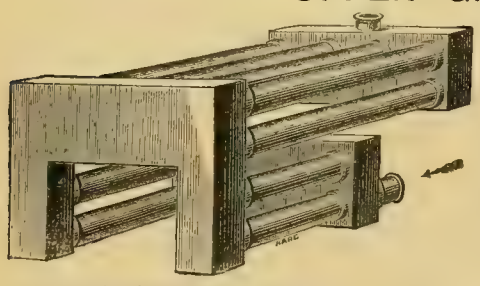
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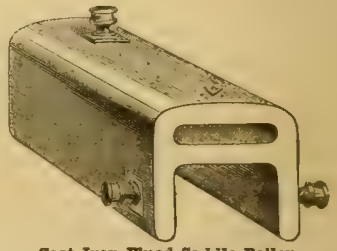
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THE

GARDENERS' CHRONICLE.

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ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.
NOTICE!—COMMITTEES' MEETINGS, Fruit and Floral, at 11 A.M.; General Meeting for the Election of Fellows, &c., at 3 P.M. On TUESDAY NEXT, August 8, last day of the EXHIBITION of the BRITISH BEE-KEEPERS' ASSOCIATION. Admission 1s.

SUTTON and CHEAM FLORAL and HORTICULTURAL SOCIETY.
The NINETEENTH ANNUAL EXHIBITION of the above Society will be held in the Grounds of Lower Cheam House (by the kind permission of H. L. Antrobus, Esq.), on WEDNESDAY, August 16, when Prizes will be distributed for Plants, Cut Flowers, Fruit and Vegetables, to Cottagers, Amateurs, Gardeners, and Nurserymen. Band of the First Surrey Volunteers is engaged for the occasion. The Show will be opened at 2 o'Clock for Subscribers on presenting their Tickets, and to the Public on payment of 2s. 6d. Admission after 4 P.M. 1s. Children half price. All produce for exhibition must be entered three clear days before the Show at the Office of Mr. W. R. CHURCH, next the Bank, High Street, Sutton; and must be exhibited on Plates or Dishes provided by the Competitors, placed in the tent by 9 o'Clock on the Morning of the Show, ticketed securely, and remain until the close of the Show at 7 o'Clock, and then removed.

MAIDENHEAD HORTICULTURAL SOCIETY.
The ANNUAL SHOW of this Society will be held on THURSDAY, August 17, in Kidwell's Park, Maidenhead. Upwards of TWO HUNDRED PRIZES. Entries close August 10. Schedules, with full particulars, may be obtained on application to Mr. H. J. MOUNT, or M. A. H. NEVE, } Maidenhead.

SANDY and DISTRICT FLORAL and HORTICULTURAL SOCIETY (open show).
The FOURTEENTH ANNUAL EXHIBITION of Flowers, Fruit, Vegetables, Cage Birds, Poultry and Pigeons, will be held at Sandy, Bedfordshire, on FRIDAY, August 25. Prizes ONE HUNDRED and SEVENTY POUNDS. Ten Stove and Greenhouse Plants in flower — 1st Prize, £10; 2d Prize, £6. Schedules on application to
WILLIAM GREEN, Secretary, Sandy.

SOUTH SHIELDS CHRYSANTHEMUM and WINTER FLOWER SHOW.
The above Show will be held in the Public Library Hall, on WEDNESDAY and THURSDAY, November 29 and 30. A liberal Prize Schedule is offered. Entries Close on Saturday November 25. For further information, apply to
BERNARD COWAN, Hon. Sec., South Shields.
N.B.—In No. 8, read "Japanese" in Prize List.

1883. THE TWENTY-FIFTH ANNUAL GRAND FLORAL FÊTE at YORK will be held on JUNE 13, 14, and 15, 1883. Schedules will be published early in January next, and may be had on application to JOHN WILSON, Secretary, 13, New Street, York.

THE BEST CABBAGES.
CARTERS' HEARTWELL EARLY MARROW.—Pronounced to be the finest Early Cabbage in cultivation. In sealed packets only per oz., 2s.; per pkt., 6d. and 1s. post-free.
CARTERS' HEARTWELL CABBAGE was awarded the First Prize in a Competition of 20 varieties at the Great International Exhibition held in Manchester, August 24, 1881.
ENFIELD MARKET.—A very select stock; one of the best for main crop. Per oz., 10d.
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CARTERS' MINIATURE DRUMHEAD.—A small, early, globular-shaped garden Cabbage, of delicate flavour and good colour. Per oz., 1s.; per pkt., 6d.

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CARTERS' NEW GOLDEN QUEEN ONION.—In shape somewhat resembling White Queen, but even more symmetrical than that variety. Price, in sealed packets, 1s. 6d. and 2s. 6d., post-free.
CARTERS' NEW SILVER BALL ONION.—A very distinct and handsome silver-skinned Tripoli Onion; flavour mild and delicious. Price, in seale1 packets, 1s. 6d. and 2s. 6d.
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NEAPOLITAN MARZAJOLA.—A beautiful silvery-white-skinned variety; a capital keeper. Per oz, 1s. 6d.
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By Royal Command to the Prince of Wales,
237 and 238, HIGH HOLBORN, LONDON, W.C.

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BUDDENBORG BROTHERS, BULB GROWERS, House Bloemswaard, Hillegom, near Haarlem, Holland. Wholesale CATALOGUE now ready, and will be sent, post-free, on application.

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Selection of 100 good showy varieties for 25s.
R. SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

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BULL'S choice PRIMULAS (alba and rosea), Herbaceous CALCEOLARIAS and choicest CINERARIAS.—150,000 of the above at 1s. 4d. per dozen; 7s. per 100; 60s. per 1000, all good, strong, and healthy. Terms cash with all orders.
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STRAWBERRIES.—Strong healthy PLANTS from Ground, also in pots, are now ready. Descriptive and Priced List of all the best kinds will be sent post-free on application.
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BRUSSELS SPROUTS, 3s. per 1000.
Packages 3d. per 1000 extra. Order of
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SUTTONS' AUTUMN LIST OF SEEDS. Post-free on application.
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THE QUEEN'S SEEDSMEN,
And by Special Warrant to the Prince of Wales,
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To the Trade only.
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Valuable Imported Orchids.—Special List, No. 69.
THE NEW PLANT AND BULB COMPANY beg to inform their Friends that the above NEW LIST is just published, and will be sent post-free on application. Lion Walk, Colchester.

CREEPERS for WALLS, TRELLISES, &c., in great variety. See Descriptive LIST. Most of these plants being in pots, may be moved now.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Hyacinths, Tulips, Crocus, Lilies, &c.
C. G. VAN TUBERGEN, JUN., Haarlem, Holland.—Wholesale CATALOGUE now ready, and may be had free on application to
Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, London, E.C.

Tea Roses.
THE LIVERPOOL HORTICULTURAL COMPANY (JOHN COWAN), Limited, The Vineyard and Nurseries, Garston, near Liverpool, have a splendid stock of TEA ROSES in all the leading varieties.
LIST free. Price to the Trade on application.
Also a large stock of GRAPE VINES.

EIGHTY THOUSAND CLEMATIS, in Pots, of all the finest double and single varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants.
Descriptive LIST on application.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

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ELSTER AND KOLLMANN, Lubeck, near Hamburgh, Germany, beg to offer the above, for Forcing. Single Crowns, 3-yr. old, extra fine roots, 32s. per 1000, cash; or 34s. per 1000, terms three months.

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Also a large stock of TEA ROSES.

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N.B. Plants grown specially for English Trade.

CUT ROSE BLOOMS and BUDS, for Budding, of very fine quality, H.P. and Teas, 6s. 6d. per 100. Package free. Cash with order.
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Notice.
MR. W. LOCKYER begs to inform his Friends and the Trade generally, that, owing to the death of his late employer, Mr. R. A. OSBORN, of the Fulham Nursery, he has
RESIGNED HIS POSITION AS TRAVELLER, &c.;
and requests that all communications be addressed,
36, LANSDOWN PLACE, HOVE, BRIGHTON.

SALES BY AUCTION.

Canonbury, N.

CLEARANCE SALE, the Land being required immediately for Building.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Boff to SELL by AUCTION, on the Premises, The Nursery, Douglas Road opposite Canonbury Station, North London Railway, on FRIDAY, August 18, at 12 o'Clock, the whole of the STOVE and GREENHOUSE PLANTS, imported ORCHIDS in good condition, PANCRATIUMS and CRINUMS; also the erections of Twelve GREENHOUSES and PITS, two Saddle BOILERS, powerful VAN HORSE, &c.

May be viewed. Catalogues had on the Premises, at 203, Upper Street, Islington; and of the Auctioneers, 8, New Broad Street, E.C.

Dutch Bulbs.—Special Trade Sale.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Mart, Tokenhouse Yard, City, E.C., on MONDAY, August 21, at half-past 11 o'Clock, an extensive consignment of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from Holland, specially selected and lotted to suit the Trade and other large buyers.

Catalogues at the Mart and 8, New Broad Street, E.C.

Wednesday Next

IMPORTED ORCHIDS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, August 9, at half-past 12 o'Clock precisely, by order of Messrs. Shuttleworth, Carder & Co., a grand lot of imported plants of LYCASTE SKINNERI, in grand masses and splendid coudition; ODONTOGLOSSUM CRISPUM (ALEXANDRÆ)—these are especially fine, of the broad bulb type; ODONTOGLOSSUM PULCHELLUM MAJUS, CATTLEYA TRIANÆ, ONCIDIUM CAVENDISHI, &c

On view morning of Sale, and Catalogues had.

Thursday Next.

CATTLEYA PUMILA, PINELLI, DAYANA, and MARGINATA.

MR. J. C. STEVENS has received instructions from Mr. F. Sander to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, August 10, at half-past 12 o'Clock precisely, the finest importation ever offered of CATTLEYA PUMILA and its varieties. It is, owing to its very easy culture, fine habit, and showy flowers, one of the best of the genus; its coming into flower late in autumn, when few Orchids are in bloom, and its very lasting properties, enhance the value of the species. The consignment is in altogether remarkably fine order, every leaf being sound and firm, and the pieces having unbroken eyes. The same Sale will contain other valuable consignments, such as a splendid lot of ONCIDIUM MARSHALLIANUM and CYPRIPEDIUM IRAPEANUM, &c.

On view morning of Sale, and Catalogues had.

Highly Important Sale of Orchids.

MESSRS. SMITH AND DEWAR, 79, George Street, Edinburgh, beg to intimate that they have been instructed to SELL by AUCTION, on THURSDAY, September 14, at 12 o'Clock noon, a very valuable lot of SPECIMEN ORCHIDS, the property of Alex. Paterson, Esq., M.D., Bridge of Allan, whose houses are getting too crowded, and is thus compelled to sell some of his larger specimens to make room. The plants offered are in perfect health, and are worth the attention of all Orchid buyers. They consist of specimen Vandas of the best varieties of tricolor and suavis, Cattleya Warneri, with 79 bulbs and nearly 30 inches across; Cattleya labiata, true Cattleya Trianæ Symei, Cattleya Mendelii, "Boyd's var.;" Aërides suavissmum, original var.; A. Reichenbachii, Chysis bractescens, largest known plant; a splendid Anthurium Scherzerianum, Veitch's var., nearly 15 feet in circumference, &c.

There will also be SOLD, same day and place, a very valuable consignment of ORCHIDS, the property of Mr. Sander, St. Alban's, consisting of Cypripedium Spicerianum, Cattleya Sanderiana, a lot of very rare Masdevallias, such as M. Macrura, M. Winniana, M. Roezlii, &c. Catalogues will be issued shortly, and any one omitted can have one sent by applying to Mr. WM. THOMSON, Jun., Clovenfords, by Galashiels, N.B., who has charge of the sale, and who will also be glad to execute commissions for any one who is unable to attend.

To Nurserymen, Seedsmen, Florists, and HORTICULTURAL BUILDERS.

FOR IMMEDIATE SALE, Business, Goodwill, and Premises situate at Leytonstone, Essex. Pleasant position. Ready-money Trade. Fine opening for capital. Dwelling-house and Shop. Lease nineteen years, Rental £50. Stock and Fixtures, &c. Also NURSERY GROUNDS, comprising two excellent Greenhouses and Pit, and Working Stock of a comprehensive description. Annual rental, £28.

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TO BE DISPOSED OF, an old-established SEED BUSINESS, in a large Lancashire town. Amount required, about £400.

Apply to SEED TRADE, Nutting & Sons, 60, Barbican, London, E.C.

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For further particulars apply to Mr. G. B. HILLIARD, Auctioneer and Estate Agent, Chelmsford.

SMALL NURSERY BUSINESS.—Stock . be sold by valuation. Some purchase money can remain. J P, *Gardeners' Chronicle* Office, W.C.

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TO LET on LEASE, with Immediate Possession, that desirable and well appointed NURSERY, called Springfield, situated in the suburbs of St. Helier's, containing about 1½ acre, with Dwelling-house, Plate-glass Shop Front, 340 feet of Glass, part planted with Vines, with Pits, Frames, and all necessary Utensils, the property of the late George Gibb. Stock to be taken at valuation.

Apply to G. BENEST, Estate Agent, Queen Street, Jersey; or to J. E. SAUNDERS, Winchester House, Winchester Street, Jersey.

Nursery Gardens, Truro, Cornwall.

TO BE LET, for a Term from Michaelmas next, all those old-established Nursery Gardens known as Treseder's Nurseries, situated within the Borough of Truro, late in the occupation of Mr. H. C. Browne, containing in the whole 7½ acres of land. There is a good cottage on the premises, and a large walled garden, together with Greenhouses, Forcing Pit, and Potting Sheds. The gardens are well sheltered, and have a good aspect; and the soil is of excellent quality for nursery purposes.

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For particulars address R. S., Robert Cooper, Esq., Seed Merchant, 90, Southwark Street, London, S.E.

THE NURSERY and SEED BUSINESS of the late Joseph Tremble, of Penrith, lately purchased by Messrs. Hurst & Son, of London, has been SOLD BY THAT FIRM to Mrs. ELIZABETH TREMBLE, Widow of the late Joseph Tremble, who will continue to carry on the business under the old and familiar style of

JOSEPH TREMBLE AND SON.

Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at 8, New Broad Street, E.C.

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Various Specimens of KERB or EDGING, PULHAMITE PERMANENT GRAVEL PATHING for GARDEN, TERRACE and other WALKS and FLOORS, to be seen at the Horticultural Company's, Regent Street, W.; at The Orchard, Philip Lane, Tottenham; and at our Brixton Depot there is the greatest variety of the above to be seen; also at Agricultural Exhibition till August 5. DURABILITY GUARANTEED.

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LAPAGERIA ALBA, well-rooted plants, 10*s.* 6*d.*, 15*s.* and 21*s.* A few extra specimens, size and price on application.

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Cheap LIST of the above, which are all in splendid condition. List free on application. Terms, cash. Orders of £1 and upwards delivered free to any part of Metropolitan District.

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BOUVARDIAS, exhibited at the Great Horticultural Show at Manchester last August, were from JOHN HOOLEY'S,

Nurseryman, &c., Edgeley Road, near Stockport,

who has this year a large stock of fine healthy plants of the best varieties. Prices on application.

Dutch Flowering Bulbs.

DOWNIE AND LAIRD have to intimate that they have posted their Annual CATALOGUE of Dutch Bulbs to their Customers, and any one omitted can have a Copy upon application.

DOWNIE AND LAIRD, Nurserymen and Seedsmen, 17, Frederick Street, Edinburgh.

Bulbs—Bulbs—Bulbs.

SEGERS AND CO., BULB GROWERS, Lisse, near Haarlem, Holland, are now booking orders for Dutch Bulbs of every description. Samples may be had from yellow Crocus, Scillas, Snowdrops, Tulips, &c., free by post.

CATALOGUES may be had free on application. No Auction Sales or Retail Trade supplied, but the Wholesale only.

☞ Please observe name and address.

BELGIAN STOCK of FORCING PLANTS of the Ornamental Plant Nursery of Ghent.

AZALEA INDICA and HOLLIES with buds, CAMELLIAS with buds, DEUTZIA GRACILIS, HELLEBORUS NIGRA, SPIRÆA JAPONICA and PALMATA, &c. CATALOGUE free on application. Send Orders directly to JULES DE COCK, Nurseryman, Ghent, Belgium.

To the Trade Only.

TEA ROSES, on own roots, extra strong, out of 4½-inch pots, £2 per 100, for cash.

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STRAWBERRY PLANTS.—The best: Amateur, British Queen, Crimson Queen, Dr. Hogg, Duc de Malakoff, Duke of Edinburgh, James Veitch, Lucas, President, Sir Harry, Sir Joseph Paxton, Viscomtesse H. de Thury, &c., from 3*s.* per 100; potted, 12*s.*

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THE

Gardeners' Chronicle.

SATURDAY, AUGUST 5, 1882.

NUNEHAM PARK.

NUNEHAM Park, the seat of Colonel E. W. Harcourt, M.P., enjoys the credit of being one of the most beautiful in Oxfordshire, or England, and the view of the Thames valley, including the Berkshire side—for the Thames here is the boundary between the counties—has been praised as pre-eminent by Brown and Mason, who laid out the garden, and by others. I read in Mr. Alfred Rimmer's *Pleasant Spots Round Oxford* that the founder of the Harcourts was one Bernard, who was related to the royal blood of Saxony, and received Harcourt, a pleasant town near Falaise, from Rollo. This reminds me of the Percies, who also took their name from a foreign town, and claimed royal derivation and alliances. For his services at Hastings, Robert Harcourt received Stanton, near Oxford, now known as Stanton Harcourt, the oldest seat of the family, though Nuneham is the chief seat—both belonging to Colonel Harcourt. Sir William, the Home Secretary, being his younger brother, dubbed knight when appointed to the post of Solicitor-General. Many lawyers and soldiers have graced the line of Harcourt, and among them was a Parliamentarian General known to his soldiers as "William the Conqueror." This, to Sir William, may seem a presage, and he may yet "stoop to conquer."

The Lord Harcourt who stands prominently among the distinguished men of his family won his peerage, and curiously enough was the first Lord Chancellor of England, the earlier holders of the Great Seal having been called Lord Keepers. The title of the first Lord Harcourt, who was born in 1660, and lived to change his Tory politics and become a Hanoverian, was handed on till 1830, when it became extinct at the death of the last Earl of Harcourt, and Edward Vernon, his maternal nephew, the Archbishop of York, then succeeded to the family estates and assumed the name of Harcourt.

I will describe my walk with Mr. Watson, the head gardener, and the chief objects of interest at this famous and delightful seat, seriatim, if not verbatim. The first fact I observed in the first forcing house we entered was the most prolific, sweet, and sugary Brown Ischia Fig—a little Fig rivalling in excellence the still smaller fruit which I remember at Petworth, and which Lord Egremont, I think, brought from Egypt. In a lean-to forcing house with 95 linear yards of fruit trees planted on the back wall, Mr. Watson mentioned that a lean-to house with the back wall planted is as good as another, except for early crops, but he considers that his Peaches would ripen a fortnight earlier if they were planted in front under the glass. There are five vineries, admirably managed, and 8 acres of kitchen garden walled in by Earl Harcourt, so that the groundwork of a great establishment exists, and what has been may be again. The pleasure grounds extend over 40 acres, the park covers 1200 acres. Horace Walpole said of this delightful long-viewed Thames-side residence:—"Nuneham

is not superb, but so calm, *riant*, and comfortable, so live-at-able, one wakes in a morning on such a whole picture of beauty." This is very well, but look from the terrace down the river valley to that tall church spire of Abingdon 4 miles distant—not even the word-painting of Burns or Scott could portray it; and look 6 miles up the valley to the spires and towers of Oxford piercing the blue mist of this summer day, or across to Bagley Wood, beloved of Dr. Arnold for its walks and view of the city; or make out the White Horse at 18 miles—only the pencil can do such a landscape justice. So in passing round the grounds I shall merely reflect, as in a glass, the facts of Nuneham—specimen trees, Brown's Walk, groves, grottos, and moral verses; if there are any that are not moral, written as some of them were in the time of Pope, we will not reflect them. So we shall produce an amended Nuneham.

The grounds are creditable to Capability Brown. There is nothing to obscure the fine view before the principal windows; a delightful lawn flanks one side of the house, and extensive shrubberies with pleasant walks the other. Clumps of choice Rhododendrons make their flowering month in May and June the most gorgeous period of the year.; but many kinds of good old shrubs, the Magnolia tripetala, or Umbrella tree, conspicuous among them, besides some tall Firs and good Beeches, give the lawn pleasing shade and covering. A grotto and rockwork and an artificial stalactite cave, out of sight, of course, and a characteristic freak of Brown's, must have assisted him in expending his employer's money. Other shrubs and specimens on the lawn, some of which effectually conceal Brown's folly, are those incomparable plants for hardihood and durability, the Holly and the Yew, a fine Catalpa, a Plane, with a girth chin-high of 8 feet 5 inches, and only one defect, the disorderly shedding of its leaves upon the lawn. I must also mention the Beeches and a handsome specimen of a very handsome and curious shrub, Rhus cotinus.

In the shrubberies we encountered some very large Stone Pines, the bark exceedingly rugged in one case on the south side of the trunk, and smooth by comparison on the opposite side, but other specimens of the same tree did not exhibit this peculiarity, and we could form no theory on the subject. A little further on we reached a seat inscribed with poetry descriptive of the spot. Oxford and Abingdon spire can both be seen through long narrow vistas cut through the foliage, and converging to the seat. The verses must be abridged, being but middling in merit, not immoral, but feeble. They commence—

> "Fair Quiet, have I found thee here,
> With Innocence thy sister dear!"

Presently, at the furthest end of the shrubberies, we reached a point of vantage where the spires of Oxford were seen, as from the house, across 7 miles of landscape, full of the life of village and homestead, well watered by our largest river and its feeders, and by dripping skies. It is a landscape green with grass and heavy timber, and grey with the tints of arable fields, and of houses and farm buildings. Whitehead's Oak stands at this corner with his memorial urn, and some lines by Mason. The Gaultheria Shallon, borrowed by us from North America, I believe, where its berries may be eaten, thrives and ornaments the slope. The Carfax Hill, a part of the park which picnic parties from Oxford delight in, is just beyond this spot, and on it stands the ornamental conduit, which was removed here from the top of the High Street, Oxford, in 1798. Brown's Walk leads from here to the house, and here is one of the oldest specimens of Pinus Sabiniana, with its light green foliage, and long, slender leaves; and here, too, is an example of the skilful covering of a bare place under the trees by the Periwinkle, which may not blossom, but is green, and bears the shade.

The old English Elm is the characteristic tree of the Park, and the first we measured, in that part of the large park which is fenced for the deer, measured 17 feet in circumference at 9 feet from the ground, and 117 feet in height. It is a perfectly well-proportioned "stately Elm," and might appropriately be named the "Harcourt Elm." We measured one afterwards on the lower ground below the slope and near the river, not far from the Rectory and the agent's house, and its girth, too, reached 17 feet, but the tree was not so tall nor so noble in shape. In this large, well-planted park, there are many other grand trees, but I believe the big Elm, which I have ventured to name, is the best, and contains the most timber. About a mile from the house, near the gates opposite to the Abingdon side, there is a grove, fenced and well sheltered, where Conifers of large size flourish, as at Dropmore. We ascertained the size of some of the specimens, by measuring them at 5 feet from the ground, and we took the exact height of several of them, estimating the rest. The short list here given includes Abies nobilis, 6 feet 2 inches by 60 feet; Pinus ponderosa, 7 feet by 70 feet; Cedrus atlantica, a fine growing tree of 55 or 60 feet, singularly blue in tint; a very large Picea Menziesii, whose prickly foliage was perfect in the early summer, while, by the middle of July, it has become brown, and the tree, the pride of the Pinetum, seems striken by death. The size of the doomed tree is 9 feet by 90 feet. Two other Spruces, the Douglas and the Hemlock, are thriving well, also Pinus Lambertiana and P. Cembra; while the tender Cephalonica seems quite at home.

The high-handed Harcourts of former times—not higher than other people, perhaps, except in stature—objected to the site of the village, which stood among the trees, just beyond the lawn, so near the house that the first Lord Harcourt might at any hour of the morn hear other chanticleers besides his own. He, therefore, moved the village to a spot beyond the Park on the Oxfork road, leaving the church, which, however, has just been closed, the reigning Harcourt having built a new one. The ground seems rich where the village stood, and the shrubs on the sites of the cottage gardens grow luxuriantly. I was thinking how many loves and lives had begun and ended on this spot, and how industriously the cocks and hens used to scratch here, when some verses met my eye under a great Elm. An inscription heads the poetry, and explains that the tree was planted by "Barbra Wyatt, who begged to be allowed to remain in her old home, a cottage which stood near this tree, when the village of Nuneham Courtney was removed. Her wish was complied with, and her cottage was not pulled down till after her death in 1760." The verses speak of her and her Colin and her happy life—

> "And distant Oxford, though she saw its towers,
> To her ambition was a world unknown."

And they tell of her content—

> "And good Queen Anne for aught she cared might reign,
> For what had she to hope and what to fear,
> Blest with her cottage and her fav'rite tree!"

The verses end triumphantly for Barbra, "Ye great and rich," says the poet—whom I regret to be compelled to abridge considerably—

> "She found that happiness you seek in vain."

Another member of this ancient family, Simon, Lord Harcourt, established an order of merit among his tenantry, as in the village *fêtes* in the North of France. Seated on a high dais in the village church, he and Lady Harcourt distributed the rewards to the best conducted of the villagers, whose names, with the letter "M.," which might stand for "mooncalf," though intended to indicate "Merit," were painted on the walls of the church. In any competition of that kind I think the rich as well as poor should compete. *H. E.*

THE SUBTROPICAL GARDEN.

SINCE the landed interests of the country have been affected by recent bad harvests, and depression in other branches of rural industry, garden expenses have been very considerably reduced. The flower garden and ornamental grounds being that portion of a garden establishment upon which much is expended, and which yields no compensating return, at any rate nothing of commercial value, is the first department upon which the hand of the economist is most severely felt, and, unfortunately, being a conspicuous feature in a private demesne, the *prestige* of a place is more or less bound up with the status of the flower and pleasure garden. Moreover, the influence attaching to a highly kept orderly garden extends far beyond its own private boundary. Who that is acquainted with life in rural districts, who knows anything of the habits of the lower or working classes, can have failed to observe, that where the gardens at the Hall or the Castle are kept in a high state of cultural order, the gardens of the lower classes in the neighbourhood partake in some degree of the same character. If, then, this influence for good is a reality, as it undoubtedly is, it is to be hoped that gardening generally, and more especially that branch of it which has a refining and elevating influence upon the middle and lower classes, will not be allowed to degenerate to what it was when Kalmias, Rhododendrons, and a few scrubby herbaceous plants were considered enough to satisfy the ambition of the flower gardener.

During the last decade great advances have been made, not only in the numbers of plants now used, but also in the methods of arranging or grouping them in the flower garden. We are coming nearer to a point which reflects art in our style of arranging plants, and in our methods of blending colours, which is of equal importance as regards producing effects which are changeful and cheerful as well as pleasing to the eye, and attractive to cultured and refined tastes. The long lines of yellow Calceolarias, scarlet Pelargoniums, and Verbenas have departed, and in their places have sprung up those groups of subtropicals and carpet beds which are the pride and the admiration of British horticulturists. But there is still something left undone—something to be achieved for the general good, which will benefit horticulture, as well as those who have its interests at heart. We depend too much upon the common herd of bedding plants for the embellishment of our flower gardens and grounds. We propagate far too many Pelargoniums and other plants in the autumn, which take up much valuable time and space, to say nothing of wintering them, and giving them that attention which is absolutely necessary to their well-being. We have proved to our own satisfaction that a garden requiring from 40,000 to 50,000 bedding plants of the ordinary type to plant it can be made more effective with several thousand less plants by introducing more of the subtropical element into our arrangements.

And here the commercial side of the question comes to the surface. If an equally satisfactory display can be produced in the flower garden without entailing the labour and cost of so much autumn propagation and winter keep, what is to take the places of the discarded plants? Well, it has been suggested that more of the subtropical element should be introduced, and again the question crops up as to the relative cost. True, such plants as Pelargoniums, Calceolarias, and such-like, cost only the trouble of propagating them and keeping them through the winter; but the great bulk of the subtropicals require neither until the spring, and for this reason are much cheaper, while one plant of the latter goes as far—in regard to covering space—as six of the former. Of course there must be provision made for a groundwork where subtropicals are planted at wide distances apart; but the majority of these may also be

raised in the spring from seeds or otherwise. In order that our remarks may not appear in any sense theoretical, we will give a few illustrations of how this will be accomplished.

We begin—say in February—to raise plants from seeds of the following subjects, which are popular for the subtropical garden, viz., Cannabis gigantea, Solanum marginatum, and other varieties; Castor-oils, both green and bronze colour; Zea japonica variegata, yellow Abutilons, the Australian Blue Gum tree, Eucalyptus globulus; Wigandia Caracasana, such plants as Cannas, Chysanthemum fruticosum, and others being easily increased either by division of the roots or from cuttings. In the above list nothing is mentioned which is not easily obtained by any one. Subtropicals of the rarer and more costly kinds are omitted, because they are not within the reach of the masses. But it is not always the intrinsic value of a plant that makes it attractive. The contrary is indeed often the case, and those finer touches which represent Nature most faithfully are often afforded by a plant that only costs a few pence. A bed of Eucalyptus globulus with a groundwork of Chrysanthemum fruticosum costs but a mere trifle as regards the plants. So in like manner a bed of Abutilons having a groundwork of light and dark Petunias is charming in the extreme, and is equally cheap. And examples might be multiplied to infinity—as, for instance, Wigandias mixed with Gladioli, Cannas with golden-coloured Fuchsias and Dactylis glomerata variegata, green Castor-oils with Veronica Andersoni variegata and crimson Verbenas, and so on. Those mixed beds—apart from the cheapness of the material—would be quite a new feature in many large gardens in the country. The admixture of fine foliage, of graceful habited plants, would raise the tone of flower garden arrangements, and render them more pleasing and interesting to employers, while there would be still plenty of room left for those dwarfer gaudy subjects which have hitherto been too largely employed.

During the present month gardeners of every grade will be concerting plans for future arrangements. A great many are afforded the opportunity of visiting the London parks once a year, and in them will be found an increase in the variety of the plants, new designs, and new styles of arrangement, which cannot fail to be both interesting and instructive to country gardeners. For the coming year, then, those who will may slacken speed, may relieve themselves of a part of their burden, and by good generalship contrive to raise a great many more plants in the spring, and fewer in the autumn.

BROADGATE.

A GARDEN possessing great variety and much that is interesting is that of Broadgate, the seat of Colonel Hibbert, near Barnstaple. The grounds surrounding the mansion are chiefly remarkable for the number and variety of choice trees and shrubs which they contain, and the beautiful views which are obtained of the surrounding country. From the south front there are pretty peeps in the direction of the River Taw—one of the principal rivers in Devonshire—Cotton Hill, Bradiford, and St. Paul's—all of which are considered notable places in the neighbourhood. The wall facing the south lawn is covered with Magnolia grandiflora and various creepers, and the conservatory extends from the southern to the northern extremities of the mansion. This conservatory—apart from the style in which it is constructed, and the manner in which the roof is festooned with creepers—is further conspicuous for its collection of plants, of Palms, Tree Ferns, and flowering plants in variety. The irregular promenades through the three wings of the building from south to north, no doubt tend to awaken a feeling of admiration in the mind of the visitor, and the drooping Tacsonias from the roof, and the specimen Ferns situated at the angles of the building, are agreeable to the eye as being something pleasing and distinct from ordinary conservatory arrangements. In order to reach the flower garden, which is situated at the north side of the house, the visitor proceeds westwards, and curves to the right through a natural arch of living trees by which the flower garden is entered.

Upon the right of the arch (and between it and the flower garden) there is a hardy fernery with a fountain in the centre, in which Mr. Parsons, the gardener, takes a great interest. There is a verandah overlooking the flower garden, and at one side of this verandah a room has been erected, from which there is a full-length view of the flower garden. In this garden there are vineries where black and white Grapes are well grown, especially Muscat of Alexandria, which are bearing large bunches, the berries being of full size, and taking on that amber tinge which is so much thought of by good Grape growers. But the Grapes, good as they are, are eclipsed by the admirable show of Roses, trained upon arches by the sides of the main walk, the excellent arrangement of bedding plants, and the show of herbaceous plants, or old-fashioned flowers, as Mr. Parsons calls them. Beyond the flower garden, and in the same direction, lies the Stone Garden. It is only divided from the former by an arch, and is so called because of a large stone whereat the Druids are supposed to have worshipped according to their fashion in olden times. From here there is a peep through the wall at the extreme north end of the river down to the lighthouse at Appledore, and to the Anchor Wood, a well-known place in the neighbourhood. The shrubbery beds, borders, and walks, are very neatly and orderly kept; the former are, indeed, very interesting, notably the long Arbor-vitæ walk, where the borders are planted with a variety of showy and useful shrubs and hardy flowers.

The gardens are in several divisions, each vieing with the other in interest as regards abundant and healthy crops, of which there is no stint, from the commonest of small fruits to capital crops of Grapes and Peaches. Plants are grown in considerable numbers, of Palms, Ferns, stove plants, and Orchids, all of which are in a very healthy and creditable condition.

AZALEA INDICA.

(*Concluded from p.* 139.)

Training.—This is a favourite work with young gardeners, and some of them are really experts at the work. The outline of the plants can be made into any shape the fancy of the trainer may wish them to bear. I prefer the pyramid to any other, though in large collections it will be best to have all shapes—pyramids, standards, bushes, &c. Some men, by the use of stakes, perpendicular, horizontal, and diagonal, with wire laid on to match, rig out the framework of their Azaleas with as much care and precision as naval architects bestow on their men-of-war fitted out for active service; and I confess that they turn out very precise work thereby. For my own part, however, I am no admirer of this excessive training. One good firm stake and a few shorter ones placed at intervals round the edge of the pot, are all the adjuncts really necessary. Upon these the plants may be tied-in to assume any shape you may wish; bearing in mind all the while that, if the plants are grown principally for the supply of cut flowers, very much of this work will be useless, if not wasted.

The period of Azalea life at which insects are most troublesome is when they have finished growing, or, in other words, when they have been withdrawn from the moist atmosphere, and from the subduing influences of the syringe. Happily their number is not great. The black thrip is the most common, as it is the most virulent, and once it obtains a firm footing is not so easy to dislodge. If they are only appearing, a good smoking of tobacco-paper, repeated until they are subdued, is a remedy easily applied. A sprinkling of Cayenne pepper will increase its pungency. Dipping in a bath made up with 2 oz. of soft-soap to the gallon of water, 1 gallon of tobacco-liquor to every 6 gallons of soapy water, will prove an effective remedy. All Azaleas previous to introducing them into heat, and again at the approach of winter, should be examined with this view, and bathed if there is the least appearance of thrips. Red-spider can only be troublesome with plants that are insufficiently supplied with water. Whenever it appears I would have something not very sweet to say to the bottle-holder. The most expeditious remedy is the garden engine, one person holding the plant in a horizontal position, while another applies the water to the under-side of the foliage with sufficient force to dislodge the enemy, but not to lacerate or strip the leaves, else the cure will be as bad as the disease.

The following sorts are among the most useful for early work, as also for general purposes. I may observe, by the way, that I have a preference for the semi-double sorts. The flowers are more persistent and stand longer when cut, either in bouquets or glasses.

Of whites I will note narcissiflora. This is, in my estimation, the most useful white Azalea in existence. If Mr. Fortune had done no other work for British gardens than introduce this Azalea from the Flowery Land, it would be enough to make us hold his memory in loving remembrance. Where white flowers are wanted in quantity for Christmas decorations this Azalea should be grown by the hundred. I put this at the head of the race in point of utility, as its flowers can be culled over a period of eight months. Borsig is the next white in point of merit. The individual flowers are larger than narcissiflora, but it does not produce them quite so abundantly; but the pearly purity and size of its flowers will make up for any deficiency in this respect. Princess Stephanie Clotilde is another very fine sort, with semi-double flowers, rather smaller than either the two sorts named; but with the lovers of fine form this variety will be precious. Bernard Andreas alba is another fine sort, that will come to be much esteemed where white flowers of snowy whiteness and good substance are in request. Crispiflora alba, another good white, with flowers crimped at the edges, as the name indicates—a very good forcer, but as yet rather scarce. Imbricata, a new semi-double sort, would be a most desirable addition to our stock of white flowers if it had stamina to grow freely; with those who can refrain from cutting this will be an acquisition, and will repay any little trouble bestowed upon it. Then we have Flag of Truce, Fielder's White, Etendard du Flandre, Mont Blanc, Snowflake, Vesta, Purity, Flower of the Day, Princess Alice, and Reine de Portugal; and last, though the oldest of them all, is indica alba. This sort is too well known to require any recommendation at this time of day. I had a plant of this sort in the open quarter, with Rhododendrons, for upwards of ten years, and it annually supplied me with Azalea flowers when they were over indoors, but unfortunately it succumbed to the rigours of last winter. There are many favoured spots in the country where this plant would make a most desirable addition to our shrubberies, and would help to open up a new pleasure to their owners.

Of coloured Azaleas the name is legion. The difficulty is where to draw the line, but this invidious sort of work must be done sometimes, even with Azaleas. The following are well-known sorts, and will disappoint none:—Bernard Andreas, Beauté supréme, Brilliant, Ceres, of exquisite form, though small; Charmer, the bold Duc de Nassau, with his very effective rosy-scarlet; Duchesse Fascination, Iveryana, with the charming Mrs. Turner, Princess Mary of Cambridge, Purpurea-pleno, Picturata, the useful, though plain and unpretentious, Roi de Hollande; Roi des Beautés, Sigismund Rucker, with his double Souvenir de Prince Albert. The raiser of this variety had without doubt a keen sense of the fitness of things. There is no Azalea known to me more worthy to bear the name of that illustrious man, the late Prince Consort, than this one. It is one of the few Azaleas that I should like to possess by the thousand. Then we have Sparkler, and Stella, and Queen of Roses; and, last of all, we have amœna, with its progeny, which will soon oust the parent from the post of honour it held so long. *A. Mackenzie, Warriston Nursery, Edinburgh.*

HORTICULTURE.

INTO whatever sphere the choice of our occupation may have drawn us, is there not implanted in all of us a deep sentiment for Nature's beauty, and particularly floral beauty? Do we not welcome with admiration the vernal tints in their endless hues when the young foliage bursts forth anew in all its freshness? Do we not all alike look for the renovation of some floral gem, or the new blossoms of some favoured tree? What, then, must be in this respect the feelings of any one who has traced and tried to understand the configuration or their structure, who may have given them their very name, and who may have been striving to turn them, for life's bustling purposes, to utilitarian account! Be mindful, plants one and all are given us by the world's Creator, not simply to be looked at, not for transient embellishment alone. If in our thoughts—absorbed though they may be in delightful contemplation of these living wonders

—we do not pass to wider views, then we do bu scantily appreciate Nature's fairest treasures. The reflecting mind must grasp their ulterior significance, must perceive their purposes for material endowment, must strive to recognise the destination assigned to them in Nature by a creative will, must cling to the persuasion of their heralding wisdom in a world eternal.

But let us pass from general to special considerations.

In what direction is our attention here to turn in horticulture, and in what aspects does it present itself to us? There may be gardens of different styles and different tastes; plus science and minus science; with or without recognised claim to observation, tests, and utility; but ornamental they all must be, because you cannot withdraw the beauty impressed by Nature on each and every one of their components. Public fancy at one time may demand extensive lawns, such as you can call forth in a season wherever water may be at command; another time it gives preference to shade-lines in a clime of heat, and may wish, or may be forced, to avoid ever-recurring cost. Then others in their predilection may concentrate their means and efforts on flowering carpets and blooming mosaics of the most orthodox and recent patterns, and of undisputed elegance, but expensive in proportion to their being exquisite, called forth temporarily by the fashion of the season, at the caprice of taste, which slips from any ruling, and mocks any law. They all will have their way and sway, but you cannot domineeringly pronounce that one style is right and one is wrong, not even from the point of view of mere pleasure. Resources and expediency must draw the line, especially when horticulture steps beyond the precincts of the private area on to public grounds.

On independent paths, with inspirations of their own, many have striven for grand aims in horticulture, with us and before us. But wherever high mindedness prevails there should be a frank and generous acknowledgment of benefits bestowed by other hands at other times; there should be no intentional destruction of other's work and other's toil; there should be a candid adjudication of other's achievements with other means; and, let me add, there should not be forgetfulness of public records of other judges in other days. A calm unbiassed future will always give a fairer verdict than agitations of the day.

I should claim for horticulture universally that wide scope demanded by the discoveries of the day! Let us ever add to the fewer forms of dazzling yet monotonous selectness the multitudes of types of singularity and sometimes even surpassing beauty, which now-a-days are within our reach through the facilities for easy traffic in reciprocal intercourse with foreign lands. The theme is one of vastness. Remember we can plead for a wide selection from 10,000 distinct trees of the world, and from perhaps three times as many plants of ornamental prominence, which in one region or the other of Australia could be utilised for horticulture plain and simple. Suppose we did not trouble about any utilitarian considerations, or any weighty responsibilities, which towards futurity we must incur; for you are well aware, concerning future obligations, the words of the few are sure to be drowned in the voices of the multitude. You may have heard of about 1000 kinds of Palms, known as well-defined species now-a-days, the majority the very types of gracefulness—all, with but few exceptions, acquisitions of permanency wherever reared—all modest in their demands on the attention and the purse of the cultivator—most of them grand in their scenic aspect, some taller than the highest mast of any ship ever built. You may have read of fully 150 sorts of Bamboos revealed to us now, by which tropical scenery may be created in extra-tropic landscapes, many of these noble plants quite treasurable in technology, as not only demonstrated in our exhibitions, but indeed in many a domestic home. But to make a show with them in our environs we must raise them by the thousand and ten thousand. Some of the elements of such a cultivation, what I would call a real landscape culture, are to us near enough—Livistona and Ptychosperma—Palms of easy rearing—as near as Gippsland and New South Wales, and Date-Palms accessible in any number from the fruit. Tall Palm-Lilies or Maori Cordylines, which early foresight, with very many other vegetable treasures, secured, yield grains of ready germination here already millionfold. Of Ferns nearly 3000 species stand on record now, the arborescent kinds to the number of about 150. Taking a wider view, Fern spores from Dicksonias, Cyatheas, and Alsophilas, can easily and copiously be shaken from the fronds near homes, and could be carried to shady and irrigated ravines here and abroad not naturally graced by forms of vegetable life so graceful and so grand—Europe possessing none of them as natives. A whole host of gaudy flowering plants, less pretentious in their features and outlines, but not longing for irrigation, and fit to cope with aridity—some brought already, yet many more to be brought—should not be hidden as single specimens, or wanting altogether, but should clothe massively and inexpensively the bareness which here and elsewhere, at almost every turn, is staring into our face.

Bromeliads, now counting by many hundreds—so manageable in the gardener's hand, and so elegant—should come across to us from the western world, to be added to a long array of Cacteæ secured from thence already. Begonias from both hemispheres are now defined to an extent exceeding 300, the endless hybrid forms uncounted, and are among the most grateful to the horticulturist, be he professional or amateur. Epiphytal Orchids, numbering now many hundreds, Australia harbours only most scantily in its own wilds. To the early and wide dispersion of stems of Dicksonia and Todea, and of Palm-like Cycads, as contributions to the horticulture of the world, we here can lay some claim, so also to a cosmopolitan diffusion of the noble forms of the race of Bamboos by seeds. There can hardly be any garden of note abroad from which some plant or other came early to us, and which had not Australian representatives in floral features of theirs in reciprocity. In this zone of evergreen vegetation we could surround ourselves massively throughout the year with floral embellishment and fragrance, especially if the autumnal flowering plants were more encouraged and rendered more varied. By these means an extensive floral display could through the season be carried with the early bulbs and other harbingers of spring, till the first Acacias of our own burst so profusely into bloom. Of the 300 recorded Australian species of the latter genus most are vernal in their flowering, and as yet not one-third of them has entered horticultural precincts, although these pretty bushes are among the most welcome inmates, even in northern conservatories, as being among the first of all for pushing their flowers there.

Horticultural exhibitions have also here deservedly got a great hold on the public mind. They are as impressively instructive as enchanting; in nearly every case a new prize-plant or fruit becomes a general gain.

The importance of horticulture in relation to educational training has never yet been sufficiently recognised. What obstacles interpose as insurmountable to give children on their school-ground some slight training also in rearing plants, in budding and grafting, and other simple processes of the gardening art? Cannot some emulation be aroused among the young disciples in allotting to the most eager a few square yards of ground each? And could such gardening not assume some slight scientific air by industrial, systematic, and especially geographical arrangement, which need detract from the gracefulness of grouping, or the splendour of flower-beds, while information would at once be impressed on the plastic youthful memory. The teaching by a professional horticulturist for an hour or two a week could be obtained in most places now readily, and perhaps even gratuitously, while annual prizes from any of the wealthy near would stimulate school-gardening to an immense extent. Horticulture, then, though often a mere play-toy it may be, can rise to an ennobling art, can add vastly to the material riches of a country, can shed blessings over whole communities. Horticulture also brings us in contact with other zones, with other races, with other languages. It is one of those chains which link together man to man, while to the individual and to the family it may become a source of the purest homely happiness. A garden at a house tends to frugality, humility, warmth of affection; we step from the domestic door at once into unfettered Nature; every leaf and flower breathes freedom from human bondage, elates the beholder, brings us nearer to the power which rules the universe! *Extract from an Address by Baron F. von Mueller to the Melbourne Social Science Congress.*

Nepenthes Hookeri. — Of this well-known Pitcher-plant there is now a very fine example in the Stanstead Park Nursery, Forest Hill. The plant is bearing seven pitchers of unusual size, which are quite an acquisition to the plant stove, and attracts great admiration from visitors.

New Garden Plants.

Sarcanthus striolatus, *n. sp.**

Much like Sarcanthus racemiger (pallidus, tricolor), but with narrower leaves, distinct column and lip, and different colour. The sepals and petals are orange, with two cinnamon parallel longitudinal bars, and the inferior part of the spur is whitish, the upper part and the lip orange. It is stated by Messrs. H. Low & Co. to come from the Philippine Islands. *H. G. Rchb. f.*

Ornithocephalus grandiflorus, *Lindl.*

The genus Ornithocephalus, established by Sir William Hooker, has only appeared a few times in European gardens—at Glasgow, at Kew, at Reigate, with the late Mr. Wilson Sanders; at Brussels, with Director Linden; at Hamburgh, with the late Consul Schiller; and in the Botanic Garden of the same town.

All the species were poor, little things. Now there has appeared this grand species, which may be regarded as a much better thing than that which was only known from gardeners' but too compressed specimens, which served the late Dr. Lindley to establish the species. It has large leaves, oblong, blunt, acute, or obtuse ones, which are compared to those of a Warscewiczella by M. Lüddemann. The rich inflorescence bears many fine white flowers, with some light green. I had a very well grown plant from Mynheer de Witte, of the University Garden, Leyden, and there is another fine specimen from my correspondent Mons. G. Lüddemann, of the Boulevard d'Italie, 18 and 20, Paris. *H. G. Rchb. f.*

Stapelia (§ Stapeltonia) tsomoensis, *N. E. Br.*

Stems glabrous to the eye and touch, but under a lens and held against the light are seen to be very minutely puberulous on the angles, opaque green, 4—6 inches high, 5—8 lines thick, 4-angled, angles compressed, repand-dentate, leaf rudiment 1 line long, erect, ovate acuminate, minutely puberulous. Cymes subsessile near the base of the younger stems, 4—9 flowered. Pedicels ¾—1 inch long, 1½ line thick, puberulous. Calyx lobes 3 lines long, lanceolate acuminate, puberulous outside, ciliate with rather long hairs, glabrous inside. Buds globose, very obtusely pointed, about 1 inch long and broad. Corolla 3 inches in diameter; back glabrous, or the nerves minutely puberulous; face with a few transverse ridges on the lobes, entirely dull smoky purple, darker at the tips of the lobes, or with some of the ridges greenish or dirty yellowish, disk and base of the lobes covered with long, simple, somewhat appressed dark purple hairs, margins ciliate, with similar hairs; lobes ovate-lanceolate, acute, 12—15 lines long, 8 lines broad, strongly recurved, margins not revolute. Segments of outer corona 2½ lines long, purplish-black, linear-oblong, obtuse, mucronate, or acuminate, concave down the face, apex recurved. Beak of the segments of inner corona triquetrous, subulate, 4 lines long, strongly arching, recurved, a little paler than the rest of the corona, wings free, 1½ line long, lanceolate-oblong, obtuse, entire, or obsoletely toothed on inner margin, purplish-black. Odour not very strong; the flowers remain open four or five days. Tsomo River. Sir H. Barkly, No. 32! (Herb. Kew).

A very free-flowering species, allied to S. multiflora, but distinguished by its glabrous stems, ciliate calyx lobes, globose buds, and opaque, smoky-purple flowers. It was discovered by Sir Henry Barkly, near the Tsomo River, in Kaffirland, South Africa, and was sent by him to the Royal Gardens, Kew, and to myself, in 1878. Recently a specimen has been sent me by Mr. Latham, the Curator of the

* *Sarcanthus striolatus*, n. sp.—Aff. Sarcantho racemigero (pallido, tricolori); foliis ligulatis sat brevibus apice obtuse et inæqualiter bilobis; floribus paniculatis; sepalis oblongo-triangulis obtuse acutis; tepalis ligulatis obtuse acutis, labelli partitionibus lateralibus trianguis, partitione mediana triangula transversa carnosissima, calcari æqualiter cylindrato apice emarginato.—Ex. Philipp. ins. Imp. hort. cl. Low. *H. G. Rchb. f.*

Botanic Gardens, Birmingham, but most probably the Birmingham plant was obtained from Kew, or from the Cape Town Botanic Gardens, to which I believe Sir Henry Barkly contributed a large number of Stapeliæ. *N. E. Brown.*



FIG. 29.—NEPENTHES COCCINEA ×.

NEPENTHES COCCÍNEA ×.

THIS (fig. 29) is one of the hybrids of American origin which have been introduced into British commerce by Mr. B. S. Williams, of Holloway, in whose nursery we took the following note :—

Pitchers 6 × 3 inches, crimson slightly speckled with yellow, flask-shaped, pointed at the base, distended below the middle, broadly cylindric above, wings deep fringed, mouth ovate acute, slightly protracted at the back, rim broad, finely ribbed, ribs parti-coloured red and black, throat greenish speckled with red, lid ovate oblong, smaller than the mouth, greenish, striped and speckled with red, apex of leaf acute.

It is evidently one of the most desirable forms for cultivation so far as beauty is concerned, but we can say nothing at present as to its habit.

ACHIMENES DAZZLE.—This beautiful scarlet-flowered variety is one of the best that can be grown for room decoration, owing to its dwarf bushy habit and the brilliancy of its flowers. It should be grown in an intermediate temperature.

THE POTATO CROPS OF 1882.

SCOTLAND.

ABERDEEN.—Potatos were long in coming up, but have grown luxuriantly during the last six weeks. Early sorts, which have been fit for use for nearly three weeks, are very good in quality, and a fair crop. We have no disease as yet, and have heard of none in this neighbourhood. *John Forrest, The Gardens, Haddo House, Aberdeen, Aug.* 1.

BANFF.—Potatos are generally vigorous and healthy looking all over this district, but I see that disease has made its appearance in an unmistakable form in the garden here on a patch of the Early Rose. The weather here of late has been moist and warm, with frequent thunderstorms. It is only on a few occasions that the disease has been observed here so early in the season. *J. Webster, Gordon Castle Gardens, July* 31.

BERWICK.—The Potato crops are looking remarkably well all over this district. Some of the early garden varieties are showing signs of the disease, but I have seen none of it among the tubers yet. *John Reid, Blackadder Gardens, July* 31.

—— The Potato crops are looking healthy and strong in the shaws, but the early ones with us are going bad with disease. *W. Richardson, Ayton Castle.*

DUMBARTON.—Disease has set in and reached the tubers both in garden and field crops, otherwise there is a plentiful yield. Most garden produce is suffering from the continued heavy rains we are experiencing. Turnips look promising as yet, also grain crops, but the hay, as might be supposed, has been much injured. *Alex. Scott, Auchendenan, Alexandria, July* 31.

LANARK.—The Potato disease has made its appearance in gardens earlier than usual, no doubt owing to the very frequent thunderstorms prevailing throughout the whole of last month, rain having fallen on twenty-seven days. The field crops do not look quite so promising as they did last year in this locality, and it is generally believed that there is not so great a breadth planted. *Andrew Turnbull, Bothwell Castle, Aug.* 1.

PERTH.—Good crops, and fair in quality. *P. W. Fairgrieve, Dunkeld Gardens, Aug.* 1.

ROSS-SHIRE.—The Potato crop looks splendid ; and there is no signs of the disease as yet. *D. Harvey, Invergordon Castle, July* 31.

SUTHERLAND.—Early Potatos are turning out well. Disease has made its appearance in places. Late crops look well so far. *D. Melville, Dunrobin Castle Gardens, July* 31.

WIGTON.—The disease is general amongst the early varieties in the fields ; but as yet confined more to the haulm than the tubers. Amongst late varieties it has made little progress. The Champion resists the disease better than any other variety, and is, on the whole, the surest cropper and the most productive variety in general cultivation. Owing to the low price of Potatos last year, the breadth planted this season is much less than for some years past, and where they have escaped the disease promise an abundant crop. *Archibald Fowler, Castle Kennedy, Aug.* 1.

ENGLAND.—NORTHERN COUNTIES.

CUMBERLAND.—The Potato crops never looked more promising in this district than they do at present. The early sorts are large in the tubers and plentiful ; the quality is excellent. I am sorry to say, however, that the disease has appeared, and if the wet, muggy weather we are having at present continues it will spread fast. *J. Hammond, Brayton, Carlisle, July* 31.

DURHAM.—As a rule, around here the Potato crops are looking well, and lifting clean and free from disease, so much so that we have not come on any up to the present time, nor are the tops showing the least signs. Field Potatos are also looking well, being clean and free in their growth, without showing any signs of disease or unhealthy growths. *J. Hunter, Lambton Gardens, July* 31.

LANCASHIRE.—With us Potatos look very unhealthy, are short in the haulm and touched with disease, though so far we have seen none on the tubers. Early kidneys are good in size, crop, and quality. *W. B. Upjohn, Worsley Hall Garaens, Manchester, Aug.* 1.

YORKSHIRE.—I am sorry to say the Potato disease is showing very freely round here. *W. Lewin, Aske Gardens, Richmond, July* 31.

—— Early Potatos are an average crop but deficient

in quality. Late crops look well but want drier weather and more sunshine. *Andrew Jamieson, The Gardens, Haigh Hall, Wigan, Aug.* 1.

—— The Potato crop is good, I may say very heavy and good. We use a great deal of soot for Potatos, and never suffer much from disease. In the neighbourhood they are going bad fast, especially in small confined gardens. The crop appears to be good everywhere. *W. Culverwell, Thorpe Perrow, Bedale, Aug.* 1.

—— Early Potatos are badly diseased; late kinds are looking healthy at present in the field, such as Regents, Magnum Bonums, and Paterson's Victoria. *R. C. Kingston, Brantingham Thorpe, Brough, Aug.* 1.

—— Late Potatos in fields are at the present time looking remarkably well and promising; but should the cold, rainy weather we are having at present continue much longer the result will be disastrous. The land is saturated with water, and if we do not get some nice drying winds soon to dry up the wet I fear the Potato crop will suffer. The crops of early sorts are good in general but are now getting badly diseased. *M. Saul, Stourton, Knaresborough, Aug.* 1.

—— Early Potatos are good, both in quality and quantity. No disease up to present date. Late sorts look well. *James Fowler, Harewood House, Leeds, Aug.* 1.

MIDLAND COUNTIES.

NOTTS.—Early Potatos suffered much from the high wind. I have very little disease in the garden, but I hear that it is prevalent in cottage gardens a few miles away. Late sorts look well, and at present there are no symptoms of the disease among them. The garden here is a stiff clay at a high elevation. *Richard Carr, Welbeck Abbey, July* 31.

—— Potatos have grown very much in the haulm lately, owing to the excess of rain; the disease has also made its appearance a little, but I hope the past few days of dry warm weather may check it. From all appearance, if the disease does not turn bad, a heavy crop of all kinds may be expected. *A. Henderson, Thoresby Park, Ollerton, Aug.* 2.

SALOP.—Early Potatos are not quite up to the usual average (so far as the crop is concerned), but they are of fine quality. The disease has made rapid strides during the last week, but on the whole field crops look fairly well, and with fine weather during the next two months we may expect a fair return. *James Louden, The Quinta, Chirk, July* 31.

—— Early sorts are turning out a good crop, and up to the 21st ult. no bad ones were seen, although we observed the fatal "spot" on the haulm on the 7th, and had the same pulled off at once with the hope of saving a good percentage. Lifting them to-day, I find about one-fourth badly diseased. Late sorts with us are not making much tops, and so far appear free from disease. *A. S. Kemp, Haughton Hall, Shifnal, Aug.* 1.

—— Early varieties in this neighbourhood are an excellent crop, and of good quality; the disease first made its appearance in the haulm of the early varieties on July 12. Magnum Bonum, Scotch Champion, Reading Hero, and Schoolmaster in the fields look well, and show no sign of disease. *R. Milner, Sundorne Castle Gardens, Shrewsbury, Aug.* 1.

LEICESTER.—The dull showery weather in July has encouraged the development of the Potato fungus. It was observed on the haulm of early Potatos as early as July 12, and has gradually spread amongst Ashleaf and Myatt's Prolific, and other early Potatos, the tubers of which kinds have become affected. The promise of a Potato crop is good, if the later sorts escape disease. *William Ingram, Belvoir Castle Gardens, July* 30.

BUCKS.—A fine crop, but very badly diseased. It has been a fine season for vegetables generally. Peas have been (and are) remarkably fine. *Thomas Bailey, Shardeloes Gardens, Amersham, July* 29.

HERTS.—A good crop of Ashleaf Kidneys with little disease, though the tops are quite dried up and cleared away. The American kinds are badly diseased, also Champions and Magnum Bonums. Field crops are free from disease, and promise an abundant supply. *G. Merrit, Kimpton Hoo Gardens, July* 31.

—— The disease is more or less prevalent in all the varieties lifted up to the present time. *J. Thompson, Gorhambury Gardens, St. Alban's, July* 31.

—— Potatos yield well, and on light well-drained soils are tolerably free from disease. On stiff cold soils the disease has made sad havoc. *J. C. Mundell, Moor Park Gardens, July* 31.

CHESHIRE.—Both early and late sorts are a good crop, and excellent in quality; but slightly diseased in low-lying districts. *Robert Milne, Vale Royal Gardens, Northwich, July* 31.

—— Early sorts have been good in most places, and a great quantity are grown in this part of the county. I am pleased to state that up to the present time but very few diseased ones have been found. Of second earlies but little can yet be said. Grave doubts are entertained respecting the late crop, which looks very poor at present. *A. J. Grant, Withington Hall, Chelford, Aug.* 1.

STAFFORD.—Early varieties turned out well, and free from disease. The seconds are a good sample, but diseased; late crops are looking well. *W. Bennett, Rangemore, Burton-on-Trent, Aug.* 1.

—— The disease is again raging in all the gardens in this neighbourhood; the only sort looking well at present is Magnum Bonum, others are more or less affected. Late varieties growing in fields are looking remarkably well, and there are no signs of disease at present. *W. Ward, The Gardens, Little Aston Hall, Sutton Coldfield, Aug.* 1.

—— Early Potatos are much diseased, and of inferior quality. Late sorts are looking better at present than the early ones did some time ago, but I fear if we do not have a great change in the weather soon they too will go. *Wm. Davidson, Sandon, Stone, Aug.* 1.

RUTLAND.—The disease has made its appearance amongst early sorts in this district, but I saved mine by cutting off the haulm on July 6, before "Mr. Peronospora" made his *début*, and there is not a diseased tuber to be found at present. Late sorts are promising. *John Gray, Normanton.*

WARWICK.—Potatos are a good crop, but three parts of the early and second early sorts are bad with disease, and to save the late varieties we want hot dry weather. *R. Greenfield, Priory Gardens, Warwick, Aug.* 1.

EASTERN COUNTIES.

LINCOLN.—All early kinds are very good; late sorts look well, but disease is making its appearance in many places. *Thomas Vinden, Harlaxton Manor, Grantham, July* 31.

—— Our early Potatos were sound and good, and an excellent crop. Second crops are now showing signs of the disease in gardens, and we hear great complaints in this neighbourhood. Field crops do not appear to have caught the disease yet, but if we have a continuance of hot showery weather they cannot escape; this is much to be regretted, as the crops look so prosperous, and promise an abundant yield. *D. Lumsden, Bloxholm Hall, Sleaford, July* 31.

NORFOLK. — Potatos growing on well-cultivated land are looking very promising, especially such kinds as Victoria and Magnum Bonum. The Early Handsworth is an excellent crop this year. This variety on our light lands is always better than Myatt's Ashleaf. On poorer and not so well worked soils the crops are not looking so well; Early Rose is very much blighted, and the haulm is drying up fast; but late winter varieties are at this date quite green and full of sap. *T. Wynne, Wroxham, July* 31.

—— The crops in this district had a splendid appearance a few weeks ago, but I am sorry to say the disease has made its appearance, and I fear late varieties will suffer very much. *Thomas Murphy, Hillington Hall, Lynn, July* 29.

SUFFOLK.—Once more, about July 20, the disease came on the heels of the thunderstorms and sultry weather. We lifted all that were fit almost the moment the disease appeared. It has now struck the later sorts, and is making sad havoc among them. Only a continuance of brilliant sunshine is likely to do any good in arresting its progress among the late sorts, and so saving the bulk of the field crops. *D. T. Fish, July* 31.

ESSEX.—The crop in this neighbourhood is a very good one, and the tubers are fine in size and quality. The disease has made its appearance, but only in a mild form. *W. F. Bowman, Hylands, Chelmsford, July* 29.

—— The Potato crop is very satisfactory, and very little disease has been seen as yet. *D. Donald, Knotts Green, Leyton, Aug.* 1.

—— All the early sorts have been very good. The late ones are going bad in places. *W. Bones, The Gardens, Havering Park, Romford, Aug.* 1.

SOUTHERN COUNTIES.

BERKS.—Potatos are a good crop, but suffering very much from disease—Myatt's Ashleaf, Lye's Favourite, and Rector of Woodstock, being the worst at present. Sutton's Reading Hero is a good cropper, and at present free from disease; when cooked it is of first-rate quality. *Joshua Atkins, Lockinge Gardens, Wantage, Aug* 1.

—— All the early sorts of Potatos here and in the cottagers' gardens have been taken with disease badly; the later kinds are looking better, and the fine weather will, I hope, be the means of stopping in a great measure the disease. The extremely cold nights through the early part of last month has caused mildew to spread very much. *James Tegg, Bearwood, Aug.* 1.

MIDDLESEX. — The disease made its appearance here about a fortnight ago, and has spread very rapidly since then. The haulm of most of our patches has completely withered, but the sorts being early and nearly ripe, I do not find the tubers much affected. The crop is very abundant. *John Woodbridge, Syon House Gardens, July* 31.

—— The unusually early appearance of the fungus spots in the leafage of the early kinds of Potatos has greatly moderated the bulk of the crop, and there is also much disease found in the tubers. In some districts on warm mornings, the Potato breadths emit a noxious perfume, that tells too forcibly of disease and rot. The mid-season kinds are now fast losing their leafage, and though the robust late growers are still green there is ample evidence of the spot in the leafage. Should we get a warm dry August there should be a heavy crop of late kinds, and though it is early to write positively, yet I think we may look for an ample supply of Potatos to meet our necessities. *A. Dean, Bedfont, July* 31.

—— The early kinds are a fine crop of large tubers, but nearly one-third are diseased. Late kinds at present look well. *T. P., The Warren House, Stanmore, July* 31.

KENT.—Very good over-average crop of Potatos everywhere, both of early and more backward kinds. Blight has touched the haulm in places, and occasionally the tubers, but it is hoped that the fine weather will arrest its progress. *Charles Whitehead, Barming House, Maidstone, Aug.* 1.

—— I am sorry to say the Potatos at this place are very much diseased; in some cases two-thirds of a very fair crop are useless. The early sorts were very good indeed, but later ones very bad. We attribute it to the dull, damp, and sluggish weather of late—perhaps, also, too frequent cropping the same ground may have some effect. *John Cox, Redleaf, Penshurst, Aug.* 1.

—— The early varieties are now being lifted, and turn out well as regards weight of tubers; but many diseased ones are apparent. Second earlies are showing symptoms of the disease; late kinds, with few exceptions, are in a healthy promising condition. *H. L., Syndale Park, Faversham, July* 31.

—— Potatos promise to be a good crop. *Henry Cannell & Sons, Swanley, July* 31.

—— The early sorts have kept comparatively free from blight up to the present time, the late kinds very much blighted in the tops, and more quickly cut off than I have ever noticed in former years, and much will depend on the weather for this month for the quantity and quality of the crop. ——, *Canterbury, Aug.* 1.

—— Potatos are a heavy crop, of good quality. Disease is showing very extensively. *R. Gray, Chevening, Sevenoaks, July* 31.

—— The disease is very prevalent in this district, and the tubers are much affected in many places. Heavy crop. *John Charlton, Tunbridge Wells, July* 29.

SUSSEX.—The very heavy rainfall of 4½ inches during July has had a bad effect on the Potato crop, and blight has made its appearance in nearly every field and garden. *J. Rust, Eridge Castle, July* 29.

—— Very much diseased everywhere, and bad in quality, they were attacked before they were half matured. *Geo. Breese, Petworth Gardens, Aug.* 1.

HANTS.—The Potato crops were uncommonly promising at the end of May, but now I do not think

I ever saw the prospect less satisfactory. The disease has attacked them very early and very severely; all early kinds have already got their worst, and such robust and disease-resisting kinds as Scotch Champion and Magnum Bonum are badly spotted, and should this sunless cold weather continue another week or two, they, too, will have to succumb. *F. Thirlby, Broadlands, Romsey, July* 31.

—— Early Potatos are a good crop, and the tubers large. The tops are diseased a little, and I hear that the late ones are much diseased and look badly. *Wm. Smythe, Basing Park Gardens, Alton, Aug.* 1.

Wilts.—The disease set in very early, and the haulm has long ago disappeared from early and second early varieties; but the tubers are not so much diseased as we expected to find them, probably we shall lose about one-third of the crop. It is too early yet to say much about late varieties in such a season as this, but I do not expect a heavy crop. *Wm. Taylor, Longleat Gardens, Aug.* 1.

—— Our early and late Potatos are surprisingly good, considering the wet weather; in fact, I have not found one tuber diseased. *Wm. Phipps, Bowood Gardens, Aug.* 1.

—— The worst I have ever seen, and one that is likely to make a lasting impression on the minds of many. *J. Horsefield, Heytesbury.*

Surrey.—The Potato crop is very good, but disease has begun in all the early and second early varieties. Early Rose seems to have been particularly liable to it, and Late Rose also; Magnum Bonums seem perfectly free so far, also Champions. The crops on the clay and chalk are, I believe, very much hurt. *J. Burnett, The Deepdene, Dorking, Aug.* 1.

—— The crops which in their early growth gave promise of a bountiful yield, have been visited by the dreaded Peronospora, and early and so-called disease-resisting varieties are all going alike, the crop will therefore be scanty and small. *A. Evans, Lythe Hill, Haslemere, Aug.* 1.

Dorset.—Early crops are very much diseased, in fact hardly worth taking up, and the late ones are taking it fast. I fear it will be as bad as it was ever known to be. *C. Hazel, Leweston Gardens, Sherborne, July* 31.

—— The crops are very much affected, with disease, owing to the continual cold rains. In the last three weeks the haulm has gone off very much, and I fear the crop will be under an average. *J. Beck, Crichel Gardens, Wimborne, Aug.* 1.

WESTERN COUNTIES.

Hereford.—The disease has begun to show very badly. Early kidneys, which have been a splendid crop, are about one-third bad, and most other kinds look as if they will show the same or even worse results. *Wm. Ward, The Gardens, Stoke Edith Park, Hereford, July* 31.

—— The Potatos in this district have taken the disease very badly, but it has not affected the tubers so much yet, of which there are heavy crops. Whole fields are stricken with it, scarcely a green leaf visible. Schoolmaster, Gloucester Kidney, Sutton's Flourball, Magnum Bonum, and a local variety called Scotch Seedling, which is the latest of them all, keeping well into June, and as free from disease as Magnum Bonum; but the latter is much affected this year. *A. Young, Holme Lacy Gardens.*

Worcester.—The whole of the early sorts are badly diseased. There does not appear to be a single exception, all are alike blackened, yet never have we had better crops or better quality. Later sorts so far do not exhibit the slightest trace of the disease, they so far look vigorous, and promising a heavy return. *Geo. Westland, Witley Court, July* 31.

Somerset.—The early Potato crop in this neighbourhood has suffered very much from the disease in its worst form. It made its appearance here the first week in July, and spread very rapidly, and although some of the earliest kinds were lifted as soon as the disease appeared, and apparently but a very few being affected, after a few days the whole were more or less so. I have still good hopes of the later kinds in fields, &c., as up to the present time they look well, and we have now every appearance of fine weather. *John Austen, Ashton Court Gardens, July* 31.

Gloucester.—Very good crops, but going very bad with the disease. *G. Turner, Treherne Court, Stonehouse, Aug.* 1.

Cornwall.—This season will not be easily forgotten with respect to the noble tuber throughout this parish. Spots of the disease were seen the first week in June, being five weeks earlier than usual. I think this was accelerated by the almost unprecedented wet and cold we experienced throughout April. The tillingl of Barley was impossible, and was not completed til the second week in May, but few farmers ever tilled so late, consequently Potatos are small and of poor quality. Our late crops are in the same predicament; the stalks are nearly all withered and blasted by the disease. *Charles Lee, Boconnoc, Aug.* 1.

—— The crop has not been so badly affected for several years; the disease made its appearance at least a month earlier in the season than usual. Our earliest crops were excellent, but even of them many tubers were diseased. *J. Murton, Tredrea, Aug* 1.

WALES.

Carnarvon. — Potatos are beginning to get diseased; we have had rain almost every day for some time past. *Allan Calder, Vaynol Park, Bangor, Aug.* 1.

Denbigh.—Potato crops came up tardily and irregularly, consequently early sorts were late. Some of the late sorts came up well, and have made growths of 5 to 6 feet on deep soils; on open soils the haulm and tubers are all that could be desired. On stiff soils the stems were weak, and disease has played havoc. I have two patches of different sorts with only a walk intervening: one side the crop is useless from disease, while on the other no symptoms of the disease can be seen. Nothing but the cold temperature could have saved the Potato this season from wholesale destruction, with such a moist atmosphere; but we are not safe yet, as the next fortnight is the most critical here, and with a clear atmosphere and brisk breezes we may gather a sound good crop. *D. Middleton, Wynnstay and Llangedyn, Aug.* 1.

Merioneth.—Owing to the excessive rainfall of the past month the disease in low-lying places is very bad amongst early varieties, while on elevated positions they are quite free. Late varieties in the field look well. *Jas. Bennett, Rhug Gardens, Corwen, July* 31.

IRELAND.

Cavan.—The Potato crop at present looks dreary enough, between blight and a continuance of cold, wet weather. If dry, warm weather does not soon set in the prospects of anything like a crop of Potatos this season is about as bright as they were in the year 1846, especially in wet, heavy clay districts. *W. I.*

Clare.—Potatos do not look so well as in the past two years; there are many bad already, and the quality is not good. *W. Wilson, Dromoland, July* 31.

Wicklow.—Early sorts in this locality a heavy crop, but badly diseased. Late sorts looking well, full of growth and healthy as yet, but late. *G. H. McCulloch, Powerscourt, Aug.* 1.

FLOWERS IN SEASON.

Our table, as might be expected at this season, is laden with specimens of beautiful and interesting plants, kindly forwarded by Messrs. Rodger, McLelland & Co., of Newry; Veitch, of Chelsea; Paul & Son, of Cheshunt, and others. The number is embarrassing in one respect—that both time and space are lacking wherein to do them justice; some must be passed over with the mere mention, others of less interest must be passed entirely. As a hint to our friends, we may say that novelties and plants remarkable in any way for beauty, interest, or culture, are more desirable than others, which, however beautiful, are better known, or have less interest. From the pile on our table we make a raid, in the first instance, on the hardy shrubs and ornamental trees. In season and out of season we have advocated the claims of this class of plants, and prolonged experience does but confirm our sense of their value and of our surprise that people continue to plant the same commonplace trees and shrubs, ignoring the profusion of fine subjects at their disposition, which are quite as well suited for their purpose, or which at least might advantageously be mixed with commoner things.

Stuartia virginica. — From Luscombe come flowers of this beautiful flowering shrub. It has deciduous leaves and Camellia-like flowers. The shortly-stalked leaves are nearly glabrous, slightly downy on the under-surface, oblanceolate acuminate remotely, and finely serrated. The flowers solitary, 2½ inches in diameter, with fine cream-coloured crumpled petals, like those of a single Camellia, but thinner. The stamens are numerous and purplish in colour, thus affording a contrast with the ivory or cream-coloured flowers. The plant is a very old favourite, but a shy bloomer, probably because our summers are not hot enough for it. A large illustration of the plant was given in our number for October 6, 1877, p. 433, from a plant at Sion House, near Brentford.

Nicotiana tubiflora. — One of the dwarf-growing Nicotianas, with tube-shaped flowers, pure white, and a capital subject for an amateur's collection. The plant grows about 12 inches high, and is a much freer flowerer than N. affinis.

Spiræa crispifolia. — Under this name Mr. Smith, of Newry (Rodger, McClelland & Co.), sends a little gem for the rockwork in the form of a dwarf shrub, said to be of Japanese origin, about 6 inches high, of compact habit, with slender reddish-brown shoots covered with hairs, and shortly stalked, roundish, crenate, rugose, dark green glabrous leaves. The small, deep pink flowers are in dense terminal clusters. This is one of the most desirable dwarf flowering shrubs we have seen for a long while, but we cannot at present guarantee the correct nomenclature.

S. Fortunei.—A well known and beautiful species, some 3 to 5 feet high, with lanceolate leaves, cinnamon-brown wood, and flat corymbs of pink flowers. Messrs. Veitch, Messrs. Paul & Son, and several private correspondents. Known also as S. callosa.

S. Bernhardi, from Messrs. Paul, of Cheshunt, is apparently only a dwarf form of the foregoing. Its dwarf habit will render it available where the ordinary form is too large.

S. "callosa pumila alba," Hort. Veitch.—We cannot guarantee the name, and only use it under protest. It is very like the foregoing, but has white flowers.

S. sibirica, Hort. Veitch, is apparently a large form of S. salicifolia, an extremely variable species. It is a tall shrub with erect cinnamon-coloured branches, oblong obovate glabrous leaves, dark green above paler beneath, toothed; flowers purplish, very numerous in terminal much branched panicles.

S. Lindleyana.—A correspondent from Ealing sends specimens of this noble shrub, the elegant pinnate foliage of which, and the very large pyramidal plumes of white flowers, render it quite one of the best of hardy shrubs. It is quite hardy, but being of somewhat rampant growth it requires space in which to develope itself.

Eucryphia pinnatifida. — A very beautiful Rosaceous shrub, with pinnate Rose-like leaves and large 4-petalled white flowers, 2½ inches across with very numerous slender stamens. The carpels are combined below, not free as described, but the styles are separate. One of the most ornamental of shrubs. Messrs. Veitch. Figured at p. 337, 1880, vol. xiv.

Ligustrum japonicum. — An evergreen shrub with thick, leathery, ovate acute leaves, and terminal pyramidal panicles of white flowers. One of the most desirable of ornamental shrubs. Messrs. Paul & Sons.

Olearia Haastii.—A New Zealand shrub with small ovate leathery leaves and terminal corymbs of white Aster-like flowers. One of the very best hardy free-flowering shrubs, figured at p. 1194, 1872. Messrs. Veitch.

Colletia horrida.—Imagine a Gorse bush, with stouter and more woody stems and thorns, and cover it densely with small bell-shaped white flowers, and some idea will be obtained of this remarkable Chilian shrub. Messrs. Veitch.

Colutea arborescens. — A correspondent at Ealing sends sprays of the old Bladder Senna, a tall, loose-growing shrub, with smooth, pinnate leaves, with oblong segments. The yellow pea-like flowers are borne in racemes, and are succeeded by bladdery pods, which furnish harmless amusement to the younger folk by the popgun-like explosions they make when compressed. The plant is ornamental, and so hardy that it bears Continental winters with impunity

Sambucus nigra var. heterophylla. — A variety of the common Elder, with the leaf-segments linear.

Clematis coccinea.—A very remarkable Texan Clematis, with pinnate foliage, the leaflets on long stalks ovate obtuse, or lobed, quite glabrous, the bell-shaped deep rose-pink flowers on long stalks. A most beautiful plant. Messrs. Veitch. Figured in our volume March 26, 1881.

Veronica angustifolia. — A shrubby species with slender erect branches, linear dark-green leaves, and terminal elongated racemes of white flowers.

Berberidopsis corallina.—A Barberry-like shrub with slender branches, and rigid shortly-stalked oblong spiny light green leaves, and terminal half-pendulous racemes of flowers, the flower-stalks long, slender, deep red, with sub-globose scarlet flowers, the size of a pea. A very beautiful and interesting shrub, but of doubtful hardiness.

Diplopappus chrysophyllus.—A wiry Composite shrub, of medium height, with slender, gold-coloured branches, and small crowded, broadly linear, Heath-like leaves, golden on the under-surface, and dense terminal panicles of oblong flower-heads of small white flowers. Messrs. Rodger, McLelland & Co., and others. Very desirable from its peculiar habit and free-flowering quality.

Hypericum oblongifolium. — A shrub with pinkish branches, glabrous ovate acute leaves, with scattered translucent dots and terminal cymes of yellow flowers, globose when in bud, broadly cup-shaped when expanded. From several correspondents.

Blue Hydrangea from Japan. — Under this name we receive from Messrs. Veitch a Hydrangea with large deep violet-blue flowers of great beauty.

Fremontia californica.—We are glad to receive flowering specimens of this beautiful Sterculiaceous shrub from several correspondents. The leaves are like those of a Fig in miniature, the globose flowers of a bright yellow and very interesting structure. We are the more pleased to receive this, as we feared that recent winters might have destroyed it.

Platycodon grandiflora.—One of the most desirable perennials of erect habit, with ovate acute serrate glabrous leaves, and large erect bell-shaped blue flowers. The flower-buds have a singular club-shaped form. Messrs. Veitch.

Œnothera Youngi. — One of the best half-shrubby species, of medium height, with dark green leaves, and a long-continued succession of yellow flowers. In the autumn it forms close rosettes of leaves, by means of which it may be propagated. Messrs. Paul & Son, Cheshunt.

Scabiosa caucasica.—A grey-leaved perennial with long-stalked, large flower-heads of a beautiful lavender-grey.

Desfontainea spinosa.—Mr. William Ireland, the Pilton Nurseries, Barnstaple, sends us flowers of this beautiful Holly-like shrub—Holly-like only as to foliage—for the long tubular flowers (2 inches long) are brave in scarlet and gold.

Our list is not half exhausted, but we must halt for the present; in the meantime it is satisfactory to note the increasing favour shown to the best hardy perennials. May we hope that the same tendency will be manifested in the case of hardy shrubs and trees, evergreen and otherwise.

LIST OF GARDEN ORCHIDS.

(Bulbophyllum: *Continued from p.* 104.)

68. Bulbophyllum rigens, Rchb. f., *Hamb. Gartenz.*, xxi., p. 296.—Birma (?). Cultivated by Mr. Day about 1895.

69. B. rufinum, Rchb. f., *Xenia*, iii., p. 44, t. 219, fig. 1—6.—India. Cultivated by Mr. S. C. Hincks, of Thirsk, in 1881. Allied to B. Careya num.

70. B. saltatorium, Lindl., *Bot. Reg.*, t. 1970; *Walp. Ann.*, vi., p. 252.—Sierra Leone. Imported and cultivated by Messrs. Loddiges about 1837. Allied to B. barbatum.

71. B. setigerum, Lindl., *Bot. Reg.* 1838, Misc., n. 24; *Walp. Ann.*, vi., p. 254.—Demerara. Cultivated by Messrs. Loddiges. A very curious little epiphyte, remarkable in having a minute tubercle at the base of the petals on the outside.

72. B. Shepherdi, F. Muell., *Fragm. Austr.*, iii., p. 40; Benth., *Fl. Austr.*, vi., p. 288. *B. Schillerianum*, Rchb. f., *Hamb. Gartenz.*, xvi., p. 423; *Xenia*, ii., p. 166.—Australia. Flowered in Consul Schiller's garden at Hamburg about 1860. A very remarkable species.

73. B. sordidum, Lindl., *Bot. Reg.*, 1840, Misc., n. 217. *Bolbophyllaria sordida*, Rchb. f., *Walp. Ann.*, vi., p. 242.—Guatemala. Cultivated by Mr. Bateman. Flowers fleshy, olive-brown, mottled with bright purple inside.

74. B. sulcatum, Lindl., *Gen. and Sp. Orch. Pl.*, p. 57; Miq., *Fl. Nederl. Ind.*, iii., p, 649. *Diphyes sulcata*, Blume, *Bijdr. tot Fl. Nederl. Ind.*, p. 314.—Java. Cultivated at Buitenzorg in 1866.

75. B. tenellum, Lindl., *Gen. and Sp. Orch. Pl.*, p. 49; Miq., *Fl. Nederl. Ind.*, iii., p. 646. *Diphyes tenella*, Blume, *Bijdr. tot Fl. Nederl. Ind.*, p. 319, t. 66.—Java. Cultivated at Buitenzorg in 1866.

76. B. tenuifolium, Lindl., *Gen and Sp. Orch. Pl.*, p. 50; Miq., *Fl. Nederl. Ind.*, iii., p. 648. *Diphyes tenuifolia*, Blume, *Bijdr. tot Fl. Nederl. Ind.*, p. 316.—Java. Cultivated at Buitenzorg in 1866.

77. B. tetragonum, Lindl., *Gen. and Sp. Orch.*, p. 53.—Sierra Leone. A curious little species, cultivated by the Horticultural Society before 1830.

78. B. triste, Rchb. f., *Walp. Ann.*, vi., p. 253; *Hamb. Gartenz.* 1865, p. 301; *Refug. Bot.*, ii., t. 117.—India. Originally found in the Khasya Hills by T. Lobb. Flowers very small, red and yellow, in dense recurved spikes at the top of very slender scapes, 8—10 inches high.

79. B. umbellatum, Lindl. *Bot. Reg.* 1845, t. 44; *Bot. Mag.*, t. 4267.—India. Collected in the Khasya Hills, by Mr. Gibson, who introduced it for the Duke of Devonshire; it flowered at Chatsworth in 1838. The umbellate inflorescence reminds one of a Cirrhopetalum, but the parts of the flowers are broad, and the sepals are short, Flowers pale yellow, spotted with red; labellum wholly red or purple.
("B. undulatum," Hort. Kew, is a name of which I can find no publication.)

80. B. vittatum, Teijsm. and Binnend, *Natuur. Tijdschr. voor Nederl. Ind.*, xxiv., p. 308; Miq. *Choix*, t. 20, fig. 2.—Java. Cultivated at Buitenzorg in 1863. Insignificant.

26. Cirrhopetalum.—Flowers in umbels. Lateral sepals longer than the posterior, and parallel under the lip or connate high up. A genus of about thirty species, the greater part inhabiting India and the Malayan Archipelago, one the Mascarene Islands, one China, and a somewhat anomalous one Australia. These very elegant little Orchids are mostly easily recognised by their umbellate or radiate inflorescence and long sepals. Zygoglossum, Hippoglossum, Ephippium, and Bolbophyllopsis, are reduced to Cirrhopetalum.

1. C. auratum, Lindl., *Bot. Reg.* 1840, Misc., n. 107, and 1843, t. 61; *Gard. Chron.* 1843, p. 911. *Bulbophyllum auratum*, Rchb. f., *Walp. Ann.*, vi., p. 261.—Manilla. Introduced by Loddiges, with whom it flowered first in 1841. The rosy and yellow flowers form a sphere at the top of the slender scape.

2. C. Blumei, Lindl., *Gen. and Sp. Orch. Pl.*, p. 59; Miq. *Fl. Nederl. Ind.*, iii., p. 654. *Ephippium ciliatum*, Blume, *Bijdr. tot Fl. Nederl. Ind.*, p. 309, t. 65.—Buitenzorg Botanic Garden, 1866.

3. C. cæspitosum, Wallich, *Bot. Reg.* 1838, Misc., 33. *Bulbophyllum scabratum*, Rchb. f., *Walp. Ann.*, vi., p. 259.—India. Imported and cultivated by the Duke of Devonshire.

4. C. chinense, Lindl., *Bot. Reg.* 1842, Misc., n. 29, and 1843, t. 49; *Gard. Chron.* 1842, p. 382. *Bulbophyllum chinense*, Rchb. f., *Walp. Ann.*, vi., p. 260.—China. Imported by Loddiges. Flowers fawn, purple, and green. "The flowers are arranged in a circle, and all look outwards; so that on whatever side the umbel is regarded it still presents to the eye the same row of grinning faces and wagging chins." The labellum in this, as in many other species, is continually oscillating.

5. C. cornutum, Lindl., *Bot. Reg.* 1838, Misc., n. 138; *Bot. Mag.*, t. 4753. *Bulbophyllum cornutum*, Rchb. f., *Walp. Ann.*, vi., p. 261.—India. Collected in the Khasya Hills by Mr. Simons, and sent to Kew, where it flowered in 1853. Flowers purple and greenish-yellow, nearly 2 inches long. The two lateral sepals are very much larger than the other parts of the flower, and united, forming a hollow spur or horn.

6. C. Cumingii, Lindl., *Bot. Reg.* 1843, under t. 49; *Bot. Mag.*, t. 4996. *Bulbophyllum Cumingii*, Rchb. f., *Walp. Ann.*, vi., p. 261.—Philippine Islands. Introduced by Cuming for Messrs. Loddiges, with whom it flowered in 1841. One of the prettiest of the genus, having purple-red flowers in a radiating umbel.

7. C. elegans, Teijsm. and Binnend., *Bat. Nat. Tijdschr.*, xxiv., reprint, p. 6.—Malayan Archipelago. Cultivated in the Botanic Gardens, Buitenzorg, 1866.

8. C. elongatum, Lindl., *Bot. Reg.* 1843, under t. 49. *Bolbophyllum elongatum*, Hassk., *Cat. Hort. Bog.*, p. 39; Miq., *Fl. Nederl. Ind.*, iii., p. 648. *Ephippium elongatum*, Blume, *Bijdr. tot Fl. Nederl. Ind.*, p. 309.—Java. Cultivated at Buitenzorg in 1866.

9. C. fimbriatum, Lindl., *Bot. Reg.* 1839, Misc., n. 120; *Bot. Mag.*, t. 4391; Wight, *Ic. Pl. Ind. Or.*, t. 1655. *Bulbophyllum fimbriatum*, Rchb. f., *Walp. Ann.*, vi., p. 260.—Bombay. Originally imported and cultivated by Messrs. Loddiges. A pretty species, the lateral sepals, greenish united in a long channel; petals and upper sepal small, purple, cut up into a deep fringe. Hort. Kew.

10. C. lineatum, Teijsm. et Binnend, *Bot. Nat. Tijdschr.*, xxiv., reprint, p. 7.—Java. Cultivated at Buitenzorg, 1866.

11. C. Macraei, Lindl., *Gen. and Sp. Orch. Pl.*, p. 59; *Bot. Mag.*, t. 4422. *Bulbophyllum Macraei*, Rchb. f., *Walp. Ann.*, vi., p. 263.—Ceylon. Discovered by Mr. M'Rae, and sent to Kew by Mr. Gardener before 1849. One of the prettiest species with racemose flowers, which are yellow and purple.

12. C. maculosum, Lindl., *Bot. Reg.* 1841, Misc., n. 173, and 1843, under t. 49. *Bolbophyllopsis Morphologorum*, Rchb. f., *Bot. Zeit.* 1852, p. 933; and *B. maculosa*, Rchb. f. *Walp. Ann.*, vi., p. 243.—India. Introduced by Dr. Wallich, and cultivated by Messrs. Loddiges. Flowers small, green and purple.

13. C. Makoyanum, Rchb. f., *Gard. Chron.*, n.s., xi., p. 234.—Brazil. Imported by Messrs. Makoy, of Liège. Allied to C. fimbriatum. Flowers light yellow, with brown spots and lines.

(*To be continued.*)

DOWNES,

The country seat and residence of Colonel Buller, V.C., is about a mile and a half from Crediton, and is pleasantly situated in picturesque grounds, which are well wooded with trees, many of which are venerable with age and majestic in appearance. Colonel Buller's name will be familiar to every one who can read a newspaper as being one of the heroes of the late campaign in South Africa. The gallant Colonel is now extending and remodelling his garden in a manner at once both methodical and practical. Attention was first of all directed to the building and furnishing of ranges of fruit and plant houses, and such other adjuncts as are requisite for cultivating both luxuries and necessaries for a private family; the result being that in something like two years the fruit houses are stocked with Pines, Grapes, Peaches, Figs, and other fruits, and specimen plants are already large enough to win prizes at exhibitions. The new houses have been built upon the lean-to principle, with a hip at the back, and in the case of the Pine stoves there are pits in the centre. The smallest of the full-grown fruits are not under 5 lb., and the average weight would be from 7 to 9 lb. all round. Some of the fruits of Black Jamaicas are from twelve to fourteen pips in depth—not bad samples of Pine growing in the time! The largest fruit of Smooth Cayenne in the fruiting-house is growing upon a plant which was a "small rootless sucker" as late as August 23, 1880; consequently, the plant bearing the fruit (which promises to be no ordinary one) is not yet two years old. Of course it is open to experts to say that good fruits are obtained from suckers in less than eighteen months, but all Pine growers know that much depends upon the size of the sucker when severed from the parent plant. The collection includes all the best summer and winter fruiting kinds.

The new range of vineries was planted with young canes twelve months last March, and these are bearing half-a-dozen bunches each this season, and the Vines are growing vigorously. The heaviest crops of Grapes are, of course, being taken from the Vines planted against the back wall, which will be taken out in course of time, when the permanent Vines are in full bearing. There are also good crops of Hepworth's Goliath Tomato grown along with the Vines—a very profitable and useful crop. The Vines consist of Black Hamburghs, Foster's Seedling, and Buckland's Sweetwater in the early house; and Muscats, Black Alicantes, Lady Downe's, Gros Colmar, and other kinds in the later houses. In another year or so, therefore, there will be no lack of early and late Grapes. The plant stove is at the end of the range of vineries, and, like the Pine stove, it is constructed with a pit in the centre, or, rather, a staging, instead of the pit. The plants are grown in specimens and half specimens, and at their present rate of growth under Mr. Bull's treatment they will soon be among the finest in the country of their kind. The collection consists of, among others, the following:—Dipladenia Brearleyana, amœna, and amabilis; Anthurium Scherzerianum, Ixoras of sorts, Croton Warreni, C. Princess of Wales, Alocasia intermedia, and different sorts of Allamandas, Palms, Medinilla magnifica, Alocasia macrorhiza variegata, highly coloured, and many other medium-sized plants.

The conservatory is constructed in a similar manner, and furnished in much the same way, only of course with a different class of plants. There are healthy plants of Plumbago capensis, Trachelospermum jasminoides, and Tacsonias, grown upon the back wall and also upon the roof, and the flowering plants are

showy and in excellent health. Begonias are very pretty trained natural fashion, and also upon trellises, and besides them there are hardy Heaths, Aphelexis, and other plants requiring similar treatment, in addition to a sprinkling of flowering subjects of a miscellaneous but ornamental character. We next proceed to inspect the contents of a range of Peach-houses, which are intended to furnish a supply of fruits from May to September, or later. The trees have already covered the back wall, or nearly so, and also the front trellising which runs transversely at distances of about 6 feet apart. They are in rare health, bearing large rich green leaves and heavy crops throughout. The varieties are the well-known Royal George, Early Grosse Mignonne, Noblesse, Late Admirable, Red Magdalen, and Pine-apple and Lord Napier Nectarines. The second and later lots consist of trees equally well cultivated, but of different varieties, for the obvious reason of securing a late succession of fruits.

Figs, Melons, and Cucumbers are well grown in houses by themselves, which yield a constant supply of fruits, with but little intermission between the crops. There are other walls still to be covered with glass, where Peach trees, Apricots, and Nectarines succeed indifferently, and evidently require but a glass protection to bring them into a thoroughly healthy and fertile state.

This is a most productive garden, the crops of fruits and vegetables being abundant and of first-rate quality; the vegetables are extraordinarily fine, owing to the depth and richness of the soil and the position of the garden, which is favourable to cultural operations. The grounds are furnished with large trees of very choice kinds, probably the best is a sample of the Maidenhair tree (Gingko adiantifolia), from 40 to 50 feet high—a good collection of Conifers, and a very choice selection of hardy creepers and flowering plants and shrubs.



Fig. 30.—Deutzia candidissima, Hort: hardy shrub; flowers pure white.

DEUTZIAS.

There are few more ornamental shrubs than these. They have the advantage of being hardy, very free flowering, easy to propagate, and requiring next to no attention. Some of them form excellent subjects for forcing. Their leaves are covered with star-shaped bristly scales, which form very pretty objects under the microscope, and are readily visible with an ordinary pocket lens. Our figure of D. candidissima represents one of the most beautiful of a beautiful genus, and is taken from a specimen sent us from Messrs. Cripps' nursery at Tunbridge Wells. A description of it was given at p. 44 of our present volume.

Florists' Flowers.

Pelargoniums, &c., at Hillingdon Place, Uxbridge.—Mr. Henry Little has so closely identified himself with the successful cultivation of the Cyclamen, Primula, Pelargonium, &c., that a visit paid to his residence at Hillingdon Place, Uxbridge, at any season of the year will be certain to be one of pleasure and profit. Hillingdon Place is on the north side of the coach road from London to Uxbridge, and represents a pleasant residence in pastoral grounds of moderate extent, a mile or so east of the pretty village of Hillingdon, which is almost close to Uxbridge.

About the grounds contiguous to the house are some Coniferous and other trees of fine development, unfortunately planted too thickly, as was the custom twenty-five years ago, and now fine specimens are in great danger of injuring each other, owing to their too close proximity. In front of the mansion are specimens of Abies Nordmanniana, 35 feet in height, very handsome, and making a rare growth this season; Cedrus Deodara and C. atlantica, handsome and well furnished; Abies Pinsapo, A. Douglasii, Picea orientalis, a slim growing tree that is said to take ten years to get a plant a few inches in height, the specimen here is 20 feet, and now growing very freely, and is perhaps twenty-five years old; Thuya Lobbii, &c. At the back of the house is a dense tuft of Picea clanbrasiliana, probably twenty-five years old and two or three other specimens a little smaller in size are here also. Close at hand were some fine old standard Roses with enormous heads; one of the old Blairii No. 1, has a head fully 5 feet through, and the blossoms were fine and numerous; there was also a very fine example of Jules Margottin, probably twelve or fourteen years old, and others to match; and in all probability the admirable condition in which these plants were seen was owing to their having been moved on two or three occasions. Ghent Azaleas do well here, there are some fine bushes dotted about the grounds; and the wealth of bloom on the Portugal Laurels was a sight long to be remembered. There are lines of this evergreen about the grounds that in the course of years have grown into good size, and their white flowers borne in the greatest profusion. The flower garden contained nothing worthy of notice with the exception of a bed of decorative Pelargoniums, the plants plunged in pots, and Mr. Little stated that they flower during the summer very freely and continuously.

It was in the height of the Pelargonium season when this visit was made, and the large collection in many sections was in full flower. How well the plants are grown has been amply demonstrated at the Pelargonium and other shows. In decorative Pelargoniums, especially of newer varieties, Mr. Little is very strong. Particularly noticeable were Lucie Lemoine, pure white, without a trace of blotch in the petals, very free, a capital late flowering variety; Nellie Hayes, delicate blush, with maroon spots on each petal, margined with bright purple, very large pip and truss, extra fine; Clemence Delahays, pale purple, with bright purple blotches on the top petals, very fine; Blushing Bride (Jackson), blush, with dark top petals shaded with orange, pale margin, very free and good; Setting Sun (Jackson), orange-carmine with slight dark blotches, fine shape, very free and good; Magnet, rich fiery orange, dark top petals, extra fine in shape, and splendid in colour; Zulu Bride (Braid), blush spotted with black on each petal, fine form, and truss very free; Comtesse de Choisseul, white on the faintest blush, slight purple spot on the top petals, large pip and truss, a first-rate decorative type. Formosa (Jackson), salmon-pink lower petals, with slight lively crimson spot, dark top petals, very fine; Poiteau, pale purple, dark top petals, very free and fine, an excellent and distinct decorative variety; Mrs. Potten (Lemoine), pure white, with slight crimson-maroon spots in the lower petals, black blotch on the top petals, fine form, excellent truss, extra fine; Aurora (Jackson), pink lower petals, slightly veined with rose, orange-pink upper petals, with slight dark blotch, large white throat, very fine;

Desfontaine, white, with a dark blotch on each petal, fine form, and large truss; Ruth Little (Jackson), bright soft rose lower petals, rose top petals with dark blotch, a very soft and pleasing flower, distinct and very fine in all respects; and Pygmalion, known also as Improved Triomphe de St. Mande, bright crimson-scarlet, darker on the top petals, large flowers, very fine and striking.

Of the newer large flowered or show varieties the following were very fine:—Superb (Beck), pale, bright red lower petals, flushed with orange, dark top petals, very fine form, and bold trusss, good habit; Gratitude, pale pink, with slight bright rosy-purple streaks, dark top petals, very fine shape, and excellent habit; Britomart (Beck), a rich orange-red flower, dark top petals, very fine shape, and excellent truss, good habit; Fortitude, orange-pink, dark top petals margined with orange and crimson, very fine pip and truss, good habit; Brilliant (Little), brilliant orange-carmine, very fine bright colour, large pip and fine truss, excellent habit, promising to make a very fine exhibition variety; Thebais (Beck), rich brilliant crimson lower petals, flushed with orange and slightly veined with dark, rich dark top petals, very fine form, good habit; Princess Hortensia, pale orange-salmon, deepening to rose, slight dark blotch on top petals, very free and good; Rose Superb (Little), pale soft rosy-pink, slight orange-crimson blotch on lower petals, orange-rose upper petals, very fine form, large truss, very free; and Gloriana (Beck), an advance on Hermit, really a tinted Hermit, delicate blush lower petals, dark top petals, shaded with fairy orange, and margined with pale rose, very free and fine, excellent habit.

The foregoing by no means exhausts the list of varieties grown by Mr. Little, but they are instanced to indicate something of the newer varieties of the past year or two. The collections of double and single zonal varieties, as well as of the double and single Ivy-leaved forms, were all alluded to in the report of the Pelargonium show; but it should be stated that Mr. Wiggins' method of growing the Ivy-leaved sorts is one well worthy of imitation, as they are invaluable for conservatory decoration during the summer.

In every glass-house there were Pelargoniums; even the vineries are made to do duty in the Pelargonium season. One lean-to house, 145 feet in length by 15 feet or so in width, was full of specimen plants in flower, and all being seen to the best advantage. *R. D.*

The Pelargonium.—The new varieties of the Pelargonium that have been introduced during the last few years are very numerous, and of great merit, many of them; the section termed decorative for want of a better name has been improved very much more than any of the others during that period, for the sufficient reason that in that section there was much more room for improvement. The new varieties were enumerated and described at the time they were exhibited, and it may be enough to say that no collection can be complete without a selection of them. The plants should now be starting into growth for early flowering, and as soon as they have started well the soil ought to be shaken from the roots and the plants shifted into pots a size smaller than those they flowered in. If the shoots are allowed to grow considerably before the plants are shaken out and repotted they receive a check. They may stand out-of-doors after they are cut down, but when they are repotted it is best to place them in a light airy house, pit or frame; after this, see that they do not suffer from irregularity of watering. The decorative section and the show varieties require much the same treatment; as a rule, it is best to cut them back rather close, and they should be dry at the roots, to prevent bleeding. It is a good time to put in cuttings, either of the young shoots or of the older ripened wood; they must not be put in hotbeds, but will form roots readily on a shelf in the greenhouse, or in a cold frame. The fancy varieties should also be cut down now, and cuttings put in if young stock is required; they should not be cut quite so close in as the others, and being more delicate in constitution they do not brook so much exposure in the open air, and require a lighter compost to be potted into.

Zonal Pelargoniums are amongst the most useful plants we have from now until Christmas to keep the greenhouse gay. The plants flowering now in 6 and 7-inch pots were propagated from cuttings in August last year. They received their last potting early in June, and are now ready to produce a plentiful supply of flowers. The double varieties are the best to cut for decorative purposes. The plants that are intended to flower from now until October will be freely watered and supplied with manure-water. Those intended to flower from October until Christmas are not yet potted into their flowering pots; this will be done about six weeks before we want them to flower.

The Verbena.—This beautiful flower has fallen into comparative neglect in the South of England, owing perhaps to the difficulty of keeping the plants in health during hot weather in summer; indeed, the Verbena is too liable to the attacks of various parasites at any season, and cultivators are apt to be discouraged when they find their plants succumbing to mildew, greenfly, or red-spider, or to a combination of the whole of them. The only way to do them well is to watch for the first appearance of any of these pests and to take steps at once to destroy them. The Verbena may be planted out in beds during the summer, where it affords a plentiful supply of beautiful flowers, if the beds are not allowed to suffer for want of water. In pots they make a beautiful and distinct feature in the greenhouse, but as the roots are formed very rapidly and speedily they exhaust the soil in the pots, surface-dressing with rich compost or repotting must therefore be resorted to. At all times give plenty of air, else the foliage will suffer. *J. Douglas, Loxford.*

Orchid Notes and Gleanings.

Odontoglossum sceptrum.—A plant of this lovely and rare Orchid, bearing a branched spike with twenty-seven flowers, is just now a striking object at Messrs. F. Sander & Co.'s nurseries at St. Alban's. I fear but few know this plant, as a weedy form of O. luteo-purpureum was formerly sold for it. The true species is that which Mr. R. P. Percival flowered last year, and that now at St. Alban's. It is certainly the neatest, most compact, and prettiest of the section, and very superior to the high-priced O. mulus. At first sight it reminds one of both O. triumphans and O. prionopetalon, the flower having the wax-like texture of the former with the white ground, saw-edged side segments of the latter variety. I have been told by a collector that there are many fine varieties of this plant, some of them having the three back segments of a shiny blackish-brown; but as the plant seems to be a bad traveller but few have as yet appeared. *James O'Brien.*

Nanodes Medusæ.—This South American species we lately saw well flowered in the collection of W. E. Brymer, Esq., M.P., Islington House, Dorchester. It is not an attractive flower to the masses, and perhaps would be best described, from a practical point of view, as being more curious than pretty, but to the real flower lover it is very striking.

Grammatophyllum Ellisii.—This charming Orchid, a native of Madagascar, we lately saw flowering in Mr. Bull's choice collection at Chelsea. It is quite an æsthetic colour, being yellowish-brown tipped with maroon. The sepals are barred with yellow, and the basal portion of the lobes are freckled with the same colour. The plant is bearing a flower-spike about 18 inches long, with over twenty fully expanded flowers.

Epidendrum nemorale.—Introduced from Mexico about the year 1840. This really handsome species has not received that amount of attention its merits deserve. I was much pleased with the really handsome specimen exhibited by Mr. Spyers, from Sir Trevor Lawrence's collection, at Regent's Park Show, on July 12. It was furnished with numerous spikes of its pleasing delicately tinted, rosy coloured flowers. Besides its value as an exhibition plant, it is also one of the very best to cut for furnishing vases, &c.; as the flowers remain in beauty nearly three weeks after they are cut from the plants. E. prismatocarpum, also exhibited at Regent's Park in fine condition, from Mr. Cobb's collection, is certainly one of the most distinct and handsome of the genus. The greenish-white sepals, and petals spotted with black, and the pinkish coloured lip are quite novel. Mr. Cobb's variety is a very good one, but whether it is in the culture, or in the variety itself—most likely the latter—it is not so good as one frequently exhibited by Mr. Heims, gr. to F. A. Philbrick, Esq., Q.C., which is the best variety I have ever seen. Both the above Orchids should be in every collection, as not only do the flowers last well, but they are excellent exhibition plants. *J. Douglas.*

COLONIAL NOTES.

The Agri-Horticultural Society of Madras.—The magnitude and importance of the work done by the Society may, says the annual report, be to some extent appreciated by the extraordinary increase in its correspondence. The number of letters written and copied into the books during the year 1881 was 1083; while in 1860, when a regular letter-book appears to have been first kept, it was only 45, in 1868 only 539, and in 1874 only 808; these figures, of course, not including numerous notes written by the various officers of the Society on the Society's business, which not being of sufficient importance, or for other reasons, are not recorded. The past season may be described as an unusually bad one for vegetation. The records of the Government Observatory show very unsatisfactory meteorological conditions, the rainfall of 1881, as there registered, being only 44.04 inches against an average of 48.94, and 8.19 of those inches having fallen on one day, November 12, on which day there was a cyclonic storm which did considerable damage in the gardens, happily only petty in detail. On May 21 the thermometer reached in the shade the nearly unprecedented height of 112°.9, while on January 31 it fell as low as 60°.4. The average maximum temperature of the latter half of May was 105°.1, and of the whole month the mean maximum was 100°.4, while the usual average is only 97°.6. On May 21 the sun thermometer reached 159°.2, its average for the month being 148°.9 against a usual average of 140°.5. The quantity of rain which fell, and consequently the moisture in the soil, being throughout the year about 10 inches lower than usual, such heat as that above recorded had a most injurious effect on plants, and makes it worthy of remark that no more plants seem to have actually perished than usually do each successive hot weather. The last day of the year was rendered remarkable by an earthquake—happily a very rare event in Madras—which damaged the Society's property by slightly cracking the roof and walls of the Superintendent's bungalow.

The Kitchen Garden.

Tomatos.—The weather which we have experienced up to the present time, while promoting a luxuriant growth in the plants, has been very unfavourable to the setting and developing of the fruit. The crop is, therefore, in the most favourable situation out-of-doors, late, and had we not anticipated this result by planting out a dozen or more plants with the fruits half grown at the same time we made our general planting, and from which we have been gathering fruit during the last few weeks, we should have had a break in the supply hitherto furnished by plants grown in pots under glass. Attend well to the thinning and stopping of the shoots and leaves, so that anything like overcrowding of either may be avoided, and that the fruit may be fully exposed to the influence of the sun—upon the presence and absence of which so much depends; and see that the shoots are, with nails and shreds, tacked to the wall as soon as they require it to be done, otherwise they will be liable to get damaged by the wind. Respecting Tomatos, I may remark that through pressure of work or rather inability to do it at the proper time in consequence of so much rain, the shoots and leaves of a few of our plants were not attended to in the way of thinning and stopping as soon as they should have been, with the result that both the beginning of last week exhibited symptoms (blotches) of the disease. These (the affected parts we cut clean away, and dusted the plants with a mixture of lime and new soot, which has arrested the spreading of the blotches. I specially mention this fact, so that if any of your readers' plants may happen to be similarly affected

they may, instead of quietly observing the progress, of the disease, or, it may be, consigning the plants forthwith to the rubbish-heap, be induced to take action in the matter, not only by contesting the right of the enemy to be in the field, but also by asserting their right and power to drive him out of it.

Seed Sowing, Planting, &c.—The beginning of next week in cold districts, and a week or ten days later in warm localities, will be a good time to make a first sowing of winter Spinach; and again about ten or twelve days later, in shallow drills not less than from 16 to 18 inches apart. About the 18th or 20th of this month Cauliflower and Lettuce seeds should be sown on a warm border for wintering in pits and frames, and to be transplanted under hand-glasses, and in the open in early spring. For this purpose we prefer Early London, Walcheren, and Veitch's Autumn Giant Cauliflower, the latter to fill in the blank that otherwise might, and frequently does occur between the supply obtained from the autumn raised plants, and those raised in heat in January; and black-seeded Bath Cos, Cooling's Broad-leaf Cos (a select variety of the former), Hick's Hardy White Cos, and Lee's Hardy Hammersmith Cabbage Lettuces; four good all-round winter varieties. These sowings, however, should be made a weak earlier or later than the dates above given, according as the situation is cold or warm. Our own practice, and one that we have heretofore, as we do now, recommend to others, is to sow another pinch of seed of the respective kinds, about the 25th of the present month. The seeds should be sown thinly rather than otherwise, to prevent the plants from damping off when they come up, through being too close together, and be protected from the ravages of birds by a piece of netting supported by short forky sticks, to prevent the former getting at the seeds through the latter. Sow the seed of Lamb's Lettuce thinly in drills 1 foot apart and 1 inch deep on a warm border about the middle of the present month, and, as also the seeds above referred to, water through a fine rose in the event of the weather rendering it necessary at the time of sowing or subsequently. Turnips (Carter's Jersey Marrow and Jersey Lily are two excellent varieties) should also be sown about the middle of this month to yield a supply adequate to the demand during the winter and spring months. Continue to sow Radishes, Mustard and Cress in a warm situation; the latter we find comes up better when shaded with a mat for a few days after sowing.

Continue to make plantings of Broccolis, Savoys, and winter Greens, as ground for that purpose becomes vacant; also Celery (from late sowing) and Leeks. As soon as the seedlings of Cabbage Lettuce and Endive—the result of the seed sown the third week in July—are large enough to handle, prick them out in small beds and guard against the ravages of slugs by dusting a mixture of new soot and lime along the side and ends of the beds; and so soon as the young plants of Lettuce and Endive become large enough let good breadths be planted of each sort for autumn and winter use—the former to be lifted and transplanted in cold pits and frames upon the approach of frost.

General Work.—Early Potatos which, like the late ones, are badly diseased this season, should, where not already done, be lifted, sorted, and put away on the shelves of the Potato-house—those for seed in one place, and those for the table in another. A portion of the ground thus cleared will come in for the winter crops of Spinach and Cauliflowers. Clip Box edgings in kitchen-gardens, either round or square fashion; but in either case it will be necessary to use a line and good taste in the operation, and according to the manner in which the latter is performed so also will be the effect—good or bad—thus produced. Peas and Beans intended for seed should be gathered as soon as the pods show signs of ripening, and be placed on shutters in pits or frames, where they can have the sashes drawn over them to protect them from damp, or in dry sheds, where they can be shelled, labelled, and stored away on wet days. The old haulms should be cleared off, and the ground, by Dutch hoeing and raking, be put in readiness for the planting of late Broccoli. A vigorous war must now be waged against weeds, which are more plentiful than is desirable in most gardens this season, and in the destruction of which a couple of "willing" hands and a good Dutch hoe can show good results for a day's labour. *H. W. Ward, Longford Castle, Wilts.*

Peaches and Nectarines.

In ordinary seasons the present is a good time for removing the sashes of early houses, to give the trees the full benefit of the autumn sun and rains, but with the continual rain and dull sunless weather we have had during the past two months, they will be as well on for the present; when we get some bright sunny weather they may be taken off, and be put under cover, to undergo any necessary repairs or painting required, which is easier and better done than when they are on the roof. As succession houses become cleared of fruit treat them as advised for the early houses, by thoroughly washing and taking out all superfluous wood not required for bearing fruit next season. Avoid overcrowding the young shoots, which are often the cause of weak spindly wood, of no use for fruit bearing. Keep the young shoots spread out to get all the sun and light possible. Later houses, if required, may now be brought on gently, by using a little fire-heat, and shutting up early whenever favoured with a little sun. Keep down red-spider by freely using the syringe. Expose the fruit to all the sun and light possible. Still keep the latest house cool, to prolong the season as far as it is possible to do so. *J. Wales, Keele Gardens, Aug. 1.*

Hale's Early Peach.—The first fruit of this excellent variety was gathered from the open wall at Chiswick on the first day of this month, fully ripe and highly coloured. The fruit would weigh between 6 oz. and 7 oz., and as regards finish it would be hard to tell whether it had been grown out-of-doors or under glass. It perhaps lacked that transparency of skin which is characteristic of fruits that are blown out by forcing, but in other respects a more perfect example of fruit culture could not be desired. The variety is evidently a first-rate one for the open wall or for forcing under glass.

Plants and their Culture.

Stove and Greenhouse Ferns.—Any of these that may require potting should be seen to without delay, so that the pots may become well filled with roots before winter sets it. In performing this operation, at this season of the year, use pots no larger than is absolutely necessary to give the plant a slight shift to tide them over till the spring. A good general mixture of soil for Ferns may be made of two-thirds peat (such as the common bracken, Pteris aquilina, thrives in), to this add one-third of light fibrous loam and silver-sand. Exceptions may be made of such as the Gymnogrammas and some of the more delicate kinds, which will thrive best in peat and silver-sand alone; on the other hand, those sorts with strong, robust growth, as the larger forms of the Tree Ferns, will do better on the whole in a soil of more retentive character. Some of the coarsest rooted kinds of Ferns are in the genus Marattia, one of which (M. elegans) we are growing in a soil chiefly consisting of loam. Where potting can be postponed till spring it will be preferable to do so. In this case occasional doses of liquid manure-water will be beneficial. For this I have found weak guano-water about the best stimulant. Such moisture-loving Ferns as Pteris scaberula and Hypolepis repens will be safer if a pan is stood under the pot, in the same manner as for pot Strawberries. This will be a safeguard against an omission in watering. These fine Ferns if once allowed to suffer, will be disfigured for the season. Probably this is the reason why they are not more grown than they are. Gleichenias should also have abundance of water. See to any of these that are pushing forth young rhizomes beyond the boundary of the pot or tub in which they are growing. If young stock is wanted, these may be safely rooted off into small pots or pans, and when they have made two or three fronds can be severed from the parent plant. If not wanted for this purpose, turn the points of these growths back towards the centre of the plant, after which a slight sprinkling of light peaty soil and sand will soon induce them to strike fresh root. Where a damp wall exists in a cool house, this, an unsightly object, may be turned to good account, on which to grow the Filmy Ferns in a natural manner, if there is room for some rockwork, and around this, again, a glass case. In this manner they will thrive immensely on either freestone or tufa, with peat for them to root into. In constructing rockwork for these or any other Ferns, the pocket system should be avoided, by this I mean the practice of having a large receptacle for soil, with but a small opening for the growing plants. I have seen some cases where it would be almost an impossibility to renovate the soil. The better plan is to place the rockwork and the soil so that the latter can be easily removed if necessary to add fresh supplies of the same at pleasure. Plenty of seedling Ferns can generally be found at this season of the year. Some of the most useful kinds should be secured and pricked off either into pans or small pots. These will make nice stuff another spring. It is also a good time of the year to raise any kind from the spores, most kinds being prolific in this respect now. The same kind of soil as each respective genus thrives the best in will suit for this. Where there may be a fruitful frond of Platycerium grande, no opportunity should be lost in attempting to increase the stock of this fine Fern. Young plants of this and P. alcicorne will be best kept in pots until large enough to be transferred to moderate-sized blocks or pieces of virgin cork; the latter suits them very well. Any large specimens of these Ferns should receive attention by removing any sour or inert soil, and substituting for it fibrous peat from which the finer portions have been removed; a little sphagnum will also be beneficial. Where a large quantity of Fern is required for cut purposes in the autumn and winter, the stock of Adiantum cuneatum should now be induced to make a good growth. This will be the more durable if the plants are freely exposed to the light and grown in a somewhat airy house. Some pots made up now with Selaginella Kraussiana will make most useful decorative stuff by the autumn. The golden form of this should not be overlooked.

Bulbous Plants.—Of these Amaryllis aulica should now be making growth; treat the plants liberally, and fine spikes of bloom will be given during the late autumn. Vallota purpurea will now be pushing up flower-spikes; endeavour to prolong the blooming period of this fine subject by hastening some and retarding others. The late stock of Achimenes and Tydæas should be watered freely. These showy plants are more valuable, I think, during September than at any other season of the year. Gesneras should now be making nice stuff; pits or frames with a slight heat will still do best for them. This fine showy subject does not appear to do well near London. At any rate we cannot succeed with it as we would like. They make plenty of good growth, and push forth flower-spikes, but the buds scarcely ever develope into open blossoms. I have attributed this to the severe fogs with which we were afflicted during the late autumn. The Roman Hyacinths and Narciss, with the Paper-white form of the latter, are now being sent over. The stock of these valuable early flowering bulbs should be secured without delay. Those intended for the first batch ought to be potted at once; when this is done, plunge the pots in cocoa-fibre if possible: this material is better than ashes, keeping sweeter. Cover the bulbs but slightly, so that the warmth of the sun can penetrate to them. When growth pushes through the covering, remove the pots to a greenhouse or pit, and the flower-spikes will shoot forth with scarcely any forcing. The stock of Lachenalias should be seen to at once; shake the bulbs out of their pots, and sort them, potting the stronger or blooming bulbs by themselves, and the weaker ones in like manner by themselves, only these latter may be placed more thickly in the pots if room cannot be spared; a somewhat light soil suits them best. *James Hudson, Gunnersbury, Aug. 1.*

Begonia fragrans as a Bush Plant.—Those who admire showy plants and love fragrant flowers, are ever ready to read and re-read anything interesting about old favourites. Of this Begonia it would be impossible to say much, if anything, that is entirely new in a cultural sense, but at least it is not often seen grown as a specimen for exhibition—about 4 feet across. In this condition a certain well-known plant grower, hailing from North Devon, has several plants, and anything more attractive can scarcely be imagined. It appears that when a moderate degree of growth is obtained the plant is more free flowering than when it is grown in a rich compost and planted out. At all events such specimens as those above-mentioned will hold their own, from a decorative point of view, with the most costly of the species; and while not depreciating the merits of other varieties, it is something to know that such specimens can be grown of a plant that is so useful for every modern purpose of decoration.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, Aug 7 { Continuation of the Liverpool Horticultural Association's Exhibition. Continuation of Bee Show, at South Kensington. Artizans' and Cottagers' Flower Show, at South Kensington. Show of Gooseberries and Table Decorations, at Old Trafford, Manchester.

TUESDAY, Aug 8 { Royal Horticultural Society: Meeting of Fruit and Floral Committees, at 11 A.M.

THE comparatively small number of working gardeners who subscribe to the GARDENERS' ROYAL BENEVOLENT INSTITUTION has over and over again been the subject of comment—unfavourable mostly to the craft as a body—amongst persons who can know little or nothing of the actual circumstances which surround a gardener's life—who have never qualified themselves for a gardener's position, and who have little real sympathy with gardening or its exponents. By such critics as these gardeners as a body have been misunderstood, and the non-appearance of their names on the roll-call of the Institution has often been attributed to motives very wide of the truth. The fact is, that, with low salaries, and the many claims which most of them have upon their very slender resources, the rank and file of the gardening fraternity are not in a position to do anything but supply their own most urgent necessities. That the support of the Gardeners' Royal Benevolent Institution would be a matter of the first importance with the craft as a body, were the circumstances of its members altered, we have no doubt whatever; at the same time, after making all due allowance, it should be quite within their power to contribute mites, and mites multiplied would form a very large aggregate. The man who by his skill and industry has contributed so much to the pleasure and instruction of the masses, who has to battle with extremes of heat and cold, and enemies beyond count, whose day's work is never done, the hundred-and-one jobs he has in view being never finished—yet who, in the face of all these things, can show such results as the average British gardener?—this is not the man to be insensible to the claims of charity, or to fail in making provision for old age and infirmity, if he only have the chance to do it.

The amount collected by gardeners for the Pension Augmentation Fund last year did credit to them as a first effort; we hope and believe that the one now being made, and which will be closed on November 1, will be even more successful (about £100 having, we believe, been already received by the Secretary, although only a few days have elapsed since the cards were issued), for there can be no two opinions as to the desirability of raising the pensions, and of doing it as soon as possible. The pensions when raised will be none too liberal, indeed they ought to be considerably higher than the committee at present propose to go, and a correspondent has suggested to us how this may be accomplished. He asks "Would it not be a good thing if all the gardeners in the United Kingdom were to ask their employers to allow their gardens to be opened to the public for one half-day once a year?" and expresses his decided opinion that most, if not all employers would agree to the proposition if the matter was only fairly put before them. "There are," he continues, "upwards of 2300 noblemen's and gentlemen's places in this country, to say nothing of the much larger number not included in the Directories, and the sum obtained for admission would range from £1 to £50, according to the size of the place and its distance from populous centres. Supposing the average receipts amounted only to the low sum of £5, the handsome total of £11,500 would be realised, and £10 from each place would put £23,000 to the credit of the Institution; and such a sum as this would enable the committee to make the pensions £25 for the old gardeners, and £20 for the widows." He suggests that as many gardens as possible should be thrown open on Bank Holidays, but that no two gardens within ten miles of each other should be opened on the same day. Failing the Bank Holidays, any other day during the summer months, before or after harvest, may be selected for the Grand *Fête* day, which should be well advertised by the usual means, and where possible should be made additionally attractive by lawn tennis, cricket, and other games for the youngsters. Other desirable accessories, such as music and light refreshments, should also be employed when desirable; the admission fee should be 1*s.* from 1 till 4 P.M., and 6*d.* from 4 till 8 o'clock.

"As a start," further writes our correspondent, who, we may mention, is Mr. JOHN PERKINS, "I have asked my employers, Lord and Lady HENNIKER, Thornham Hall, Eye, for permission to put the scheme above suggested into practice, and their answer was 'Yes, with very great pleasure;' and we hope to have our half-day *fête* in September, as soon after harvest as possible."

Mr. PERKINS deserves the hearty thanks of the committee of management for his admirable suggestion; we hope the *fête* at Thornham Hall will be as successful as he could desire; and that other gardeners will take the matter up, and see to it that successful *fête* days shall be abundant in the land, that the Institution which has afforded relief to so many may be placed in a position to do still more.

Another plan, already partially in operation, would be to make collections at the several flower shows throughout the country. If the young gardeners would give their pence, and those whose means allowed would bestow their shillings and pounds, we should soon have an Institution which would be a credit to us and an untold boon to the infirm and incapacitated among us. We have already expressed our willingness to receive and transmit to the committee any sums that may reach us.

—— THE CANNON-BALL TREE.—Mr. JENMAN, the colonial botanist at British Guiana, sends us a photograph of the flowering and fruiting stem of a young Cannon-ball tree, taken in the Promenade Gardens, Georgetown, British Guiana, which we have had engraved (fig. 31). This particular tree, which, as will be seen, is well named, is about 45 or 50 feet high, with a stem 18 inches thick, free of branches, as shown, and with a handsome spreading, hive-shaped head of dense dark green foliage. This is a young tree. In its native forests it grows to a much greater size. Couroupita guianensis inhabits the wide-stretching alluvial lands skirting the rivers of British Guiana, where it is plentiful, attaining a height of 80 to 100 feet or more. It is of free growth, and quickly forms a fine feature as a specimen plant in a tropical garden. It suddenly drops its leaves in March, and in a few days is again clothed in fully developed foliage of the richest green. The flowers are large, freely produced, curious in form, pink in colour, and highly scented. The solid rusty-coated fruits are about 6 inches in diameter, and contain a quantity of flat circular seeds, rather larger than a sixpence, embedded in their pulp. The tree belongs to the Lecythis family, and it is stated that the hard shells of the fruit are used as drinking vessels.

—— SPECIAL SOCIETIES.—The annual meeting of the Pelargonium Society will take place this year at a later date than usual, and the members will be duly advised on the subject. At the luncheon of the National Carnation Society, the propriety of holding a Pink show was proposed and approved. A committee will therefore be framed to carry out such a show next year, and Mr. SHIRLEY HIBBERD will in the meantime act as Secretary. A subscription of five shillings only will be expected from each supporter.

—— DISEASES OF PLANTS.—It is proposed to form an international association of those botanists and entomologists most competent to deal with this important subject, and for the purpose of studying the natural history of plant diseases, and the investigation of the means whereby they may be obviated or cured. The main objects proposed are:—1. Recognition and speedy communication of information as to the various forms of diseases of plants of all kinds, the spread of epidemics, and the prevention of the same. 2. The collection of statistics respecting diseases in various localities and observation of the influences of situation, soil, climate, &c. 3. Investigations as to the power of particular varieties to resist disturbing influences, and especially frost; and also the making of various cultural experiments with a view to discover the best varieties of plants to be cultivated in different localities. Co-operation of members in different countries is indispensable, and they should be chosen from among the most able men having sound knowledge of the variations, &c., of plants. Scientific investigation of new forms of plant diseases will be conducted both anatomically and chemically. For the furtherance of the object of the Society it is advisable to issue an appeal to the members, the appeal to take the form of questions and tables to be filled up with notes on the weather, and other remarks. The growth of seeds is also to be studied with regard to locality, climate, &c.; as also the cultivation of fruit, forest, and garden trees. The nature of the soil is to be taken into consideration, and the power of different plants to withstand weather, especially frost. Dr. PAUL SORAUER, of Proskau, Silesia, is the Secretary and originator of the proposed Society, and in each country special representatives are to be appointed to collect information.

—— THE NEW GOVERNMENT OFFICES.—For years plans have been under consideration for the construction of new Government Offices at Whitehall, which are urgently needed; and now that the Law Courts are approaching completion it is probable that a commencement will be made in Whitehall. The shameful bungling and waste of money that accrue from the way in which successive Governments tinker at the plans of their predecessors, and devise new ones of their own, without reference to any well considered scheme for carrying out the work as a great whole, is unhappily notorious, as is also the manner in which architects and landscape gardeners who do know their business are too often treated. Whatever plan be ultimately adopted we share the wishes of those who propose to open up the Mall to Trafalgar Square by extending it across Spring Gardens, and thus forming a vista from the square right up to Buckingham Palace, thus facilitating traffic, greatly enhancing the effect of the square and of the Mall, which would then have a suitable finish at both ends, and securing a current of air. The advantages of such an improvement so vastly outweigh the disadvantages that we hope the authorities may see their way to carry it out, and not lose the opportunity of making one of the finest town thoroughfares in Europe.

—— SEAMLESS SEED BAGS.—Mr. JAMES T. ANDERSON, of 149, Commercial Street, Shoreditch, the well-known importer of Russia mats, and manufacturer of sacks and bags, &c., has sent us a seamless seed bag—a speciality of his manufacture, in which there is no seam whatever, and which is, in consequence, admirably adapted for holding fine seeds. As the cost of the seamless bags is the same as that of the sewn ones, and all complaints as to imperfect sowing and bursting will, by their use, be done away with, they must become, with seedsmen, an article of prime necessity.

—— SPORT FROM THE COMMON AUCUBA JAPONICA.—Mr. IRELAND, of the Pilton Nurseries, Barnstaple, sends us a sport from the common Aucuba, identical, or nearly so, with the variety latemaculata, the centre of the leaf being occupied with a broad yellow disc, leaving only a small margin of green. We believe that it is matter of common experience that these central variegations are less constant than those in which the margin is variegated and the centre green—a curious physiological fact.

—— PELARGONIUM GLOIRE D'ORLEANS.—Among the Ivy-leaved section of Pelargoniums this is certainly one of the very best. It is a free grower, and produces numerous trusses of pink flowers, which are distinct and striking either used singly or *en masse*.

Mr. Barron sent a well-grown collection from the Society's gardens, Chiswick, to the late National Carnation and Picotee Show at South Kensington, but no other variety in the collection exhibited the same qualities of growth, habit, or colour. Small plants in 4-inch pots make pretty little bushes for front lines in greenhouses, and they also make bright objects for the dinner-table or sitting-room. The plant is sure to become a favourite with gardeners,

with it. How many hundred residences in and round London are clothed with it from base to roof during summer. Falling in elegant and luxuriant folds, it relieves the harsh monotony of miles of otherwise naked brickwork. Strip the houses of its plenitude of handsome five-lobed leaves, and what a contrast would be presented to view. True, its leaves are not evergreen, like those of the Ivy, but they are not the less acceptable in summer, and in

attaches itself to whatsoever it grows against, and forms a dense mass of wood, even when denuded of leaves; but it never festoons in so natural and graceful a manner as the common form. In the case of the Virginian Vine, the leading shoots that hang down in the way should be cut away when the leaves have dropped, and those left nailed or tied firmly into position. Thus the plants can remain till spring comes round, and the branches send forth their young growths. He



Fig. 31.—The Cannon-ball Tree. (see p. 176.)

—— The Virginian Creeper. — We have no hardy Creeper that can compare with the "American Ivy," as it has been sometimes designated, for service at this season of the year. It is both a most accommodating and a most serviceable plant. It will do in almost any soil, and in almost any cold and wet situation. It can be planted in odd corners, and outside of these it will spread itself, clothing many a naked spot with ample verdure, and hanging in graceful festoons from any available point its leaders can reach. As a town plant for covering brickwork rapidly and completely we have nothing to compare

autumn they are aglow with living fire, the which, if it presages the decay of winter, yet lights up the dull declining days with a warmth of colour that is as striking as it is in keeping with the season. What a delicious aspect of coolness it gives to a dwelling in summer, when no cloud tempers the heat of a bright July or August day. There are some who recommend that the smaller leaved A. tricuspidata should be planted in preference, to save the trouble of training, &c., but with all its good qualities it can never replace the more common A. hederacea. The former is highly valuable as a permanent covering, because its bine

who introduced the Virginian Creeper to this country was a benefactor to his race, and his memory should be held in grateful remembrance. But—who was it?

—— Montbretia crocosmæflora. — For furnishing large show-houses or conservatories at this season, or for grouping upon special occasions, the grass-like leaves and orange flowers of this plant are unsurpassed for giving general tone and lightness of effect to any arrangement. It looks well associated with Cannas, tall Dracænas, or Palms, or even among the ordinary run of summer flowering plants; it would

be a relief among so many subjects that are conspicuous for brightness, but lack anything like grace in their habit or foliage.

—— TRITONIA CROCATA.—Small plants of these are so hardy and so useful for the amateur's greenhouse, that no one should be without a collection of the different varieties. The leaves are narrow, green, and the flower-spikes about 12 inches long, each spike bearing from six to seven flowers. The flowers are orange, cup-shaped, and marked with yellow at the base of the cup.

—— THE "AIT" AT KEW BRIDGE. — We trust the powers that be will not be too much occupied with their warlike preparations and their political conflicts to bestow a thought upon one of the prettiest bits of river scenery in the whole course of the Thames. Separating the wooded demesnes at Kew from the noisome town of Brentford stand in midstream one or two islets—locally termed aits, or eyots —and which were once well wooded with spreading Poplars and other trees, which formed a delightful picture as viewed from Kew Bridge. At all times of the year the view is beautiful, but perhaps specially so on a winter's afternoon as the sun is about to set, when the trees form a fine contrast to the tall shaft of the waterworks. Surely, and not very slowly, these beautiful islets are being undermined and washed away by the tides. The trees, no longer provided with sufficient roothold, fall at the first blast, so that speedily nothing will be left to shut out the grimy smoke-bellowing and stinking factories of Brentford from the Royal Gardens. If it were a mere question of picturesqueness we should despair of hope that the authorities—in this case, if we are rightly informed, the Government—would pay any heed to the matter. Indeed, attention has been called to it over and over again in the Press, and still, for want of a few wattles, the destruction is allowed to proceed. But the matter has a practical aspect also, for the aits in question are not only screens to shut out offensive surroundings, but they play a part in the shelter and protection of the gardens, while their preservation would obviate the shoaling of the river. The remedy is obvious, and as the extent is trifling it would not entail much cost. Moreover, the aits might be utilised, by making them part of the Arboretum, and while securing the few existing trees, Alders, Willows, Poplars, and other trees for which the situation is adapted, might be planted. The simplest way would be to put the islets under the management of the authorities at the Royal Gardens.

—— GILIA BRANDEGEI.—Two or three years ago this pretty plant was figured in the *Botanical Magazine*, from a specimen grown by that most successful introducer and cultivator of new and rare herbaceous plants, Mr. W. THOMPSON, of Ipswich. According to the work just mentioned, this is an "exceedingly rare plant, discovered by the very intelligent and energetic collector whose name it bears, on perpendicular rocks at the source of the Rio Grande, in the Rocky Mountains of S.W. Colorado." It was again found by Drs. GRAY and LAMBORN, very sparingly, on the Sierra Blanca, in July, 1877, at an elevation of upwards of 12,000 feet above sea-level. The plant grows nearly a foot high, is everywhere glandular pubescent; the pale primrose tubular flowers measure upwards of an inch in length. A fine specimen at Kew is now flowering abundantly in a cool frame in a somewhat slightly sheltered spot. Many persons have quite failed to grow this species on the open rockwork; like some other plants from very lofty elevations, the sharp and sudden atmospheric changes probably prove too much for it—in the cold frame these are to a considerable extent modified.

—— EARLY FLOWERING CHRYSANTHEMUMS.—At the Caterham Horticultural Society's Show on July 26 Mr. JOHN CATTELL, nurseryman, Westerham, exhibited a box of cut flowers of a varied and interesting character; among them was a collection of bunches of early flowering Chrysanthemums. It is something to see Chrysanthemums in flower in July; and so many varieties, and all generally of dwarf free habit. The varieties staged from Westerham were Frederick Pole, chestnut, good colour, distinct; Madame Picaul, cerise-rose, pretty; Dr. Boisduval, lilac-rose; Indicum nanum, blush rose, changing to blush; Illustratum, pale pink; Andromeda, pale yellow; Virgo, white, with lemon centre; White Jardin des Plantes, pure white, with slight sulphur centre; and Souvenir d'un ami, said to be snow-white, but here delicate blush—a very good variety indeed, that flowers early, and remains in bloom a long time. There are other varieties in the lists, but here were the kinds named in full bloom, and they, therefore, can be depended on to bloom at this season of the year. Many of the visitors to the show were surprised to see Chrysanthemums in flower in July; as well those who are ignorant of the existence of this early section might be. The fact is that, with care, Chrysanthemums can be had in bloom from the end of June, or earlier, up to the end of January, and, indeed, with the service of some of the late-flowering Japanese varieties, on to the end of February, if only some heat can be given to assist the expansion of the flowers.

—— VEGETABLE MARROWS FOR MARKET.—Vegetable Marrows must be a remunerative crop, judging from the extent to which they are grown by some market gardeners. Mr. CHARLES STEELE has a great breadth at Gunnersbury Lane Farm, Ealing, which were put in to follow one of the finest crops of Lisbon Onions ever seen. The ground was heavily manured after the Onions, and ploughed, the ploughman cutting deep furrows at stated distances apart. Into this deep furrow a heap of manure was dropped some 7 feet or so apart in the line; a slight mound of earth was piled over it, and on this two plants of Vegetable Marrows that had been reared two in a pot were planted out. It was done during dry weather, and a little water was given at the outset; then the rains came, and the plants went away with astonishing rapidity, and in a majority of cases are bearing excellent crops. They cover a piece of ground of considerable extent, and there are just over fifty lines of Marrows, each 130 yards or so in length, with shorter rows at each end, with one necessitated by the shape of the ground. The lines of Marrows are from 12 to 14 feet apart, and between them space was formed for five or six lines of Paris Cos Lettuce which are being gathered for market. The leading shoots of the Marrow will soon meet each other, and then the yield will be something enormous. The variety grown is the Long-ribbed White, and it appears to fruit in a young state, and at all times very freely. The seeds are sown in 48-pots, two in a pot, raised and grown on in a dung-bed and then hardened off for planting out, by which time the pots are full of roots; and being prepared to bear any vicissitudes which may be reasonably expected at the end of May and early in June, they really receive no appreciable check.

—— POLYGONUM MOLLE.—On the new rockwork at Kew this pretty species is now in flower. It is a native of Nepal, and although quite distinct from, has somewhat the general appearance of P. amplexicaule. It makes a graceful clump a couple of feet high, with large panicles of small white flowers.

—— A RIBBON-BORDER OF POPPIES.—Travellers by the Great Western Railway to Reading, as they come near to the town, pass along at the north-westerly end of Messrs. SUTTON & SONS' seed trial grounds. Just now these grounds are extremely gay with large patches of annuals that are surprisingly attractive because displaying such striking patches of colour. But one long and broad band of varied colour, not in lines, as in the case of the rainbow, but mingled together, particularly strikes the eye, and many a wonder must be expressed as to what particular flower this huge band represents. It runs parallel with the Great Western Railway to the extent of some 200 yards, and on examination it is found to consist of some eight lines of Pæony-flowered Poppies, carrying immense blossoms, many of them 6 to 8 inches in diameter, and of varying colours, from pure white, which appears to be the smallest flowered, to rich deep crimson and black-purple; between these extremes are flesh, lemon, pink, violet, rose-scarlet, and many other colours and combinations of colours too numerous to mention. Finer types of the double Poppy can scarcely be imagined, and the whole constitutes a band of colour as unusual as it is extensive. This bed of Poppies is in remarkable contrast to the patches of brilliant colours which flank it on all sides, and one can realise something of their value for the furnishing of shubbery borders in patches. The seed of these fine Poppies must be in great demand, as this bed looks as if it would furnish seed enough for the United Kingdom, with a colonial possession or two of great extent thrown in with it. Granted that the Poppy is a somewhat evanescent flower, yet such a strain as the Pæony flowered is very fine, and most attractive when in bloom.

—— ROSA SINICA. — The double form of this species is grown in some Continental nurseries under the name of R. alba odorata, and a plant received from abroad is now flowering in the Kew collection, with the latter name attached to it. The true R. alba, however, is a totally different plant. AITON'S Rosa sinica (for what the plant is to which LINNÆUS gave that name is a matter of some uncertainty) is a nearly evergreen half-climbing shrub, with dark green glossy leaves, its peduncles and fruits being covered with large straight bristles. Its native country is probably China, it however is cultivated in so many Eastern countries that there seems some doubt as to its being truly a Chinese plant.

—— THE QUEEN ONION—Notwithstanding what has been said to the contrary, this early and most useful Onion is quite distinct from the Neapolitan Marzagole and the Early White Naples. We have just had an opportunity of seeing the three growing side by side under circumstances that enabled us to carefully examine and note the differences. Between the last two no difference can be distinguished, but between these and The Queen there is not only a difference but a very great distinction. The Queen was sown at the same time as the others in spring, and has matured the crop. Indeed there is scarcely a sign of foliage, but just beneath the soil there are perfect bulbs of Onions quite matured. But the others are growing fast, and are only beginning to form bulbs, and it will be weeks ere they will be matured. There is a difference of several weeks in the time of turning in, and the difference in the growth of the Onions is as great. Perhaps there are spurious stocks of The Queen in cultivation, and, if so, any confusion of sorts can be accounted for.

—— DELPHINIUM GRANDIFLORUM.—Mr. JOHN CATTELL, nurseryman, Westerham, has forwarded a branched flowering spike of this fine Delphinium, and he has marked it "very old and very scarce." What a superb thing it is! The flowers are of the richest bright blue—not a sky-blue, but a real regal blue, reminding one of Gentiana verna, but richer and fuller in the tint; the flowers medium-sized, semi-double, and borne on dark almost erect flower-stems, which are of a wire-like substance and erect. The ordinary form of D. grandiflorum as found in gardens falls some way behind this in beauty; it is the most truly blue Delphinium in cultivation, and one does not wonder at its being labelled "scarce." Is it scarce because it is a weakly grower? The rigid and robust looking character of the flower-stems would lead one to infer the contrary.

—— DELPHINIUM MOOREANUM. — This is presumably a new variety, and is growing in the collection at Westerham. The flowers are small, of good shape, fully double, and finely produced; the body of the petals a kind of pale rosy-magenta, with a distinct broad margin of beautiful clear pale blue. No information is forthcoming as to its origin, but it should be noted as a variety deserving a place in a select collection.

—— PHLOX DRUMMONDI, BEAUTY OF WESTERHAM.—This is a striped variety which reminds us of the pretty form that was grown twenty-five years ago under the name of General Radetzsky. This variety, which was raised at Westerham, has a broad shaded crimson wedge of colour on each segment, the latter being feathered with lavender. It is very pretty indeed, but if the lilac feathering were only pure white, it would be even more acceptable. As it is, it is a striped variety decidedly in advance of any of those obtained from the Continent. It was sent by Mr. JOHN CATTELL, Westerham. In all probability it will come true from seed, but it is not difficult to keep plants through the winter in pots, and propagate by means of cuttings in the spring. We should think this striped form would make a very pretty basket plant.

—— GAILLARDIAS.—The recent award of a First-class Certificate of Merit to what is known as the double Gaillardia, G. picta Lorenziana, serves to call attention to a somewhat neglected but very useful and

showy class of plants. The double variety has the whole of the centre of the flower filled up with quilled florets, and it is said that seedlings will produce six different shades of colour. That this is a decided novelty cannot be questioned, but whether it is more strikingly handsome for garden purposes than the single forms remains to be seen. Of these a round half-dozen was shown by Mr. John Cattell, of Westerham, at the recent exhibition of the Caterham Horticultural Society. G. stellata represents a bright golden form, with a single row of ray florets, and a greenish-brown disc: it is a strong growing type, and blooms very freely. G. magnifica is of a richer and deeper gold, with a more even circle of ray florets and a reddish-brown disc. This is decidedly handsome, and should be in the collection of those who grow hardy plants for exhibition purposes in August. G. aristata is of a yet deeper gold with larger ray florets, also in a single row, but more closely set, therefore giving the flowers the appearance of better form, and with a small reddish-orange disc: this also is very fine. G. superba has longer ray florets, also of a deep golden colour, the disc yellowish-green in the centre, with a margin of dull red; and a bronzy red ring about one-third of the length of the florets, round the base of the same. In G. bicolor we get shorter ray florets of a fine bright yellow colour, a reddish-crimson disc with a ring of orange-red at the base of the florets, but which is much brighter in colour than in the case of superba. Lastly comes G. grandiflora: this is the smallest flowered of the batch, the disc dull red with a slight yellowish-green centre, the florets thin and irregular, but with a band of reddish-brown extending some half or more of their length round the disc. Gaillardias do well in good garden soil, providing it is not too heavy and retentive of moisture. They are very useful plants for cutting from, and the flowers last for a good time in water. Plants come freely from seeds, which can be sown either at midsummer, to flower the following year, or early in the spring, to flower the same season. They form conspicuous objects in mixed borders, and if the flowers are kept cut, so that seeds are not formed, they bloom freely and for a lengthened period.

—— Rubus nobilis.—More than twenty years have elapsed since this species was described by Regel in the *Gartenflora*, and even now its origin is unknown. Koch in his *Dendrologie* says "native country unknown, probably North America." A specimen of this species presented to the Royal Gardens, Kew, by M. Van Volxem, under the name of R. nepalensis, is now flowering in that establishment. It is perfectly hardy; has trifoliate leaves, hairy on both surfaces, green above and white below, and large panicles of fine large red flowers. A search through the Kew Herbarium proved unsuccessful in discovering anything wild which resembled R. nobilis; there is, however, a specimen of the cultivated plant from St. Petersburg.

—— The Extraction of American and European Turpentine.—In a recent number of the *Oil and Drug News*, in an article on the turpentine and resin interests of Georgia, it is stated that the 37,000,000 acres of land of which Georgia consists have a variety of climate and soil which presents a field of agriculture and manufacture almost unsurpassed. The turpentine and resin industry in the State of Georgia, is one which has grown into great prominence. Its importance as one of the chief interests is of such a nature as to cause the employment of a large number of hands and a large amount of capital, in fact it now constitutes one of the largest and most profitable industries in the State. It has been estimated that the annual product of Georgia in the resin and turpentine trade is 900,000 barrels of turpentine, and 2,300,000 barrels of resin. The turpentine lands are valued at from 2 dollars to 20 dollars per acre. There are from 7000 to 8000 hands employed in the business. The turpentine is obtained by cutting boxes or pockets in the trunks of the Pinus australis. The boxes are cut from November to March, and each hand is expected to empty 10,000 boxes during the season. The sap begins to flow freely about the middle of March, and is collected from the boxes by means of a peculiar ladle, and deposited in barrels. The stills used are not essentially different from the ardent spirit stills in common use. They have a capacity of from five to twenty barrels, and run through two batches a day, *i.e.*, a twenty barrel still runs forty barrels of sap, producing about six barrels of spirits of turpentine, and twenty-three barrels of resin. The bulk of the turpentine used in European commerce is furnished by the Pinus australis, but quantities are also obtained from the Scotch Fir (P. sylvestris), in Finland and Russia; from P. Laricio in Austria and Corsica; and from P. Pinaster in South-western France. The European plan of collecting turpentine, though similar in its results, differs somewhat in practice, from that which obtains in America; the deep holes or "boxes" are not cut in the trunks, but some of the wood is chopped away for some distance up the trunk, down which the turpentine trickles, small pieces of zinc often being placed in a slanting position below, to conduct it into vessels placed to receive it, or a kind of a receptacle is made of earth at the level of the ground from which the turpentine is afterwards scooped. Some fine specimens of trunks that have been operated upon for the extraction of turpentine have recently been received at the Kew Museum; one series from Bordeaux of Pinus Pinaster, exhibited in a case in No. 3 Museum, shows the turpentine concreted on the surface of the wood that has been wounded, and a fine specimen of P. australis, from North America, shows very clearly the nature of the pocket or box.

—— Curious Growth of a Coreopsis. — A correspondent of Coulter's *Botanical Gazette* describes a very singular growth of some plants of a species of Coreopsis—perhaps C. discoidea—met with in Du Page County, Illinois. The phenomenon described is similar to that exhibited by some Aroids, such as Philodendron, and by many species of Ficus, which germinate in the crown of a Palm, or in the fork of some other tree, and send down to the earth long cord-like roots, by means of which the plant becomes terrestrial. Usually these roots develope to such an extent as to completely enclose and strangle the trunk of the nurse-tree.

"In what are known as the Big Woods, eight miles south-west of Wheaton College, there occur ponds or swamps with no natural outlet, and bottoms of tenacious brick-clay subsoil several feet in thickness. These mud-ponds, or swamps, are filled up by the winter and spring rains, but dry out in midsummer. The plants of which I am speaking grew 2 feet above the ground, on the stems of Cephalanthus bushes, which were standing in one of those dried-out ponds. Long slender roots, resembling the stems of Dodder, followed closely the fissures of the Cephalanthus bark down to the soil, where they developed normally, thus connecting by a slender thread, as it were, the tuft of green herbage above with the moisture-supplying earth below. The best developed plants were found highest up, though all were nearly on the same horizon. Lower down I could see undeveloped seeds sticking to the bark, some of which had sprouted, but failed to grow, apparently from want of moisture. It seems most likely that the seeds floating on the surface of the water during a season of floods collected around the bushes; that the water remained standing until the time of their germination, and then began slowly to subside, and thus the roots, following this retreating source of moisture, were led down to the ground. The plants were very much dwarfed, being only 4 to 6 inches high, but they were profusely branched, with stems varying from $\frac{1}{16}$th to $\frac{1}{4}$th of an inch in diameter. The roots exhibited little tendency to branch in the downward course, though in some instances dividing once or twice."

Of course, under the circumstances, there was nothing very remarkable in the development of long aërial roots; it is, however, an interesting illustration of an effort at adaptation to conditions.

—— Phœnix rupicola. — Notwithstanding the great variety already existing among Palms, and their utility as furnishing subjects, there is still plenty of room for the introduction of plants of graceful habit and character. The great bulk of Palms being exceedingly rapid growers, it is at times difficult to select a suitable plant—one of suitable size and habit—for a small or even a large dinner-table. Take, for example, that most useful of all Palms, Seaforthia elegans, which grows so freely, leaving a foot of naked stem at its base within a few months. This plant is no longer fit to be used upon the dinner-table, for the simple reason that those who sit at dinner only see the bare stem instead of the leaves. The Arecas are better, being more dwarf, more compact in habit, and slower growers, but it is questionable whether there is any other Palm in commerce, all things considered, that will be found more generally useful to the gardener or amateur than this Phœnix. The leaves are beautifully cut, and the drooping habit and gracefulness of the plant stamp it at once as being one of the very best Palms yet introduced for ornamenting the sitting-room or dinner-table.

—— Barren Fig Trees. — Why are so many Fig trees barren? The question is asked, not for any combative purpose, but if possible to throw out a useful hint, and to invite cultivators to give us the benefit of their experience. The great and most prolific source of the mischief arises from want of cultural knowledge in dealing with the trees in summer. A common opinion prevails that by pinching Fig trees you make them fruitful. This is no more correct in the case of the Fig tree than it is in the case of any other fruit tree, unless the operation is performed at the proper time, and with judgment, according to the condition of the tree's growth, and other circumstances. A. pinches his Fig tree because his neighbour B. has done the same, without any regard to the respective condition of each tree. The kernel of the matter lies in one fact, and that fact is that the young shoots of Fig trees are pinched in a green state, and instead of fruit succeeding the operation there is a swarm of young growths. The points of the shoots should not be pinched off until the wood is beginning to take on a brown hue, and until it is quite firm. There may be three or more Fig trees growing in the same garden, and no two of the trees will be fit for pinching at the same time. This is perfectly logical and reasonable, because one tree may be planted against a south wall and another against a west one, where the situation is low, and it would therefore be bad judgment, and want of discrimination, to treat both trees alike. In Devonshire and Cornwall the trees are allowed to grow bush fashion, and what little pruning they get amounts to thinning out occasionally, and good average crops are annually obtained without so much hair-splitting as regards the time to pinch and how to do it.

—— Scutellaria moccineana.—Of all winter-flowering plants this is probably the greatest friend to the gardener. To do it well, however, it requires cultivation, or rather strict attention to cleanliness; for it will flower at any period of the year, whether winter or summer. Its spikes of vivid scarlet flowers are never more welcome than about Christmas, and cuttings taken now, and encouraged with a little warmth, will make serviceable stock for cutting from; or, if grown in small pots singly, they come in well for grouping in *jardinières* with Maidenhair Ferns, &c.

—— Anagallis tenella. — Without exception the showiest of the bog plants now flowering in the tank in the herbaceous department at Kew, is our native bog Pimpernel. It forms a dense carpet of tiny leaves and branches, thickly covered—indeed almost quite hidden—with the profusion of large tender rose-coloured corollas. In Sir J. E. Smith's *English Flora*, the author says, "It yields to none of our wild plants in elegance; and being scarcely known on the Continent, except in the South, is a welcome present to German, Swiss, and Swedish botanists."

—— Diplacus glutinosus as a Room Plant. —Has any one noticed the effect which this simple plant gives in a sitting-room during the bright days of summer? It looks a plant of a semi-hard-wooded character, but grows as freely as the commonest of soft-wooded plants. While growing, however, if time is a consideration the wood should be kept soft by shading until the plant has attained the desired size, after which it should be gradually exposed to sun and light, in order that the wood may get hardened, and a flowering condition secured. Much has lately been said about express culture of plants and fruits, and this is a plant which may be subjected to the express system without fear of failure. A decent-sized plant for a sitting-room may be grown from the cutting in three months. Give the plant a natural pleasing form by pinching, and when in full flower use it for the sitting-room. If you put it in a dark room there is nothing particular about it—in good truth it looks rather dull—but put it in a room facing the south, draw the blinds, and the gleams of subdued light through them, acting upon the buff Mimulus-like flowers, has a soft sweet effect which neither an artist nor a poet could adequately describe. Those who wish to enjoy its full beauty

must view it from some little distance, and take care that the plant is placed in front of the window, where the action of the light upon the soft yellow flowers will be as described.

—— ABUTILON VEXILLARIUM FOR AMATEURS.—No one who is acquainted with the difficulties which beset the ordinary amateur in his gardening efforts can have failed to notice how frequently an unfortunate selection is made in the case of plants. The amateur is above all things an enthusiast. Give him, therefore, a plant which is useful, ornamental, and a free grower, and he is in his element. About the first thing an amateur will ask for is a creeping plant to cover a pillar or trellis in his greenhouse, and for this purpose the above Abutilon is one of the best plants that can be recommended. A plant may be bought for a few pence, or a cutting, which is not difficult to obtain, will root in a few days, and in less than three months will make a considerable plant. Besides being a good creeper it is a well known bedding plant; and when its long pointed leaves are well coloured, it is one of the prettiest objects that one can desire to see in a garden.

—— ADIANTIUM CURVATUM.—In the cultivation of Ferns it would be well if we could appreciate more fully than we do the changing colours of the fronds during the different stages of development. In the variety under notice the young fronds are of a light bronze colour, and they contrast beautifully with the older ones, which are green and in every-day language better hardened. We are possessed of such a wealth of Ferns that if we only paid a little more attention to arrangement we might, even with a very ordinary collection, have much better effects. Among Adiantums alone there is sufficient variety to make an interesting show in a good-sized house. But we must study arrangement, and if we grow Ferns for no higher purpose than to cut them, there is no reason why we should not take as much pains to show them off as if we were dealing with a collection of less useful and common plants.

—— MYRTLES.—So comparatively few are the species or varieties of plants that will take with the multitude in Covent Garden that most of the nurseries where plants are grown for the market present a sameness that, despite the excellent cultivation generally carried out, reduces the interest attached to them. Yet there are a few establishments wherein are cultivated, more or less, things that the majority of growers do not attempt; amongst these are the fragrant Myrtle, which, for its bright glossy leaves, is always a favourite with those who look for something beyond colour in the flowers of the plants they require. The old large-leaved, and also the small-leaved variety are grown at Mr. HART's, Beaumont Road Nursery, Leyton, in considerable numbers, and which are yearly propagated to be disposed of in the form of compact well-furnished plants, large as well as small, but much the greater portion of the stock go to furnish the daily supply for the leading bouquet makers. The best examples of bouquets, especially for weddings, are usually intermixed with the pretty and fragrant growths of these Myrtles used in the form of shoots 6 or 7 inches in length, and which, independently of their agreeable perfume and bright leaves, go far to relieve the too even surface for which Covent Garden bouquets were at one time objectionable, but in which there has of late been a decided improvement. The old plants are kept on in use for many years. Each season, after the shoots have been gathered during winter and early spring, the plants are close cut in, so as to keep them compact and bushy, after which they are encouraged to make fresh growth, which, as soon as it is hard enough to stand without flagging, is daily gathered, and the quantity of shoots that a moderate-sized, well-managed plant will produce in the course of the year is considerable, as the regular thinning out of the strongest strengthens the weaker ones.

—— THE POTATO CROP.—The reports we give in the present number are, all things considered, not so unfavourable as might have been anticipated. So far there seems a prospect of a fair crop, in spite of the disease having made its appearance in a severe form, especially in the South and West. Early Potatos seem to be most affected with disease, while Magnum Bonum and Champion hold their own as hardy varieties relatively unhurt by the fungus. It is singular and instructive to notice the small plots in cottagers' gardens and on railway banks. In such places where, it may be, several varieties are grown in small patches in proximity, it is easy to see, as one speeds along in the train, that while some varieties are destroyed others are flourishing. Travel along the same line a few days later, and the whilom flourishing haulms are seen affected in their turn, and, as we believe, to a large extent unnecessarily so, if the growers would but destroy the haulm immediately they discover the disease upon one variety. In any case they would gain time, while (upon the small scale we are now alluding to) we believe the main crop might be saved where now it is allowed to go to destruction. Mr. JENSEN's plan of moulding should decidedly be tried also.

—— THE PRUNER TO THE RESCUE.—This call to action is decidedly necessary in the case of some suburban gardens, where variegated and ornamental trees have been planted in front gardens. Here we may note that it is a pleasing feature in the planting of the gardens of modern villa residences, that ornamental trees of a valuable character are being used with much greater plenty than formerly. Then, the planter seemed to be constantly ringing the changes on Mountain Ash, Laburnum, Acacia, Thorn, Sycamore, Poplars, and a few other of the commoner trees; now, the best of flowering plants are found intermingling with really choice pictorial trees, and especially with those having variegated foliage—that is where, as at Ealing, there is a good tree-nursery in the neighbourhood. Incidentally we may remark that the late CHARLES LEE has left his mark in this neighbourhood, and set an example of taste and judgment that might be followed with advantage elsewhere. But many of the variegated trees especially require attention, for they are worked on some strong-growing green stocks, and the more vigorous character is forced out among the variegated shoots, and, growing away very strongly, will soon smother the more picturesque variegated parts if they are not cut away. We have seen within the last day or two trees of Ulmus campestris albo-variegata worked on a large leaved form of probably U. montana, and the stock is rapidly overpowering the scion. Other cases might be mentioned, in which the knife of the pruner is sorely needed. Probably the residents of some of these villas think it pleasing to the eye to have the green and variegated forms together, little thinking that it will soon become a battle between the two, with certain victory to the strongest. The ordinary jobbing gardener is, on the whole, an ill-informed and unobservant being, and but little help can be had from him in a general way. Specially the contractor and builder needs to be told that he wastes money, when planting by the roadside, if he does not expend a little in staking the trees he plants, and fencing them off from the nibbling tendencies of the tradesmen horses.

—— THE WEATHER.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending July 31, issued by the Meteorological Office, London:—The weather has again been rather unsettled and showery in the north of England and west of Scotland, but has improved elsewhere, and in the southern parts of the kingdom it has been very fine, with scarcely any rain. The temperature has been about equal to the mean in "Scotland, E.," but elsewhere it has continued slightly below. The maxima were generally registered during the latter part of the period, and ranged from 77° in "England, E." and "England, S.," to 68° in the south of Ireland. The minima, which occurred in most places on the 27th, were rather low, varying from 39° over eastern England, and 40° in "Ireland, N.," to 45° in Scotland and the south of Ireland. The rainfall has been a little more than the mean in "Scotland, W.," and "England, N.W.," and equal to it in "England, N.E.;" but in all other districts the fall was less. Bright sunshine has been rather less prevalent than last week in most districts, the percentages ranging from 54 in "England, S.W.," to 26 in "Ireland, N." Depressions observed:—At the commencement of the period two depressions were shown over the North Sea, and a third over Brittany. By the 27th, however, these had disappeared to the eastward, and the wind, which had been moderate from the northward, shifted to the southward on all our coasts, and blew strongly in the west. From that time till the end of the period the barometer was highest on our south and south-west coasts, and lowest to the northward, where a few slight disturbances were passing.

BRADIFORD HOUSE,

THE seat of T. J. Dennis, Esq., lies to the north-west of Barnstaple, and is approached by a winding drive which leads to the carriage front at the east side of the house. The house is in the Elizabethan style, and is ornamented with four large stone columns at the carriage entrance. The sweep of lawn upon the west of the drive is furnished with Abies lasiocarpa, A. Nordmanniana, Cryptomeria elegans, Wellingtonias, Tulip trees, fine samples of Copper Beech, evergreen Oaks, Douglas Firs, flowering Chestnuts and Thorns, Turkey Oaks, and the Pseud-acacia. How these trees grow and luxuriate in Devonshire can only be pictured by those who have actually seen them. Trees may be seen elsewhere as large or larger, but the colour and luxuriance of the leafage is seldom equalled in other climates. Close to the house are some huge Weeping Elms, where there are seats placed under the shade of their drooping branches, and not far removed from them are some fine Pines and Weeping Ash, and in another portion of the grounds there are large Elms, Pinus insignis, P. excelsa, Chestnuts, and a Beech avenue which affords that degree of shade which is always enjoyable during the summer months.

This is one place among a few which is not marred by a network of walks running hither and thither and very often leading nowhere. But there is something which makes up for this, which is more sensible and natural.

The grounds are skirted by a lovely walk having upon the right good sized trees of Beech and Pines and upon the opposite side low evergreen Oaks, Beech, Elms, and Pinus austriaca. The undergrowth of flowering shrubs must be very pretty in the spring when all are in bloom and the branches of various tints droop over them irregularly, and hardy bulbs and other flowers carpet the ground. A walk from the walled-in garden takes the visitor to the tennis-ground, which is entered by an arch of common Laurel, and is enclosed by a belt of Beech, Oaks, Pines, Cupressus, and Tulip trees, Portugal Laurels, trimmed Cedars, Wellingtonias, Limes in single specimens, clumps of flowering shrubs, and Pampas-grass. Flower gardening is well done in borders in the carpet and panel style, for which purpose a considerable variety of plants are used. But Grape growing is the gardening feature of the place. In this branch of gardening Mr. Harris excels, and is very successful as an exhibitor. A man, however, may have splendid fruits, flowers, or vegetables, but if he is far removed from any great centre he seldom succeeds in gaining praise or credit for his work such as he should have. Better crops of Grapes need not be desired by any one than those that are grown at Bradiford House, where plants are also grown in the same houses.

The early Hamburghs are cut, but the house is not without interest for all that, for here are grand trained plants of zonal Pelargoniums, from 3 to 4 feet across, of John Gibbons, Corsair, Gertrude, Mrs. Whitley, The Shah, Samuel Plimsol, and Lady Charles Campbell. There are also good trained specimens of Petunias. The second division has a fine crop of Muscat and Hamburgh Grapes, which are of a very high order as regards finish and quality. The third house is filled with late Grapes, Lady Downe's, Alicantes, and others; and in this house there is also a beautiful show of flowering Begonias, Fuchsias, Coleus, Tuberoses, Achimenes, and other useful stock, making in all a really creditable display, which fully testifies to the industry, zeal, and skill of Mr. Harris, the gardener.

RUSTIC BRIDGE.

WE again avail ourselves of a design for a rustic bridge, furnished us by Messrs. W. Barron & Son, of Borrowash, and of such a character that any estate carpenter could easily construct it. A bridge should, first of all, be suited to its requirements—that is, first and foremost, safe; then it should be adapted to its environment. The present example (fig. 32) would be out of place in an Italian terrace garden, but near the rootery or the fernery it would be quite appropriate.

DECORATIVE TREES.

A liking for trees, manifested by the dwellers in any country, may safely be taken as one of the evidences whereby to gauge the civilisation and culture to which the people have attained; not that by any means the nations who stand low in the scale are all indifferent to or devoid of emotional, or even devotional feelings towards arborescent life as evidenced in the simple Hindoo, who holds the Banyan sacred. And if we look nearer home we meet with evidence that coincides with this view, for, in our own country at a time when, according to our ideas of human culture, the people were a long way in arrear of the present, and when undoubtedly the wood wherewith to shaft the spear or fashion the bow was a matter of greater import than anything of a decorative character, yet even then there existed a love of trees. Had this not been so, the land would not be interspersed so thickly as we find it with decorative trees, so old that their age is only conjectural. In proof of this, I might point to the ancient Oaks we continually meet with in the grounds, and in close proximity to the old mansions existent in every country—to the yet more patriarchal Yews that still live in the graveyards attached to the old churches, where, after keeping sentry for may be a thousand years, they even now bear witness to the reverence for the sacred building, or respect for the memory of the dead felt by those who planted them. And I think we may see in the selection thus made of the Oak and Yew, alike remarkable for the age to which they live, and for their beauty, that planters in remote times knew enough of tree life to enable them to set a due value on these as decorative trees.

It is not to be supposed that every one has such love and veneration for trees as the author of the ballad, "Woodman, spare that tree;" but yet it is clear that the people of this country are strongly imbued with like feelings, for, wherever we see a man in a position to acquire as much land as will enable him to rear a habitation, if there happens to be a tree on it he will make any sort of shift to avoid destroying it; and if there are no trees on the spot, he at once sets to work planting them. In choosing "Decorative Trees" as the title for this paper I have done so with a view to separate the subject from the wider, and no doubt more important division of arboriculture—timber growing, which, it is needless to say, is a very different affair in every way to that of the cultivation of trees for the embellishment of the landscape or the grounds attached to a mansion. Be these of an extensive park-like character, or simply the limited surroundings of a suburban residence, the first consideration that presents itself is

Where to Plant.—This, as a matter of course, needs to be regulated by the more or less extensive character of the place and other local circumstances. Large or small, the course pursued should be to give as much apparent extent to the grounds as consistent with a sufficiently clothed appearance; this can only be secured by leaving, so far as the extent permits, enough of the surface, in each direction, where an open view is desirable, free from trees. Trees that are handsome objects in themselves may very often be met with so far out of place that they themselves lose by the position they stand in, as well as being detrimental to the appearance of the grounds they occupy. This is not alone apparent in places of limited extent, where the disposition to possess all the new species that have been introduced in recent times has resulted in crowding up almost every available space where there was room for a tree to grow, but is frequently to be met with in extensive places, where the injudicious introduction from time to time of odd trees or groups that whilst small did not so plainly show their ill effects, but when grown up became an eyesore, which the usual disinclination for the removal of trees allows to remain.

The ill effects of planting so many of the fashionable new evergreen trees in the most conspicuous positions near the mansion, often without a thought as to their being wanting naturally in form to harmonise with the building, has frequently led to manifest incongruity, and to still greater inconsistency, when, as they increase in size, they shut out the light from the windows, and often have not themselves room to grow. These mistakes are frequently apparent in cases where more foresight might have been expected. Trees are usually planted whilst young, and in a small space, and as they grow up there is tolerably clear evidence that the planters had not given much thought about the effect they would produce in themselves, or the influence they would exert over adjacent objects: hence the enjoyment derivable from many a fine decorative tree, or group of trees, is marred by the unsuitable position they occupy.

What to Plant.—In considering the very important matter of what to plant, after that of adaptability to the soil and locality, the choice needs to be guided by local circumstances—proximity to other objects, such as buildings, water, and the surroundings generally. The tall spiral shaft of the Lombardy Poplar, that when used sparingly in the distance or in close proximity to a building usually contrasts so well with other objects, invariably has an opposite effect if present in considerable quantities. Trees like this, of exceptionally erect habit, or the Cedar of Lebanon, so opposite in form, should, for the contrast they afford, ever find a prominent place, but always in limited numbers. There is one matter which tree planters would do well never to lose sight of, that is, in all cases to confine the kinds they use to such as have given proof of their adaptability to the soil and situation. A kind of tree that only holds a secondary place in appearance, if it thrives well, is much preferable to a better species that, through being unable to grow in the place, languishes. I think it will be admitted that of late years there has been an undue preference shown for the planting of evergreen trees for decorative purposes, to the exclusion of deciduous kinds, where the latter would often be more in character. Novelty and variety are desirable, but fitness for the purpose required is of still more importance.

Nearly all the trees that in recent years have been introduced to us are evergreen, mostly representatives of the Coniferous or Taxaceous families; and to the fact of their being new may be assigned the reason of their having for the last quarter of a century almost exclusively monopolised favour for decorative planting. But planting trees is a very different affair to that of putting in an annual crop, and it is well to bear in mind that although the tree may have all the attractions of being rare and new when we plant it, yet long before it attains age and size to give even a forecast of what it is likely ultimately to be in appearance, it will cease to be either new or rare. If we could count upon the new trees that come to us, even such as we could rely upon being quite hardy, attaining something like the size and appearance that they grow to in their native countries, then we might more safely plant them in prominent positions. But there is abundant proof that no reliance can be placed upon any opinion we can form as to how a tree that is indigenous to another country, even where the climate is something like our own, will thrive with us until it is actually tried.

It must not be supposed that on account of this I would by any means discourage the planting of trees new to us, but I think we have seen enough of the failures resulting from planting untried trees in prominent positions to point to the advisability for such places of using only the kinds that we know enough about to enable us to rely upon them, and of these, fortunately, there is no stint; in deciduous trees there need be no hesitation as to what we may depend upon—our own English Oak, Beech, Lime, Elm, Sycamore, and Hornbeam, apart from home associations, are not easily beaten as decorative trees. We have besides Birches, foreign Oaks, Elms, Planes, Willows, Horse Chestnuts, and Sweet Chestnuts amongst larger growers, in addition to Walnut, Acacias, Ailantus, Alders, and many others of a similar character. Our native evergreen trees are comparatively few, yet the Yew and Holly, although not attaining the size of many we have from other countries, are amongst the best decorative subjects we possess; but in the Pines, Spruces, Cedars, Cypresses, Junipers, and Arbor-vitæs, which the hill-regions of Southern Europe, China, Japan, and the cooler parts of America, have given us—from the best and sufficiently proved of these there is ample room for selecting such as possess everything in form, colour, and general habit that can possibly be required for all the purposes for which decorative trees can be wanted, without, as too often done, planting those that are doubtful and frequently disappointing.

Winters such as those of 1860—61, and 1880—81 show the mistake that is made by planting trees at all uncertain in their ability to not only survive the severe frosts to which at intervals we are subject, but, further, to bear these cold ordeals without being disfigured to an extent that often makes them painful to look upon for years afterwards. In many places, especially where the dressed grounds are extensive, positions could be found for such trees as are at all doubtful of hardihood, where, if it happened that they got injured or destroyed, they would be less missed than when they occupy places where death or injury leaves a gap. Where situations of this kind are not available it is much better to dispense with doubtful trees

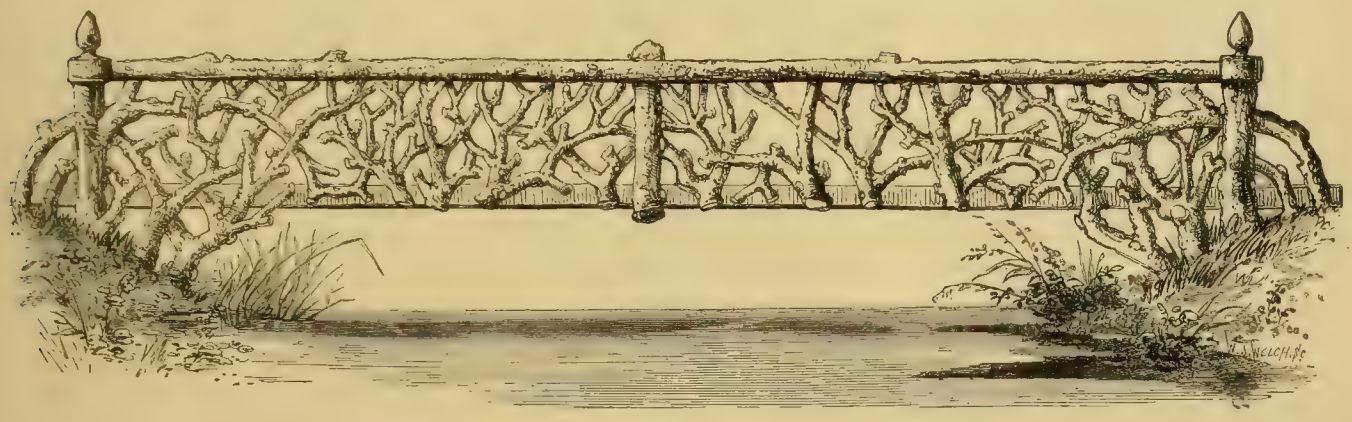


Fig. 32.—Design for a rustic bridge. (see p. 180.)

altogether. I have spoken of the preponderance of evergreen decorative trees that have been of late years planted to the exclusion of deciduous kinds, and by which so much is lost in the beautiful colours, and shades of colour, which the deciduous species give, from the time they first don their leaves in spring up to the autumn fall. It is unnecessary, neither do I feel any inclination to go over the hackneyed ground about the beauties of spring and autumn tints; it has been sung in verse and prose by the great poets of every land, followed by thousands of imitators. All I have to add is, that those who plant evergreen trees to an extent that prevents the deciduous kinds being fully represented, rob their grounds very much of the beauty existent in tree life. The different varieties of Oak alone afford a study in the closing shades of their leaf colours.

It is no doubt quite possible to get to the opposite extreme by not using evergreen trees in sufficient numbers, which in their numerous shades of green contrast so well with deciduous kinds when the grouping is well done. The effect produced by considerable masses of evergreen trees in the distance is generally an important feature in the landscape at all times of the year. Near a dwelling, especially in the winter, their presence gives a feeling of shelter and warmth that is alone worth considering; yet I look upon it that, in any place, let the grounds be large or small, the evergreen species should be used much more sparingly than the deciduous kinds. Even in the comparatively modern pinetums I have not seen anywhere that the presence of many more deciduous trees, would not have much better balanced the general effect. Against this it may be urged that Nature often plants immense breadths of evergreen or deciduous trees alone, often whole tracts where a single species predominates; but for purposes of decoration in this we do not want to follow Nature. In decorative planting there is one thing that deserves particular attention; I allude to the extent to which the grouping together of individual kinds should be carried, as opposed to the dotting mixtures, where every tree is different in kind and character to those immediately near it. At the present day there are few, I think, who will question the superiority of the grouping system when it is worked out with judgment, but the extent to which it should be carried can only be determined by local circumstances, such as the size of the grounds, their inequalities of surface, and general features, still further ruled by the character of the tree of which each group is composed. In one position a single tree of any given kind may be enough, where a dozen, a score, or a hundred of the same tree may be required in another. Contrast in form, as well as in colour, can alike be more effectively illustrated under the grouping system than the ordinary mixed style of planting, providing the requisite judgment is brought to bear upon it.

Those who are engaged in decorative tree planting, even if comparatively young men, work more for those who are to come after them than for their own time. This makes it the more necessary to consider well the appearance the trees will assume as they attain age. Without a due regard to this the work, be it the planting of a single tree or of numbers without limit, can only have a haphazard result.

How to Plant.—There are few varieties, and still fewer species, that come under the head of decorative trees that thrive in exceptionally wet or exceptionally dry soils. Where the land is too wet for a tree it can never flourish, and ultimately dwindles away; where drier than suited to its natural requirements the progress is slow, it cannot attain its full size, and the appearance is more or less stunted. In places where the latter extreme exists it is usually where the soil is thin and the subsoil consists of sand or gravel, in either case little can be done to improve it, except for planting on a very limited scale. With many of the rarer kinds of trees in recent times, where the natural soil was supposed to be too shallow, or not of a suitable description, the planting has been done on raised stations, by adding more or less new soil of a suitable kind; in this way the trees often go on for a time, but in many cases that I have seen they fail to continue making satisfactory progreess. The necessity for sufficient drainage, where the land requires it for plants generally, is so well understood at the present day, as to need no further comment from me, than to say that there are very few, except Poplars and Alders, which will thrive with stagnant moisture in the soil.

Treatment in After Years.—The appearance required in a tree for decorative purposes is so different to that which even the same kind needs to bear when the growth of timber is the object that a very different course requires to be followed, not only as to room needful at the time of planting, but much more so as growth progresses. The tall massive trunk free from branches, or the sign of their ever having existed, which is so precious in the eye of the woodman, is not the form that more than a few are required to possess when trees are grown for decoration. From the first space must be allowed to admit of free development in the lower branches, with increased room as it becomes necessary afterwards. To the want of timely thinning even more than close planting is due the very unsatisfactory condition that trees which should be ornamental in appearance often present.

The effects of the all but general disinclination to thin sufficiently trees that encroach upon each other are to be seen on every side. Places of all sizes alike give evidence of this greatest of mistakes in tree cultivation; even in positions where they can least be spared nothing so common as to see the whole ruined sooner than part with any. It would be easy to enlarge on this the worst of all practices in tree culture; it is a matter that has frequently been urged, yet often with little purpose, for except amongst those who have given some attention to tree life advice in this direction has not much effect.

The practice of laying on over the roots considerable quantities of soil in after years, when the trees have attained some size, has recently been mooted. With Coniferous trees especially this appears to have been tried. A light addition, such as the ordinary surface-dressings applied to any crop, may in some cases do no harm, or even be of use; but I am convinced the ultimate result of covering the roots of trees that naturally have the whole of their roots so near the top of the ground as the trees in question, with a body of earth sufficient, as has been spoken of, to prevent the winds blowing them over, would be their destruction. Evergreen trees so treated may not at once resent such usage—may even seem to profit by it for a time, but I should be very sorry to run the risk of what the effects are almost certain eventually to be. *T. Baines.*

SWEET PEAS.

Probably no other common flower is so useful in the garden during summer as the Sweet Pea, and it is as indispensable to it as Mignonette; and yet, while it is so useful and so commonly grown, it appears to escape, to a considerable extent, the attention of writers. Perhaps it is assumed that nothing that is fresh can be written about it, and yet new varieties occasionally come into cultivation, and they are of undoubted novelty and quality; but as they are so seldom met with in gardens, they appear to gain a footing there but very slowly. Formerly we had but few varieties of Sweet Peas, now they have grown into something like thirteen or fourteen varieties, every one of which well deserves a place in the garden.

It is nearly two centuries ago that the Sweet Pea was introduced from Sicily. In all probability the original form has been considerably improved upon, and it has either sported into new forms, or yielded them by means of seed. In later years new varieties have been obtained in this way:—Among the plants raised from seed of any one variety, a new departure has been discovered in the case of a plant or two. Those whose practice it is to grow from seeds largely are aware of the tendency in many annuals to break into different characters, and when one appears it is marked, the surrounding plants are pulled out to give the new type space in which to develope itself, and the seed is carefully gathered and sown for another season. Sports of this kind are often very difficult to fix in a permanent character; they will appear for a year or two or more, as if they would do so, and then they will revert to their original form, to the great disappointment of the cultivator. On the other hand, such sports can be permanently fixed after a few years' selection, and when the durability of the new character is assured the variety can be sold in the ordinary way.

Let us endeavour to set forth in descriptive form, as nearly as it can be done, the various sorts of sweet Peas in cultivation. Taking first the purple we get an exceedingly bright and attractive variety with a crimson standard, as the upper part of the flower is termed, with very pleasing blue-violet wings. If only three varieties were grown this should be one of them, for the blue-violet tint on the wings is most attractive. The purple-striped, as the striped form of this is termed, has the standard and wings much streaked and spotted with white; but while the striped forms afford variety, they are scarcely so pleasing to the eye as the self-coloured flowers. The scarlet Sweet Pea has a standard of a deep scarlet or red hue, the wings being paler and brighter in colour, approaching magenta, with a white keel; indeed, the white keel appears to be characteristic of all the varieties. The scarlet Invincible is a larger and finer selection of this, being more intense in colour in all its parts. It is now much grown for cutting, indeed, more so than any other variety, because of its fine appearance. The scarlet Invincible has striped forms also, in which pencillings of white are thrown across all the parts of the flower. Whether the black Sweet Pea was derived from the purple, or *vice versâ*, the black so-called has a maroon crest and deep purple wings, but it is not so bright in appearance as the purple. But a tendency to become purple will be found among the black, and to become black among the purple; in fact they are apt to run into each other, and need rigid selection to keep them true to character. The Painted Lady is a very pretty and distinct Sweet Pea, the standards scarlet, and the wings white. This variety, too, should have a place in every collection. We have seen in Messrs. Carter & Co.'s collection a very fine striped form of the black Sweet Pea, in which the dark standards and the deep purple-blue wings are striped with white, and this is very pretty indeed, and may not materially differ from the ordinary striped form of the black. The white is well known from being perfectly white in all its parts; it is an exceedingly attractive variety, and like the scarlet Invincible is highly grown for cutting from. What is known as Sutton's Butterfly, is a white flower tinted in the most pleasing manner with delicate lilac-blue on the margin of the standards and wings, changing with age to deep lilac. It originated as a sport among some white Sweet Peas at Messrs. Sutton & Sons' trial grounds at Reading, and it is also known in catalogues as the blue-edged. Fairy Queen appears to have been another sport from the white variety, the standards and wings being white, flaked with rose. This is a very pleasing variety indeed, and quite distinct in character. Crown Princess of Prussia, which we believe to be another of Messrs. Carter & Co.'s raising, is also a very pretty and distinct variety, the crest salmon-pink, the wings delicately tinted with pink, quite novel, and deserving to be generally grown. The Queen has the standards scarlet feathered with white on the edges, something in the way of a Tulip that is so marked, and with pencillings of the same in the centre, the wings slightly flaked with bright rosy violet; this is also very attractive and novel, and with Violet Queen, now to be described, originated at the St. Osyth seed farms, and, we should think, in both cases came up as sports from Painted Lady. Violet Queen has lovely rosy-pink standards, with bright pale violet wings, and is very fine in appearance and novel in character. There yet remains the yellow Sweet Pea, which is not much grown, and which, no doubt, represents a cream-coloured form of the white; and, if this be so, it can scarcely be depended on for fixity of character.

An enormous quantity of Sweet Peas is every year grown for the trade. A wholesale house like that of Messrs. Hurst & Son, of Houndsditch, grows every year from 25 to 30 acres of Sweet Peas, but the produce is very variable. Last year, owing to the weather, there were many total failures; but a good average season and crop should produce about 20 bushels per acre, but this is seldom realised. Messrs. Carter, Dunnett & Beale grow large breadths of the different varieties of Sweet Peas at their St. Osyth seed farms, some sorts more largely than others, according as they are in demand, and there must be very heavy sales of Sweet Peas. Messrs. Hurst & Son put their annual sales at about 300 bushels, and the seeds are grown chiefly in Kent and Essex. The greater quantity is grown as mixed colours, separate colours being required only in comparatively small quantities.

Of late years Sweet Peas have come to be much grown for supplying cut blooms for market, the scarlet Invincible and the white in particular being cultivated for this purpose, as well as in mixed colours. A hedge of Sweet Peas of mixed colours is a very pretty sight indeed in any garden, and diffuses a most agreeable fragrance. The scarlet Invincible in conjunction with Tropæolum canariense is a charming combination, as delightful as it is novel. A garden without Sweet Peas is a garden without one of the most useful of flowers that can find a place in it. *R. D.*

PLANT PORTRAITS.

Aglaonema pictum, Kunth, *Illust. Hort.*, t. 445.—A Sumatran Aroid, with erect stem and sheathing leaves, with ovate-lanceolate blades 4—7 inches long, of a dark green, mottled and blotched with white on the upper surface.

Aloe abyssinica, var. Peacockii, Baker; *Bot. Mag.*, t. 6620.—One of Mr. Peacock's plants with lanceolate fleshy, toothed leaves, and panicles of crowded cylindrical yellow flowers.

Anacyclus radiatus, Lois., β purpurascens, *Gartenflora*, t. 1074.—An annual Composite with very finely dissected glaucous green foliage and flat heads of flowers, with white ray florets and a central yellow disc, or with florets of disc and ray both yellow. Haage & Schmidt.

Androsace rotundifolia, var. macrocalyx, *Bot. Mag.*, t. 6617.—A very pretty Himalayan species, with a tuft of long-stalked roundish Mallow-like leaves from whose midst uprises a scape bearing at the top a truss of pale rose flowers surrounded by a leafy involucre, and each in the variety figured with a large leafy calyx. Hort. I. Anderson-Henry.

Anthurium Andreanum, Linden, *Bot. Mag.*, t. 6616; see *Gard. Chron.* 1880, p. 490.

Bauhinia corymbosa, Roxb.; Hook. in *Bot. Mag.* t. 6621.—A stove climber, with roundish deeply biparted leaves, and tufts of pale rose or rosy lilac flowers, with five rounded notched petals. Hort. Macleay.

Campanula Allioni, *Garden*, May 20.—An alpine species, attaining a height of a few inches only, with underground runners, linear oblong leaves, and large bell-shaped violet-blue flowers, like those of a Canterbury Bell.

Cattleya gigas, *Garden*, May 20.—Flowers very large, lilac; lip broad, reddish-violet, edged with pale lilac, and with a yellow blotch at the base. New Granada.

Gooseberries, *Bulletin d'Arboriculture*, May.—The varieties figured are:—1, Plunder, green, smooth; 2, Speedwell, red, hairy; 3, Rover, dark red, smooth; 4, Ringer, deep yellowish-green, shining.

Montbretia crocosmæflora, *Revue Horticole*, March 16.—A hybrid between Crocosmia aurea (pollen) and Montbretia Pottsii (seed), with spear-like foliage and erect racemose cymes of curved funnel-shaped orange flowers.

Odontoglossum excellens, *Garden*, April 1, 1882.—A supposed hybrid between O. Pescatorei and O. tripudians, and a great rarity. It has flowers nearly 3 inches across with elliptic segments, the petals broader than the sepals, all primrose-yellow, blotched with cinnamon-brown, lip broad oblong retuse, white with brown spots.

Physalis violacea, *Revue Horticole*, May 16.—A Solanaceous perennial, like the Egg-plant, but with globular dark violet berries, suitable for use in salads, or cooked like Tomatos. Its history is not known.

Pear Joséphine de Malines, *Bulletin d'Arboriculture*, April.—Fruit medium-sized, turbinate, rounded; flesh fine, melting, juicy, sugary. 1 quality. November—January. The tree is very hardy.

Peperomia resediflora, André; Hook. in *Bot. Mag.*, t. 6619.—A stove herb with succulent stems, long-stalked cordate ovate glabrous leaves and long spikes bearing white club-shaped spikes of inconspicuous blooms.

Tydæa Vesuvius, *Revue de l'Horticulture Belge*, March.—Leaves ovate lanceolate; flowers very numerous on long stalks, bright red, with darker stripes, irregularly funnel-shaped, with a 5-lobed limb. M. Duval.

Visnea mocanera, *Revue Horticole*, May 16.—A Tea-like shrub with small pendulous white bell-shaped flowers, suitable for greenhouse culture.

HOME CORRESPONDENCE.

Germination of Seed.—In my paper on "Seed Sowing," in your publication of the 15th inst., I suggested enquiry whether seeds of species of Primulas, &c., having whorled stems were generally slow to vegetate, and Mr. Smith, of Newry, finds that even seeds of Primula japonica will vegetate the first year if sown immediately they are ripe. This is worth attending to by those who, like me, have encountered the difficulty I complained of. Of course we all know that imported seeds are for the most part difficult to raise. *I. Anderson-Henry.*

—— It is curious how some seeds will not germinate at all in any soil I can give them, which seeds come up with my friend Mr. Harpur-Crewe readily. I feel sure it is a question of soil; he cannot raise some Primroses which grow here as readily as Mustard and Cress—P. capitata, for instance. It is remarkable how well Himalayan alpines do here compared with the South of England. The converse is the case with Swiss alpines—Cyananthus lobatus, Androsace lanuginosa, A. sarmentosa, Primula Stuarti, P. sikkimensis, P. rosea, P. capitata, &c. I wish I knew of some more to try, but I cannot get the seed of Meconopsis Wallichi to germinate. *C. Wolley Dod.*

Friendly Sparrows.—I have found some farther services done for me by this much abused bird, inasmuch as I have found him at work among my Rhododendrons clearing them, as it appeared to me, of caterpillars, which heretofore have, at this season, infested those especially of the R. Nobleanum breed, and now I cannot find a living grub. *I. Anderson-Henry.*

Picea ajanensis.—Although our figure (fig. 33) is taken from an undeveloped specimen, we yet take



Fig. 33.—Young cone of Picea ajanensis.

the opportunity of representing the cone, for already it shows the comparatively more undulated scales which serve with other characters, especially the flatter leaves, to distinguish it from its near ally, P. Alcockiana. We owe the communication of our specimen to Messrs. Barron, of Borrowash.

Special Societies.—Whether it is the conduct of the Council of the Royal Horticultural Society in the past, or the inexorable necessities of the age which have led to the creation of so many special horticultural societies, it is worthy of note that exactly the same thing has grown up in connection with agriculture, although no one perhaps will for a moment contend that the conduct of the executive of the Royal Agricultural Society is open to question. We have, independently altogether of that, horse, dog, dairy, goat, shorthorn, fat cattle, and some other shows and societies, all covering in their degree exactly the same ground that is covered by the Royal Agricultural Society, and all apparently doing good work in their respective sections and spheres. It cannot be for a moment conceded that these bodies grew up out of jealousy or discontent. The only really tangible explanation to be given for their formation is that agriculturists associated with the special subjects with which they deal found them to be, if not absolutely, at least to some extent, essential to the welfare and progress of their respective specialities, and probably such is the case. At any rate, we do not find that the larger and more cosmopolitan society entertains towards them feelings of jealousy, and most probably regards them as valuable aids in the development of agricultural progress. The Royal Horticultural Society, though professing to stand at the head of horticultural bodies, yet cannot for a moment profess to occupy in relation to horticulture the same position that the Royal Agricultural Society does to agriculture. In the one case the Society is localised, and has no status out of the metropolis. In the other case it has no localisation, but operates more or less all over the kingdom. Again, whilst the farmers' organisation has always endeavoured to expand its operations and to accept new suggestions in a liberal spirit the Gardeners' Society, if it can merit such an appellation, has become from year to year more and more contracted, and its executive enjoys but little general confidence. What popularity it possesses in the horticultural world it owes to its committees and to Chiswick. Events of late have shown that even its most ardent supporters in the past, the metropolitan nurserymen, are falling off from it, and that its ancient *prestige* is fading away. But whether the conduct of the Council of the Royal Horticultural Society in the past has, or has not had to do with the promotion of special societies, the fact remains that these have grown up vigorously and plentifully, therefore it would be best in diagnosing the causes which have led to their formation to ascertain what were the motives operating in the minds of those who formed them. Having had something to do with the formation of your supposed Cucumber Society, the which under City *prestige* has made a position such as may well surprise its early modest promoters, I may say that it was the cold shoulder shown to it by the Royal Horticultural Society which stimulated its establishment. I, with others, felt that not only did the Council treat with contempt the exhibition of our favourite products, but farther, that not one of its members cared anything for them, or knew anything about them. We wanted to stimulate the culture of the Cucumber, to popularise it, to improve its character, and perform for it many other good offices. It is true that as much as might have been accomplished has not been done, but had not our Society been formed nothing whatever would have been done. The Royal Horticultural Society is none the poorer for our operation, however much so it may have become so through its own shortsightedness; but the nation has at least grown something richer, for now, in spite of greater evils than are those which afflict any other plant, we have now not only enough Cucumbers to satisfy the wants of the nation, but plenty to spare to other nations that are not blessed with International Cucumber Societies. But whilst Cucumber growers are essentially grovellers in the earth, earthy, and naturally of low democratic tastes, the growers and courtiers of the queen of flowers are almost the salt of the earth—the very aristocracy of the horticultural world, and yet, too, do we find these setting up a Society of their own, revolting from the authority of the Royal Horticultural Society with the most unblushing courage and in the boldest fashion. If not appalled with the miserable spirit of loyalty shown by the Royal to Flora's queen, then overwhelming must be their devotion to her, and truly sensible must they have been that only a court of her own, upheld and maintained by truly loyal subjects, could render to her full and abundant homage. Such an exhibition of Roses as that held recently at South Kensington, under the auspices of the National Rose Society, would never have been held there except under the Society's influence. Without doubt it has done a great work for the Rose in promoting its culture and its popularity; and although here, in the South, at least, the area of operation and number of exhibitors associated with the National Auricula, Carnation, Dahlia, and other societies must of necessity be much more limited, the same plea for their existence holds good. They have grown out of our wants and our loves; no existing body, or indeed any that can be formed, can embrace to the full all the various sections of horticulture. Still farther, certain sections will always have enthusiastic admirers who care nothing whatever for some other sections, and who will always do the work of their respective sections better and far more thoroughly than it can otherwise be performed. Remove from these the stimulus of being the promoters of their own shows, and one half their interest in the culture of their favourite flowers is taken away. Each new body, little or great, becomes a new centre for the diffusion of horticultural love and light. It stimulates where before all was coldness or ignorance. Looked at in a purely horticultural sense, no doubt horticulture has, by the formation of these various special societies been largely benefited. If the Council of the Royal Horticultural Society thinks it can as far as relates to those special bodies, which have their habitation in London, by gathering them into its fold, do the work which they are doing as well or better, and more cheaply, and can also keep alive and continue to promote the same amount of energy and enthusiasm, then it has a right to ask for their cohesion with it. Whether the promoters of these bodies hold to that belief is quite another matter. The pecuniary position is not without its merits, because the heavy demand made upon a few persons to support these various bodies becomes very onerous, and the question is one which the subscribers have an undoubted right to speak upon freely. If the Council of the Royal Horticultural Society will say that it will provide liberal prize schedules from its own funds for all these specialities, it will open the door wide for their admission under its roof. *A. D.* [Our correspondent overlooks the fact that, in mentioning the non-existent Cucumber Society we did so expressly

to avoid the imputation that our remarks were pointed to any particular society. He had therefore no right to assume that we had in our minds, as assuredly we had not, the case of any one special society. Our remarks were intended to raise discussion as to the relative advantages of special and general societies. ED.]

Special Shows.—I venture, as a grower who has had many years' experience, and who knows a little of the pitfalls that surround South Kensington, to state my views on the matter. There are a good many things which are excellent in theory, but which fail when brought to a practical test, or which are good under exceptional circumstances; as when we are told that if we could secure a good despot, then despotism would be the best form of government under which to live. Now the observations which you have made with regard to the advantages of co-operation, and of merging all these different societies which carry out their special objects in one, and that the Royal Horticultural Society at South Kensington, seem to me to completely ignore the very unsatisfactory character of the institution. I accuse no one; I believe that the Council, as at present constituted, is a fairer exponent of horticulture than any we have had there; but I ask you to look back on the long years of squabbling and fighting, of recrimination and change, of repudiation and bankruptcy; and consider if it is a society on which dependence is to be placed? Its officers may mean well, but they cannot control the force of events; and even now, when its very existence hangs on the fiat of the Commissioners of 1851—when we find the Council has no voice in the matter—when the gardens are to be handed over for 1883 to the International Fisheries' Exhibition, and all arrangements are to be made with them or through them—is this a time when special societies are to be invited to give themselves up to its tender mercies? Horticulture does not maintain South Kensington; it is supported by the residents of the neighbourhood as a place for lawn-tennis and a playground for their children; and if, as it is contemplated, the lower part of the ground be taken away, a road driven through it, and its privacy destroyed, is it not very doubtful (and this feeling I know is shared by some at least of the authorities connected with it) whether the Society would last; nor does the experience of the past give any encouragement for the future. What revolutions have been made in its exhibition arrangements; and now, supposing the ideas expressed in your article were carried out, how do we know that to-morrow might not see an entire change? Again, I am interested, and have been for years interested, in the Rose. A National Rose Show was set on foot some twenty years ago; it was held first at St. James's Hall, then at the Crystal Palace; but the same statements were made then as now—the Palace was a commercial speculation; the high interests of horticulture were not considered at such places; and therefore it was advised that it should be transferred to South Kensington. It was so. For a time the Rose shows held there were announced as those of the National Rose Show, but this myth was afterwards abandoned, and the whole thing swallowed up. Now, this is not encouraging, and I see no guarantee for anything better in the future. Funds might fail, and then some of these minor matters, such as Auriculas, Picotees, &c., would be given up. It is for this reason that I hope the authorities of the National Rose Society will never listen "to the voice of the charmer, charm he never so wisely." I also think that it is a mistake to suppose that the sinews of war would be supplied to the large society in the same manner as they are now to the special societies, *i.e.*, I do not think where a person subscribes a guinea a piece to three or four of these you would induce him, or her, to give the same amount to the large society. My own experience is against it. I once was connected with a society (not horticultural), and another had been set on foot having nearly similar objects, so near that there was always a puzzle to discriminate between them. It was said, Why not amalgamate? persons who subscribed to both would give the same amount to the united society. It was said, No—persons might for a year, but after that they would fall into the same groove and give their guinea. And so it fell out; the societies were amalgamated, officers dismissed or pensioned off—the income of one society being at the time £10,000 a year, the other £30,000; but the income of the amalgamated society never reached the latter sum, and dwindled down to £25,000. Hence, and for any general experience of such things, I believe the idea you set forth, however pleasant it may sound, is but the "baseless fabric of a dream." There are, however, one or two points in the opposite direction worthy of notice—where a special society has been some years in existence without adding to the number of its exhibitors, and where those exhibitors are some half a dozen, to whom it forms a nice little annuity, then I say that the *raison d'être* of that society exists no longer: and that there are such I think the columns of your own paper testify. In such a case the Royal Horticultural Society would be perfectly justified in withholding its support, either in money or as supplying a place of exhibition, and the promoters might be told, "We are very sorry you should lose your little pocket-money, but we cannot do it;" in fact, this is sometimes done in exhibitions—if there are not three competitors no prize is awarded. Might we not say, if there are not a large number of exhibitors then they had better die? Then, again, I think there ought to be some mercy shown to those who are not specialists. Take the list of the subscribers to some of these societies, and you will find many who never grow one of the flowers towards the development of which they have contributed; they are good-natured people—they are known as horticulturists, and they are fair game. It may be they occupy some prominent position, and so are open to the demand; but it is not right that a man who does not grow a Hollyhock, does not care about a Hollyhock, because he is fond of Orchids or Palms, should be called upon to put money into the pockets of the promoters of the Hollyhock Society; in fact, let Hollyhock growers combine for a sweepstakes, for that it is, and then there might be justice in it. We are told how earnest and disinterested are the promoters of these special societies, but when I see them exhibiting for the love of it, and with no after-thought about the cash, then I shall be the sooner ready to believe in this commodity, of which there is not very much to spare in this bustling selfish world of ours. I do not subscribe to the croak that no improvement has been made through the stimulus given to speculation by the special societies—your own columns in the same paper bear witness to this. Probably the great improvement in the Carnation achieved by Mr. Dodwell would never have been made had no society of the kind existed, and a great stimulus is given to the cultivation and sale of plants by them, and let it be remembered this is no new thing. Pansy societies, Auricula societies, Tulip societies existed many years ago in greater numbers than now, and carried on by growers as enthusiastic as any we have. I would therefore suggest to the specialists that they adhere to the present plan; it is a cheap way for the Royal Horticultural Society to get up exhibitions, it gives growers an interest in managing their own affairs, which they would never feel in the somewhat exalted regions of the "Royal." Let the pockets of those not specially interested be spared, but let the societies themselves flourish. *Wild Rose.*

Hardy Fruits at Chiswick.—The complaints which are general all over the country respecting the failure of the hardy fruit crops hardly prepares one for the sight that may now be seen of Pears and Apples at the Royal Horticultural Society's Gardens at Chiswick. Mr. Barron may indeed be proud of his success, for it is more than probable that there are few other gardens, either public or private, where there is a similar show of fruits within the four corners of the British Islands. The strange thing is that in the case of the Apples the great bulk of the trees are only from 2 to 3 feet high, and in many cases they are grown upon what is known as the dwarf spur system. When going through the collection I fancied to myself what would be the result if one of the crazed ones who advocate that fruit trees should be grown in a natural or wild state should one afternoon stroll round Chiswick with his hands behind his coat-tails and suddenly come upon this quarter of little dwarf Apple trees laden to the ground with fruits and supported with stakes and other contrivances to keep the branches from being weighed down to the ground! The varieties that are doing extra well are Cellini, Lord Suffield, Small's Admirable, Braddick's Nonpareil, Stirling Castle, Cox's Orange Pippin, Beaumann's Red Winter Reinette, New Hawthornden, Yellow Ingestre, and Duchess of Oldenburg, perhaps the prettiest Apple in the whole collection. The Pears that are bearing most freely are Williams' Bon Chrétien, Louise Bonne of Jersey, Beurré Sterckmans, Beurré Bachelier, and Marie Louise. These are just a few of the best jotted down in a hurried run round. Such exceptional crops in an exceptional season must be highly satisfactory, and the causes which lead to such results should afford instructive lessons to gardeners and fruit growers generally. *W. H.*

Vines Losing their Bottom Leaves.—The suggestion being put forth by "W. H.," at p. 150, as to the cause of young Vines losing their lower leaves is very plausible, and, perhaps, exact; but it is evident that the fault lies more in the time of planting than in any other cause. Very many good Vine growers now replenish their houses with young Vines in the summer rather than in the winter, because Vines still in full growth then turned out in pots become established in the border, and lose nothing in vigour, but will furnish a good length of fruiting wood that same season. Still farther, it is doubtful whether, even for early spring planting, such good results are got out of pot-planted Vines as from eyes pressed into turf started in heat and then transferred at once to the border. Mr. Wildsmith puts his Vine-eyes into pieces of turf, and plunges them into the border at once, employing fresh turfy loam, which itself furnishes a strong bottom heat; and he gets from these eyes established Vines the same season as good as established pot plants could give. On the other hand, in planting Vines for cool late houses, it is obvious that the best course is to do so in the autumn, because, in common with all plants, no matter of what kind, tiny rootlets will be encouraged, to form even whilst the plant is at rest; and then, when the time for pressure comes, whether it be under the influence of natural or artificial heat, will proceed to feed the plant as soon as the newly-formed leafage shall attract the roots into work. To turn plants from out of a cool temperature and at rest into a rich free border, and to force immediately, is wrong. If the pot Vines were previously started into action before planting the result would be much better. With respect to perpendicularly-trained Vines losing their bottom leafage earlier than those trained at an angle, it is obvious that the remark can only apply in exceptional cases. If outdoor Vines were not a case in point, the perpendicular house at Chiswick would show that exceptions are so formidable as to render the theory questionable. *A. D.*

Parraffin and its Value.—I find the above a very valuable insecticide, and at the same time a very destructive agent unless you know how to use it. I use it myself in the following manner:—I get ½ lb. finest soft-soap and 1 pint paraffin oil, and put ½ pint soft warm water into a pail; then add half the soap, well work this into a lather, and then add a little paraffin and mix it up again, and when well mixed add the remainder of the soap and paraffin and another ½ pint of water, and again mix this until it becomes a thick cream; add to this a quart of water, and put the same into a jar and shake it all well up. It will then be ready for use. For under glass syringing I put 3 gallons of water into a can, and add ½ pint of the mixture. For out-of-doors it can be used a little stronger. *John Mayo, Oxford.*

Poppies and Daisies.—How wonderfully has the general taste improved of late years in the matter of out-of-door garden flowers! Poppies and Daisies, in all their single beauty, are now preferred to the double monstrosities, which have done duty for the last fifty years or more. With singleness of bloom, too, we usually get much finer colour; and this applies to many flowers, besides Poppies and Daisies. In the *Gardeners' Chronicle* I read a few weeks ago a little notice respecting the large single red Poppy—Papaver orientale. All that was said of it is true. It is a grand plant, hardy, vigorous, and truly perennial, bearing enormous single orange-scarlet blooms in profusion for four to six weeks in the spring and early summer. But the same good qualities belong to another Poppy—Papaver bracteatum—the colour of which is different and much finer: it is a deep rich crimson, with a large intensely black spot at the base of each petal, and is altogether superior to the hue of P. orientale. Another charming Poppy there is, and I believe very little known or cultivated—Papaver umbrosum. It is smaller, and an annual: it is like P. bracteatum in miniature, rather deeper perhaps in colour, and with a larger black blotch at the base of each petal: it is of dwarf habit, and a continuous profuse bloomer. At the present moment it is the most striking and ornamental flower in my garden. I intend never to be without it. The two Daisies (I use the word "Daisy," not in a botanical, but in a general sense) I would recommend your readers to adopt; they are old-fashioned flowers, and have passed out of sight, and very much out of memory—I allude to the Cape Marigold and the hybrid Marigold. They both have large white rays, with brown eyes, are of dwarf habit, and bloom very freely indeed. The Cape Marigold has the better habit, shorter and more even; but the other has the finer flower. I have patches of both in my garden now covered with bloom, and they are very fair to look upon. *James Salter, Basingfield, Hants.*

Biota nepalensis.—I send you some sprays of Biota nepalensis. It now much resembles B. orientalis, but the growth is more compact, and through the spring and early summer is tipped with a beautiful silvery colour. The original plant came to us from Orleans (France). *W. I., Barnstaple.*

A Day among the Wild Flowers.—Lovers of botany, intending to pay a visit to the seaside, would find both pleasant scenery and numerous specimens of wild flowers at Felixstowe, a pretty little watering place on the south-east coast of Suffolk, overlooking the German Ocean. It can be easily reached by boat or rail from Ipswich or London, but the sea trip is the more enjoyable of the two, at least to those who are fond of the water. Immediately on landing at Felixstowe Pier, a large expanse of sandy ground bordered by salt marshes meets the eye, giving promise of a rich harvest of flowers. The marshes

abound with clusters of the Sea Wormwood (Artemisia maritima), and of the annual Sea Blite (Suæda maritima). At intervals little groups of the sea-side Sandwort (Arenaria maritima) are to be seen with their delicate lilac and white blossoms, looking brightest and best where the sea-water regularly bathes them. A peep over the embankment by the roadside will be rewarded by a glimpse of the Sea Lavender (Statice Limonium), the Rose Bay or flowering Willow (Epilobium angustifolium), and the Chamomile (Matricaria Chamomilla). The broad level of sand and short grass on the right-hand is literally covered with the pretty little Sea Campion (Silene maritima) and the Thrift or Sea Pink (Armeria maritima), excepting where the sand gives place to shingle, and even there a few of the Silenes may be seen, without a blade of grass near. The rougher places are brightened by the richly-coloured flowers, and hoary glaucous leaves of the yellow Horned Poppy (Glaucium luteum), which attracts the eye from afar, and causes many conjectures as to what it can be. A close inspection of the more sandy soil will lead to the discovery of a tiny Stonecrop (Sedum anglicum), about 1½ inch high; the little Pearlwort (Sagina maritima), and a hairy Clover (Trifolium arvense). On nearing the sea the Rest-harrow (Ononis arvensis) is seen in great abundance, as also the little yellow Clover (Trifolium minus), and the graceful and elegant yellow Bedstraw (Galium verum), whose pale yellow panicles of flowers blend well with the delicate rose-pink of the Rest-harrow. Several Thistles, among them the Musk Thistle (Carduus nutans), the common Carline Thistle (Carlina vulgaris), and the slender-flowered Thistle (Carduus tenuiflorus) now raise their heads; on the low wiry bushes the Sea Bindweed (Calystegia Soldanella), with its handsome rose-coloured flowers, attracts attention; and large and beautiful specimens of the Sea Holly (Eryngium maritimum) abound. The Sweet Alyssum (Alyssum maritimum), the purple Sea Rocket (Cakile maritimum), the Lamb's Lettuce (Valerianella dentata), the seaside Cotton-weed (Drotis maritima), a rather rare plant; the Orache (Atriplex rosea), the Sea Spurge (Euphorbia Paralias), and the Sea Ruppia (Ruppia maritima) are also to be found. Near the railway station the Henbane (Hyoscyamus niger) flourishes, and on the steep cliffs about a mile farther along the shore, the wild flowers are very gay and numerous, owing to the many fresh-water springs. The Tree Mallow (Lavatera arborea), with its dark-eyed purple flowers; the common Mallow (Malva sylvestris), the Marsh Mallow (Althæa officinalis), the wild or Dyer's Rocket (Reseda luteola), the Great Hairy Willow Herb (Epilobium hirsutum), the Ragwort (Senecio Jacobæa), the spineless Rest-harrow (Ononis arvensis), the Mullein (Verbascum thapsus), the Grass Pea (Lathyrus Nissolia), the purple-headed Lucerne (Medicago sativa), the common Yarrow (Achillea Millefolium), and Potentilla repens. A rather rare grass (Phleum arenarium) grows on the shore, and in one or two rough places may be seen the Common Vervain (Verbena officinalis). The geologist and naturalist, as well as the botanist, will find this neighbourhood rich in specimens for their respective studies, and will be well repaid for an excursion here, as the cliffs abound in fossils, shells, &c., where the water left them ages and ages ago. *H. M. S.*

Gardening Prospects in South Wilts.—After having experienced something like eight weeks of almost continuous wet weather, it cannot reasonably be expected that gardening prospects at the present time should be of a very high order, indeed the disastrous results wrought amongst some crops are equalled only by those of the memorable year 1879. The Potato crop, it may be almost safely stated, will be a general failure, and one of the worst we have known for years—a striking contrast to that of last year, when many were only too glad to dispose of their Magnum Bonums towards the end of the season at from 50*s.* to 60*s.* per ton. Thanks to our Free Trade principles, we shall probably obtain bountiful supplies at fair prices from foreign lands, where the ravages of the disease are less known than they are, unfortunately, with us. One very noticeable fact—and I am not quite sure as to its being an unprecedented one—respecting the disease this year is the earliness of its first appearance, viz., June 11—the result, in all probability, of very early planting and a forward spring. At that time the haulm, owing to its rapid growth, had arrived at that stage when, atmospheric conditions being favourable, the murrain is absolutely certain to make its appearance. Certain varieties, notably Champions and Magnum Bonums, which hitherto have borne irreproachable characters for their disease-resisting properties, have suffered—so far as the haulm is concerned—in an almost equal degree with the weaker growing kinds, which are generally supposed to be more susceptible to the disease. Although I am an advocate for cutting off the haulm—if the tubers are large enough for use—on the first symptoms of disease, I must at the same time candidly confess, that under any other conditions my opinion is that the operation is useless, *i.e.*, so far as checking the spread of disease in the tubers. Next year, if all s well, we shall try the *modus operandi à la* Jensen, and see what that will do. Almost all other crops of vegetables are satisfactory. In many of the cottagers' gardens, however, the Onion crop is all but a total failure, in consequence of the ravages of mildew, this being brought about partly by the heavy rainfall we have had, and partly by the persons themselves lacking nerve enough to thin out their crop sufficiently in the early stages of growth. All kinds of fruit, Apples and Pears excepted, are abundant, small fruits especially so, but, as may naturally be expected in such a wet season, quantities of Strawberries have been literally spoiled, and the flavour has been somewhat indifferent. Of wall fruit, such as Apricots, Cherries, Peaches, Nectarines, Plums, and Figs, there is a very good average. Many of the trees have been hard hit with blight, indeed in this respect the season has been a very trying one, and it has only been by a free use of insecticides that many of the trees have been kept in fairly good health. Coming now to flower gardening, it is only fair to say that weeds and grass have grown apace, and have necessitated no small amount of labour, but for sub-tropical and carpet bedding the season has been an extremely unfavourable one, the white frosts and cold nights with which we were visited at the end of June being the very opposite to what most of the plants required; some of them—Alternantheras and Coleus for instance—received such a check, that they have not even yet recovered themselves. With a fine bright August, however, these and many other subjects would assume a presentable appearance for the remainder of the brief portion of the season which is left to them. *J. Horsefield, Heytesbury.*

Late Sown Calceolarias.—Those who desire to have a good display of these charming flowers next season will find the second week of the present month the best time in all the year to make a general sowing. Seeds may be sown at any time from the month of May to the first week of September with varying results according to climate, and other conditions and according to the skill of the cultivator. There are many who recommend sowing at an earlier period and who no doubt succeed admirably with their plants because they are skilled in the art of cultivation and know how to avoid those conditions which are inimical to the welfare of the young plants. But what are the advantages of late sowing? In the first place there is one fact which will not admit of disputation, and that is, that Calceolarias dislike even the breath of heat. Therefore, by sowing the seeds about the middle of the present month, the young seedlings do not appear until the hot weather has passed away for the season. But the skilled man interposes and says, "I sow my seeds two months earlier than you do, and I have larger plants at the end of the season than you have, and I experience no difficulty in keeping my young seedlings perfectly healthy during the hottest of summer weather." Such a statement as this cannot well be controverted, for the obvious reason that the expert cultivator has the means, and knows full well how to avoid the effects of the hot weather by keeping his young seedlings in a cool, airy northern aspect. But the small cultivator, even if he is well informed, probably has not the time or the means to attend to all this, and by making one false step at the first gives himself a task for the rest of the season. Having, therefore, as I hope, rendered the aim of these remarks intelligible to "experts and specialists," I will next endeavour to simplify the details of cultivation for the benefit of those who require and are open to receive instruction. We have determined that the seeds should be sown within the next few days, and we will proceed to explain the simplest way of carrying out the details. First of all, wash a shallow seed-pan, and when it is dry drain it well with broken crocks, over which place some rough compost. The soil in which the seeds are to be sown need not be of a special character; it may consist of a little peat, leaf-mould, and loam; a sprinkling of the latter, or none at all, if the two former are in proper condition. In brief, any miscellaneous compost that is readiest at hand will answer the purpose, provided it contains the necessary degree of moisture. The seeds are so very fine that watering should not be attempted until the young seedlings appear, if it can be at all avoided, therefore the soil should be in a free, moist state at the time the seeds are sown. A fine sieve should be used to run the soil through—at least enough to make an inch in depth upon the surface of the compost. Then take a square of glass, and press the surface of the soil over evenly, and scatter the seeds thinly upon it. So many amateurs and young gardeners destroy their seeds by covering them too deeply, and blame the seedsman, or somebody or something else, that if the operation is performed at all, it should be done with extreme caution. A little soil should be placed regularly over a fine sieve, which should be shaken once, or at most twice, over the seed-pan, so that something like a dense volume of dust falls upon its surface, then put a square of glass over the seed-pan and place it in a cold frame until the seeds germinate. A very good way of avoiding any difficulty with regard to covering the seeds is to put a coating of damp moss over a square of glass upon the seed pan, and see that the glass fits tightly, to prevent moisture evaporating from the soil without covering the seeds with soil at all. If these hints are attended to, not a good seed will miss germinating, and, of course, when the young seedlings are visible, they should be slightly watered through a very fine rose. When the young seedlings are large enough, prick them off into pans or shallow boxes in a compost of a similar or rather richer character, and treat as before. It is a good plan in hot weather to moisten the bottom of the frame all over about 10 A.M. (sooner or later, as time can be spared), by which means a cool damp atmosphere is maintained for the greater part of the day. Of course, I am assuming that the frame will be placed in a position shaded from the sun. When the plants are large enough for another shift, instead of potting them off as is the usual custom, continue to grow them on in boxes as before, but give them a stronger and richer compost to grow in. They dislike heavy or sodden material, and for this reason some little attention should be given to the selection of the compost, which should consist of about one-third of free fibrous loam, one-third of leaf-mould run through a half-inch riddle, and about a third of cow-manure rubbed down between the hands, and pure horse-droppings. Unless the manure is in a workable state, give more loam and leaf-mould in preference to using cow-manure in a pasty state. In a compost of this kind the plants will make leaves like young Cabbages, and in the cool autumn grow apace. They grow with greater freedom in boxes, and are less trouble to amateurs when grown in boxes during the earlier stages of growth than when grown in pots. To prove this pot off one set of plants in small pots, and grow another set in boxes as recommended, and see which will be the best plants and cost the least amount of trouble. When they have attained a good size pot them up in the same kind of compost; but before doing so dip every plant, whether clean or unclean, in a solution of soft-soap water, at about 4 oz. to the gallon. One of the mistakes made by amateurs in the cultivation of these plants is in not thoroughly cleaning them before the final potting. Their leaves are so fresh, sappy, and green that greenfly is sure to lodge there, and cause some trouble afterwards. Once clean, however, they remain clean for a considerable time, and if wintered in a cool airy structure near to the glass, and not subjected to any fire-heat, except what will keep out keen frost, a good display of flowers next season is sure to be the result. *W. H.*

The Herbaceous Border.

Hemorocallis, or Day Lilies.—In the remarks on hardy plants (p. 117), these are mixed up with weedy Asters, Golden Rod, Toad Flax, and Live Forever, and alluded to disparagingly; but surely the writer cannot have made acquaintance with Hemerocallis lutea, which is one of the finest—if not the finest—of herbaceous plants at the season when it comes into bloom. The others, such as H. kwanso, may be dowdy in blossom and coarse in habit; but H. lutea is just the reverse, as it has neat and graceful foliage and form, and its flowers are quite unrivalled in their rich yellow colour. We think so highly of it here that we grow it for forcing, and a plant or two of it in early spring quite brighten and lighten up a house. Those who have not got it will do well to add it to their borders, as it is quite deserving a place even among the choicest collections. H. kwanso variegata is a strikingly ornamental plant, as in appearance it is almost equal to Pandanus Veitchii, and being so thoroughly hardy is available for decorative purposes in pots where the Pandanus could not be used without injury. The normal form of H. kwanso is well adapted for planting in semi-wild places near ponds or woodland walks, where it is sure to attract notice on account of its bold contour, although it is perhaps a little too strong and coarse for ordinary borders.

Onosma taurica.—Among hardy herbaceous plants now in bloom this is one of the best, and is so distinct in habit and in the colour and form of its flowers as to be deserving a place in the choicest col-

lection. The leaves are narrow, vary from 3 to 6 inches in length, and are covered with short silvery hairs, which give the foliage a greyish hue and render it very conspicuous. The flowers are bright yellow, and are borne in racemes at the top of stems emanating from the crown of the plant, and as they are tube-shaped and pendulous they are seen to best advantage on plants in elevated positions, such as on rockwork or banks, situations which are well adapted for growing this Onosma, as in low borders or damp places it is apt to rot and die away in the winter. To prevent this it should be planted in full sun and have free open soil to grow in, and if a little sand is sprinkled round the collar it will be a great help in absorbing the moisture and keeping the heart in a sound healthy condition. The way to increase the stock is to take cuttings any time during the summer after the shoots have become tolerably firm, and if put in in the ordinary way, under handlights, and kept moist and shaded, they soon root, when they should be potted and preserved in cold frames during winter for planting out in the spring.

HERBACEOUS PLANTS.—Herbaceous plants of all kinds are showing themselves in their true characters this year, the frequent rains and cool weather having just suited them, and the result is they are remarkably fresh and strong, and full of gay blossoms. Delphiniums have been simply grand, as they sent up spikes towering from 4 to 7 feet high, branching out freely in all directions, and with the different shades of blue of the masses of blossom were most striking, dotted here and there at the backs of borders in the foreground of shrubs. The best effect I have seen produced with them is where they have been associated with white or light Foxgloves, with which they blend well, and form a fine contrast in colour. Any one who has space should try groups of them mixed, and if seed is sown at once, and the plants when up pricked out and nursed on they will be strong enough to flower next year. To get seeds of either to germinate freely it is necessary to sow under handlights in fine soil, kept moist and shaded for a few days, after which time the young seedlings should have plenty of air. Next to Delphiniums, Pentstemons have been the best things, and these are now in full beauty, for, having escaped injury, owing to the mildness of the winter, they are much earlier and finer than usual. Although there are some of the named kinds very desirable, Pentstemons come so good from seed, and afford so much variety, that it is hardly worth troubling about the named sorts, and seedlings are generally stronger than plants that are propagated from cuttings, and are sometimes preferable on that account. If Pentstemons are wanted to bloom next year they cannot well be sown too soon, and to keep the plants safe for turning out in the spring they should be potted singly and wintered in frames. The way to protect them in borders is to earth up the collars with cocoa-nut fibre or half-rotten leaves, either of which may be kept in position by sticking round each plant a branch or two of Whin or other close evergreen to ward off the birds. Antirrhinums require much the same management, as they, like Pentstemons, are not hardy enough to endure very sharp frosts. It is only those who have light, dry soil that can grow Alstromerias, but where they succeed they are among the gayest and most useful subjects that can be had, as their heads of exquisitely-marked Lily-like flowers are very beautiful, and of great value for cutting. The situation that suits them best is a sloping sunny border, sheltered by a high wall or fence, for, as they make their young growth very early and are rather tender, they need protection from the cold cutting winds. To give them a chance to root well down, on which much of their safety depends, it is necessary to trench the ground deeply, in doing which it is a great help to the plants if a heavy dressing of leaf-mould and sand is worked in. These keep the soil open and assist the drainage, and it is important that the tuberous roots should be dry, or they rot. The quickest way to get Alströmerias established is to buy plants in pots and turn them out in the spring, when they should be planted 6 inches or so beneath the surface and have a good handful of sand thrown over the crowns. In winter the best way of protecting is to cover the ground over them with half-rotten leaves, so as to form a mulching, and the bulk of these may with advantage be left on for the plants to push through, as then the young shoots get protected in spring. Clumps or beds of Alströmerias may also be got by sowing seed now and leaving the plants to grow on without further disturbance. In sowing the seed it is a good plan to dibble it in singly about 6 or 9 inches apart, burying it about an inch deep, as then there is no crowding of the plants when they grow. The weather has been specially suitable for herbaceous Phloxes, which generally suffer from heat and droughts, but are now in the most luxuriant health, and ablaze with gay blossoms. The improvement that has been made in the size and texture of these during the last few years has been great, but they are seldom seen in the state of perfection they may be had through being planted in shallow unprepared soil, and not being mulched and watered. It is surprising what this latter combined assistance does for them, as by mulching the earth about them is kept cool and moist, and the surface roots are able to feed and nourish the plants. To have Phloxes really fine they require frequent dividing and transplanting, as patches left to stand long in a place send up too many shoots and exhaust the soil, so that at most a couple of years in a place is quite long enough. As a rule, the best heads of flower are produced from young plants having single stems, and the way to get these is to propagate by cuttings from the strongest shoots, taken off and put in early in spring, at which season they strike readily if inserted in sandy soil, and placed in a close pot or frame. Spring is also the proper time to divide the crowns, which may be split up readily, cutting them through with a spade. Phloxes delight in liquid manure, which may be given them freely now and as long as they continue in bloom. Monarda didyma is exceedingly brilliant, and produces a very striking effect in a border, where its large heads of deep scarlet Salvia-like flowers show up to great perfection, and quite light up a place. The lilac and the white kinds, though good to have by way of contrast, are not showy, but grown near together in masses with the other form a pleasing mixture of colour. The brightest gem among the Spiræas is S. palmata, which is so beautiful as to be deserving of the greatest care and attention. Like all the Spiræas it is fond of water, and only thrives really well in a moist situation. The finest plants we have are in deep sand that is always wet, and in it they form quite bushes, with fine heads of bloom. Funkias are, and have been, very full of flower, and without they are exceedingly ornamental, their foliage being very attractive, both on account of its form and peculiarity of colour. The one with finest leaves is F. Sielboldi, which is a most striking plant during all stages of growth. The most serviceable for cutting are F. ovata, of which there are several varieties that bear small spikes of Lily-like blooms. Anemone japonica and A. japonica alba are just opening, and will remain gay till quite late in the autumn. These Anemones like a deep rich moist soil, and, once planted, should not be disturbed, as they gain strength by standing unmolested, and form fine bold masses with plump crowns that send up plenty of flowers. Lilies are earlier than usual, and seem to enjoy the cool moist weather; but unfortunately some of them have a provoking way of dwindling, which goes on till they disappear altogether. One of the worst is L. auratum, and the only place we can get this to do really well is where it has shade the greater part of the day, which appears necessary for most of the others. The lovely pure white L. candidum is not so particular, as in cottage gardens and everywhere here it grows and blooms freely in hot exposed positions, and the bulbs increase so fast as to push each other out of the ground. The next robust hardy doer to this is L. tigrinum, some of the varieties of which are very showy and good. The best way, I think, to have Lilies is to plant them at wide distances in suitably prepared borders, and have the spaces between filled in with English and Spanish Iris, Gladiolus, Tigridiums, Scillas, and such-like bulbous plants that come on one after the other. By an arrangement of this kind they are more safe than they are among other things, as they can be left to themselves to ripen naturally, and are not liable to get uprooted or damaged by digging. *J. S.*

LINDELOFIA SPECTABILIS.—This is a fine Borage-wort from Kashmir, with funnel-shaped bluish-red or dark purple corollas. The species is well worth growing, it is quite hardy, and makes an attractive border or rockwork plant, 1 foot or 1½ foot in height. It came to Kew—where it is now finely in flower on the new rockwork—under the name of Cynoglossum montanum.

Reports of Societies.

Newcastle Botanical and Horticultural: *July* 26, 27, *and* 28.—This, the fifty-seventh summer show of this Society, was held on the above dates in the usual place, Leaze's Park, and was a decided success, both in the numerous productions brought together, and also in the weather, which latter has frequently been of such an untoward character as to become a serious matter for the committee, whose expenditure in the liberal prizes they offer and the other attractions provided, involves a large outlay. Several distant exhibitors of large plants who have usually competed here were absent on the present occasion, but the increased number staged by competitors resident in the northern portion of the kingdom, together with the greatly improved character of the plants forthcoming from the immediate locality, brought the exhibition quite up to its usual standard, with the important gain that there was an all but absence of the mediocre examples that at one time detracted from the merits of these exhibitions as a whole. This we look upon as being as it ought to be, and affords conclusive evidence that the labours of the promoters are attaining the object which should be the aim of those who are interested in such exhibitions—that is, the improvement of the horticultural practice of the neighbourhood.

In the open class for eight stove and greenhouse plants in bloom Mr. Letts, gr. to the Earl of Zetland, Upleatham, Marske-by-the-Sea, took 1st—a £12 Silver Cup and the Royal Horticultural Society's Silver Knightian Medal—with an exceptionally large well bloomed group—not a stale flower in them—and which contained a finely flowered example of Anthurium Scherzerianum, with from sixty to seventy big blooms; Dipladenia amabilis, beautifully clothed with its rosy blossoms above the ordinary size; Erica obbata and E. ampullacea, each about 4 feet through, and covered with large pearly flowers; Ixora Williamsii, so crowded with its dense heads of bloom that they literally touched each other; Statice profusa, near upon 5 feet through, and unusually bright in colour; and a large and finely flowered Phœnocoma. Mr. Adams, who was 2d, had a fresh, well bloomed, and highly coloured Kalosanthes, Dracophyllum gracile, still fresh, though so late in the season; a medium sized but very well flowered Phœnocoma, and Erica ventricosa, extremely large but spoiled for want of the colour of the flowers being properly brought out. To have Heaths at this season of the year with anything approaching the full amount of colour of which they are capable, the flowers need to expand in the open air. 3d, Mr. Noble. Foliage plants were well shown, Mr. Hammond, gr. to Sir Wilfred Lawson, Carlisle, taking the lead in the open class with a fine group, in which was an immense bush of Croton pictus, and a highly-coloured example of C. majesticus, Cordyline indivisa, and Latania borbonica. Mr. Noble, who was 2d, had amongst others a handsome specimen of Stevensonia grandifolia, Kentia Fosteriana, one of the best of greenhouse Palms, and a highly glaucous-leaved form of Dasylirion. Crotons in threes were nicely represented, Mr. McIntyre being 1st with an exhibit that contained a well-managed example of the large-leaved C. Andreanus; 2d, Mr. Methven.

Exotic Ferns (open).—These were in nice fresh condition, but much smaller than general here. Mr. Noble had 1st, with a clean compact lot, the best of which were good examples of Davallia Mooreana and Gleichenia Mendelii; 2d, Mr. Hammond; 3d, Mr. Methven.

There were a few Orchids, nicely bloomed, Mr. Hawkin, Wolverhampton, having 1st, with six, the most noticable of which were Epidendrum nemorale and Dendrobium formosum. Ericas were shown in the form of well-flowered, fresh, medium-sized plants; Mr. Letts having the lead with four, Mr. Watson being 2d. Tuberous-rooted Begonias were fairly represented, Messrs. Noble, McIntyre, and Garrett taking the prizes in the order of their names. Bedding plants done as they are here, in large pans, make a pretty display. With twelve distinct varieties, Mr. M. Clarke had 1st, Mr. McIntyre 2d. Alpines and rock plants were nicely managed, Messrs. J. Dickson & Sons, Chester, being 1st, Mr. J. Appleby 2d, and Mr. McIntyre 3d. The 1st and 2d prizes for twelve pots of hardy succulents, which were likewise nicely shown, went to Messrs. Clarke and Mr. Whiting.

Groups of plants arranged for effect, each confined to 200 feet super., form an important feature in the programme at Newcastle; a very great improvement being noticeable within recent years in this competition here, both in the choice of suitable materials and the way they are put together. The 1st, 2d, and 3d prize-takers, Messrs. McIntyre, Hammond, Clarke, and others, had a close run. Comparatively few flowering plants were used, the requisite colour being obtained by single-stemmed highly coloured Crotons, Dracænas, Caladiums, the elegant Eulalia japonica variegata, Panicum variegatum, &c. The winning group was much improved by the introduction at intervals of the yellow Oncidium flexuosum. There is nothing that adds a greater charm to combinations of this description than the elegant feathery sprays of the flowers of this Orchid. Dinner-table plants were forthcoming in beautiful condition, Messrs. Whiting, Hammond, and McIntyre taking the prizes in the order we give their names.

In the amateurs' class for six stove and greenhouse

plants in flower the competition was here again very close, the groups being respectively very well flowered and fresh. The 1st prize, which carried with it the Royal Horticultural Society's Silver Banksian Medal, was won by Mr. Watson, who had, along with others, an unusually well-bloomed Stephanotis, Allamanda Hendersoni, and a profusely flowered Heath. Mr. Adams came in 2d, his best plants being Bougainvillea glabra, very highly coloured; Phœnocoma prolifera, bright and well flowered; and an orange-coloured Ixora, with large heads. 3d, Mr. Methven, having in a well managed collection the beautiful Erica Exquisite, Lapageria rosea, a large, healthy specimen; Allamanda Hendersoni, and Rondeletia speciosa major. With six foliage plants Mr. Letts took the lead, staging beautiful examples of Croton majesticus, C. Johannis, Chamærops humilis elegans, and Gleichenia Mendelii; 2d, Mr. Hammond, whose collection contained a couple of highly coloured Crotons and the elegant Bonapartea juncea filamentosa, large, and in splendid order; 3d, Mr. McIntyre. Six exotic Ferns (amateurs).—1st, Mr. Noble; 2d, Mr. Bullock. Hardy Ferns were better represented. With twelve Mr. Bullock had 1st, a distinct nicely grown group, in which was a pretty example of Lygodium palmatum, a plant not often seen. With three Ericas Mr. Methven took 1st honours, staging small well flowered plants; 2d, Mr. W. Watson. Three Orchids.—1st, Mr. Noble; 2d, Mr. Hawkins. Table plants were very well done in this division, also the kinds suitable for the purpose, and not too large. 1st, Mr. Noble; 2d, Mr. McIntyre.

Cut flowers.—Roses were very well shown, the competition in many cases being extremely close. With forty-eight, not less than twenty-four varieties, Mr. B. R. Cant, Colchester, took the lead, staging an even lot of well developed flowers; Messrs. R. Mack & Son, Catterick Bridge, 2d; Messrs. Paul & Son 3d. Thirty-six, not less than eighteen varieties.—1st, Mr. E. R. Whitwell, an excellent stand; Mr. Cant 2d, Messrs. Paul & Son 3d. Twelve yellow Roses.—1st, Messrs. Paul & Son; 2d, Mr. Cant; 3d, Messrs. Mack. Twelve Roses, one variety.—1st, Mr. Cant; 2d, The Cranston Nursery Co.; Messrs. Paul & Son 3d. Twelve Tea-scented Roses.—1st, Mr. Cant; 2d, Messrs. Paul & Son; 3d, Messrs. Mack. Twelve bunches or trusses of cut stove or greenhouse flowers, dissimilar.—With these Mr. McIndoe took the lead, showing in his usual style a handsome and well matched stand; 2d, Mr. N. Black. Twelve Pinks, not less than six varieties.—These are always well shown here; the 1st prize went to Mr. T. Flowdy, Mr. R. Scott being 2d, and Mr. Harland 3d. As usual, cut flowers in the shape of centre-pieces, baskets, bouquets, and button-holes, were present in quantity sufficient to in themselves make an effective display; there was also a marked improvement in the selection of the flowers and in their arrangement. For a single drawing-room stand, Mr. Rutherford had 1st. Messrs. J. & E. Hugill 2d, Mr. Whiting 3d. Baskets of cut flowers, not to exceed 12 inches in diameter.—1st, Mr. Methven; 2d, Mr. Rutherford; 3d, Mr. T. Oliphant.

Bouquets, both brides' and ordinary, were remarkably well shown by Mr. C. W. Baines, who took 1st in both classes, Messrs. J. & E. Hugill and Messrs. Clark being 2d and 3d in the bridal class, whilst Mr. Rutherford and Messrs. Hugill occupied the same positions in the other.

Fruit was present in quantity, and although there might not be anything of the sensational character now and then met with, there was a great deal that was good. With eight dishes, Mr. J. Edmonds, gr. to the Duke of St. Albans, Notts, had 1st, his collection containing Muscat and Black Hamburgh Grapes, both in good condition; Royal George Peaches, Elruge Nectarines, and a Queen Pine; Mr. McIndoe, gr. to Sir J. Pease, M.P., Hutton Hall, being 2d, with, amongst others, a nice Queen Pine, Madresfield Court and Duchess of Buccleuch Grapes, and Barrington Peaches; 3d, Mr. Mann, gr. to Mr. Hornsby, Grantham. Four dishes.—In this class, likewise, Mr. Edmonds took 1st honours, staging Black Hamburgh and Muscat Grapes, Royal George Peaches, and Elruge Nectarines; Mr. H. Johnson 2d, Mr. A. Mackie 3d. Single Pine.—1st, Mr. Edmonds with a handsome Queen; 2d, Mr. McIndoe. Four bunches of Grapes, not less than two varieties.—Of these there were a large number of exhibitors, Mr. Hammond taking 1st with Black Hamburgh and Buckland's Sweetwater, both nicely finished; Mr. E. Douglas being 2d, staging Black Hamburgh and Muscat of Alexandra; Mr. M. Larke, 3d. Two bunches, Muscats.—1st, Mr. Douglas; 2d, Mr. McIntyre; 3d, Mr. Mann. Two bunches any other white kind.—With these Mr. Hammond was to the fore; Mr. Black 2d, Mr. Carrick 3d. Two bunches Black Hamburgh.—Here there were near upon a dozen competitors, mostly having good fruit; 1st, Mr. Hammond; 2d, Mr. Douglas; 3d, Mr. Westcott, all staging smallish bunches, but very well finished both as to colour, bloom, and general condition. Two bunches any other black kind.—1st, Mr. Larke, with Madresfield Court; 2d, Mr. Westcott, who had the same excellent variety; 3d, Mr. Douglas. Melons as usual were in quantity with green-fleshed varieties. Mr Jenkins was 1st, Mr. Grice 2d. Scarlet-fleshed.—1st, Mr. Larke; 2d, Mr. Grice. Peaches.—1st, Mr. Mackie, with a beautiful dish of Noblesse; 2d, Mr. Edmonds; 3d, Mr, McIntyre. Nectarines.—1st, Mr. Jenkins; 2d, Mr. Black; 3d, Mr. Mackie. Figs.—1st, Mr. Mann, a handsome dish; the same exhibitor also being 1st with Cherries.

Caterham Horticultural: *July 26.*—This is a small Society, mainly supported by the gardeners of the neighbourhood, and its operations may be said to be confined to the old village of Caterham, which lies on the hill, rather than to the rapidly growing new neighbourhood which is springing up along the fertile Caterham valley. The Society has wisely commenced in a small way, and if worked judiciously will, no doubt, soon have to extend its borders.

On this occasion there was a very nice show, and the keenness of the competition in many of the classes augurs well for a good show in the future. Stove and greenhouse plants were limited in quantity, but they were good, the best three specimens coming from Mr. Brand, gr. to H. Gardener, Esq., Caterham. A pan of Achimenes grandiflora was finely grown. Mr. Brand had the best three Ferns, staging good examples of Davallia Mooreana, D. bullata, and Adiantum cuneatum. Mr. Ireland, gr. to F. D. Ryder, Esq., was 2d, having a fine piece of Adiantum farleyense, A. gracillimum, and Gymnogramma chrysophylla. Fuchsias, Pelargoniums, Begonias, and other flowering plants were fairly well shown, and for a special prize for four Coleus there was a large competition. Here Mr. Brand, who appears to be the leading plant grower of the district, was 1st with some excellent specimens. In the class for a group of plants arranged for effect there was a good competition also, Mr. Brand taking the 1st prize; Mr. Pearman, gr. to H. Howe, Esq., being 2d. An effective group of plants, not for competition, was set up by Mr. Snow, gr. to D. Birt, Esq., which included good Orchids, Begonias, Hæmanthus, &c. In the cut flower classes the best twelve bunches came from Mr. P. Cochrane, gr. to R. C. Bucknall, Esq.; Mr. Pearmain being 2d. The last named exhibitor won the special prize for eighteen cut Roses, staging some very good flowers. In the class for table decorations there were some tasteful arrangements, Mrs. Gunneraus being 1st, and Mr. Wormson being 2d. Vegetables made a good display, and constituted one of the chief features of the show. In the class for a collection of six varieties, in which there was a keen competition, Mr. Warner, gr. to F. Venables, Esq., was 1st, and Mr. P. Cochrane, 2d. All the vegetable classes brought very close competitions. The cottagers, too, came out well with vegetables and several special prizes were awarded in these classes.

Of fruit there was a limited show. Mr. P. Cochrane had the best four dishes, distinct varieties, setting up Black Hamburgh and West's St. Peter's Grapes, Victory of Bath Melon, and Strawberries. Some of the exhibitors in this class claimed that this collection should be disqualified on account of having two sorts of Grapes, contending that the intention of the framers of the schedule was to have but one variety of any fruit, but the judges overruled the objection, contending that distinct varieties included two sorts of Grapes. Messrs. Paul & Son, the Old Nurseries, Cheshunt, greatly helped the show by sending three boxes of fine cut Roses, which included good blooms of Comtesse de Camondo, Auguste Rivère, Madame Alphonse Lavallée, Marguerite de Brassac, Ferdinand Chaffolte, Harrison Weir, J. S. Mill, La Rosière, La Duchesse de Morny, and R. N. G. Baker. Mr. George J. Woollett, nurseryman, Caterham, had a group of plants and cut Roses also; and Mr. John Cattell, nurseryman, Westerham, sent plants, and also boxes of cut flowers, including early-flowering Chrysanthemums, Roses, &c., all of a very pleasing character.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, AUGUST 2, 1882.

Month and Day.	Barometer. Mean Reading Reduced to 32° Fahr.	Barometer. Departure from Average of 18 years.	Temperature of the Air. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 30 years	Hygrometrical Deductions from Glaisher's Tables 6th Edition. Dew Point.	Degree of Humidity. Sat. = 100.	Wind. Average Direction.	Rainfall.
July	In.	In.	°	°	°	°	°	°			In.
27	30.23	+0.47	75.5	50.5	25.0	61.7	+0.5	52.9	73	W.; S.W.	0.00
28	30.14	+0.38	64.5	56.9	7.6	59.2	+3.0	56.5	92	W.; S.W.	0.05
29	30.01	+0.25	78.0	54.5	23.5	63.4	+1.1	58.1	83	N.; N.E.	0.00
30	29.92	+0.17	77.4	56.5	20.9	64.9	+2.6	53.2	66	W.	0.00
31	30.10	+0.35	73.0	52.5	20.5	61.8	−0.5	47.3	59	W.; N.W.	0.00
Aug. 1	30.00	+0.24	74.0	59.5	14.5	65.2	+2.9	58.8	81	W.	0.00
2	29.88	+0.13	79.0	58.6	20.4	66.5	+4.2	55.3	68	W.	0.05
Mean	30.04	+0.28	74.5	55.6	18.9	63.2	+1.1	54.6	75	W.	0.10

July 27.—Fine bright morning; cloudy afternoon. Fine night.
— 28.—A little rain early in the morning; fine morning. Overcast afternoon. Fine night.
— 29.—Very fine bright day and night. Full moon, stars visible in zenith.
— 30.—Gloomy morning. Fine afternoon. Fine night.
— 31.—Fine bright warm day. Fine still night.
Aug. 1.—A dull overcast day, but fine. Fine night. The maximum temperature of this day took place at midnight.
— 2.—Fine bright morning, deep blue sky, close atmosphere; dull afternoon; slight rain from 4 to 6 P.M. Fine night, rather windy.

London: *Atmospheric Pressure.*—During the week ending July 29, the reading of the barometer at the level of the sea increased from 29.79 inches at the beginning of the week to 29.64 inches by 3 P.M. on the 23d, increased to 29.88 inches by 9 A.M. on the 25th, decreased to 29.86 inches by 3 P.M. on the same day, increased to 30.48 inches by midnight on the 26th, and was 30.14 inches by the end of the week.

The mean reading for the week at the level of the sea was 30.09 inches, being 0.16 inch higher than last week, and 0.15 inch above the average of the week.

Temperature.—The highest temperature in the shade in the week was 78°, on the 29th. On the 28th the highest temperature was 64°.5. The mean of the seven high day temperatures was 71°.

The lowest temperature in the shade in the week was 50°.5 on the 27th; on the 28th the lowest temperature was 56°.9. The mean of the seven lowest temperatures was 53°.5.

The greatest range in one day was 25°, on the 27th; the smallest was 7°.6, on the 28th. The mean of the seven daily ranges was 17°.5.

The mean temperatures were—on the 23d, 60°.1; on the 24th, 58°.5; on the 25th, 57°.3; on the 26th, 58°.8; on the 27th, 61°.7; on the 28th, 59°.2; and on the 29th, 63°.4; and these were all below their averages, excepting the 27th and 29th—which were above their averages by 0°.5 and 1°.1 respectively; the rest were below their averages by 2°.1, 3°.7, 4°.9, 3°.4, and 3° respectively.

The mean temperature of the air for the week was 59°.9, being 1°.1 lower than last week, and 2°.2 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo, placed in the full rays of the sun, was 140° on the 29th; the highest on the 28th was 87°. The mean of the seven readings was 125°.3.

The lowest reading of a minimum thermometer with its bulb placed on grass and fully exposed to the sky was 40° on the 26th. The mean of the seven readings was 47°.6.

Rain.—Rain fell on four days, to the amount of 0.40 inch.

England: *Temperature.*—During the week ending July 29 the highest temperatures were 80°.5 at Cambridge, 78° at Blackheath, and 76° at Hull and Sunderland. The highest temperature at Liverpool was 66°.9, at Bolton 70°.6, and at Plymouth 71°. The general mean was 73°.4.

The lowest temperatures in the week were 38° at Hull, 41° at Cambridge, and 42° at Truro. The lowest temperature at Blackheath was 50°.5, at Brighton 50°.4, and at Liverpool 48°.9. The general mean was 45°.7.

The greatest ranges of temperature in the week were 39°.5 at Cambridge, 38° at Hull, and 31°.2 at Nottingham. The least ranges were 18° at Liverpool, 23°.2 at Brighton, and 26°.7 at Plymouth and Bolton. The general mean was 27°.7.

The mean of the seven high day temperatures was highest at Cambridge, 74°.6, at Hull 72°.3, at Sunderland 71°.1, and at Blackheath 71°; and was lowest at Liverpool, 63°.6, at Bolton 64°.7, and at Bradford 64°.8. The general mean was 68°.5.

The mean of the seven lowest night temperatures was highest at Brighton, 54°.1, at Blackheath 53°.5, and at Liverpool 52°.9; and was lowest at Hull, 48°.3, at Bolton 48°.6, and at Wolverhampton 49°.3. The general mean was 51°.

The mean daily range of temperature for the week was greatest at Cambridge, 24°.3, at Hull 24°, and at Sunderland 21°.7; and was least at Liverpool, 10°.7, at Bradford 13°, and at Leeds 14°.3. The general mean was 17°.5.

The mean temperature for the week was highest at Cambridge, 60°.7, at Brighton 60°, and at Blackheath 59°.9; and was lowest at Bolton, 54°.8, and at Liverpool and Bradford 56°.5. The general mean was 57°.9.

Rain.—The largest falls were 1.28 inch at Bolton, 1.08 inch at Liverpool, and 0.95 inch at Bradford. The least falls were 0.40 inch at Blackheath and Leicester, and 0.42 inch at Truro. The general mean fall waz 0.66 inch.

Thunderstorms occurred on the 25th at Cambridge, Wolverhampton, Hull, and Bradford. Thunder was heard on the 24th at Cambridge and Hull.

Scotland: *Temperature.*—During the week ending July 29 the highest temperature was 74°, at Dundee; at Edinburgh the highest temperature was 64°.7. The general mean was 68°.3.

The lowest temperature in the week was 41°, at Dundee; at Edinburgh the lowest temperature was 48°.4. The general mean was 45°.4.

The mean temperature for the week was highest at Dundee, 58°.1; and lowest at Edinburgh, 56°.2. The general mean was 57°.1.

Rain.—The largest fall was 1.46 inch, at Glasgow; the smallest fall was 0.47 inch, at Aberdeen. The general mean fall was 0.94 inch.

JAMES GLAISHER. F.R.S.

Answers to Correspondents.

BALSAMS: *W. Hender & Sons.* A good strain of Camellia-flowered varieties.

BOOKS: *Count de H.* Paul's *Rose Garden*, Kent & Co., 2d edition.

CAMELLIAS: *E. Moon.* Apply the liquid cow-manure when the buds are set.

EUCHARIS: *W. B. S.* Fusion of the flowers of Eucharis is by no means uncommon. We presume the reason is that in the young state the flower-buds are pressed together, and cannot afterwards separate. We do not think you will perpetuate it, but you are going the right way to do it.

ERRATUM: *Kinghtsheys.* We are informed that our correspondent was in error, at p. 116, in stating that Mr. Kemp laid out the gardens at this place; as the whole of the flower garden and pleasure grounds were designed and laid out by Mr. R. T. Veitch, of Exeter.

"GENERA PLANTARUM:" *Enquirer.* This work, in three thick volumes, contains descriptions of all the genera of flowering plants in Latin. A hundred volumes at least would be required for the species. For your other question, *Botany for Beginners* (Bradbury, Agnew, & Co.) would suit you.

GLOXINIA SEEDLING: *C. H.* Pretty, but no improvement on a great many existing varieties. Such flowers as yours, and better ones, are commonly obtained now-a-days from a packet of good seeds.

INSECT ON GRASS: *J. R.* The eggs of a butterfly, but which one we cannot say.

INSECTS: *J. W.* Your Melon and Cucumber plants, Escallonia macrantha, Celosias, Balsams, pot Vines, Tomatos, &c., are infested by very minute pale yellow thrips. All the specimens which we could discover were wingless except one in the pupa state, with rudimentary wings nearly as long as the abdomen. If you should find any perfectly winged we should be glad if you would send specimens to Professor Westwood, Oxford. *I. O. W.*

LILIUM HARRISI: *Correspondent.* We are not answerable for the statements made. We suspend our judgment till we are in a position to judge for ourselves, and we recommend you to do the same.

MALFORMED ROSE: *W. F. & Co.* The calyx, instead of remaining, as it were, in a half developed state, has expanded into five perfect leaves. At the same time the flower-tube and the corolla are abortive.

NAMES OF PLANTS: *C. W.* The moss is Lycopodium Selago; the other is a Carduus, or some allied plant, which we cannot recognise from the specimen sent.—*Albion.* Stuartia virginica, not Magnolia.—*J. Leman.* 1, not recognised; 2, Lysimachia ephemerum; 3, Astrantia carniolica; 4, Ononis arvensis? 5, Aster alpinus; 6, Geranium striatum.—*T. S., Newry.* Diplopappus chrysophyllus.—*C. M. O.* Specimen insufficient.—*R. B. Cooke.* Cynoglossum officinale.—*T. T.* Francoa; perhaps F. appendiculata, but we cannot be certain from such a poor specimen.—*P., Ireland.* Inula Hookeri, India.—*Lymington.* Send a better specimen.—*T. H. A.* 1, Maxillaria marginata; 2, Physianthus albens; 3, Asplenium Shepherdi; 4, Aconitum lycoctonum; 5, Sanguisorba canadensis; 6, Helichrysum anatolicum.

PELARGONIUM SEEDLINGS: *J. Wheeler.* None of your seedling zonal Pelargoniums appear to be of any commercial value.

POTATOS WITHIN POTATOS: *C. Kimberley.* A very common occurrence in old Potatos.

PRIMULAS: *E. Moon.* The plants will carry all the spikes of flowers, and ripen the seeds, if you feed them judiciously.

ROVE-BEETLE *versus* ROSE-BEETLE.—A misprint in our Notices to Correspondents (*ante*, p. 123, answer to "J. T."), in which the word "rove" was printed instead of "Rose," has misled some of our readers into the idea that the Rose-beetle (Cetonia aurata) was not injurious to Roses, but that it fed upon other insects. It is to the rove-beetle (Staphylinus, Linn.) that our observation applied—Philonthus being one of the modern genera into which the old Linnean genus has been cut up. *I. O. W.*

SEED GROWING: *A Young Seed Grower.* In both cases the result would be injurious. You cannot keep them too far apart to keep the stocks true.

SPOT IN ORCHIDS: *Sir T. L.* See Mr. Berkeley's article in the *Journal of the Royal Horticultural Society*, n.s., vol. iv., 1866, p. 25, fig. 5, and see *Gard. Chron.* 1865, p. 167.

SWEET WILLIAMS: *Ellis W.* An average fair sample only.

VARIOUS: *W. T.* 1, Three bunches constitute a dish of Grapes; 2, as many as you please, so long as they are distinct; 3, according to the wording of the class, you could show twelve varieties of Pelargoniums if you chose, but, as that is against the spirit of the schedule, it would decidedly not be to your advantage to put up more than one or two.

VINES: *J. H. H.* From your statement respecting the way in which your Vines are affected with red-spider, it is evident the origin of the mischief arises from an unhealthy state of the roots. They are probably suffering from drought. If so, water sparingly at first, or the sudden flow of sap created by a drenching of water at the roots will cause the berries to crack. Therefore moisten the soil gradually down to the drainage. Dusting the pipes with sulphur is of no use. Mix the sulphur in milk, and add sufficient water to give the mixture the consistency of paint. Then raise the temperature of the water in the hot-water pipes to near the boiling point, and paint the pipes over once or twice while they are hot, and let the temperature fall gradually. Every insect in the house may be killed in this way, and in your case no other remedy will be of any avail. Of course evening is the time to perform the operation. Give air early next morning. Do not use sulphur on flues.

WATERCRESS BED: *H. H.* The way in which you propose to make the Watercress bed will answer very well, but if you have a sufficient supply of water do not plant the Lilies in a stagnant pond. They will, however, grow in stagnant water. The Cape pondweed, Aponogeton distachyon, and the white and yellow Nympheas lutea and alba, will give you an interesting and pretty display. You will require from six to twelve plants. The plants grow upon the surface of the water, and it is immaterial in what way they are planted.

*** Correspondents are specially requested to address, post-paid, all communications intended for publication to the "*Editor*," and not to any member of the staff personally. The Editor would also be obliged by such communications being *written on one side only of the paper* and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

☞ FOREIGN SUBSCRIBERS sending Post-Office Orders are requested to make them payable to William Richards, at the post-office, King Street, Covent Garden, London, and at the same time to inform the Publisher at the office of this Journal.

CATALOGUES RECEIVED.

BARR & SON, King Street, Covent Garden—A Few Specialities in Bulbs.

WILLIAM PAUL & SON, Waltham Cross, N. — Dutch and Other Bulbs, &c.

ALFRED LEGERTON, 5, Aldgate, London, E.—Wholesale List of Dutch and Other Bulbs.

T. H. P. DENNIS & Co., Chelmsford—Greenhouses, Pits and Frames, &c.

WILLIAM PARHAM, Bath—Horticultural Buildings.

COMMUNICATIONS RECEIVED: W. S.—R. B.—J. W.—E. E. A. C. de H., Staby, Sweden.—D. T. F.—W. I., Belvoir.—W. J.—E. W. S. (our reporter has left the neighbourhood for the present)—J. Laing & Co.—M. S.—G. P.—W. E. D. (a malformation, which we will examine and report on. It may be the result of injudicious treatment at a particular stage, but as only a few plants are affected the cause lies in the individual plant)—J. P.—H. E.—Q. R.—C. D.—T. H. A.—E. M.—R. C. B.—T. L.—H. N. E.—J. H. K., Haarlem.

DIED, on the 31st ult., LOUISA ISABELLA, the wife of W. Richards, 41, Wellington Street, Strand, aged thirty-two.

Markets.

COVENT GARDEN, August 3.

Trade has considerably fallen off since our last report, prices being lower all round. Large quantities of Channel Islands Grapes are reaching us, considerably affecting English growth. *James Webber, Wholesale Apple Market.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldii, doz.	12	0–24	Ficus elastica, each	1 6–	7 0
Arbor-vitæ (golden), per dozen	..	6 0–18	Foliage Plants, various, each	..	2 0–10 6
— (common), dozen	6	0–12	Fuchsias, per dozen	4 0–	9 0
Balsams, per dozen	..	3 0– 6	Genista, per doz.	..	8 0–12
Begonias, per doz.	..	6 0–12	Gloxinea, per dozen	12 0–	18
Calceolaria, doz.	..	4 0– 9	Heliotrope, per doz.	4 0–	9
Cockscombs, dozen	4	0– 6	Hydrangea, doz.	.. 9 0–	12
Crassula, or Kalosanthes, per dozen	10	0–15	— paniculata, doz.	18 0–	48
Cyperus, per dozen	6	0–12	Lilium, in var., doz.	18 0–	42
Dracæna terminalis	30	0–60	Marguerite Daisy, per dozen	..	9 0–18
— viridis, per doz.	..	12 0–24	Myrtles, per doz.	..	6 0–12
Euonymus, various, per dozen	..	.. 6 0–18	Palms in variety, each	..	.. 2 6–21
Evergreens, in var., per dozen	..	.. 6 0–24	Pelargoniums, doz.	..	6 0–12
Ferns, in variety, per dozen	..	.. 4 0–18	— scarlet, per doz.	2 6–	6
			Rhodanthes, doz.	..	6 0–12
			Solanum per doz.	..	9 0–12

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 blooms	0	2– 4	Pelargoniums, 12 sprays	..	0 9– 1 0
Arum Lilies, per doz.	4	0– 6	— zonal, 12 sprays	0	3– 0 6
Bouvardias, per bun.	0	9– 1 6	Pinks, 12 bunches	..	2 0– 6 0
Calceolaria, 12 bun.	6	0–12 0	Primula, double, per bunch	..	.. 1 0– 1 6
Carnations, 12 bun.	3	0– 9 0	Pyrethrum, 12 bun.	3	0– 9 0
Cornflower, 12 bun.	2	0– 4 0	Rhodanthe, 12 bun.	9	0–12 0
Eucharis, per doz.	2	0– 6 0	Roses (indoor), doz.	1	0– 3 0
Fuchsias, 12 bunches	6	0– 8 0	— (outdoor), doz.	0	6– 1 0
Gardenias, 12 blms.	3	0– 8 0	— Coloured, doz.	1	0– 2 0
Gladioli, 12 bun.	6	0–12 0	— Moss, 12 bun.	..	12 0–18 0
— brenchleyensis, 12 sprays	..	1 6– 3 0	Stephanotis, 12 spr.	3	0– 6 0
Heliotropes, 12 sp.	0	0– 1 0	Stocks, 12 bunches	4	0– 9 0
Lapageria, white, 12 blooms	..	3 0– 6 0	Sunflower, 12 blooms	1	0– 3 0
— red, 12 blooms	1	0– 3 0	Sweet Peas, 12 bun.	2	0– 6 0
Lilium various, 12 blooms	..	.. 3 0– 6 0	Sweet Sultan, 12 bun.	4	0– 6 0
Marguerites, 12 bun.	4	0– 6 0	Tropæolum, 12 bun.	1	0– 2 0
Mignonette, 12 bun.	1	6– 4 0	White Jasmine, 12 bunches	..	.. 4 0– 9 0
Pansies, 12 bunches	1	0– 3 0			

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Cherries, ½-sieve	.. 6	0–16 0	Lemons, per 100	– 5	0– 7 0
Currants, Black, per ½-sieve	 3	6– 4 0	Melons, each	.. 2	0– 4 0
— Red, per ½-sieve	2	3– 3 3	Peaches, per dozen	.. 6	0–12 0
Figs, per dozen	.. 2	0– 3 0	Pine-apples, Eng. lb.	3	0– 4 0
Grapes, per lb.	.. 1	0– 3 0	Raspberries, per lb.	.. 0	3– 0 6
			Strawberries, per lb.	0	6– 1 0

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, per doz.	.. 3	0– 6 0	Herbs, per bunch	.. 0	2– 0 4
Asparagus, English, natural, per bun.	.. 7	0– ..	Horse Radish, bund.	4	0– ..
— Sprue, per bund.	1	0– ..	Lettuces, Cabbage, per score	.. ..	1 6– ..
Beans, French, English grown, p. lb.	0	4– ..	Mint, green, bunch	.. 0	4– ..
Beet, per doz.	.. 1	0– ..	Mushrooms, p. basket	1	0– 3 0
Cabbages, per doz.	.. 1	0– 2 0	Onions, per bushel	.. 4	0– ..
Carrots, per bunch	.. 0	4– 0 6	— Spring, per bun.	0	6– ..
Cauliflowers, English, dozen	.. 2	0– 4 0	Parsley, per bunch	.. 0	4– ..
Celery, per bundle	.. 1	6– ..	Peas, per qt.	.. 1	6– ..
Cucumbers, each	.. 0	6– 1 0	Radishes, per doz.	.. 1	6– ..
Endive, per doz.	.. 2	6– ..	Rhubarb, per bundle	0	6– ..
Garlic, per lb.	.. 1	0– ..	Small salading, pun.	0	4– ..
			Spinach, per bushel	3	0– ..
			Tomatos, per doz.	.. 2	0– ..
			Vegt. Marrows, doz.	3	0– ..

SEEDS.

LONDON: *Aug.* 2.—The supply of Trifolium incarnatum is now abundant, and very low rates consequently rule for same. Some business has been passing in this year's Italian Rye-grass. New Rape seed, being of unusually fine quality, and remarkably low in price, is meeting with a speculative inquiry. For Mustard the sale is slow. Canary and Hemp seed realise full rates. Feeding Linseed is quieter. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

At Mark Lane on Monday both English and foreign Wheat were 1*s.* lower on the week, with a dull sale. Flour was dull, and 6*d.* lower. Barley about unaltered. Beans and Peas were firm; Maize steady on the spot, rather easier forward; and Oats on large arrival rather lower.—On Wednesday there was not sufficient business in Wheat to affect quotations, which were nominal; flour also inactive. Barley, Beans, and Peas, quiet and unchanged. Stout Oats were firm, but common dull; and Maize unchanged.—Average prices of corn for the week ending July 29:—Wheat, 50*s.*; Barley, 27*s.* 1*d.*; Oats, 25*s.* 9*d.* For the corresponding period last year:—Wheat, 47*s.* 1*d.*; Barley, 27*s.* 6*d.*; Oats, 23*s.* 1*d.*

CATTLE.

At Copenhagen Fields on Monday the proportion of prime beasts on offer was rather short, and upheld late value, but second qualities were lower. Sheep and lambs were the turn dearer for primest. Quotations:—Beasts, 4*s.* 4*d.* to 5*s.* 2*d.* and 5*s.* 4*d.* to 6*s.* 2*d.*; calves, 5*s.* to 5*s.* 8*d.*; sheep, 5*s.* 4*d.* to 6*s.* 2*d.* and 6*s.* 4*d*, to 6*s.* 8*d.*; lambs, 7*s.* to 8*s.*; pigs, 4*s.* to 4*s.* 8*d.*—A very similar state of trade to that of Monday existed on Wednesday. Beasts sold very slowly at Monday's generally current rates, excepting the topping rates there quoted. Sheep and lambs steadily upheld previous value. There was rather a strong muster of English calves, with a slow sale; and the pig trade was reported dull.

HAY.

Tuesday's Whitechapel Market report states that trade was quiet, and without any change in price. Quotations:—Prime old Clover, 120*s.* to 140*s.*; inferior, 75*s.* to 90*s.*; new, 90*s.* to 110*s.*; prime meadow hay, 100*s.* to 127*s.*; inferior, 55*s.* to 90*s.*; new, 70*s.* to 95*s.*; and straw, 30*s.* to 63*s.* per load.—On Thursday trade was firm for best Clover and hay, but quiet and dull for other qualities.—Cumberland Market quotations:—Superior meadow hay, 126*s.* to 135*s.*; inferior, 90*s.* to 105*s.*; new hay, 70*s.* to 100*s.*; superior old Clover, 130*s.* to 147*s.*; inferior, 100*s.* to 112*s.*; new, 70*s.* to 110*s.*; and straw, 60*s.* to 68*s.* per load.

POTATOS.

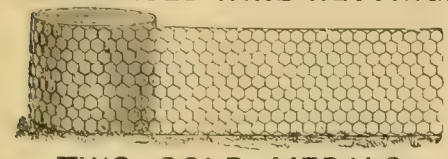
The Borough and Spitalfields Markets reports state that supplies were moderate and demand limited. Quotations:—Kent Regents, 80*s.* to 90*s.*; ditto, kidneys, 100*s.* to 120*s.*; Essex Regents, 70*s.* to 80*s.*; ditto, kidneys, 90*s.* to 100*s.*; Magnum Bonums, 100*s.* to 110*s.* per ton.—The imports into London last week were 40 bags from Malta.

COALS.

The following are the prices current at market during the week:—East Wylam, 15*s.* 6*d.*; Ravensworth West Hartley, 15*s.*; Walls End—Hetton, 17*s.* 8*d.*; Hetton Lyons 15*s.*; Hawthorns, 15*s.* 3*d.*; Lambton, 17*s.*; Wear, 15*s.*; South Hetton, 17*s.* 6*d.*; Original Hartlepool, 17*s.* 6*d.*; Chilton Tees, 15*s.* 6*d.*; Thornley, 16*s.* 6*d.*; Tees, 17*s.* 6*d.*

Government Stock.—The closing prices of Consols on Monday were 99⅞ for delivery, and 99 1/16 to 99 1/16 for the account. Tuesday's closing figures were 99⅞ to 99⅞ for both delivery and the account. Wednesday's final quotations were 99⅞ to 99⅞ for delivery, and 99 1/16 to 99 1/16 for the account.—On Thursday Consols dropped 1/16th to ⅛th.

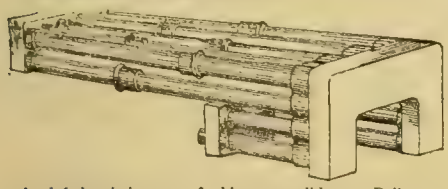
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See *Gardeners' Chronicle*, Jan. 1880, and Nov. 19, 1881.

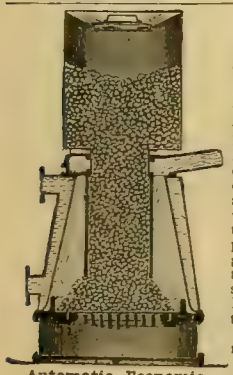


As inferior imitations of this now well-known Boiler are being advertised and sold to the detriment of its reputation, C. P. K. & Co beg to inform Gardeners and the Trade generally that Mr. Rochford has assigned to them the sole and exclusive right for its Sale and Manufacture.

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TEBBS' UNIVERSAL FUMIGATOR.—Will last for years, and is fast superseding all other apparatus or contrivance for the purpose. Price 3*s.*, 4*s.* 6*d.*; large size, 7*s.* 6*d.* each; packing extra.
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Price List on application.

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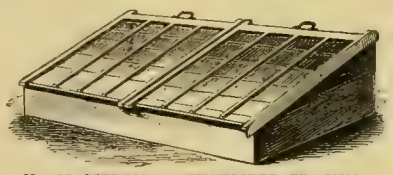
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These Frames are 13 inches deep in front, and 24 inches deep at the back; the lights are 2 inches thick, with a strong iron strengthening rod, and one handle to each light. These Frames are made of the best hard red deal, shipped from the best districts for durable wood, all painted four coats of best oil colour, the lights are glazed with best 21-oz. English glass. For Testimonials, see our Catalogue, free on application. Carriage paid to any Railway Station in England and Wales: also to Edinburgh and Dublin.
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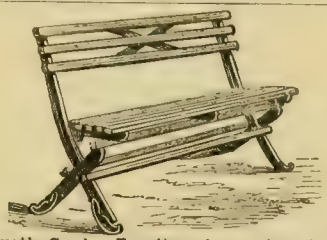
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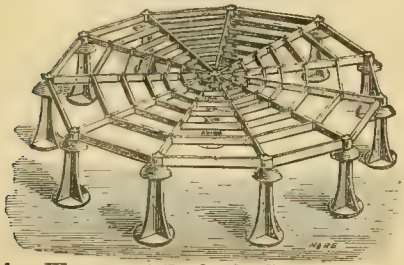
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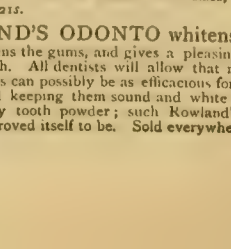
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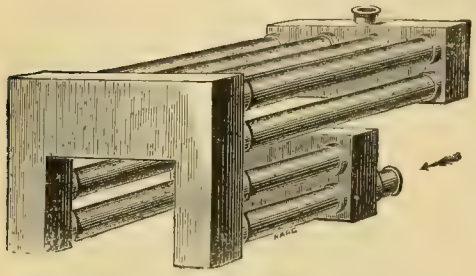
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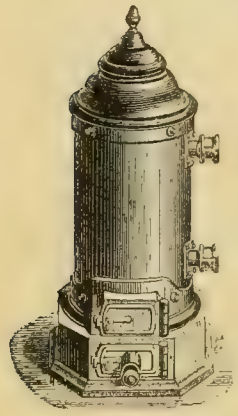
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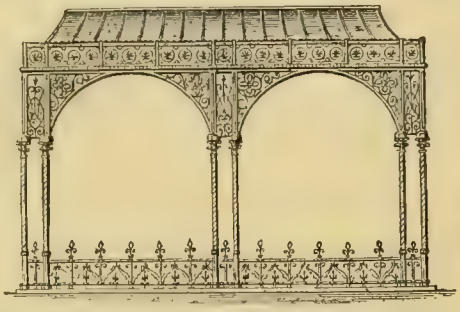
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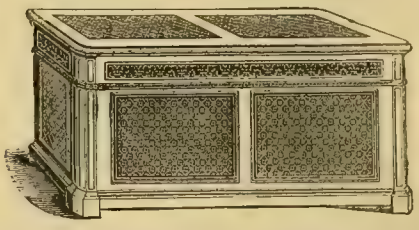
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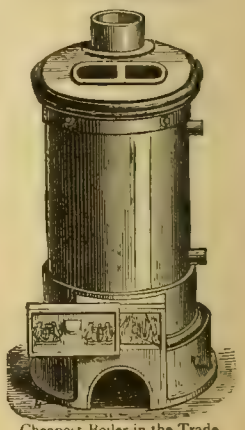
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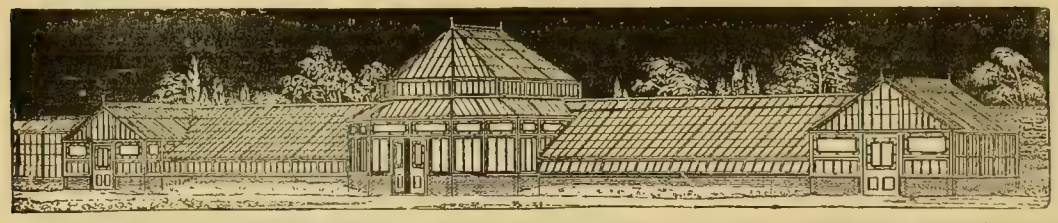
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THE

GARDENERS' CHRONICLE.

Established 1841.

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C. VUYLSTEKE, NURSERYMAN, Loochristi, near Ghent, Belgium. Wholesale CATALOGUE may be had free of Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, London, E.C.

N.B. Plants grown specially for English Trade.

6000 Grape Vines.

THE LIVERPOOL HORTICULTURAL COMPANY (JOHN COWAN), Limited, The Vineyard and Nurseries, Garston, near Liverpool, have a splendid stock of VINES, grown from eyes this year, suitable for present planting. CATALOGUE free. The Trade supplied. Also a large stock of TEA ROSES.

Lily of the Valley.

ELSTER AND KOLLMANN, Lubeck, near Hamburgh, Germany, beg to offer the above, for Forcing. Single Crowns, 3-yr. old, extra fine roots, 32s. per 1000, cash ; or 34s. per 1000, terms three months.

EIGHTY THOUSAND CLEMATIS, in Pots, of all the finest double and single varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants. Descriptive LIST on application. RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Tea Roses.

THE LIVERPOOL HORTICULTURAL COMPANY (JOHN COWAN), Limited, The Vineyard and Nurseries, Garston, near Liverpool, have a splendid stock of TEA ROSES in all the leading varieties. LIST free. Price to the Trade on application. Also a large stock of GRAPE VINES.

Hyacinths, Tulips, Crocus, Lilies, &c.

C. G. VAN TUBERGEN, JUN., Haarlem, Holland.—Wholesale CATALOGUE now ready, and may be had free on application to Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, London, E.C.

CREEPERS for WALLS, TRELLISES, &c., in great variety. See Descriptive LIST. Most of these plants being in pots, may be moved now. RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Autumn and Winter Blooming

SALVIAS and BEGONIAS.—We have large quantities of the above ready for the blooming pots, 5s., 8s., and 12s. per dozen.
H. CANNELL AND SONS,
The Home for Flowers, Swanley, Kent.

Valuable Imported Orchids.—Special List, No. 59.

THE NEW PLANT AND BULB COMPANY beg to inform their Friends that the above NEW LIST is just published, and will be sent post-free on application. Lion Walk, Colchester.

SQUELCH AND BARNHAM, COMMISSION SALESMEN, Covent Garden Market, London, W.C. Gentlemen, Fruit Growers, and Gardeners, wishing to dispose of their Fruit, &c., to the best advantage, can be SUPPLIED WITH BASKETS, LABELS, &c., at once, by applying to the above. Banker's reference and terms on application.

JOHN MOIR AND SON (Limited) are prepared to CONTRACT for SUPPLIES of STRAWBERRIES for next season. These to be kinds recommended by themselves, suitable for Preserving purposes. For particulars apply to The SECRETARY, 148, Leadenhall Street, London, E.C.

WANTED, 25,000 FRUIT TREE STOCKS, of various kinds. Quotations will oblige. J. R. PEARSON, Chilwell, Notts.

WANTED, Queen PINES, fine PEACHES, MELONS and GRAPES ; also Choice CUT FLOWERS.—WISE AND RIDES, Fruit and Flower Salesmen, Covent Garden, London, W.C.

EARLY FORCING BULBS.

JAMES CARTER AND CO. have received their first consignment of the above, in splendid condition.

PLANT at once EARLY FORCING BULBS for the decoration of the Conservatory, Drawing-room, &c., at Christmas time.

EARLY WHITE ROMAN HYACINTHS, 25s. per 100, 3s. 6d. per dozen, 4d. each.

EARLY WHITE ROMAN HYACINTHS (Blue Skin), 17s. 6d. per 100. 2s. 6d. per dozen, 3d. each

EARLY BLUE ROMAN HYACINTHS, 12s. 6d. per 100, 1s. 9d. per dozen, 3d. each.

LIGHT BLUE NEAPOLITAN, 15s. per 100, 2s. per dozen, 3d. each.

DARK BLUE NEAPOLITAN, 15s. per 100, 2s. per dozen, 3d. each.

EARLY DOUBLE ROMAN NARCISSUS, 2s. 6d. per dozen, 4d. each.

EARLY PAPER-WHITE NARCISSUS, 1s. 9d. per dozen, 3d. each

DOUBLE SNOWDROPS, large, 21s. per 1000, 2s. 6d. per 100, 5d. per dozen.

SINGLE SNOWDROPS, large, 21s. per 1000, 2s. 6d. per 100, 5d. per dozen.

DUC VAN THOL TULIPS, red and yellow, single, 10s. per 100, 1s. 6d. per dozen.

NOTE.—These prices are not binding after the publication of our Autumn CATALOGUE.

COLLECTIONS of the above, price 5s., 7s. 6d., 16s., 24s., 45s., and 65s. 20s. value Carriage Free.

CARTERS, THE QUEEN'S SEEDSMEN, By Royal Command to the Prince of Wales, 237 and 238, HIGH HOLBORN, LONDON, W.C.

BULL'S choice PRIMULAS (alba and rosea), Herbaceous CALCEOLARIAS and choicest CINERARIAS.—150,000 of the above at 1s. 4d. per dozen ; 7s. per 100; 60s. per 1000, all good, strong, and healthy. Terms cash with all orders.
T. FLETCHER AND SON, Florists, &c., Chesterfield.

To the Trade Only.

TEA ROSES, on own roots, extra strong, out of 4½-inch pots, £2 per 100, for cash.
MAIRIS AND CO., Weston-in-Gordano, Bristol.

Christmas Roses.

BUDDENBORG BROTHERS, BULB GROWERS, Hillegom, near Haarlem, Holland, are now booking orders for the above. Prices will be given on application.

TWO HUNDRED THOUSAND HERBACEOUS and ALPINE PLANTS for Borders, Rockwork, &c. See Descriptive LIST, giving colour, height, time of flowering, &c., free by post for 1d. stamp. Selection of 100 good showy varieties for 25s.
R. SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Hyacinths, Tulips, &c.

BUDDENBORG BROTHERS, BULB GROWERS, House Bloemswaard, Hillegom, near Haarlem, Holland. Wholesale CATALOGUE now ready, and will be sent, post-free, on application.

Dutch Flowering Bulbs.

DOWNIE AND LAIRD have to intimate that they have posted their Annual CATALOGUE of Dutch Bulbs to their Customers, and any one omitted can have a Copy upon application.
DOWNIE AND LAIRD, Nurserymen and Seedsmen, 17, Frederick Street, Edinburgh.

BOUVARDIAS, exhibited at the Great Horticultural Show at Manchester last August, were from JOHN HOOLEY'S, Nurseryman, &c., Edgeley Road, near Stockport, who has this year a large stock of fine healthy plants of the best varieties. Prices on application.

LAPAGERIA ALBA, well-rooted plants, 10s. 6d., 15s. and 21s. A few extra specimens, size and price on application.
LAPAGERIA RUBRA, superb, 7s. 6d., 10s. 6d. and 15s. A few extra-sized specimens, size and prices on application.
W. HOWARD, Southgate, N.

Pink, Best White.

MRS. SINKINS, blooming from May to September. Pipings, 1s. per doz.
T. F. EARL, Alpha Street, Slough.

GERANIUM CUTTINGS.—Vesuvius, Wonderful, Madame Vaucher, Virgo Marie and Madame Amelie Baltet, 6s. per 100, 50s. per 1000, or 1s per doz., post-free.
J. L. WATSON, Manor Road Nursery, Gravesend.

Strawberry Plants.—In consequence of H. CANNELL AND SONS being located in the midst of hundreds of acres of the above (runners are this year unusually fine and early), they would be pleased to quote price for any quantity and any sorts.
Swanley, Kent.

STRAWBERRIES.—Strong roots for present planting and for fruiting next year, 4s. per 100. Descriptive LIST and price for plants in pots for forcing on application. — RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

SALES BY AUCTION.

Trade Sales of Dutch Bulbs.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, August 16, SATURDAY, August 19, and WEDNESDAY, August 23, at half-past 12 o'Clock precisely each day, several large consignments of first-class Double and Single HYACINTHS, TULIPS, CROCUSES, NARCISSUS, SNOWDROPS, and other BULBS, just received from well-known farms in Holland, in lots to suit the Trade and private buyers.

On view mornings of Sale, and Catalogues had.

Thursday Next.

ESTABLISHED ORCHIDS.

MR. J. C. STEVENS will include in his SALE by AUCTION, on THURSDAY, August 17, about Fifty Lots of established ORCHIDS, from a privare collection, including a fine established plant of the true old CATTLEYA LABIATA, now bearing sheath.

On view morning of Sale, and Catalogues had.

Auction Rooms and Offices, 38, King Street, Covent Garden, W.C.

Thursday Next.

ODONTOGLOSSUM SCEPTRUM.

MR. J. C. STEVENS has been instructed by Mr. F. Sander to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, August 17, at half-past 12 o'Clock precisely, a superb importation of ODONTOGLOSSUM SCEPTRUM, in sound and extra condition. A few years ago we imported this fine Odontoglot, and since then it has been in flower in several Collections and the admiration of every one. The flowers are round and of great substance, and the spike compact and large, petals broadly marked chocolate-brown, interveined with golden-yellow, sepals round and fringed, golden-yellow with deep chocolate spots and blotches: what makes the flower still more beautiful is its very large finely fringed and round yellow lip, reminding one of the Golden Purse Orchid, Stenia. It is an Odontoglot difficult to import, and we are pleased to be able to offer a consignment in really fine health. (See dried flowers). The sale will also contain a large importation of CATTLEYA IMPERIALIS (GIGAS), also a CATTLEYA which we believe really grand; and new CYPRIPEDIUMISCHLIMI, ODONTOGLOSSUM MIRANDUM, ANGULOA UNIFLORA, ODONTOGLOSSUM ALEXANDRÆ—the grandest lot offered for some time, and our extra varieties, LYCASTE SKINNERI, &c.

On view morning of Sale, and Catalogues had.

Canonbury, N.

CLEARANCE SALE, the Land being required immediately for Building.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Boff to SELL by AUCTION, on the Premises, The Nursery, Douglas Road, opposite Canonbury Station, North London Railway, on FRIDAY, August 18, at 12 o'Clock, the whole of the STOVE and GREENHOUSE PLANTS, imported ORCHIDS in good condition, PANCRATIUMS and CRINUMS; also the erections of Twelve GREENHOUSES and PITS, two Saddle BOILERS, powerful VAN HORSE, &c.

May be viewed. Catalogues had on the Premises, at 203, Upper Street, Islington; and of the Auctioneers, 8, New Broad Street, E.C.

Dutch Bulbs.—Special Trade Sale.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Mart, Tokenhouse Yard, City, E.C., on MONDAY, August 21, at half-past 11 o'Clock, an extensive consignment of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from Holland, specially selected and lotted to suit the Trade and other large buyers.

Catalogues at the Mart and 8, New Broad Street, E.C.

George Lane, Woodford, close to Station.

CLEARANCE SALE.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. P. K. Fripp (who has sold the business) to SELL by AUCTION, on the Premises, The Nursery, Tavistock Road, George Lane, on THURSDAY, August 24, at 12 o'Clock, without reserve, about 15,000 GREENHOUSE PLANTS, including 1500 Genistas, 2000 Callas, 3000 Chrysanthemums, 2000 Hydrangeas (Thomas Hogg), 2000 Solanums, GARDEN IMPLEMENTS and Effects.

Catalogues had on the Premises, and of the Auctioneers, 8, New Broad Street, E.C.

Tottenham, N.—Annual Sale.

MESSRS. PROTHEROE AND MORRIS beg to announce that they have received instructions from Mr. John Maller to hold his ANNUAL SALE of WINTER BLOOMING HEATHS and other PLANTS on THURSDAY, September 21.

The Stock is in remarkably fine condition, and an inspection is solicited.

Old Charlton, Kent,

To NURSERYMEN, FLORISTS, and OTHERS.—The valuable LEASE, GOODWILL, FIXTURES, and FITTINGS of the Victoria Nursery, Victoria Road.

MR. HARCOURT MILLS will SELL by AUCTION, owing to dissolution of partnership, at his rooms, Wellington Street, Woolwich, on TUESDAY, August 15, at 6 for 7 o'Clock, unless previously disposed of by private contract, the LEASE and GOODWILL of the VICTORIA NURSERY, favourably situated in the Victoria Road, Old Charlton. The lease is held for nineteen years at the nominal rental of £18 per annum. The building and plant comprise a very handsome show glasshouse, 36 feet by 14 feet, fitted with striking pit with hot-water tank; two Glass Houses, 60 feet by 12 feet, fitted with cemented tanks for tepid water; two frames, 24 feet by 5 feet, and 12 feet by 4 feet, complete, and boiler for heating, four more houses, &c. The favourable position of the Nursery commands a large and lucrative trade in the centre of an aristocratic locality, without opposition.

Particulars with conditions of Sale may be had of TALFOURD HUGHES, Esq., Solicitor, Greens End, Woolwich, and at the auctioneer's offices, Woolwich and Brighton.

WANTED, a SMALL NURSERY and SEED BUSINESS. Send full particulars to H. BURNHAM, Hunsdon, Ware, Herts.

FOR DISPOSAL, a FLORIST and JOBBING BUSINESS, in good position, main road, 7 miles West of London. Three Greenhouses. In present hands 17 years. Apply,

J. SMITH, Florist, Uxbridge Road, Ealing, Middlesex.

To Nurserymen, Seedsmen, Florists, and Horticultural Builders.

FOR IMMEDIATE SALE, BUSINESS, GOODWILL, and PREMISES, situate at Leytonstone, Essex. Pleasant position. Ready-money Trade. Fine opening for Capital. Dwelling-house and Shop. Lease, Nineteen Years Rental, £50. Stock and Fixtures, &c. Also, NURSERY GROUNDS, comprising Two excellent Greenhouses and Pit, and Working Stock of a comprehensive description. Annual Rental, £28.

Orders to View of Messrs. FOREMAN, SON AND CO., Chartered Accountants, 32, Gresham Street, London, E.C., where full particulars can be obtained.

London, S.E.—(No. 5568.)

TO BE SOLD, by order of the Mortgagees in possession, an old-established NURSERY and SEED BUSINESS, upon which many thousand pounds have been expended. There are 6 acres of land, Dwelling-house, Shop, Conservatory; eight Greenhouses, and seventeen Pits, all heated by hot-water piping, and adapted kinds of plants, also the requisite Outbuildings. The Stock consists of Hard and Soft-wooded Plants, Heaths being a speciality. Rent £77. Any one with about £2000 at command would be treated with on advantageous terms.

Full particulars of Messrs. PROTHEROE AND MORRIS, 8, New Broad Street, E.C.

Essex.

TO BE SOLD, with Immediate Possession, the ANCHOR GARDENS, Moulsham, Chelmsford, comprising about 2 acres of Land, with Vineries, Conservatory, and Pits, and well stocked with Fruit Trees. The property, in addition to its advantages as a Nursery Garden, possesses most eligible sites for building purposes.

For further particulars apply to Mr. G. B. HILLIARD, Auctioneer and Estate Agent, Chelmsford.

London, East.—(No. 5706.)

TO BE SOLD, at a sacrifice, a small FREEHOLD NURSERY, comprising large Plot of Ground and 5 Greenhouses. Doing a good Local and Shop Trade. Price all at to an immediate purchaser, £500.

Particulars of Messrs. PROTHEROE AND MORRIS, 8, New Broad Street, E.C.

TO BE LET, for one or more years, the VEGETABLE and FRUIT GARDENS at the Hall, Bushey, Herts, about half an hour from London, consisting of upwards of 7 Acres, with an extensive Range of Glasshouses, all in good condition.

Apply, to JOHN McDONALD, Esq., The Hall Gardens, Bushey, Herts.

Nursery Gardens, Truro, Cornwall.

TO BE LET, for a Term from Michaelmas next, all those old-established Nursery Gardens known as Treseder's Nurseries, situated within the Borough of Truro, late in the occupation of Mr. H. C. Browne, containing in the whole 7½ acres of land. There is a good cottage on the premises, and a large walled garden, together with Greenhouses, Forcing Pit, and Potting Sheds. The gardens are well sheltered, and have a good aspect; and the soil is of excellent quality for nursery purposes.

To view, apply to Mr. MITCHELL on the premises, and for Terms of Letting and all further particulars to Mr. REGINALD C. GLANVILLE, 80, Lemon Street, Truro.

Waltham Cross, Herts.—(No. 5627.)

Thirteen miles from Liverpool Street, on the main Cambridge line of the Great Eastern Railway.

TO BE LET, on Lease, about 2 Acres of productive NURSERY LAND, with Cottage, Outbuildings, and about 13,500 feet super of Glass, particularly adapted for Fruit Growing.

Terms and particulars may be had of Messrs. PROTHEROE AND MORRIS, Auctioneers, 8, New Broad Street, London, E.C.; or of Mr. J. S. BRIDGMAN, Auctioneer, Crossbrook Street, Cheshunt.

Jersey.

TO LET on LEASE, with Immediate Possession, that desirable and well appointed NURSERY, called Springfield, situated in the suburbs of St. Helier's, containing about 1½ acre, with Dwelling-house, Plate-glass Shop Front, 340 feet of Glass, part planted with Vines, with Pits, Frames, and all necessary Utensils, the property of the late George Gibb. Stock to be taken at valuation.

Apply to G. BENEST, Estate Agent, Queen Street, Jersey; or to J. E. SAUNDERS, Winchester House, Winchester Street, Jersey.

TO LET, a small FLORIST, NURSERY and MARKET GARDEN. Capital required, about £150. Present stock on easy terms.

Full particulars on application to F. N., *Gardeners' Chronicle* Office, W.C.

DESIGNS Made and Works EXECUTED

In the Arrangement of TERRACES, CONSERVATORIES, FLORAL CORRIDORS, ROOF GARDENS on uninteresting Lead Flats, &c., formed with substantial PULHAMITE KERB for the FLOWER BORDERS, JARDINIERE, &c., in TERRA-COTTA or ARTIFICIAL STONE of various colours.

BALUSTRADES, VASES, PEDESTALS, FIGURES, FOUNTAINS, CONSERVATORY and WINDOW BOXES in great variety, suitable for any style of House.

Various Specimens of KERB or EDGING, PULHAMITE PERMANENT GRAVEL PATHING for GARDEN, TERRACE and other WALKS and FLOORS, to be seen at the Horticultural Company's, Regent Street, W.; at The Orchard, Philip Lane, Tottenham; and at our Brixton Depot there is the greatest variety of the above to be seen; also at Agricultural Exhibition till August 5. DURABILITY GUARANTEED.

A Photographic Book of over 200 Illustrations, with Sizes and Prices, sent for Inspection on receipt of twelve stamps.

Address—

PULHAM & SON, The Works, Broxbourne.

(Established in 1837.)

Geometrical Mosaic and Encaustic

TILE PAVEMENTS, for Conservatories, Verandahs, Entrance Halls, &c. Enamelled and Decorated Glazed Tiles, for Wall Linings, Fireplaces, &c.; also Patent Indestructible Terra-cotta Plant Markers. Patterns and Prices sent post-free on application.

MAW AND CO., Benthall Works, Broseley, Shropshire.

Robert Arthur Osborn, deceased.

NOTICE IS HEREBY GIVEN, that all Creditors and other persons having any CLAIMS or DEMANDS against or upon the estate of ROBERT ARTHUR OSBORN, late of Fulham, Hampton, and Sunbury, in the County of Middlesex, but lately residing at Hastings, in the County of Sussex, and at Tunbridge Wells, in the County of Kent, Nurseryman (who died on the 25th day of June, 1882, and whose Will was proved by Thomas William Shoosmith, of the Lime Works, Camberwell, in the County of Surrey, Manager of Lime Works, and John Edward Ewing, of Eaton, near Norwich, Nurseryman and Seedsman, trading under the style of Osborn and Sons, in the Principal Registry of the Probate Division of Her Majesty's High Court of Justice, on the 2d day of August, 1882), are hereby REQUIRED TO SEND in writing the particulars of their CLAIMS or DEMANDS to us, the undersigned, the Solicitors for the said Executors, on or before the 6th day of OCTOBER NEXT, after which day the said Thomas William Shoosmith and John Edward Ewing will proceed to distribute the assets of the said Robert Arthur Osborn among the parties entitled thereto, having regard to the debts and claims only of which they shall then have had notice, and they will not be liable for the assets of the said deceased or any part thereof so distributed to any person, of whose debt, claim, or demand, they shall not then have had notice.—Dated this 9th day of August, 1882

WALKER, BELWARD AND WHITFIELD, 5, Southampton Street, Bloomsbury, Solicitors for the said Executors.

To Agricultural Drainers, Contractors, and others.

THE METROPOLITAN BOARD of WORKS is prepared to RECEIVE TENDERS for UNDERDRAINING about FORTY ACRES of TOOTING BECK COMMON, in the County of Surrey, and carrying out other works thereon.

PERSONS WISHING TO TENDER may, on and after the 14th day of August, 1882, on applying to the ARCHITECT, at the Office of the Board, Spring Gardens, S.W., between the hours of 9 A.M. and 4 P.M., or on SATURDAYS between the hours of 9 A.M. and 2 P.M., inspect the Drawings and Specification.

The Tenders are to be addressed to "The Clerk of the Metropolitan Board of Works, Spring Gardens, S.W.," and be marked on the outside "Tender for Drainage Wooks at Tooting Beck Common."

The TENDERS MUST BE DELIVERED at the Office of the Board not later than 4 P.M. on TUESDAY, the 10th day of October, 1882, after which time no Tender will be received.

The Board does not bind itself to accept the lowest or any Tender.

J. E. WAKEFIELD, Clerk of the Board.

Spring Gardens.—August 11, 1882.

SPECIAL LIST OF FERNS, PALMS, PRIMULAS, &c.

Cheap LIST of the above, which are all in splendid condition. List free on application. Terms, cash. Orders of £1 and upwards delivered free to any part of Metropolitan District.

E. DENSON AND CO., Fern Nursery, Foxberry Road, Brockley, S.E.

To Exhibitors,

FOR SALE, a magnificent specimen CYCAS REVOLUTA, 9 ft. across and 7 ft. high, in perfect condition. To an immediate purchaser a low price will be asked.—W. JACKSON, Blakedown, Kidderminster.

FOR SALE, a large Fruiting ORANGE TREE, head 5 feet 6 inches by 5 feet 6 inches, in tub 2 feet square. No reasonable offer refused.

A. ROSS AND SON, The Nurseries, Kendal.

Bulbs—Bulbs—Bulbs.

SEGERS AND CO., BULB GROWERS, Lisse, near Haarlem, Holland, are now booking orders for Dutch Bulbs of every description. Samples may be had from yellow Crocus, Scillas, Snowdrops, Tulips, &c., free by post.

CATALOGUES may be had free on application. No Auction Sales or Retail Trade supplied, but the Wholesale only.

☞ Please observe name and address.

STRAWBERRY RUNNERS.—Strong, healthy, and well-rooted, from all the best market varieties. Sample and Price LIST post-free. Manual on Strawberry Culture, 6*d*.

W. LOVEL AND SON, Strawberry Growers, Driffield.

STRAWBERRIES.—Strong healthy PLANTS from Ground, also in pots, are now ready. Descriptive and Priced List of all the best kinds will be sent post-free on application.

THOMAS RIVERS AND SON, Sawbridgeworth, Herts.

CAULIFLOWER, BRUSSELS SPROUT PLANTS.

VEITCH'S AUTUMN GIANT, 3*s*. 6*d*. per 1000.

BRUSSELS SPROUTS, 3*s*. per 1000.

Packages 3*d*. per 1000 extra. Order of

R. BATH, Crayford; or J. BATH, 34, Wellington Street, Covent Garden, W.C.

To the Trade.

W. M. CROWE begs to offer the following at clearance prices:—

ZONAL GERANIUMS, for pot culture, strong stuff in small 60-pots, in about 50 best double and single varieties, true to name. The plants are in fine condition to pot on for winter flowering. My selection, 17*s*. 6*d*. and 25*s*. per 100.

FUCHSIAS, in about 25 to 30 best double and single varieties, strong stuff in small 60's, my selection, 12*s*. and 15*s*. per 100.

GLOXINIAS, erect and drooping varieties, of the finest quality. Strong plants, now full of flower, 7*s*. per dozen, 45*s*. per 100; smaller, in 60's, 20*s*. per 100.

TUBEROUS BEGONIAS, good plants, now full of flower, in 60-pots, 4*s*. 6*d*. per dozen, 30*s*. per 100.

CYCLAMEN PERSICUM, of the best procurable quality, good stuff, from boxes, 16*s*. per 100; larger, from single pots, 20*s*. and 30*s*. per 100. CATALOGUE free.

W. M. CROWE, Boleyn Nursery, Upton, Essex.

SPECIAL OFFER OF PLANTS.

ACACIA LOPHANTHA, in 54-pots, 2*s*. per dozen.

GREVILLEA ROBUSTA, in 48-pots, 6*s*. per dozen.

" in 60-pots, 20*s*. per 100.

BEGONIA PEARCII, in 60-pots, 20*s*. per 100.

CYPERUS ALTERNIFOLIUS, in 60-pots, 20*s*. per 100.

" in 48-pots, 4*s*. per dozen.

PRIMULA SINENSIS FIMBRIATA, red and white, in thumb-pots, 12*s*. per 100.

CHRYSANTHEMUMS, leading sorts, in 54-pots, 3*s*. per doz.

THOMAS PERKINS AND SONS, 34, Drapery, Northampton.

SPRING FLOWERING BULBS.

EARLY WHITE ROMAN HYACINTHS,

EARLY DOUBLE ROMAN and PAPER-WHITE NARCISSUS,

DOUBLE and SINGLE SNOWDROPS,

NAMED HYACINTHS, TULIPS, CROCUS, &c.,

Delivered Carriage Free to any Station.

Our first Consignment of the above just received, in fine condition.

DESCRIPTIVE CATALOGUES POST-FREE ON APPLICATION.

LITTLE & BALLANTYNE,

NURSERYMEN AND SEEDSMEN TO THE QUEEN,

CARLISLE.

ARTICLES FOR GARDENERS, FflorISTS, NURSERYMEN,

SEEDSMEN, &c.

ILLUSTRATED CATALOGUE,

Fifty-six Pages, Post-free, on application.



ILLUSTRATED CATALOGUE,

Fifty-six Pages, Post-free, on application.

CARTON-JOINED BOUQUET-PAPERS, 12 and 24 Scallops, White, Gold, or Silver; FERN FRONTS, Satin BOUQUET CUPS, BASKETS for Flowers, STALK COVERS, FLOWER-POT COVERS, BOUQUET PAPERS for Coffins, MOURNING BOUQUETS, &c.

For full particulars, see Price List.

B. FADDERJAHN, 16, RITTER-STRASSE, BERLIN S., GERMANY.

Now Ready, a Revised Edition of the

COTTAGER'S CALENDAR OF GARDEN OPERATIONS.

Price 3d., Post Free 3½d.

W. RICHARDS, 41, WELLINGTON STREET, STRAND, LONDON, W.C.

NOTICE.

SELLING OFF OF NURSERY STOCK.

EWING & CO.,

EATON, near NORWICH.

Great Reduction in Price for Cash Payments, viz.

15 per Cent. for Cash before delivery.
10 per Cent. for Cash within One Month of date of invoice.
5 per Cent. for Cash within Three Months of date of invoice.
After Three Months no discount can be allowed.

In addition to their immense Outdoor Stock of ROSES; FRUIT TREES, Bushes and Roots; ORNAMENTAL TREES and SHRUBS, they have ready for immediate Sale a very extensive Stock of New and Scarce ROSES in Pots; Tea and Noisette ROSES in Pots; CLEMATISES of best Old and New Varieties, in Pots; Variegated and Choice Green-leaved IVIES, in Pots; AMPELOPSIS VEITCHII, and many other Hardy CLIMBING and CREEPING PLANTS, in Pots, &c.

N.B. Cut Roses, &c., can be supplied at cheap rates, carefully packed for travelling long distances.

A slight extra charge must in most cases be made for packing. Where cash in payment of goods is sent *with the order*, the amount for *package* may be forwarded in stamps *after* despatch of goods.

N.B. Post-office Orders should be made payable to EWING AND CO., at Eaton, near Norwich. Cheques crossed GURNEY AND CO., Norwich.

Trade Terms on application.

CAULIFLOWER, BRUSSELS SPROUT PLANTS.
VEITCH'S AUTUMN GIANT, 3*s.* 6*d.* per 1000.
BRUSSELS SPROUTS, 3*s.* per 1000.
Packages 3*d.* per 1000 extra. Order of
R. BATH, Crayford; or J. BATH, 34, Wellington Street, Covent Garden, W.C.

Novelty.
GRAND NEW BEDDING PLANT.
First-class Certificate Leeds Horticultural Society.
LOBELIA "ANDREW HOLMES."
By far the best dark blue. See Advertisements in June numbers of *Gardeners' Chronicle*. Price, 1*s.* each, 9*s.* per doz., 60*s.* per 100. The usual discount to the Trade.
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NEW ROSES of 1882, in pots.—Vendors' Selection, 30*s.* per dozen; Purchaser's, 36*s.* per dozen. The above comprise all the best English and French-raised Hybrid Perpetuals, Perpetual Polyantha, Teas, Hybrid Teas, and Perpetual Moss.
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COCOA-NUT FIBRE REFUSE.
4*d.* per bushel; 100 for 25*s.*; truck (loose, about 2 tons), 40*s.*; 4-bushel bags, 4*d.* each.
LIGHT BROWN FIBROUS PEAT, 5*s.* 6*d.* per sack; 5 sacks, 25*s.*; sacks, 4*d.* each.
BLACK FIBROUS PEAT, 5*s.* per sack, 5 sacks 22*s.*; sacks, 4*d.* each.
COARSE SILVER SAND, 1*s.* 9*d.* per bushel; 15*s.* per half ton, 26*s.* per ton; in 2 bushel bags, 4*d.* each.
YELLOW FIBROUS LOAM PEAT-MOULD, and LEAF-MOULD, 1*s.* per bushel.
SPHAGNUM MOSS, 8*s.* 6*d.* per sack.
Manures, Garden Sticks, Virgin Cork, Tobacco Cloth, Russia Mats, &c. Write for Free PRICE LIST.
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MOORE'S EARLY WARWICK TURNIP.

New Seed for present sowing now ready.

A fine mild early green-topped variety, of perfect form.

This Turnip should have a trial by all Market Gardeners.

In sealed ¼ lb. packets, 1s.; ½ lb. packets, 2s.

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Descriptive Catalogue for 1882.

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Tree Carnations, Tuberous Begonias, New Double and Single Zonal Geraniums for pot culture, Foliage Geraniums, New Ivy-leaved Geraniums, New Fuchsias, Ferns, Bouvardias, Salvias, Abutilons, Coleus, Chrysanthemums, Cyclamen, Gloxinias, Double Petunias, Miscellaneous Stove and Greenhouse Plants, and Bedding Plants in great variety.

CATALOGUE of the above, including all the Best Novelties, will be forwarded free to all applicants.

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Ferns a Speciality.

The largest stock in the greatest number of varieties of

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In the Trade, suitable for STOVE and GREENHOUSE cultivation, for Outdoor Ferneries, and other purposes. Special LIST free on application. Illustrated CATALOGUE 6*d.*

W. AND J. BIRKENHEAD, Fern Nursery, Sale, near Manchester.

JOSEPH BAUMANN, NURSERYMAN,
Ghent, Belgium, begs to offer:—
100 AZALEA INDICA, 100 A. MOLLIS, 100 A. PONTICA, Ghent varieties, with flower-buds, £4, £5, £6, £8.
12 GYNURA AURANTIACA, new, 10*s.* to 15*s.*
100 ,, ,, new, £2, £3, £4.
100 FICUS ELASTICA, £5
100 SKIMMIA JAPONICA, with fruits, £1 10*s.*
100 LATANIA BORBONICA, fine, £8, £12.
100 GARDENIA FLORIDA, £4.
100 SWEET BAYS, fine large pyramids and standards, for which J. B. received the four First Prizes in the show of La Société Royale d'Agriculture et de Botanique de Gand, July 1, 1882.
100 SPIRÆA JAPONICA, 10*s.*
ARAUCARIA EXCELSA, large.

TO GROWERS of CUT FLOWERS, and FLORISTS.—The Advertisers will forward sample blooms of their NEW WHITE CARNATION, Harriet Turner, considered by all that have seen it to be one of the best for cut flowers; each flower a bouquet of itself. Very free bloomer, and perfectly hardy. Will be sent out on and after October 1, in pots, 50*s.* per 100.
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TEN THOUSAND ROSES IN POTS.
On own roots and Seedling Briers.
TEA, NOISETTE, CHINA, and HYBRID TEAS, a select LIST of the leading varieties.
5-inch pots (1st selection), fine, bushy, 1½, 2 to 2½ feet.
5-inch pots (2d selection), fine, bushy, 1, 1½ to 2 feet.
7-inch pots, suitable for forcing.
CLIMBING ROSES, 5 to 7 inch pots, 4, 5, 6 to 8 feet.
Second to none in quality.
GEO. JACKMAN AND SON, Woking Nursery, Surrey.

UNSURPASSED SEEDS for present sowing of the choicest kinds of CABBAGES, ONIONS, CAULIFLOWERS, &c., at moderate prices.
See Descriptive LIST free on application.
RICHARD SMITH AND CO., Seed Merchants and Nurserymen, Worcester.

Tuberous Begonias.

JOHN LAING AND CO.'S Gold Medal Collection is unrivalled. They have now in cultivation 100,000 Begonias, which present to the public an unprecedented floral display of single and double flowers. A visit is solicited (Catford Bridge Station, South-Eastern Railway).
Prices, 12*s.* to 60*s.* per dozen.
CATALOGUES on application. Address
JOHN LAING AND CO., Forest Hill, S.E.

DUTCH BULBS.

DIRECT FROM THE GROWERS.

ANT. ROOZEN AND SON, NURSERYMEN,
Overveen, near Haarlem, Holland.
Before ordering Dutch Bulbs, read ANT. ROOZEN AND SON'S CATALOGUE for 1882, which their Agents, Messrs. MERTENS AND CO., 5, Billiter Square, London, E.C., will forward post-free on application.

SPECIAL CULTURE OF FRUIT TREES AND ROSES.

MESSRS. RIVERS & SON

Beg to invite all those interested in the above to visit their Nurseries.

The Orchard Houses are full of Fruit this season, as usual, and contain many interesting sorts of Peaches and Nectarines.

A large Collection of all the best varieties of Roses on bloom.

☞ *The Nurseries are situate about one mile from the Harlow and Sawbridgeworth Stations, Great Eastern Railway (Cambridge Line).*

SAWBRIDGEWORTH, HERTS.

THURSDAY NEXT.

ODONTOGLOSSUM SCEPTRUM.

MR. J. C. STEVENS has been instructed by Mr. F. SANDER to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, August 17, at half-past 12 o'Clock precisely, a superb Importation of ODONTOGLOSSUM SCEPTRUM, in sound and excellent condition. A few years ago we imported this fine Odontoglot, and since then it has been in flower in several Collections and the admiration of every one. The flowers are round and of great substance, and the spike compact and large, petals broadly marked chocolate-brown, interveined with golden-yellow, sepals round and fringed, golden-yellow with deep chocolate spots and blotches. What makes the flower still more beautiful is its very large, finely fringed, and round yellow lip, reminding one of the Golden Purse Orchid, Stenia. It is an Odontoglot difficult to import, and we are pleased to be able to offer a consignment in really fine health. (See dried flowers.)

The Sale will also contain a large Importation of CATTLEYA IMPERIALIS (GIGAS), also a CATTLEYA which we believe really grand; and new CYPRIPEDIUM SCHLIMI, ODONTOGLOSSUM MIRANDUM, ANGULOA UNIFLORA, ODONTOGLOSSUM ALEXANDRÆ—the grandest lot offered for some time, and our extra varieties LYCASTE SKINNERI, &c.

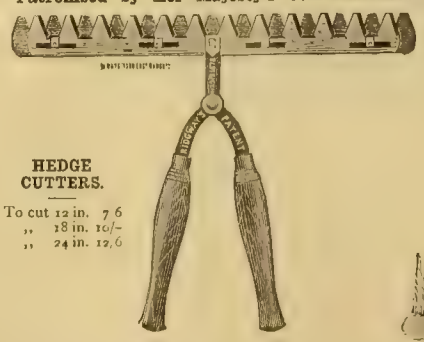
On view morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

GREAT REDUCTION IN PRICE, 1882.

RIDGWAY'S New Patent HEDGE, GRASS, and LAWN-EDGE CUTTING MACHINES

Strongly recommended by the *Field*, *Gardeners' Chronicle*, and all the best authorities.
Patronised by Her Majesty's Commissioners of Forests, and now in use at Windsor Great Park.



HEDGE CUTTERS.

To cut 12 in. 7 6
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GRASS CUTTERS.

(Best Polished Blades) *s. d.*
To cut 10 in., with short handles 4 6
,, 14 in., with long handles 9 0
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(Black Blades.)
To cut 10 in., with short handles 3 6
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LAWN-EDGE CLIPPER and Turf Trimmer.

Price 12*s.* 6*d.* only, 15*s.* best polished. Warranted very much superior to any other implement for the purpose.

From JOHN CARTER, Nurseryman and Seedsman, Keighley, August 4, 1882.—"Your Lawn-edger is the best yet made, and will certainly do its work well."
From THOMAS BEATTIE & CO., North of Ireland Seed Warehouse, Belfast, August 2, 1882—"Please send us forward three more Lawn-edge Clippers by cheapest and quickest route. Your kind and prompt attention will much oblige. P.S.—They are a good thing."

May be had from all respectable Seedsmen and Ironmongers, or direct from the Patentee, carriage paid, upon receipt of Post-office Order.

Works: LONDON ROAD MILL, MACCLESFIELD.

A Double First-class Certificate.

Viz., a First-class Certificate as a Decorative Bedding Rose in 1881, *and a First-class Certificate as a Show Rose in* 1882.

The Royal Horticultural Society have Registered their Award, and this unprecedented success has been achieved by

An English Raised Seedling Rose.

H.P. DUCHESS OF CONNAUGHT (Noble).

CHARLES NOBLE, BAGSHOT.

Sow at Once,

CRANSTON'S EXCELSIOR ONION

The finest winter variety in cultivation; grows an immense size, and very handsome shape. First-class Certificate.

Post-free for 1*s.* 6*d. per Packet.*

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(LIMITED),
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ORNAMENTAL PALMS.

SEED of OREODOXA, the most graceful of Palms. In good condition and fresh. Price, 40*s.* per bushel.

THOS. CHRISTY & CO.,
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SPECIAL OFFER OF FERNS.

Having a splendid stock, we offer 100 Stove and Greenhouse Ferns and Selaginellas, nice healthy plants, in 50 species and varieties, for 42*s.*; 50 in 50 varieties, 25*s.*; 50 in 25 varieties, 21*s.*; 25 for 10*s.* 6*d.*; 12 for 4*s.* or 6*s.*

Special TRADE LIST on application.

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DANIELS' CHOICE SEEDS,

FOR PRESENT SOWING.

Post or Carriage Free at Prices Quoted.

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DANIELS' DEFIANCE CABBAGE.—The most magnificent variety ever sent out, weight 12 lb. to 15 lb., remarkably early, short-legged, and compact, and of the most delicious Marrow flavour. Should be in every garden. .. .. Per packet 1*s.* 6*d.*	3 6
From Rev. E. P. CAMBRIDGE, *Warmwell Rectory, July* 21.—"Daniels' Defiance Cabbage has turned out the finest and most delicate flavoured I have ever eaten."	
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,, New Queen	1 4
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Special quotations for larger quantities on application.

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STRAWBERRIES A SPECIALITY.

Strong Runners from ground, and in small and large pots, of all the leading varieties.

Guaranteed true to name.

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Beg their Customers to send their Orders as soon as convenient, because it is now the proper time for ordering.

THREE MEDALS

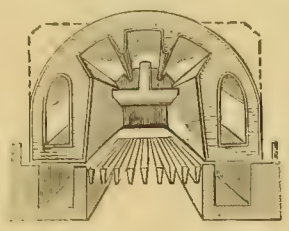
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ROYAL HORTICULTURAL SOCIETY'S GREAT IMPLEMENT SHOW,
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For BEN'S BOILER,
Which also obtained the Medal last year.



THE ONLY AWARD
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Patent Lead Bars requiring no Putty; also Glazing with under Putty and none outside.

BRONZE MEDAL
For GARDEN SEATS:

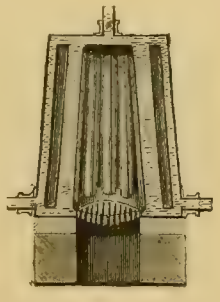
The Highest Award (Silver Medal) in this Class being given to the same Seats in a Larger Collection.

The Novelty being

MEAD'S REPLEX SEAT and TABLE,

Readily changed, and combining, in addition, a Box under seat, for Tennis, Croquet, Tools, &c. Useful to Cricketers for Scoring, Bats, Balls, &c.; also for Schools, Chapels, Lecture Rooms, &c.

In addition to the above there are exhibited other Boilers, including the New Patent Wrought-Iron Tubular and Conical, called



THE "MONARCH,"

For use either as an Independent Boiler, or set in Brickwork.

Also GAS BOILERS, GAS STOVES, Small Apparatus with Copper Boiler and Wrought-iron Double Tubes, for Water, Heated by OIL or GAS.

Portable-jointed Pipes and Valves of various kinds, Iron Vases, Tables, Scrapers, &c.

B. W. WARHURST,

Horticultural Engineer,
33, HIGHGATE ROAD, LONDON, N.W.

Pamphlet on Glasshouses and Heating, and Illustrations and Prices of above, on application.



THE

Gardeners' Chronicle.

SATURDAY, AUGUST 12, 1882.

A VISIT TO EVERSLEY.

IN one of Charles Kingsley's earliest descriptions of the parish where he lived as curate and rector thirty-three years, he reported five-sixths of Eversley as moor and Fir forest. At the time of the Saxons the wastes and wilds of Hampshire and Surrey, of Aldershot, Bagshot, Frimley, and Chobham, famous for Fir trees, and known as the district of the Bagshot Sand, extended towards London as far as Weybridge, where the better land of the Thames Valley begins. But the Fir could not then have been the native tree of that wide country, as it is now, or Eversley (the wild boar's haunt) would have been more appropriately named from a bird instead of a boar, and a devourer of Pine seed, such as the crossbill, or it might have been named from the capercailzie. The parish consists of three small hamlets, each standing on its own green, surrounded now by Fir plantations, and formerly, I have no doubt, by Oak woods, divided by tracts of moorland, and distributed over the best ground wherever a trail of fertility is occasioned by the numerous streams.

On the derivation of the word Mr. Isaac Taylor, author of *Words and Places*, wrote to Kingsley that he thought him right in taking the name of Eversley as one of the few remaining records of the former existence of the wild boar in England. He adds—"In Anglo-Saxon a wild boar was called *eofor*. An Anglo-Saxon *eo* commonly answers to modern English *e*. All these changes are seen in the word *seven*, which in Anglo-Saxon was written *seofon*. Hence Anglo-Saxon *eofon* would take the English form ever (genitive evers)." The last syllable of Eversley is the Anglo-Saxon *leâh*, a bosky place—a sort of open pasturage more or less wooded. Kingsley lodged for a while on one of the greens near the Chequers Inn, where I took luncheon, and I will borrow his description. "I pass through a gateway," he says, "out upon a village green, planted with rows of Oaks, surrounded by trim sunny cottages, a pleasant oasis in the midst of the wilderness." An "oasis" is the gift of water, and in this parish and district the narrow valley of some stream, or rivulet, often lies like a long green garden between two banks of brown moor. Kingsley describes the cottages "each with its large neat garden, and beehives, and pigs and geese, and turf stack." He said once to one of my informants, speaking of his flock, "I know them all, and their geese and pigs too!"

I had walked through 3 miles of self-sown Scotch Firs, when a kind guide bade me farewell at a gate, and pointed out the comfortable old Rectory of Eversley. I had reached my goal within a few hundred yards. Streams of water and ponds are plentiful in this neighbourhood, where several parishes in Hants, Berks, and Surrey are watered by several well-known streams—the Loddon and Blackwater and their tributaries. A little rivulet lay between the Fir wood and the rectory, and a large black

Poplar on its margin bore witness to a better soil. The rectory and church are close together, and both are surrounded with mixed trees and shrubs. The high road before the rectory windows has been planted out from the lawn skilfully, having a most pleasing outlook upon the glebe across the way where the ground rises, so that the prospect consists of a grass field sloping up to the trees and fences of a broken ridge. The highest point is the knoll on the left.

"Feed on Nature," says Kingsley, in a letter of advice; and here, on his own ground, he could do so amid one of Nature's peaceful pastoral scenes. And from beneath the Acacias on the lawn he could look on the moorland and on "these delicious self-sown Firs!" as he used to call them. "Oh, for a lodge in some vast wilderness:" some one sighs. Here is the lodge, and here the wilderness—a green wilderness of self-sown Firs. "There they stand in thousands," he wrote, in *My Winter Garden*, (prose idylls), "the sturdy Scots, colonising the desert in spite of frost, and gales, and barrenness; and clustering together, too, as Scotchmen always do abroad, little and big, every one under his neighbour's lee, according to the good old proverb of their native land, "Caw me, and I'll caw thee!'"

Writing to an old schoolfellow, a soldier who can hardly understand life at Eversley, he calls himself a "minute philosopher," explains his winter garden and its evergreens, Scotch Fir, Holly, Furze, and Heath, and then reads a noble lecture on the study of Nature, concluding, "and if a man be busy, and busy about his duty, what more does he require for time or for eternity?" Geologist and student of natural history, he was, of course, a close observer, and nothing escaped his notice in his "winter garden." Queen's chaplain and brilliant as he was in letters, how he loved that garden—a dead world it may seem to some, and yet so full of life to those who have eyes to see! "Above my head," he says, "every Fir needle is breathing—breathing for ever; currents unnumbered circulate in every bough, quickened by some undiscovered miracle; around me every Fir-stem is distilling strange juices, which no laboratory of man can make; and where my dull eyes see only death, the eye of God sees boundless life and motion, health and use."

He found many interesting problems and some mysteries in his garden. The white Clover puzzle has greatly exercised the agricultural mind sometimes, and no wonder. Farmers ask what produces white Clover? The author of *My Winter Garden* asks, "What makes Erica tetralix grow in one soil and the Bracken in another? How did three species of Club-moss—one of them quite an alpine one—get down here, all the way from Wales perhaps, upon this isolated patch of gravel? Why did that one patch of Carex arenaria settle in the only square yard for miles and miles which bore sufficient resemblance to its native sandhill by the seashore to make it comfortable? Why did Myosurus minimus, which I had hunted for in vain for fourteen years, appear by dozens in the fifteenth upon a new-made bank which had been for at least 200 years a farm gateway?"

Following Addison, who claimed for his own all the beautiful estates he fancied, Kingsley says, "I call the garden mine, not because I own it in any legal sense, but in that higher sense in which 10,000 people can own the same thing, and yet no man's right interferes with another's;" and he declares it is as full of glory and instruction to him as the Himalaya or the Punjab to his soldier friend. The life and studies at Eversley taught, too, a respect for simple labourers, and a sympathy with simple people, and it taught, to quote the Rector, "that the world is going God's way."

Those who have read Kingsley's life, or who know anything of his eminence as an author, professor, or lecturer, preacher, and clergyman, must know him for a hard-working man. One of his parishioners told me that he did as much work as three men. In a love-letter written from Eversley, shortly before his marriage, at the age of twenty-three, he confesses to a very busy life. He studied music for the sake of his singers, medicine for the sake of the scattered poor and their rheumatics; and as a teacher and leader in the parish he took care to acquaint himself with the ways and wants of the people. He led among his flock a most manful and practical life, combining varied interests. He could do most kinds of farm work, follow the hounds, throw a fly most skilfully, write verses or a novel, and, as he once observed in his graphic way, in reference to professional duties, "It is past two now, and I have four old women to read to at three, and an old man to bury at four; and I think, on the whole, that you will respect me the more for going home and doing my duty." That habit of doing his duty in his parish in the most patient, energetic, practical, and acceptable way, "unresting, untiring," made him so beloved that I doubt if any man ever had a more undivided body of devoted neighbours around him. One knows not where to stop in describing such a many-sided and so good a man. "He had the hearts of all the people," said an old parishioner. But he had the hearts of half the men of science—of Max Muller, Huxley, Darwin, Lyell, and a host of others. His efforts went far to make the Wellington College, founded in honour of the great Duke 4 miles from Eversley, a success. He delivered bright, delightful lectures to the boys, presided at their games, which of course succeeded, and founded their museum, which could not fail under such auspices. The boys were for ever drifting over to the rectory, drawn thither by the influence of some irresistible attraction, as the magnet turns to the pole. When he was Canon of Chester, he started a natural history society, and wrote to Sir Charles Lyell and other friends to enrol their names to give it *éclat*. This large society embraced all classes, and he led them all in their excursions, all travelling together second-class, and broke down the artificial barriers between man and man, as no sermons, admonitions, nor exhortations could have done.

The idle hours of such a man could be but few; but he sometimes engaged in sports. In a letter to his friend Tom Hughes—save his recent judgeship, and as England has got him again, long may she keep him, for he, too, is a good fellow—he is full of cheerful, jolly gossip about fishing and flies. "Mind your March browns," he says, "certain till the black Alder comes out, which he won't here for three weeks, unless we have a sudden change." He concludes with the following order, "Also bring me (and I will pay thee) 1 lb. avoirdupois of Skinners' best Bristol bird's-eye. You mind that last, or I'll send you back for it."

I visited an inn where he has often treated the labourers with beer, and drunk with them. And did this stain his cloth? The answer is found in the reverence they felt for him, the good influence he exerted, and their great affection. I heard him spoken of as "Mr." Kingsley, like any other rector, but to his face they often called him "uncle." And if the clergy were generally called "uncle" in the same spirit, by the same class—the poor, the rich might call them what they pleased, but the Church would be strengthened.

One cannot claim perfection for any son of Eve; and if any may think himself free from human frailty, which began in a garden, though it does not tarnish gardeners more than others, they had better conceal it from the envious world. Kingsley professed a "muscular Christianity," but he lived a pure and noble life, and, as a clergyman, a successful one, for "every man Jack" of his parishioners, as one of themselves told me, "was a steady churchgoer."

My sketch of Kingsley must needs be rapid, and I must now hasten to the end of my short story. In visiting the church and parsonage, after this momentary glimpse at the good parson, having left the Bramshill Fir woods, which he delighted to ramble in, I crossed the little brook which brings loam and fertility to the lower ground through which it runs, and then a few steps brought me to the rectory gate. It stood half open, shabby for want of repair and paint, and the drive to the front door was covered with weeds. I had heard that a successor of a very different type had followed Kingsley, and I now saw that a much less calamity had at length befallen the parish—he had gone away. The house is covered with creepers, which Kingsley himself planted and trained, but they are unkempt and straggling. Two tall specimens of the Mullein, noble wild plants, but misplaced here, grow upon the lawn, and Docks, coarse Plantains, and Thistles look into the windows. There are the Lombardy Poplars and the little bell-turret, which both appear in an engraving I have seen, with a starling (his favourite bird) perched on the tallest Poplar's terminal branch; but how desolate this homestead of our so good and great, once the brightest of homes, now looks! The seat beneath the three Scotch Firs where he loved to sit, in a secluded corner of the lawn, is broken. Kingsley died January 23, 1875, and the "abomination of desolation" has reigned here since. I passed through a wicket gate into the churchyard, and walked straight to his grave. I knew where he lay, under the shadow of the three Firs, on the south side, on the left of the walk leading from the lych gate. It is a very pretty churchyard, thanks to Kingsley. Some clergymen will not allow the decoration by seemly shrubs and trees of these most sacred spots on earth which most need the presence of Yew or Cypress and other evergreen trees. Such men must be wanting in human sympathy, and such clergymen must weaken the Church. From the lych gate there is an avenue of fine Irish Yews, with a tall Thuya terminating each row; the boundary wall, on the right, has the appearance of a wall of Ivy—you cannot see a brick. The church, with tower and four turrets, is half hidden with Ivy and an evergreen Cratægus, planted by Kingsley more than thirty years ago. The wall on the south, which divides the churchyard from the rectory garden, and beneath which he lies, is covered with such masses of Ivy and other evergreens that you cannot see the ruined seat from his grave, nor could you see into the graveyard from the garden. There are six great Irish Yews growing round an adjoining grave, planted before he needed a memorial. He lies low amid many tall shrubs, with an edging of marble enclosing 7 feet of level turf, and a marble cross at the head, wreathed with the flower he is said to have loved best, whose cruciform stamens form the symbol of his faith—the Passion-flower. He was only fifty-six at his death, and the date of death and name form the whole of the inscription, except these touching words, placed there by his own desire, and conveying the story of his life and firm belief: "Amavimus, amamus, amabimus." It seemed to me that a commentary to this declaration of love past, present, and to come, lay on his grave in the form of several garlands or handfuls of flowers, scattered there quite recently. The Queen has sent votive flowers to the grave of her late chaplain, and the Prince of Wales, too, who loved this brave heart, and whose little sons sent him, when stricken by death as it proved, small pictures from Sandringham, and affectionate messages to cheer him; but there were humble nosegays strewed there to the memory of the friend whom they could not always call "Mr." at Eversley. These lay on the grave of "uncle." Some of the little bouquets had not been tied up. I noticed particularly a bunch of Forget-me-Nots cast down loose by small hands, apparently to honour the memory of one who "worked as hard as three men"—all these words are from Eversley—"and did what was right." *H. E.*

New Garden Plants.

HESPERALOE YUCCIFOLIA, *Engelm.**

This is a very remarkable plant, for the full botanical history of which we may refer to the works below cited. It is neither an Aloe, nor an Agave, nor a Yucca, but it is something like all three. The leaves, pollen, and seeds, says Engelmann, are those of a Yucca, the perigone and pistil those of an Aloe, the filaments, being adnate at the base and geniculate upwards, resemble those of an Agave. As a garden plant we may say that in addition to the above likenesses it may also be likened to a Bromeliad, such as Tillandsia, of which it has the tufted dry foliage. As our cut (fig. 34), taken from a specimen communicated by Mr. Ware, will show, the plant bears a rosette of long (12—18 inches) narrow channelled dry leaves, the margin of which breaks up into long whitish threads. From the centre of the tuft uprises a flower-stalk 3—4 feet in height, naked at the base, but bearing at the upper part fascicles of flowers loosely disposed in racemes. The perianth is cylindrical, reddish, 6-parted, the segments linear obtuse persistent. The fruit is described as capsular, with numerous thin black horizontally-arranged Yucca-like seeds. The plant is a native of Texas, and is one of the most interesting and striking of recent introductions of its class. The great length of time during which it remains in bloom is one of its desirable characteristics, the specimen from which our figure was taken having been in bloom for many weeks, and therefore not adequately representing the beauty of the plant.

It is worth cautioning tally writers and catalogue makers not to confound this with Hesperelæa, an Oleaceous genus. *M. T. M.*

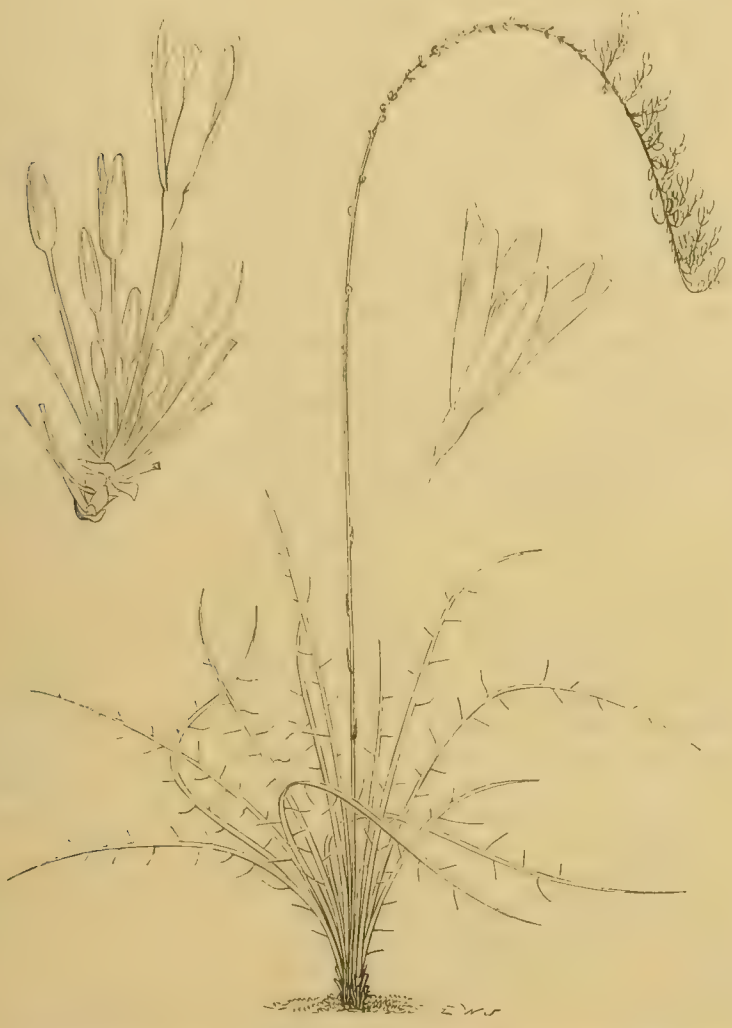


Fig. 34.—Hesperaloe yuccifolia. Plant much reduced; pale rose flowers nat. size.

Begonia lineata, *N. E. Br.*

Plant 7—9 inches high. Rootstock tuberous. Stem dying down annually, terete, glabrous, fleshy, internodes elongated, greenish with pink lines, or pinkish, somewhat pellucid. Stipules lanceolate, acuminate, membranous, ½ inch long, 2 — 2½ lines broad. Petiole terete, channelled down the face, ½—1½ inch long, of the same substance and colour as the stem, but sparsely pilose. Lamina obliquely cordate-ovate, acute, or acuminate, the basal lobes rounded, overlapping in the lower leaves, margin minutely ciliate, sinuate repand or more or less lobed; 7—8 nerved, nerves slightly prominent above, very prominent beneath; upper surface somewhat rough from short scattered setæ, blackish-green, very thickly covered with silvery-grey spots, or the central area almost entirely silvery-grey, broken into spots and dots towards the margin; under-surface glabrous, except the nerves, which are sparsely pilose or setulose, purple-red, densely covered with minute whitish dots. Cyme terminal, dichotomous. Bracts large, submembranous, deeply concave, sub-carinate on the back, caducous. Pedicels ½—¾ inch long, rosy. Flowers glabrous, about an inch across their longest diameter, pale pinkish, with the base of the sepals and petals and the veins deep rose coloured; male flowers with two broadly elliptic obtuse sepals, and two much smaller obovate petals; stamens monadelphous in a globose shortly stipitate head, anthers obovate, yellow; female flowers with two sepals and 4—5 petals, the two innermost ones much smaller than the rest; stigmas sinuous, scarcely spiral, yellow. Ovary 2-celled, white, with three unequal red or greenish wings, the lateral wings narrow cuneate-deltoid, the dorsal wings obliquely semi-elliptic, twice as broad as the lateral ones, all abruptly rounded at the apex. Placentas bifid. Capsule about three-quarters of an inch in length and breadth, 2-celled.

This pretty species was introduced from Java by Mr. Curtis, and was recently exhibited at the Royal Botanic Society's show by Messrs. Veitch, who have the entire stock of the plant. It belongs to the section Platycentrum, and is closely allied to B. rupicola, Miq., but is readily distinguished from that species by its much larger flowers, ovary, and seed vessel, these being about twice the size of those of B. rupicola, and the dorsal wing of the ovary is of a very different shape, being in B. rupicola about twice as broad as long, whilst in B. lineata it is twice as long as broad. The leaves also of B. lineata are more or less scabrous above, whilst in B. rupicola they are glabrous. It will probably make a good plant to hybridise with. *N. E. Brown, Herbarium, Kew.*

Stapelia pulchella, *Mass.**

Everywhere perfectly glabrous. Stems 2—4 inches high, ¼—½ inch thick, 4-angled, with stout conical spreading decussate teeth; just like the stems of S. variegata, S. bufonia, &c. Flowers in gradually developing, several flowered, sub-sessile or sessile cymes. Pedicels 1—1¼ inch long, 1—1½ line thick. Calyx lobes ovate acute, 1½—2½ lines long. Corolla 1½—2¼ inches in diameter, with a shallow saucer-shaped disk, and spreading or recurving deltoid-ovate acute 5-nerved lobes; annulus small, solid, obscurely pentagonal, 4 — 7 lines in diameter, only raised ¼—½ a line above the general surface, the face of the corolla slightly rugulose, sulphur-yellow, covered with numerous small purple-brown dots or minute specks, these are smaller and more crowded upon the annulus, and become more minute towards the tips of the lobes, the margins of the lobes are also sometimes very narrowly edged with purple-brown; the bottom of the cup formed by the annulus is purple-brown, or pale purple-red, and distinctly marked off from the yellow ground colour by a darker purple-red line, or more rarely the entire bottom of the cup is of a uniform sulphur-yellow. Segments of the outer corona linear-oblong obtusely rounded, or emarginate, or minutely three-toothed at the apex, 1¼—1⅝ line long, ⅓ line broad; above dark purple-brown, with a spot or somewhat V-shaped transverse line a little below the apex, of pale sulphur-yellow, and generally narrowly margined with the same colour; beneath yellowish with just the apex dark purple-brown; gynostegium dark purple-red. Segments of inner corona with the apex produced into a short subulate erect beak about ⅔ line long, and with a short conical projection on the shoulder (the bend where the coronal segments become incumbent on the anthers), dark purple-brown marked with yellowish.

A very neat and pretty species, which I first received from Mr. Westcombe in August, 1877, and quite recently from Mr. W. B. Latham, the Curator of the Botanic Gardens, Edgbaston, Birmingham, who states in his letter that "our Hon. Secretary, H. Buckley, Esq., brought the plant from the Cape about four years ago."

This species was placed by Haworth in his genus Podanthes, and by Decaisne in the same group, except that the latter author treated Podanthes as a section of the genus Stapelia, instead of maintaining it as a separate genus, and this appears to me a more correct view, as I have already expressed in the *Journal of the Linnean Society*, Botany, xvii., p. 163, for the present plant appears to me to connect the two groups of species that fall under the generic names Podanthes and Stapelia.

Masson's figure of this species is not a good one, nor is his description as ample as could be desired, yet I think there can be little doubt but that the plant I have here described is the true S. pulchella of Masson. None of the authors who since Masson have written upon the Stapeliæ seem to have seen living flowers of this species, and it does not appear to be a common plant in cultivation, since I can find no record of having received it from any other correspondents than those mentioned above, though I have an impression that Mr. J. E. Daniel, of Epsom, has sent me a very similar if not identical plant. There appear to be two varieties of it, one having the corolla marked with purple-brown dots, the other having the dots reduced to mere specks. *N. E. Brown, Kew.*

* *Hesperaloe yuccifolia*, Engelmann, in Watson's *Botany 40th Parallel* (1871), p. 497 (Appendix); *Yucca (?) parviflora*, Torrey, in *Bot. Mexican Boundary* (Emory, 1858), p. 221; *Aloe yuccæfolia*, Gray, *Proc. Amer. Acad.*, p. 390, *fide* Engelmann.

* *Stapelia pulchella*, Masson, *Stapeliæ novæ*, p. 22, t. 36; Haworth, *Syn. Pl. Succ.*, p. 33; Decaisne, in *DC. Prod.* 8, p. 655.

REPORT ON THE CONDITION OF THE FRUIT CROPS.

[FROM OUR OWN CORRESPONDENTS, AUGUST, 1882.]

COUNTY.	APRICOTS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APPLES.	PEARS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
SCOTLAND.										
ABERDEEN	Average	Average on walls	Average; Morellos good	....	Under	Under	Average	Average	....	George Donaldson, Keith Hall
	....	Much under average	Under average	Not grown outdoors	Much under average	Much under average	Under, except red Currants	Average	....	John Forrest, The Gardens, Haddo House
	....	....	....	....	Under average; bad	Under average; bad	Under average; good	Under average; good	....	John Proctor, Slains Castle
	....	....	....	....	....	....	Under	Under	....	William Paterson, Balmoral
	Under	Under	Average; good	Not grown in the open air	Under	Under	Over, and good	Average, and very good	Under	Robert Farquhar, Fyvie Castle Gardens
ARGYLL	....	Very few	Half a crop	....	Very few	Very few	Half a crop	Not above half a crop	....	A. Brown, Kilmorey Gardens, Lochgilphead
	Failure	Very few	Under, except Morellos	....	Very few	Failure	Under	Average	....	G. Taylor, Castle Gardens, Inverary
AYR	Under	Under	Average	Under	Under	Under	Average	Over	....	P. Thomson, Rozelle Gardens
BANFF	Full average; fruit fine	Far below average	Under average	Much under average	Under average	Light crop	Over average	Average; good	....	John Webster, Gordon Castle Gardens
BERWICK	Under	Under	Under	Trees all killed	Under	Under	Average; good	Over; good	....	W. Fowler, Mertoun House, St. Boswell's
	Over; very good	Under; good	Failure	Failure	Under; good	Failure	Over; very good	Over; very good	....	William Richardson, Ayton Castle Gardens
	Under average; good	Under average; good	Average; good	Under average; good	Under; good	Failure	Average; very good	Average; very good	Under; bad	John Reid, Blackadder Gardens
CAITHNESS	Under; bad	Under; bad	Under; good	....	Under; bad	Under; bad	Under; good	Average	Under; bad	John Sutherland, Langwell
CLACKMANNAN	Failure	Scarce	Average	Failure	Under average	Failure	Average	Average	Under	Thomas Ormiston, Alloa Park
CROMARTY	Under	Under	....	....	Fair; under average	Fair; under average	Fair; under average	Under average	....	James Laing, New Tarbet Garden, Parkhill
DUMFRIES	....	Under	Under; bad	Under	Under	Under	Under; good	Over; good	Under	John Shannon, Jardine Hall Gardens, Lockerbie
	....	Failure	Failure	....	Failure	Failure	Average; good	Average; good	....	James Smart, Raehills, Lockerbie
DUMBARTON	....	Under	Under	....	Under	Much under	Average; good	Average; bad from rain	....	Alex. Scott, Auchendenan
	....	Very bad crop	Bad crop	....	Very bad crop	Very bad crop	Average crop	Very bad	....	James Mitchell, Camis Eskan
EAST LOTHIAN	Average; very good	Under	Under average: good	Under average	Under average; good	Under average	Average; good	Over average; very good	Under average	L. Dow, The Gardens, Newbyth
	Under	Under	Under	Under	Under	Under	Over	Over	....	T. Gellatly, Gosford, Longniddry
	Average; good	Under; good	Under; bad	....	Average; good	Under; good	Average; good	Average; good	Under	Wm. McKelvie, Broxmouth Park
FIFE	Under average	Under average	Under average	....	Under average	....	Over average, and here good	Average	....	W. Henderson, Balbirnie, Markinch
	Under	Under	Under	....	Average	Under	Average; very good	Average; good	....	George Ramsey, Fordell House, Inverkeithing
FORFAR	Under	Average	Average	Under	Under	Under	Average	Good	Under	Geo. Johnston, Glamis Castle
	....	Under; bad	Under; bad	....	Under; bad	Under; bad	Average; good	Average; good	....	James Mitchell, Panmure Gardens, Carnoustie
INVERNESS	....	Average; good	Average; very good	....	Under; bad	Under; bad	Average; good	Over; very good	....	Angus McDonald, Balmaccan Gardens
KINCARDINE	....	Under	Average	....	Total failure	Total failure	Average	Over average	....	George Wighton, Fasque, Laurencekirk
KINROSS	....	Under	Under; good	....	Under	Under	Average; good	Average; good	....	John Fortune, Blair Adam Gardens
LANARK	....	Under	Under	....	Average; good	....	Average; good	Over; good	....	Francis Davidson, Palace Gardens, Hamilton
	Few grown	Under average	Under average	None on the open walls	Under average	Greatly under average	Average, except black Currants	Very abundant	....	Andrew Turnbull, Bothwell Castle
MIDLOTHIAN	Average; good	Under average; good	Under average; good	Scarce; good	Under average; very good	Much under average; good	Abundant; very good	Heavy crops; good	Scarce; good	Malcolm Dunn, Dalkeith Gardens
	Average	Under	Under	....	Under; good	Under	Over; very good	Over; very good	....	Charles Johnston, Dalhousie Castle Gardens
MORAY	Over	Average	Under	Average	Very bad	Very poor	Very good	Over; very good	....	Donald Cunningham, Darnaway Castle Gardens
NAIRN	Under	Under	Under	Under	Under	Under	Average	Average; good	....	James Manson, Kilranock Castle, Fort George
ORKNEY	....	....	Under average	Over average under glass	Under average; bad	Average; good	Very thin	Under average: bad	....	Thos. McDonald, Balfour Castle Gardens, Kirkwall
PEEBLES	....	Under	Average	....	Under	....	Over; good	Average; good	....	M. McIntyre, The Glen, Innerleithen
PERTH	Under	Under	Under	....	....	Under	Under	Average	....	P. W. Fairgrieve, Dunkeld Gardens
	....	None except Victorias	Under	....	Scarcely any	Under	Average	Early sorts very plentiful	....	George Croucher, Gardener, Ochtertyre, Crieff
	Under average	Under average	Under average	Under average	Under average	Under average	Average, except Currants	Above average	Under average	D. Doig, The Gardens, Rossie Priory, Inchture
RENFREW	....	Under; good	Under; good	Under; good	Under; bad	Under; bad	Average; good	Over; good	....	Thomas Lunt, Ardgowan, Greenock
ROSS-SHIRE	Under average	Under average	Under average	Under average	Under average	Under average	Average; good	Average; good	....	D. Harvey, Invergordon Castle
	Failed completely	All vars. are very scarce	An average crop	They have failed	A few on wall	A few on wall	Very scarce in general	Abundant crop	....	Jas Munro, Duncraig, Strome Ferry
ROXBURGH	Average; good	Under average; good	Under	Failure	Average; good	Under; bad	Over; good	Over; good	....	John Galloway, Minto Castle, Hawick
SUTHERLAND	....	Under	Average	....	Under	Under	Average	Average; good	Average	D. Melville, Dunrobin Castle Gardens, Golspie
STIRLING	Failure, both standards and wall	Failure	Failure	....	....	....	Average; quality good	Average; quality good	....	Maurice Fitzgerald, Dunmore Gardens, Stirling.
WEST-LOTHIAN	Average; good	Under; very good	Under; bad	Under; bad	Under; very good	Under; bad	Average; except black Currants	Average	....	J. Moyes, Dalmeny Park, Edinburgh
	Good average crop	Failure	Failure	Failure	Failure	Failure	Abundant	Good average	Very few	W. Muir, Hopetoun Gardens.
WIGTON	Average; good	Under; good	Under; good	Average; good	Under; good	Under; good	Average, except Currants; good	Over; very good	....	Archibald Fowler, Castle Kennedy and Lockinch
ENGLAND—NORTHERN COUNTIES.										
NORTHUMBERLAND	Over average; good	Average	Average	Under average	Under average	Under average	Over average; good	Average; good	Average	Thomas Bowie, Chillingham Castle Gardens
CUMBERLAND	....	Average; good	Total failure	....	Average	Under average	Average; good	Average; good	Under average	J. Hammond, Brayton, Carlisle
	Under average	Under average	Under average	....	Under average	Under average	Average	Over average	....	J. Shaw, Muncaster Castle, Ravenglass
WESTMORELAND	....	Failure	Average	....	Failure	Failure	Plentiful	Plentiful	Under	W. A. Miller, Underley Gardens
	Under average	Under average	Average; good	....	Under average	Under average	Over average; very good	Average; good	Very plentiful	Samuel Sarple, The Gardens, Dallam Towers
	....	Very few	Under average	....	Under average	Scarce	Good; except black Currants	Abundant and good	Very few	Edward Evans, Storr's Gardens, Windermere
DURHAM	Bad	Bad; under average	Good average; Morellos under	....	Under average	Under; bad	Over; very good	Average; very good	....	J. Hunter, Lambton Gardens, Fence Houses
	Under average	Under average	Under average	Average; very good	Under average	....	Average; very good	Average; good	....	James Larkin, Auckland Castle

CONDITION OF THE FRUIT CROPS—(*Continued.*)

COUNTY.	APRICOTS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APPLES.	PEARS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
NORTHERN COUNTIES.										
YORKSHIRE	Under average	Under average	Under average	Average	Under average	Very much under average	Average	Average	Under average	Michael Saul, Stourton Castle
	Under	Under	Average	Under	Under	Under	Average; good	Average; good	....	J. Fowler, Harewood House
	A good average	Poor crop	Good average	Just a crop	Just a crop	....	Over average	Very good	Very good	Joseph Shaw, Nunappleton, Bolton Percy
	Under average	Under average	Under average	Under average	Under average	Under average	Average	Average	Average	Robert C. Kingston, Brantinghamthorpe
	Bad	Bad	Bad	Bad	Bad	Bad	Very good	Very good	....	W. Lewin, Aske Gardens
	Under	Under; bad	Below average	....	Average	Under	Over; very good	Good, but spoiled by wet	Average	Wm. Stephens, The Gardens, Endcliffe Hall
	Where sheltered, good	Bad	Moderate	Moderate	Very partial	Very bad	Abundant	Good	Good	William Culverwell, Thorpe Perrow, Bedale
LANCASHIRE	....	Under average; very poor	Under average	Good under glass; none out-of-doors	Very partial crop	Complete failure	Over average; very good; extra	Over average; good crop	....	W. B. Upjohn, Worsley Hall Gardens
	....	Under average	Average, except Morellos	Under average	Under average	Failure	Average	Average	Walnuts under average	W. P. Roberts, Cuerdon Hall, Preston
	Average; good	Under average	Morellos over average	Average	Under average	Scarcely any	Plentiful	Plentiful	....	F. Harrison, Knowsley Gardens, Prescot
	....	Under	Under	....	Under	Total failure	Average	Average	....	Andrew Jameson, Haigh Hall, Wigan
	....	Failure	....	....	....	....	Fair crop	Heavy; good	....	H Lirdsey, Huntroyde Park Gardens
	....	Failure	Average	....	Partial	Failure	Average; good	Extra good	....	J. Johnstone, Roby Hall, near Liverpool
MIDLAND COUNTIES.										
CHESHIRE	Under	Under; poor	Average generally	Failure	Under generally	Thin and poor	Good crop generally	Average	Not much grown	Alfred J. Grant, Withington Hall, Chelford
	....	Under; bad	Under; bad	Under	Under	Under; bad	Average; good	Over	....	Robert Mackellar, Abney Hall, Cheadle
	....	....	Under average	None outside	Average	....	Good; average	Good; average	....	Robert Milne, Vale Royal Gardens
	Over; very good	Under	Average; good	....	Under; bad	Under; bad	Average; good	Over; very good	Under	Thos. Selwood, Eaton Hall, Gardens, Chester
DERBYSHIRE	Over average	Under average	Average	Average	Average	Under average	Average	Under average	Average	J. H Goodacre, Elvaston Castle Gardens
	Under average	Under average	Under average	Under average	Under average	Under average	Average; good	Average; good	Average	Thos. Keetley, The Gardens, Darley Abbey
NOTTS	Average; good	Under	Average; very good	Average	Under	Under	Average; good	Average; good	Average	S. A. Woods, The Gardens, Osberton Hall
	Over average	Failure	Under average	Average	Average	Under average	Average	Average	Under average	Richard Carr, Welbeck
	Under	Under; trees infested with fly	Under; trees very unhealthy	Under	Under	Under	Average; fruit very dirty	Average	....	J. Edmonds, Bestwood Lodge, Nottingham
	Good	Scarce	Plentiful	None outdoors	Fair average	Poor crops	Plentiful	Abundant; good	Very good	A. Henderson, Thoresby Park, Ollerton
SALOP	Under average; bad	Average on walls; good	Average on walls	Average; bad	A long way under average	Almost *nil*	Average; good	Average; very good	Average	A. S. Kemp, Haughton Hall, Shifnal
	Average; fair	Under; fair	Average; poor	Under; fair	Under; good	Under; fair	Average; good	Average; poor	Under	James Louden, The Quinta, Chirk
	Under; good	Under; good	Under; bad	Under; bad	Under; good	Under; bad	Over; very good	Over; very bad	Under	James Bain, Downton Hall Gardens, Ludlow
	Average	Under	Average	Under	Under	Under	Plentiful	Plentiful	Under	W. Pratt, Hawkstone Gardens
	Average; very good	Quite a failure	Under; good	Over; very good	Under	Average; good	Average; very good	Over; very good	Under	R. Milner, Sundorne Castle Gardens, Shrewsbury
STAFFORD	Under average	Under average	Average	Under average	Under average	Under average	Over average	Over average	Average	William Davidson, Sandon, Stone
	Under	Under	Under	Under	Under	Under	Under	Over	Under	E. Simpson, Wrottesley
	Under average	Under average	Under average	Ground too cold	Under average	Under average	Average	Average	Average	Wm. Bennett, Rangemore, Burton-on-Trent
	Failure	Under	Under	....	Under average	Failure	Plentiful and good	Average; good	Average	W. Ward, The Gardens, Little Aston Hall
	.. .	Under average; bad	Under average; bad	Very few grown outdoors; under	Under	Under; bad	Very good: over average	Good average	Very few grown; under	J. Wallis, Keele Gardens, Newcastle
	Good crop; rather small	Very thin	Fairly good	Rather thin out-of-doors	Very poor crop	Very thin indeed	Plenty; but sadly blighted	Very good	Fairly good	Thos. H. Rabone, Alton Towers, Stoke-on-Trent
LEICESTER	Average	Under average	Average	Under average	Under average	Bad	Good	Good	Average	James Maclean, Beau Manor Park
	Over; very good	Under; bad	Under; bad	Over; good	Under	Under; bad	Average	Average	Average	William Ingram, Belvoir Castle Gardens
	Average	Under average	....	....	Under average	Under average	Over average; good	Over average; good	Average	Edmund Wainwright, Nevill House, Market Harborough
RUTLAND	Average; good	Under	Average; good	Under	Under	Under; bad	Average	Abundant; very good	Plentiful; Walnuts scarce	John Grey, Normanton, Stamford
	Average; not very good	Under; bad	Average; good	Under	Average; good	Average; good	Over; very good	Over; very good	....	Henry Mason, The Gardens, Bisbrook Hall
WARWICK	Plentiful and good	Few, and miserable	Few, and miserable	Very good, especially Nectarines	Thin and very partial	Generally a failure	Raspberries plentiful and good	Very fine and plentiful	Hazel plentiful	W. Miller, Combe Abbey Gardens
	Abundant and good	Under; badly blighted	Under: badly blighted	Average; good	Average	Under	Abundant, badly blighted	Abundant and bad	Average	R. Greenfield, The Priory Gardens, Warwick
	Thin	Scarce on walls; standards fair	Under on walls; standards good	Fair crop	Good average crop	Under	Very good	Abundant and good	Good	J. J. Brenchley, Newnham Paddox, Lutterworth
NORTHAMPTON	Under; good	Under	Under	Average; promising	Under	Under	Over; very good	Average; good	Average	Jas. Trigger, Milton Gardens
	A good crop and fine	Almost a failure	Morellos only a good crop	A very good crop	Quarter crop	Nearly a failure	Abundant	Abundant	Abundant	R. Gilbert, Burghley
HUNTINGDON	Over average; very good	Average	Under average; good	....	Under average	Average	Over average; very good	Over average; very good	Plentiful in woods; Walnuts average	J. J. Bowie, Hinchingbrook Gardens
	Average; good	Under average; good on walls	Average	Average	Under average	Average	Average	Over average; good	Over average, except Walnuts	Wm. Kennedy, Kimbolton Castle, St. Neotts
BEDS	Over average; very good	Average: much blighted	Over average; good	Average; good	Under average; not good	Average; good	Over average; very good	Average; very good	Over average; good	Geo. Ford, Wrest Park, Silsoe
	Average; good	Under average	Average	Average	Under average	Under average	Average; good	Average; good	Average; good	Chas. Turner, Cranfield Cour Newport Pagnell
	Over; very good	Under; very bad	Average; good	Average: good	Under; very scarce	Under; fruit small	Very plentiful and good	Very abundant and fine	Average; good	H. Landers, Southill Park
OXFORD	Under	Average	Average	Under	Under	Under	Over average	Over average	Under	Isaac Watson, Nuneham Park
	....	Average	....	....	Under average	Under average	Over average; good	Over average; fine	Average	John Greenshields, Sarsden House
	Over	Under	Average	Good	Under	Average	Very good	Over	Over	T. Buckerfield, Shirburn Castle
	Average	Under; very good on walls	Under	....	Under	Under	Over; very good	Over; deficient in flavour	....	William Finlay, Wroxton Abbey, Banbury
	Over average	Under average	Under average; Morellos scarce	Under average	Scarce	Scarce	Plentiful	Abundant; very fine	Under average; Walnuts average	B. Hope, Middleton Park Gardens, Bicester
BUCKS	Over average; very good	Under average	Over average; good	Over average; very good	Under average; bad	Under average	Over average; very good	Average	Over average	Thomas Bailey, Shardeloes Gardens
	Average; good	Under average; bad	Over average; very good	Average; good	Under average; bad	Under average; bad	Over average; very good	Over average; very good	Over average; very good	Geo T. Miles, Wycombe Abbey Gardens
	Half a crop	Under average; good	Average; good	Under	Under	Average; very good	Over	Over; very good	Under	J. Smith Mentmore, Leighton Buzzard

CONDITION OF THE FRUIT CROPS—(*Continued*).

COUNTY.	APRICOTS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APPLES.	PEARS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
MIDLAND COUNTIES.										
BUCKS	Average; good	Under	Under; good	Under; bad	Average	Average	Over; good	Over; bad	Average	George Haskins, Stowe Gardens, Buckingham
HERTS	Average; good	Under average	Under average	Over average; good	Under average	Under average	Over average; good	Average	....	George Norman, The Gardens, Hatfield House
	Over; very good	Average; bad	Average; bad	Average; very good	Under; bad	Average on walls; good	Over; very good	Over; good	Under	Richard Ruffett, Panshanger
	Over average; very good	Average; good	Average; good	Over average; very good	Under average	Under average	Over average; very good	Average; good	Over average; very good	J. C. Mundell, Moor Park Gardens
	Over; very fine	Average; good	Average; good	....	Over; good	Average; very good	Abundant; very fine	Average; good	Over; good	J. Thompson, Gorhambury, Gardens
	Average; good	Under; bad	Average; very good	Average; good	Under; bad	Average; very good	Average; very good	Average; good	Over; Walnuts under	G. Merritt, Kimpton Hoo Gardens
EASTERN COUNTIES.										
LINCOLN	Average; good	Under; bad	Under; good	Average	Under; good	Under	Over; very good	Over; very good	Over	Isaac Dell, Stoke Rochford, Grantham
	A great crop, and fine	Average on walls, standards a failure	Walls average, standards a failure	A heavy crop	Under an average	Not an average on walls	A good crop, and very fine	Excellent crops of fine fruit	Filberts and Cobs abundant, Walnuts thin	George B. Tillyard, Brocklesby Park, Ulceby
	Average; good	Under	Under	Average	Under	Under	Over; very good	Over; very good	Over	David Lumsden, Bloxholm Hall, Sleaford
	Average; good	Under; bad	Average; good	Average; good	Under; good	Under; bad	Over; good	Average; good	Not many grown	Thomas Vinden, Harlaxton Manor, Grantham
	Average crop	Good	Good	Bad	Good	Bad	Very good	Good	Average	James Taylor, Lea Hall Gainsborough
NORFOLK	Average; good	Under; good	Under; bad	Under; bad	Under; bad	Under; good	Over average; very good	Average; good	Nuts, average; Walnuts, failure	Henry Batchelor, Catton Park, Norwich
	Very good crop	Good crop on walls	Average on walls	Average crop	Average	Under average	All kinds very good	Very good	Filberts excellent, Walnuts medium	Thomas Wynne, Wroxham Hall, Norwich
	Over average; very good	Average	Average, except Morellos	Over average	Under average; bad	Average	Average	Over average; good	Under average	A. Lancaster, The Gardens, Holkham
	Average crop; fruit small	Average on walls, bad on standards	Morellos average; dessert sorts scarce	....	Very scarce	Very much under average	Over average; good	Average; good	Walnuts scarce; no others grown	William Shingles, Melton Constable
	Above average	Above average; very good	Under average	Average; very good	Under average	Average	Above average; very good	Average	Average	Thomas Murphy, Hillington Hall, Lynn
SUFFOLK	Average	Under average	Average	Under average	Under average	Under average	Very good	Very good	Very good	George Bethell, Sudbourn Hall, Wickham Market
	Over	Under; bad	Average	Average	Under; bad	Under; bad	Over	Over	Average	J. Sheppard, Wolverstone Park, Ipswich
	Over; very good	Under; bad	Under; bad	Average; good	Under; bad	Under; bad	Average; good	Over; good	Average; good	John Wallis, Orwell Park, Ipswich
	Over; good	Under; good	Average; good	Average; good	Under; bad	Under; bad	Over; good	Over; good	Average	Robert Squibbs, Ickworth, Bury St. Edmunds
	Average; very good	Average; very good	Under average; good	Under average; good	Under average; good	Under average; good	Over average; very good	Average; very good	Over average; very good	J. Mill, The Gardens, Rendlesham Hall
	Average	Under	Average	Over average	Under	Under	Over	Average	Average	D. T. Fish, Hardwicke, Bury St. Edmunds
ESSEX	Under	Average	Average	Under	Under	Average	Over	Average	....	D. Donald, Knott's Green, Leyton
	....	Over average	Over average	....	Under average	Under average	Over average	Over average	....	Jas. Douglas, Loxford Hall, Ilford
	Average	Under	Average	Good	Under	Under	Good	Good	Average	W. Bones, Havering Park Gardens, Romford
	Average	Under average	Under average	Average	Under average	Under average	Over average, good	Over average; very good	Average	William Smith, Birch Hall, Colchester
	Crops very good; above average	Bad	Very good; over average	Good	Bad.	Much under average	Very good; over average	Very good; over average	....	W. F. Bowman, Hylands Park, Chelmsford
	Average; good	Under; bad	Under; bad	Average; good	Under; bad	Under; good	Over; very good	Average; good	....	H. Lister, Easton Lodge, Dunmow
SOUTHERN COUNTIES.										
BERKS	Average	Over average	Average; good	....	Very few indeed	Under	Over average; very good	Average; spoiled with wet	Average	Alexander Galt, Aldermaston Court Gardens
	Thin	Good; an excellent crop on walls	Good	Average crop	Very scarce	Good on walls and standards	Very good	First-rate	Immense crops	James Tegg, Bearwood
	Average	Average; good	Over; good	Under	Under; good	Under	Over; good	Average; good	Over	J. Atkins, Lockinge Gardens, Wantage
	Average; very good	Under	Under	Average	Under; bad	Average	Over; very good	Over; good	Average; good	Robert Fenn, Sulhamstead Abbotts, Reading
MIDDLESEX	Average	Under average; bad	Under average	Average	Under average	Under average	Over average; good	Over average; good	Average	A. F. Barron, Royal Horticultural Society, Chiswick
	Moderate crop	Very few indeed	Fairly good; Morellos very good	....	Very poor crop	Very poor crop	Very abundant, and fine	A great crop	Walnuts thin; small Nuts plentiful	Alex. Dean, Bedfont
	Average	Very poor	Below average; good	Average crop	All but a failure	Very few	Plentiful; good	Plentiful; wanting in flavour	....	T. Baines, Fern Cottage, Palmer's Green, N.
	....	Under average	Failure	Not grown on open walls	Total failure	Under average	Abundant and good	Full average	Under average	T. P., The Warren House, Stanmore
	Average	Under	Under	Average	Under	Under	Average	Average	Failure	R. Henderson, Fulham Palace
	Average	Under average	Average	Average	Much under average	Much under average	Over average	Over average; very good	....	John Woodbridge, Syon House Gardens
	....	Under average; bad	Above average; good	Above average; good	Average; good	Under average; bad	Average; good	Average; very good	....	J. Willard, Holly Lodge Garden, Highgate, N.
SURREY	Over; very good	Average; good	Over; very good	Average; good	Failure	Average; very good	Average, except black Currants	Average; very good	Over; very good	J. Burnett, The Deepdene, Dorking
	Average	Total failure	Over average	Average	Total failure	Average	Average, but blighted	Under average	Average	W. Denning, Coombe Lane, Norbiton
	Plentiful and good	Failure, except on walls	Average; on walls	Average; good	Failure; bad	Failure; bad	Over average; very good	Over average; very good	Plentiful	Alfred Evans, Lythe Hill, Haslemere
	Under average	Under average	Average; good	Average; very good	Under average	Under average	Over average	Average; good	Average; good	F. Corbould, Tandridge Court, Godstone
	Under average	Under average	Good	Not good	Very much below average	Under average	Good	Good	Average	Charles Green, Pendell Court, Bletchingly
	Average; good	Under; bad	Average; good	Over average	Under average	Over average; good	Average; very good	Average; very good	....	H. C. McRae, East Horsley Towers
	Average	Under	Under	Average	Very scarce	Under	Average	Average	Scarce	W. Smith, Farnham Castle Gardens
	Average	Under average; bad	Over average; good	Over average; good	Under average; good	Average	Abundant; good	Over average; good	Average	Jas. Child, Garbrand Hall, Ewell
KENT	Average	Not quite average	Average; good	Average; good	Very few indeed	Under average; good	Average; good	Average; good	Over average	John Cox, Redleaf, Penshurst
	Average; good	Average; good	Average; good	Average; good	Much under average	Under average	Average; good	Average; good	Under average	R. Gray, Chevening, Sevenoaks
	Not an average crop	Under average; quality poor	Under average; quality fair	A good show of fruit	Very much under average	Under average	Over average	Over average	Over average of Kent Cobs	Charles Whitehead, Barming House, Maidstone
	....	Under average	Average	Average	Under average	Very scarce	A good average	Average; very good	Abundance	Henry Cannell & Sons, Swanley

CONDITION OF THE FRUIT CROPS—(*Continued*).

COUNTY.	APRICOTS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APPLES	PEARS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
SOUTHERN COUNTIES.										
KENT	Bad	Under average	Bad, except Morellos	Good	Bad, except common sorts	Poor crop	Average	Good; but damaged by rain	Average	Fredk. Deuxberry, Cobham Hall, Gravesend
	Average; very good	Under average, good	Under average	Average; good	Under	Under	Average; very good	Average; very good	Average	—, Canterbury
	Under average	Under average	Average; very good	Over average; good	Under average	Under average	Over average; very good	Over average; very good	Average	D. Buchanan, Sherwood Park, Tunbridge Wells
	Under average	Under average	Under average	Average	Much under average	Much under average	Average	Average	Over average	John Charlton, Tunbridge Wells
	Under average; good	Over average; good	Over average; bad	Average; very good	Under average good	Under average; good	Over average; very good	Over average; very good	Average; good	H. L., Syndale Park, Faversham
SUSSEX	Over average	Over average	Average; good	Over average	Under average	Good	Abundant	Very good	Average	John Wilson, Castle Gardens, Arundel
	....	Average; bad	Over; very good	Average; good	Under; very bad	Under; bad	Average; very good	Over; very good	Average; good	B. Coombe, Wiston Park Gardens, Steyning
	Under average	Under average	Plentiful and good	Average	Much under average	Very scarce	Very plentiful and good	Over average; excellent	Over average	Joseph Rust, Eridge Castle
	Average	Average	Average	Average	Under	Average	Over	Average	Average	F. Rutland, Goodwood
	Over; very good	Under; bad	Under; bad	Over	Under	Under	Over; very good	Average	Over	Geo. Breese, Petworth Gardens
	Bad	On walls very good	A good average	A good average; bad	Bad	Under average	Very good	Very good	Good	Sidney Ford, Leonardslee, Horsham
	Average; good	Average; good	Under	Average; good	Under	Under	Average; good	Average; good	Average; good	William Allen, Normanhurst Court, Battle
	Average	Average	Average; good	Average; good	Under	Under	Average; good	Average	Average; Walnuts under	John Halsey, Cowdray Park, Midhurst
HANTS	Bad	Under average	Fair; Morellos abundant	Under average	Very bad in places	Under average	Abundant everywhere	Abundant and fine fruit	Abundant	Philip Edwards, Fowley Gardens, Liphook
	Under average; very bad	Under average	Above average; good	Under average	Under average; bad	Under average	Above average; good	Average; good	Above average; good	W. Smythe, The Gardens, Basing Park, Alton
	Over average; very good	Average; good	Morellos over average; good	Over average; very good	A complete failure	Over average; good	Average; good	Over average, very good	Filberts and Cobs average; Walnuts none	W. Wildsmith, Heckfield Gardens, Winchfield
	No trees outdoors	Under; bad	Under, except Morellos; good	....	Under; bad	Under	Average; black Currants good	Under	....	William Stanbury, The Gardens, Appley Towers, Isle of Wight
	Over average; very good	Average; good	Average; good	Over average; very good	Under average; bad	Average, but mildewed	Over average; good	Over average; good	....	F. Thirlby, Broadlands, Romsey
WILTS	Very good	Average	Average	Very good	Under average	Under average	Very good indeed	Very good	Under average	Wm. Phipps, Bowood Gardens, Calne
	Over	Average	Average	Over	Under	Under	Over	Over	Average	Wm. Taylor, Longleat Gardens, Warminster
	Over average	Average	Average	Average	Under average	Under average	Over average; good	Over average	....	J. Horsefield, Heytesbury
	Over; good	Under; bad	Under; bad	....	Under; bad	Under; bad	Average; good	Under; bad	Average	Thos. King, The Gardens, Devizes Castle
	Over average; good	Under average	Morellos over average; good	Over average	Very few	Under average	Over average; good	Over average; good	Over average	H. W. Ward, Longford Castle, Salisbury
DORSET	Under average; good	Over average; very good	Average; good	Average; prospect of being good	Very thin; under average	Under average; good	Over average; good	Average; good	Over average	J. Beck, Crichel Gardens, Wimborne
	Good	Average	Average	Good, where protected	Bad	Bad	Very good	Very good and fine	Average	J. Saltford, Puddletown, Dorchester
	Average; good	Under average	Morellos fine, others not good	More than we have had for years	Scarcely any; bad	Much below average	Abundant; good	Very fair	Average crop	C. Hazel, Leweston Gardens, Sherborne
	Over average	Average; bad	Over average	Average	Very scarce	Under average	Over average; good	Over average; very good	Under average	W. P. Leach, Bryanston, Blandford
WESTERN COUNTIES.										
HEREFORD	Over average	Under average	Average; good	Over average	Under average	Under average	Over average	Over average	Over average	A. Bye, The Gardens, Hampton Court
	Over average; good	Very few	Average; Morellos good	Under average	Under average	Under average	Over average; very good	Average; very good	Average; good	William Ward, The Gardens, Stoke Edith Park
	Over average; good	Under average	Morellos good	Over average	Under; good	Under; good	Abundant; good	Abundant; good	Under	A. Young, Holme Lacy Gardens
	....	Under average	Partial	Under; bad	Under average	Under average	Average; good	Average	Over average	E. Jones, Perrystone Gardens, Ross
WORCESTER	Over; very good	Under; bad	Average; Morellos over; good	Average; good	Under; bad	Under; good on walls	Over; deficient in flavour	Average; deficient in flavour	Average	Arthur Barker, The Gardens, Hindlip Hall
	Under average	Under average	Average	Bad	Under average	Under average	Abundant and good	Average	Average	R. Palmer, Hagley Gardens, Stourbridge
	Over; very good.	Under	Under; good	Over; very good	Average; good	Under	Over; very good	Over; very good	Over; good	Walter Child, Croome Court, Severn Stoke
	Average; good	Much under average	Under average	Average; good	Under; bad	Much under average; bad	Over average; good	Average	Average	Geo. Westland, Witley Court
GLOUCESTER	Over average; very good	Under; good	Average; good	Over average; good	Under; bad	Average; good	Average; good	Over average; very good	Average; good	Alexander Scott, The Gardens, Sherborn Park
	Average	Under average	Very good	Bad	Under average	Under average	Very good	Very good	Average	S. Wathen, Kingscote Park
	Average	Bad and small	Average	Very bad; many trees killed	Very bad	Very bad	Very good	Very good	Average	G. Turner, Tretherne Court, Stonehouse
	Good	Under	Bad	Good	Bad	Good	Very good	Good	Bad	E. Miller, Old Sneed Park
MONMOUTH	Over; very good	Under; bad	Average; good	....	Under; bad	Under; bad	Average; good	Average; good	Over; good	Thomas Coomber, Hendre Park
	Under	Under	Average	Over, and very good	Average and good	Under	Over and very good	Average; good	Under	S. Words, The Gardens, Tredegar Park
SOMERSET	Average; good	Under average; bad	Average; good	Average; good	Under average; bad	Under average; bad	Over average; good	Average; bad	Under average	John Austen, Ashton Court Gardens
	Average	Very good	Good	Average	Under	Average	Very good	Average	Average	William Hallett, Cossington Farm, Bridgwater
	Average; good	Under average	Average; bad	Average; good	Average; bad	Average; bad	Average; very good	Average; very good	Under average	W. A Beale, Cricket St. Thomas, Chard
DEVON	Over average; good	Under	Morellos a heavy crop, others under	Over average; good	Failure	Almost a failure	Over average; good	Under; bad	Under average	Alex. Ayson, Oxton House Gardens, Kenton
	Over; good	Under	Average; very good	Under	Complete failure	Average on walls only	Average; good except Raspberries	Average; good	Under	D. C. Powell, Powderham Castle, Exeter
	Very good	Average	Average	Under average	Under average	Good	Very good	Good	....	F. Geary, Eggesford Gardens, Wembworthy
	.. .	Over; very good	Average	....	Under	Average; good	Over; very good	Under	....	David Wilson, Castle Hill, South Molton
CORNWALL	....	Under; good	Over; very good	Under; small	Very scarce	Very scarce	Abundant crop; very good	Over; and fine	Average in Kentish Cobs, others thin	Charles Lee, Boconnoc
	Average; bad	Under	Average; bad	Average; good	Under	Under	Over; good	Average; good	Under	James Murton, Tredrea
	....	Under average	Average; good	Over, and very good	Under; bad	Under	Over average; very good	Average; good	Under	George Knox, Port Eliot
WALES.										
ANGLESEA	Under average	Under	Under	Under	Under	Under	Average	Average	Under	Robert Webster, Glyn Garth
	....	Under; good	Average; good	....	Under; good to bad	Under; average quality	Average; good	Average; good	....	J. Ellam, Bodorgan
BRECON	Average; good	Under; bad	Average; good	Average; good	Under; bad	Under; bad	Average; good	Under; good	Average	Albert Ballard, Glanusk Park, Crickhowell
CARMARTHEN	Very few grown	Under; bad	Good	Under; bad	Almost a failure	Much under average	Very good	Over average	Filberts very scarce	Lewis Bowen, The Gardens Edwinsford

CONDITION OF THE FRUIT CROPS—(*Continued*).

COUNTY.	APRICOTS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APPLES.	PEARS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
WALES.										
CARNARVON	Under	Under	Average	Under	Under	Under	Average	Good	....	Allan Calder, Vaynol Park, Bangor
DENBIGH	Heavy crops, and ripening slowly	Gages good, others a mere sprinkling	Fair, but spoilt by rain	Good average, but will be late	Generally a thin crop	A sprinkling, and indifferent	Currants heavy crops	Heavy crops, and good	Filberts fair, Walnuts a failure	P. Middleton, Wynnstay Gardens, and Llangedyn
GLAMORGAN	Over average; good	Under average	Average; good	Average	Much under; bad	Much under; bad	Over average; good	Over average; good	Not grown in quantity	R. Crossling, St. Fagan's Castle
MERIONETH	Bad	Average	Average; very good	Under; bad	Average	Under	Over average; very good	Average; very good	Under average	Jas. Bennett, Rhug Gardens, Corwen
MONTGOMERY	Over	Under	Under	Under	Under	Under	Over	Very good	Under	William Lee, Powis Castle Gardens
PEMBROKE	....	Average	Average	Under average	Under; bad	Under; bad	Over average	Good	Under average	Geo. Griffin, The Gardens, Slebeck Park
IRELAND.										
ANTRIM	....	....	Average; very good	Not grown outside; good in house	....	Under; bad	Average; very good	Average; bad	....	Geo. Porteous, Garron Tower
ARMAGH	Under	Under; bad	Average	Under average	Under average; bad	Under average; bad	Average; good	Average; good	....	W. Allan, Brownlow House, Lurgan
CARLOW	Under	Under	Under	Under	Under	Under	Average	Average; bad	Average	Thomas Turner, Oak Park
CAVAN	....	Under an average; good	Under an average; bad	Under an average; bad	Almost a failure; bad	Under an average; bad	Under an average; bad	Under an average; bad	....	W. I.
CLARE	....	Under	Under	Average	Under	Under	Average	Average	Under	W. Wilson, Dromoland Gardens
CORK	Under	Average	Under	Average	Under	Under	Average	Average	Under	W. Osborne, Fota Island
DERRY	....	....	Under average	Average crop	....	....	Average crop	Average crop	....	William Fleming, Palace Gardens
DUBLIN	Under; bad	Under; good	Average; good	Under; bad	Under; bad	Under; bad	Average; good	Average; good	Under; bad	J. Ellam, Brenanstown House
	Bad	Under Average; good	Average; good	Over average; very good	Under average; bad	Under average; bad	Over average	Average	Under average	David Pressly, Knockmaroon Lodge
FERMANAGH	. ..	Average; good	Average; very good	Over average; good	Under average; bad	On wall over average; good	Average; good	Over average; good	Average	William Hardy, Florence Court, Enniskillen
GALWAY	....	Under	....	....	Under	Under	Under	Under	....	James Garnier, The Gardens, Kylemore Castle
KILDARE	Under	Average	Under	....	Under	Under	Average	Average	Under	Philip Wadds, The Gardens, Moore Abbey
KILKENNY	....	Under	Under; bad	Under	Under	Under	Average	Average	Under	William Gray, Woodstock Park, Inistioge
LIMERICK	Average; over	Good crop	Good	Bad	Bad	Bad	Good crops	Good crops	Average	George Buttery, Adare Manor
MEATH	Under; bad	Average	Under	Under; bad	Very few	....	Average; good	Very good	....	John Clews, Headfort House, Kells
QUEEN'S CO.	Under	Under	Under	....	Under	Under	Average; very good	Average	Under	E. Ennis, Emo Park
WATERFORD	....	Under; bad	Average; good	Average	Under; good	Under; bad	Over; very good	Average; bad	Under; bad	G. Fairbairn, Curraghmore
WESTMEATH	Under; bad	Under; bad	Average; good	Under; bad	Under	Under	Average; good	Average	Under	John Igo, Moydrum Castle, Athlone
WICKLOW	Average; good	On walls over; very good	Under; bad	Under; bad	Under; good	Under; bad	Over; very good	Over; good	Over; heavy crop	G. H. McCulloch, Powerscourt.
CHANNEL ISLANDS.										
GUERNSEY	Under	Under	Under	Under	Barely average	Barely average	Over	Average	....	Chas. Smith & Son, Caledonia Nursery
JERSEY	Average; good	Above; good to very good	Average; good	Average; promise well	Under; too early to decide	Under; too early to decide	Average; good	Over; good	....	Charles B. Saunders, St. Saviour's
SCILLY ISLES	Average; bad	Under; bad Under average	Average	Average	Under; good Under average; bad	Average; bad Under average	Over; good Average; good	Average; good Under average	....	Edward Pond, The Vineries G. D. Vallance, Tresco Abbey Gardens

FORESTRY.

THE LARCH.—There is one unfortunate tree that used to be grown very largely in this country, and which is now propagated and planted largely, but which will not live here—on the whole, I think the best tree that we have in the country, on account of the fastness of its growth and the excellence of its timber when grown; need I say I refer to the Larch, the fastest grower of all our trees, and whose wood is only equalled by heart of Oak for lasting either indoors or out. But this tree is apparently doomed. Wherever you go in the centre and east of Scotland (and I am speaking principally of that country), the disease has seized it, and not only killed the small young plants, but trees of every size from 3 feet high up to 30. Another curious thing is, instead of merely attacking the top, and the tree dying downwards, while the tips of the side branches are quite healthy, the tips are this year first attacked, and the branches die inwards while the top is still alive. A friend the other day asked me to show him the Larch disease. "Come a little way with me," I said, "and I'll show you plenty." Which I soon did.

Now what is to take the place of it? Our ordinary Firs—Scots, Spruce, and Silver—are not such fast growers, and the wood is poor rubbishy stuff. By far the larger proportion of the Fir grown is never expected or intended to grow into timber size; it is cut down for coal pits—sleepers, but principally for fencing, for each estate requires a deal of fencing, much more than proprietors are at all aware of. When grumbling one day to my bailiff about the immense amount of wood and labour required to keep up my fences he said to me—"Have you any idea of the length of fences that you have to keep up? It is 50 miles." (I thought perhaps three or four.) "I've been thirty years your forester, and know it well; and the wood is only Spruce, and only lasts three or four years, when it requires renewing."

Now I say again, if Larch is doomed what is to take the place of it? Insignis has been tried, and is found, according to a late agricultural report, not to be hardy enough. Douglasii has also the reputation of being too tender. Has any one tried nobilis? Undoubtedly in some favoured spots it does well, producing a thick trunk, thick all the way up, which is a great point; a fast grower, and with little branch compared to the bole—another good thing; but does any one know how the wood lasts?—whether it be as tough and lasting as a fence-post or rail as a Larch is?—and whether it be hardy enough to be grown in our woods as a timber tree for the sake of profit instead of merely in our pleasure grounds as a specimen?—or is there any other tree that fulfils the requirements of hardiness, speed in growth, and quality of wood?

Can it be that Larch has degenerated from using home-grown seed, badly ripened under the few blinks of sunshine that reach our foggy island, instead of foreign seed?—for the old trees of fifty years old and so on seem to be nearly disease-proof, and they are all grown from imported seed. Wood for fencing and coal prop-wood are what our British-grown Fir is principally used for. Scots is the best; but by the time it comes to be the size for those purposes it has not got any bone in it—poor soft wood, which hardly pays to use at all.

Will some of your arboricultural correspondents with more practical knowledge of the subject than I have, take it up and ventilate it, and settle what is best to be grown in the place of Larch? *A Country Gentleman.*

DOUBLE BLACKBERRIES.

IN our number for August 24, 1878, we gave an illustration of the double pink Bramble, which brought us a considerable amount of correspondence from writers who apparently were not aware of the beauties of the common Bramble. Assuredly the profusion of pale rose-coloured double flowers of the variety in question are very attractive, but it has a worthy rival in the double white form, of which we now give a figure from a specimen forwarded to us from Messrs. Cripps' nurseries at Tunbridge Wells (fig. 35). Every botanist knows how variable the common Bramble of our hedgerows is, and even the Blackberry gatherers are aware of the difference in the size and flavour of the fruit. It will be seen by those who take the trouble to compare our present figure with that of the double pink, that, in addition to the difference in colour, there is a considerable difference in the flowers. We have not the specimens now at hand to make the necessary comparisons, but from the drawing it seems as if in the double white form the doubling was mainly due to an increase in the number of the petals; while in the pink form the doubling is due to the assumption by the stamens of a petal-like form. This, however, is a minor matter with those who look to general effect without caring to enquire how that effect is produced. We cannot too highly recommend these Brambles for general use in suitable situations.

Orchid Notes and Gleanings.

Work in the Houses.—In the East Indian-house the beautiful Saccolabium Blumei will now or soon be in perfection, and where the plants have attained to a good size, capable of developing fine spikes, they will make a fine show, as few Orchids surpass a good form of this species. While in flower the plants should be placed in the coolest end of the East Indian-house, as it is risky to move them out to too cool and dry a position. Basket culture suits this plant best, as the long fleshy roots do not retain their vitality long when enclosed in a pot. The beginning of next month will be a good time to give them a shift, and in doing so make sure of the most perfect drainage, and fill up with the best sphagnum moss, which should be freely intermixed with crocks and charcoal. Give them all the light possible, short of direct sunshine, by hanging them up about 2 feet from the glass. Aerides suavissimum and A. quinquevulnerum should also now be flowering, and will need attention when they are over. If the material about their roots is at all soddened it will be advisable to replace it with clean fresh sphagnum and potsherds. A. suavissimum is rather impatient of too much water at the root, and the same remark applies to A. roseum; the latter kind especially is quickly ruined if the drainage gets choked with decaying moss. The Stanhopeas will now be moving freely, and the baskets should be dipped occasionally to make sure that the material is moistened throughout. In the intermediate-house Angræcum falcatum will now be going out of flower. It is a small growing plant that yields a large crop of flowers for its size, and these are borne on spikes of a size that are useful for cutting, and the flowers are sweetly scented; this is best grown in a basket or shallow pan in sphagnum moss and charcoal, and the plant should be hung near the light, and where it will get a fair amount of air. Among a lot of Orchids grown for cutting, Brassia verrucosa should have a place, as it is a free growing plant, and always attracts attention when in flower. The latest of these will now be over, and the plants will commence



Fig. 35.—The double white bramble. (see p. 204.)

growth at once, so that any requiring more root-room should be potted before they get advanced much in their growths. Good fibrous peat suits this plant, as it is a free rooter, and is seldom out of order if regularly attended to with water. Pot culture suits it best. Cœlogyne cristata will now be forward towards commencing the formation of its bulbs, and will take very liberal supplies of water, as anything approaching a droughty condition at the root, in the present stage of growth, will seriously affect the development of the bulbs. When the bulbs are nearly fully developed the plants should be gradually inured to stand more light. Plants of Chysis bractescens that have completed their growths should be moved to a slightly cooler temperature, and should be well exposed to the light. Keep them a little drier at the root than hitherto, but not so dry as to affect the foliage, which should be allowed to ripen and fall very gradually. Attend carefully to the ventilation of the cool-house, as many of the Odontoglossums will now be forward with their growths, and abundant ventilation will give substance to the leaves, and assist in hardening and maturing the bulbs. Ventilate freely at night, as there is less danger in ventilating freely during the night at this season of the year than during the day, especially when the days are hot and sunny. Late plants of Epidendrum vitellinum in this house should be potted without delay. *J. Roberts, Gunnersbury Park Gardens.*

CŒLOGYNE MASSANGEANA.—The plant that was figured in our number for March 18 last is again flowering in Mr. B. S. Williams' nursery, this time producing three of its pendulous, numerously flowered spikes. The fact of its flowering twice in one year adds much to its value, and renders it a valuable acquisition for amateurs.

LÆLIA XANTHINA. — This beautiful and distinct Orchid is now in bloom in Mr. B. S. Williams' collection at Upper Holloway. It is rarely seen in flower. The petals are of a bright canary-yellow, lip white, with a yellow throat, and a few stripes of pink up the centre. There are two plants of this in bloom, one being larger in flower than the other.

MR. CRAWSHAY'S CATTLEYA-HOUSE.—The Cattleyas illustrated on p. 209 are, with three exceptions, C. Mossiæ in its numerous varieties. The exceptions are :—No. 7, C. amethystina alba (flower equal to, and was mistaken for Lælia elegans alba, by an authority who gives a plant of the latter which has lately been figured), and which by the way I purchased at Stevens' Rooms as C. species for four shillings when out of bloom ; and Nos. 263 and 266, C. Mendelii—263 being a fine variety. The C. Mariæ with four exceptions came from an importation that was well known to a good many buyers last year, of which the collector wrote that "Among the Cattleyas are a quantity of a beautiful variety of Mossiæ which has a certain likeness to Trianæ ; the labellum is much frilled, deep yellow in the interior, dark red in the middle, with a blush or rather white border." This seemed too good a character till the flowers appeared, then I could fully bear it out with the one exception of "dark red," but as florists and artists disagree on colours I take it as the blending of the innumerable and indescribable shades of rose and purple, &c., that are met with in this species, and then I can bear that out also. We bloomed some magnificent varieties from them, and have still a lot more to bloom next year (these rhizomes, I hope, may be better than what we already have, if possible), and then the absolute "dark red" may appear. So different were their beauties that Mr. Denning, who was here the day they were photographed, advised me to keep them all, saying, "I would part with none, if they were mine ; " but as I had not room for all, he finally considered that six were to be dispatched. These, curiously enough, included three of the four plants which did not belong to the importation, of which twenty-seven plants were at that time in bloom. Now, to remark on a few special ones, we will take No. 667—a long, heavy leaf and bulb that made a growth and carried a three-flowered spike the first year (for all these plants were in the boxes on July 12, 1881, and photograph was taken May 24, 1882). Size was—sepals, $3\frac{1}{8} \times 1\frac{1}{8}$; petals, $3\frac{3}{8} \times 2\frac{9}{16}$; lip, $3\frac{1}{2} \times 2\frac{1}{2}$ diameter in the lobe : a magnificent form, and very dark, with a heavy frill on the lip. No. 663, whose sepals were 4×1, and whose flowers stood without expansion $6\frac{1}{4}$ across. No. 692, whose lip was solid, not mottled, rosy-purple, and a white margin all round it $\frac{1}{8}$ inch. No. 715, very like shape of a C. Mendelii, whose lip was a mass of spots of soft rose on a very pale blush ground. No. 769, C. Mossiæ pulcherrima, whose petals were $3\frac{3}{4} \times 2\frac{9}{16}$, and lip $3\frac{1}{8} \times 1\frac{5}{8}$; the sepals and petals a soft creamy-rose shade, with latter heavily frilled, and lip with a rich white border, centred by a rosy-purple blotch. This was a gem to look at. No. 806, a magnificent form, as the following will explain. Sepals, $3\frac{15}{16} \times 1$; petals, $3\frac{7}{8} \times 2\frac{11}{16}$, very dark, well frilled (the latter) ; lip, $3\frac{3}{8} \times 2\frac{3}{16}$, heavily frilled, and deep orange, extending almost every way to the edge ; this we christened "magnifica," for the petals stand up so well on the shoulders as to three-quarters cover the dorsal sepal. Some of the plants that bloomed after the photo was taken, which we had taken separately, proved even finer than those I have here mentioned. One that carried six flowers on three spikes, each bearing two, was an enormous variety, that was almost worthy of the name of "grandissima," were there such a word; its sepals were $4 \times 1\frac{3}{16}$, petals $3\frac{7}{8} \times 2\frac{3}{4}$, lip $3\frac{3}{4} \times 2\frac{1}{2}$. The heaviest fringe and deepest and largest blotch of purple that I have seen in a C. Mossiæ—a nursery traveller here at the time was surprised at its fineness, from the first year's growth ; another we bloomed was dark as Lælia atrorubens almost, with deep chestnut in the lip ; but I could describe twenty more were it not monotonous to readers. Suffice it to say they were, and are, an exceedingly fine lot. Now a word as to growth. Lately a great deal has been said for and against growing Cattleyas on blocks. There are no doubt many reasons, both ways, why they should be grown in pots and on blocks. We have proved, from the quantity of plants I am writing of, that to establish them on cork for the first year is undoubtedly the best way, for there is more freedom of root-action, and the growths made on cork are far finer than those in pots, many of the former equalling the foreign growths, and some surpassing them ; one was half as big again, carried two leaves and a three-flowered spike. This was on bare cork and no moss at all. The great secret of growing is constant attention as to water and shading. As to the plan of growing them on now I can say nothing, although I cannot prophesy on paper publicly, as I have my private opinion as to the result. In these remarks on cork growing I allude solely to Cattleya Mossiæ, be it understood ; C. Warneri and gigas, I doubt not, would do equally well. There is no doubt that management in a pot is easier in regard to labour and time, but for the smaller growing Cattleyas the block, to establish them quickly upon, is the way. For Lælia crispa and such tall ones (why should this be called Cattleya when not one?) no doubt pot culture is the easier and better looking way of growing them, for the bulbs are too tall for a block ; but there is no doubt that even these large species get far more soil and organic matter about their roots in the peat than what they do in their native homes. *D. B. C.*

CATTLEYA DOWIANA.—This fine variety is also in bloom in the Victoria Nursery, Holloway. It is one of the best and showiest of its class. There are many varieties, but this one has a very large lip and is bright in colour. The sepals and petals are nankeen, the lip rich dark purple, streaked with gold.

CATTLEYA CRISPA GRANDIFLORA. — This fine Cattleya is now in full bloom in the nurseries of Mr. B. S. Williams, Upper Holloway. The plant has three spikes of its showy blossoms, one with eight and the other with seven blossoms each. The sepals and petals are white, the lip very large and of a rich dark crimson colour, edged with pink and crisped all along the margin. The throat is bright orange, and the flower-spikes are well thrown up above the foliage.

CATTLEYA AUREA. — This rare and exceedingly handsome Cattleya is now beautifully in flower at Mr. William Bull's establishment at Chelsea.

TWEEDIA CŒRULEA is a very ornamental Asclepiad which is far too seldom seen in cultivation. The genus was named in honour of Tweedie, who sent T. cœrulea to this country from Buenos Ayres nearly half a century ago. It succeeds best in a cool house, or even planted out in the summer months in the open air, where, either trained against a wall or to a detached trellis or a pole, its numerous blossoms (which in a warm house are of an undecided bluish-grey colour) assume a splendid azure-blue tint, and produce a highly ornamental effect. Now in flower at Kew.

The Flower Garden.

HARDY FERNERY. — The occurrence of a very favourable season for the growth of these interesting plants has had the effect of rendering them in many cases overcrowded, and the present will be a very good time to regulate them, not only by cutting away old and unsightly fronds, and many Sedums and Saxifrages, which are apt to get too thick upon the ground, but by removing a considerable portion of those plants which are apt to become crowded entirely, so that the permanent occupants may have sufficient room for development, and to show their distinctive characters, and stand out distinct from each other. This is much more easily performed at the time when the fronds are all active than in the spring, when we have to wait so long for the young fronds to appear before we can ensure so careful a manipulation as to avoid doing any injury, as it should always be kept in mind where there is a fair collection of sorts, that if they are left unmolested and become overcrowded, the strong growing sorts with ramifying roots will very soon choke the choicer and weaker growing sorts, and fill the ground with a close-grown network of roots which will prevent the more delicate sorts from becoming established at all ; this can only be avoided by severely curtailing the sorts so inclined to spread. As I before observed, now, when they can be well distinguished, is the time to take out large clumps of the offending sorts, which will make valuable plants for filling bare spaces in the woods or elsewhere, and the holes thus made may be filled up with new soil at once, and, after removing all other refuse, which will be sure to accumulute from time to time, to cover the whole anew with cocoa-fibre, and leave all neat and fairly trim, for we must bear in mind that the great charm of these plants is a certain external appearance of apparent wildness.

TRELLISES.—It is always necessary to go over these from time to time, but particularly now when the climbing Roses are getting past flowering, and should have the exhausted flowering shoots either entirely removed, or, if necessary, spurred back to the main stem, and all the young wood of the present season carefully thinned out, and the remainder, particularly the long shoots of such as Madame d'Arblay, and other strong climbers, neatly laid in for another season. Many Honeysuckles will also be past, and must have old exhausted stuff removed, and fresh young shoots laid in. Some of the sorts of Clematis are past blooming, and require old growth cutting out, but many sorts, particularly the old Jackmanni, are only just advancing into full beauty, and should be carefully tied out so as to avoid a crowded appearance on the trellis, at the same time a certain degree of wildness must be allowed, but if possible not too conspicuous ; the great thing is to hit the point between over careful trimness and carelessness. A very fine effect is produced by planting any free-growing hardy sort in a good situation near, say, to a standard Rhododendron, and allowing the young shoots to trail over it in all directions ; it does not appear to injure the standard at all, and about this time of the year it forms a most unique and beautiful object, like a large standard Clematis, and very striking. It is not advisable to leave it on the standard after flowering, but loosen it and fasten the Clematis to a stake to ripen its growth. Evergreen trellis plants, such as the Exmouth Magnolia, may have the wood thinned out, and the remainder carefully fastened to the trellis. Evergreen Thorns should come under the routine, but above all, when all is finished a powerful and copious syringing is the most useful auxiliary to a clean and healthy appearance.

BEDDING PLANTS.—Since my last a marked improvement has taken place in the growth of bedding stuff generally, so that there is no reason to anticipate a scarcity of cuttings ; at the same time, to avoid a decimated appearance in the beds, only a few cuttings at a time should be taken, and for another fortnight they will do very well if pricked a few at a time in an exposed situation, on a south border for autumn potting when rooted ; but all cuttings taken after that time should either be kept in store pots or boxes, to be potted off in the spring. The beds will now

require constant attention to regulate the growth, and thus there will be no lack of cuttings, if both operations are combined. *John Cox, Redleaf.*

Grapes and Vineries.

The earliest house must still have plenty of air on the front and back ventilators night and day. No more damping down of paths and borders will be required after this time of the year, but give the borders sufficient water to keep the roots healthy, and if the laterals have become crowded shorten them back so that the sun and air can circulate freely among the foliage. Houses in which ripe fruit is hanging must be kept cool and dry, only damping the paths and borders occasionally on bright mornings when there is plenty of air on; give sufficient water at the roots to keep the berries plump and healthy. Go over the house every week with a hair-broom to dislodge the spiders, for if allowed to remain they disfigure the bunches very much with their webs. Fire-heat can now be dispensed with where the fruit is ripe and the wood brown and hard. The latest houses of Hamburghs that are swelling their fruit will do without fire-heat if this warm weather lasts until they begin to colour, when fire-heat with more air will be beneficial. Give the borders when dry abundant supplies of tepid manure-water, admit air early in the morning and close early in the afternoon. Those that are colouring must be kept as advised in previous Calendars. Muscats that are ripe will not now require any fire-heat except on damp sunless days, when a little may be turned on in the early part of the day. Only damp paths and borders down occasionally on the brightest days, and give plenty of air on the front and back ventilators on all favourable occasions; give sufficient clear water, at a temperature of 65°, to keep the berries plump. Later houses of Muscats swelling their fruit must be kept at a night temperature of 70°, with a rise of 10° by day, closing early in the afternoon, with plenty of atmospheric moisture. When the berries can be seen changing colour, use rather less atmospheric moisture, and more air, doing it gradually; do not use any more manure-water after they commence to change colour, but clear tepid water, at a temperature of 85° until they are ripe, when water at a lower temperature can be used. Admit air carefully, so that there will not be any cold draughts, for any check at that time will do great harm. Late varieties of Grapes for keeping through the winter will now be changing colour, and can still be kept at a night temperature of 65° to 70°, with a rise of 10° by day. Keep a little fire on, to keep up a circulation of warm air; leave a little air on the back and front ventilators night and day, and increase it as the temperature rises until mid-day, when it can be reduced as the sun-heat declines; use clear tepid water at the roots when they are dry, and only damp paths and borders occasionally. Newly planted vineries that are making their second year's growth, and have had a crop of fruit taken from the bottom of the canes, must have plenty of air, and if the wood is strong and not well ripened, turn fire-heat on in the early part of the day, and turn it off early in the afternoon, until the wood is ripe, when it must be discontinued. Those planted late in outside borders must have plenty of heat and air, giving abundance of air in the early part of the day and close early in the afternoon. *Joshua Atkins, Lockinge Gardens, Wantage.*

The Orchard House.

If the trees in the early house are all cleared of their fruits, and they have been thoroughly syringed to clean them from insect pests, it will now be a good time to repot any of the trees that require it. I have frequently urged the importance of repotting the trees as soon as they are cleared of their fruit. It is certainly the best time, as I have sufficiently proved during the last fifteen years. What fruit trees in pots require is a fresh supply of rich compost once a year; this is supplied in two ways, and the best is to repot them entirely. If it is intended to replace the tree in a pot the same size as that it was turned out of, take a chopper and cut the base from the ball just above the drainage; then chop an inch off the ball all round, working out a portion of the loose soil with a pointed stick, and in repotting press the soil in firmly with a wooden rammer. If the trees are to be planted in pots a size larger, the ball will not need to be much disturbed, merely remove the loose earth with a pointed piece of iron. The drainage from amongst the roots should also be picked out, and the potting must be done firmly. The house must be kept rather close for a few days until the trees are established, and if any of them show signs of flagging they must be dewed overhead with rain-water, which will keep them all right. In less than a week the fresh compost will be penetrated with roots, and the house may be freely aired again. The second way to treat them is by top-dressing, but I do not care to do this until the end of September or October. With a pointed piece of iron, such as the prong of a digging fork, remove a considerable portion of the top soil, which is thoroughly exhausted, and work down the sides of the pots to at least half the depth of the roots, forking the soil out, the space to be filled up with the rich potting material. The fruit is now being gathered in the late house, and one cannot but once more recommend the early Nectarine Lord Napier: it is one of the best in existence, and is the first to ripen with us. The next really good variety to succeed it is Rivers' Stanwick Elruge, a richly flavoured, highly coloured Nectarine, very superior to either of its parents. Syringing must be discontinued while the fruit is ripening, and the trees must not receive very much water at the roots, only enough to keep them from flagging. *J. Douglas.*

The Hardy Fruit Garden.

Peach and Nectarine trees continue to make rapid growths, and will require frequent attention in order to prevent crowding of the shoots, and to insure their ripening. Keep the sublaterals closely pinched in, and the points of all vigorous shoots, retained for extending the size of the tree, should also be removed after this time. The shading foliage must be removed aside from the fruits, or a portion of the length of offending leaves may be cut off to admit the passage of the sun's rays to the work of beautifying and imparting flavour to them. See that no injury is likely to result to the fruits from adjacent nails, or from their being pressed tightly against inequalities of the walls or branches. Young trees making vigorous shoots of a firm description may have some of the best placed of the laterals proceeding from the upper side of the current year's extensions laid in at regular distances to form branches for the permanent frame of the trees, and growths on all trees must be kept secured regularly to the walls by nails or twigs. Apricots are now ripening off quickly, but require continued bright weather to improve their flavour, and to assist in checking fresh growths, which are still being produced by trees in full crop. All growths made after this time may be at once removed as being unsuitable for either extension or fruit-bearing purposes, and as preventing that speedy ripening of the previously formed shoots which is so necessary in our short summers, that are curtailed by frosts at each end. Daily attention will be required to secure the fruits in good condition, so as to avoid waste from over-ripeness and bruises in falling, while allowing each fruit time to thoroughly finish. Such Pears as Bergamotte d'Eté and Citron des Carmes will also require to be gone over at frequent intervals to remove individual fruits as they ripen, as they are worthless if not at once eaten when ready. Continue to remove breastwood as soon as formed, and to regulate the growth generally by ties, &c., as required. Aphides on Plum trees continue to be troublesome, and require to be dislodged by the forcible application of clear water, or by the use of some insecticide, to enable the trees to perfect their bloom-buds for another year. Autumn-bearing Raspberries will require to be kept securely tied to their supports, and to have all suckers removed as soon as formed. Other Raspberries as they go out of bearing can have the old canes cut away, to admit all possible light and air to the young ones. Keep the ground clear from weeds and open on the surface by the use of the hoe. Complete at once any planting of Strawberries remaining to be done, and also finish clearing off the runners from old beds, to strengthen the plants and cause the plantation to present a tidy appearance through the autumn months. Tomatos, which form in most gardens a portion of the wall crops, are this season later than usual, and will require every attention in order to make the crop a success. Keep all laterals removed, and the growing point may also be stopped when it is thought it has proceeded as far as there may be any prospect of ripening the later bunches of fruits. Late growths on Fig trees will require to be stopped closely, and all secondary growths, resulting from the previous pinching performed on the points of fruiting branches, must be removed. Tie in securely those shoots required for extension or interior furnishing, and endeavour to expose the fruits as much as possible to the sun. Vines on walls will require to have continued attention paid to securely fastening in and stopping growths, and to the removal of extra bunches. If it be decided to thin the berries it will be well to proceed with the operation at an early date, when it may be done speedily without the use of the scissors by picking out the extra berries while in an embryo state with the finger and thumb. *R. Crossling, St. Fagan's Castle.*

The Pine Stove.

Many fruits are now either ripe or fast approaching that stage; these should be cleared off without delay, to give all available space to succession plants, which will make more progress during the next two months than they have done for the last ten or twelve weeks. If the growth is sturdy, the leaves broad and thick, give the plants every encouragement by attending to their requirements. Owing to the cold, sunless, wet weather we have had, a maximum of 95° is the highest I have recommended for fruiting plants, and 90° for the successional, but with the change that has taken place, the maximum temperatures may rise from 90° after closing to 95°, or even 100° for a short time. These figures apply both for fruiting plants and successionals. Damp the houses or pits well as soon as each division is closed. Let the steam and moisture rise from the front of the house up the roof, which steams the glass and prevents the plants from scalding or burning even in a high temperature. Keep down the shadings until 4 P.M., or even 4.30, according to the angle of the houses or pits. If the structures face south-west or west, the sun's rays are powerful up to 5 P.M., so that the shadings should be regulated according to circumstances. Those plants which were put into their fruiting-pots late should be pushed on so as to complete as much growth as possible by the middle of November, after which time the growth they make is liable to become damaged from a variety of causes, unless carefully handled. Take off all suckers this month and start them in a bottom-heat of about 85°. If they are very sappy expose the trimmed end for about twenty-four hours to the sun, but do not resort to that excessive drying process which was once so much indulged in. When making suckers trim the lower leaves off some distance up the stem, for Pines differ from many other plants, as they not only make roots at the base of the sucker, but also all the way up the stem. As I have given comprehensive details on the different modes of propagating the Pine to meet all cases, I need not at the present further allude to this subject; I may add, however, that the true variety of Smooth Cayenne and Charlotte Rothschilds will always be in demand, and those who can guarantee a clean stock will never find much difficulty in disposing of it, even before a large number are grown. To get a sufficient stock for succession requires some fostering, as they are naturally shy and unprolific in producing suckers. Suckers of the above-named varieties, taken off in June and July, should not be pushed on for the present; but rather retarded, for if they get too large and over pot-bound they will be of little use next February, and are almost sure to fruit prematurely. As all varieties of Queen suckers are plentiful choose the best only and those that are not drawn. As much valuable space is at disposal in the shape of shelves and other vacant places near the glass, this may be utilised by growing Capsicums for pepper, also plants for decoration. If the structures are hipped-roofed, or what is more commonly called three-quarter span, the back shelves near the glass are well adapted for the growing of Calanthes, and those who once grow this noble class of winter-flowering Orchids under these conditions will be amply satisfied with the results. With little shading, plenty of light, and a position close to the glass they are at home, and grown in the high temperatures I advise for Pines they revel and make gigantic bulbs and flower-stems, especially Veitchii, the finest of its genus. *D. Wilson, Castle Hill, Devon.*

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, Aug. 15 { Clay Cross Floral and Horticultural Society's Show.
WEDNESDAY, Aug. 16 { Sutton and Cheam Horticultural Society's Show
THURSDAY, Aug. 17 { Maidenhead Horticultural Society's Show. Basingstoke Horticultural Society's Show.
FRIDAY, Aug. 18 { Sale of Glass Erections and Stock at the Nursery, Canonbury, by Protheroe & Morris.

THOSE who recommend the British farmer to take to fruit growing for market as a partial remedy for agricultural depression would do well to scan previously the annual records of the FRUIT CROPS given in our columns before they counsel the locking up of capital in fruit culture. We do not now care to say anything about foreign competition, the difficulties of carriage, of realising a satisfactory market price —the glut at one time, the deficiency at another —but we do advise the would-be fruit-grower on a large scale to cast an eye over the records of the last ten or a dozen years, and see if they are at all encouraging. Beginning with 1870—for ten years is quite long enough for our purpose now—we find in 1870 that fruit crops of all kinds were generally abundant; in 1871 they were scanty and late; in 1872 there was universal failure. In 1873 the crop was reported under average. In 1874 the yield was over average, so it was in 1875; but in 1876, 1877, 1878, 1879, 1880—five years in succession—a failure was recorded. In 1881 the crop was a fair average; and now in 1882 we have another general deficiency to record.

Except, then, in the case of small fruits and Strawberries, which are often abundant when other fruits are scarce, we have only had three good fruit seasons out of thirteen consecutive years. One out of thirteen is described as average, and nine as bad years—some, like 1879-1880, very bad. We fear the expression "average" in the minds of our reporters reflects the writer's notions of what ought to be rather than what has really been. But as the general fruit crops include many varieties of fruit, it may be well to see how particular kinds have fared, and for this purpose we cannot choose a better illustration than Apples. In 1870 they were abundant; in 1871, partial; in 1872, very scarce; in 1873, below average; in 1874, fair; in 1875, abundant; in 1876, scarce; in 1877, below average; in 1878, much below average; in 1879, again much below average; in 1880, deficient; in 1881 they were abundant; and this year they are spoken of as much below average.

Here, again, taking the whole breadth and length of the British Isles, there were only three out of thirteen years in which the crop was abundant, only one wherein it was fair, and in all the rest deficient. This is not a tempting prospect.

When we have had good crops there have generally been a warm autumn to ripen the wood, relatively little rain, and a general absence of spring frost at the time the trees were in bloom. To spring frost more than any other single cause must be attributed our deficient crops. Thus in 1870, 1875, and 1881 there was a general, or at least relative absence of spring frost at the critical periods, and in all these years the crop was above average. On the other hand, in 1871, 1872, 1873, 1877, 1878, 1879, 1880 spring frosts and east winds effected the destruction of the crops. Clearly, then, as we cannot regulate the seasons, we should grow of Apples, as far as possible, late-flowering kinds, like Adams' Pearmain, and our hybridisers should work to procure such varieties. The experience of this present year, however, has been such as to show that not even late flowering kinds are to be expected to resist violent gales. In 1876 the blossoms were destroyed by easterly winds, while in this present spring the fearful and long-protracted gale of April 29 has wrecked our fruit crops and so damaged the foliage of trees in general that they bear traces of it now, and indeed have not all the summer assumed their full robe of verdure. As we know of no practicable means of avoiding the effects of such blasts, together with the plague of "fly" that follows upon them, except on the most limited scale, we have not much encouragement to hold out to those who propose entering upon hardy (?) fruit growing as a commercial speculation. Gardeners in private establishments, with the supplementary aids at their command, are not so entirely at the mercy of the elements as the market fruit growers and the farmers, but it is hardly likely that even they will peruse the records we have alluded to with any very great satisfaction.

Adverting now to the crop of the present year, as estimated for us by our obliging correspondents throughout the three kingdoms, we find that the nett result of their reports may briefly be summarised as follows :—

APRICOTS.—Under an average generally; the best crops in Eastern, Midland, and Western Counties.

PLUMS.—Much under the average, and quality inferior.

CHERRIES.—Much under an average, except, as usual, of Morellos; best returns from Bedfordshire and Oxfordshire.

PEACHES AND NECTARINES.—Under the average, except in Southern and Western Counties.

APPLES.—Very much under an average.

PEARS.—Very much under an average; and quality generally reported as likely to be inferior.

SMALL FRUITS.—A very good average generally; and over average in Eastern, Southern and Western Counties.

STRAWBERRIES.—A good average generally.

NUTS.—Under average except in Eastern, Midland, Southern, and Western Counties. Walnuts a thin crop generally.

—— LIVERPOOL HORTICULTURAL ASSOCIATION.—The fourth great exhibition of this Society was held on Saturday and Monday last in Sefton Park. Those who fully realise the powerful influence which competitive exhibitions have had, and continue to have, in raising the standard of cultivation in all descriptions of garden produce, and in advancing the pursuit of horticulture generally, have from its first establishment felt a particular interest in this Society, which so far differs from others that it owes its origin to the exertions of the gardeners of Liverpool and the neighbourhood, who alone from the first, we believe, have had the whole management, coupled with the serious responsibility of carrying these exhibitions to a successful issue. Serious we repeat, for, looking at the matter from a pecuniary point of view it was no light undertaking for a body of gardeners to take on their shoulders the heavy burden of costs inseparable from exhibitions on such a scale as those at Liverpool. The question of success has been fully answered by the fine display of all kinds of produce now annually brought together in Sefton Park, and more especially on the present occasion, when the principal exhibits were nearly all forthcoming from the immediate neighbourhood, and which were such as few places in the kingdom could equal and none surpass. Those who have been conversant with the gardening of the district for a lengthened period need not be told that fruit, especially Grapes, have long been grown magnificently; in fact, the cultivation in this department about Liverpool was for a long time considerably ahead of plants; but without the least intention of making objectionable comparisons, it may be said that this is by no means the case now, for though the Grapes continue to maintain their excellence the plants at present forthcoming are quite equal to them.

—— MISS NORTH.—Miss MARIANNE NORTH sailed for the Cape on August 2 to resume her task of painting the flora of all parts of the world. After spending some months in South Africa she proposes to visit Madagascar and the Seychelles Archipelago, both of which present rare and beautiful objects for the pencil. As before, she travels alone and unattended.

—— TRACHELIUM CŒRULEUM.—A very good plant for the summer decoration of the amateur's conservatory or greenhouse. Its flowers are nearly as good as those of the well known Statice profusa, but of a darker shade of colour, and the leaves are much smaller also. It is a useful plant if it is not a particularly showy one.

—— THE SHOTTS IRON COMPANY.—The House of Lords, to whom appeal was made by the Company in this famous case, and to which we have frequently referred, have decided that no ironstone shall be calcined within one mile of the estate of Judge INGLIS, the costs of the appeal to be paid by the Company.

—— CAUCASIAN ROSES.—The last part of the *Bulletin* of the *Société Royale de Botanique de Belgique* contains an elaborate monograph of the Roses of the Caucasus gathered by MM. BROTHERUS, of Helsingfors.

—— ILLUSTRATIONS OF BRITISH FUNGI.—The tenth number of Dr. M. C. COOKE's *Illustrations of British Fungi* has just been issued, including very numerous coloured figures of the smaller Agarics.

—— RHUS COTINUS.—The brightly coloured feathery panicles of the Venetian Sumach produce at the present season an excellent effect in sunny spots in the shrubbery. A good clump of this species, with a background of common Laurel, in a garden on the bank of the Thames, is so striking as to attract the attention of even the most non-horticultural holiday folks. This shrub is worth planting, too, if only for the beautiful colour assumed by the decaying leaves in autumn—a fine reddish-yellow.

—— RHODODENDRON MARIÆ.—Dr. HANCE describes in the *Journal of Botany* for August a new Chinese species of Rhododendron found in Kwang-Tung. The flowers are of a lilac colour, with a faint perfume. The corolla tube is cylindrical, slightly 5-sulcate, the lobes of the limb ligulate, as long as the tube, stamens five. It belongs to the section Tsusia, and it is considered would form a great acquisition to European gardens; for although "the flowers are comparatively small their number and compactness, lovely colour, delicate fragrance, and the contrast with the golden silky bud-scales, make this one of the prettiest and most interesting species I have seen."

—— BEGONIAS.—Although visitors to flower shows have been made pretty familiar with flowering Begonias as exhibition plants, yet really large specimens are not often seen. At the recent exhibition of the Royal Southampton Horticultural Society, Mr. E. WILLS, gardener to Mrs. PEARCE, of Bassett, and who resides close to Mr. W. H. ROGERS' famous Red Lodge Nursery, exhibited six plants that were almost monsters for Begonias, and were both finely grown and superbly flowered. The plants averaged 4 feet to 5 feet in height and about 3 feet through, the sorts being Acme, Emperor, Magenta Queen, Mrs. Wills, and two good seedlings. The kinds do not exhibit that superb quality with which Mr. LAING, Mr. HEMSLEY, and other good raisers, have made us so familiar, but are free bloomers. Mr. WILLS grows freely, and stimulates with a moderate use of guano. Even finer plants than some of these had to be left at home for lack of van space.

—— TABLE DECORATIONS.—At the same show the 1st prize single table epergne was one dressed by Mr. CYPHER, of Cheltenham, in a manner that evoked the highest praize. It was a simple stand having a dish base, from out of which rose a plain stem surmounted by a small vase, and supporting three small branch cornucopias. The flowers used were long spikes of the white Francoa, Bridal Wreath, two or three of each, with the curiously orange and scarlet flowers of the Gloriosa superba being, as it were, carelessly stuck into each holder. Added to these were one or two sprays of blue Lobelia, bits of pink Erica, and long pendent sprays of Selaginella cæsia. In the base-dish were flowers of Nymphæa alba, Lilium lancifolium rubrum, and Dipladenia amabilis, with a few Fern fronds. Not merely were the flowers used singularly pleasing, but the charming effect obtained was got with a minimum of labour and material.

—— WHITE CLOVE GLOIRE DE NANCY.—Mr. T. S. WARE sends us some beautiful blooms of this fine Clove. The white is very pure, and the scent true Clove; its foliage and habit are identical with the old Clove, and it has every appearance of growing equally as free. Mr. WARE knows of no variety so

well suited for outdoor growth, and feels sure it will eclipse (when known as a white Clove) the immense popularity the old Clove has gained.

—— Herbaceous Plants.—It is a significant sign of the times that Mr. George Paul is establishing a nursery at Broxbourne on a large scale for the cultivation of the best alpine and herbaceous plants. At present the establishment is in the rudimentary stage only, but the preparations are so very extensive that there is little doubt that in a very few years the establishment in question will be a worthy companion to the very interesting nursery at High Beech, and the Roses' home at Cheshunt. A rock garden is in course of formation, and there are numerous frames and propagating pits. In the open ground, which is very level, and will probably require contrivances for shade and shelter, the plants are to be arranged in series according to their heights, so that the visitor may see the effect of the plants he proposes to purchase. There were already many conspicuous plants in bloom when we paid a visit to the nursery recently, and many indications of rarities and novelties to come in the future. An Anagallis under the name of A. Philippsii was remarkable for the brilliant blue of its large flowers. Anchusa angustifolia is another lovely blue perennial. Unlike most Borageworts, each flower springs from the axil of a leafy bract, and yet not quite from the axil, the significance of which the morphologist will not fail to perceive.

—— Pelargonium Dr. Masters.—Not long since we were shown in the Elvaston Nurseries a plant of this popular market variety, in which one branch had produced flowers of "Sparkler." Whether this was a reversion or not we cannot say, being unaware of the origin of Dr. Masters!

—— Hydrangeas.—The finest Hydrangeas for market purposes we have seen this season were some in the Elvaston Nurseries, Borrowash; size and vigour of foliage, profusion and colour of bloom, were alike remarkable. The plants were raised from cuttings struck in the autumn of last year, and were assisted by Clay's Fertiliser, and at a later stage by weak guano-water. The robustness of the plants was something very remarkable, partly owing to the free exposure to the light they experienced in the house in which they were growing.

—— Clove Carnation The Governor.—This undoubtedly fine variety, though it has hitherto failed to find favour with the Floral Committee of the Royal Horticultural Society, is greatly esteemed in the South and West of England, where it is now frequently being shown by Messrs. Cross & Steer, of Salisbury, who are sending it out in fine condition. At the annual summer exhibition of the Devizes Horticultural Society on Bank Holiday, Messrs. Cross & Steer exhibited something like fifty blooms in fine condition, with large and full flowers, almost white, save with a delicate tinge of blush in the centre, and with large and finely formed petals. It is a strong grower and very free of bloom, and is found of the greatest value for cutting from.

—— Croton interruptus aureus.—This is a charming dwarf growing Croton, with a close thick growth and dwarf habit, and in every respect a most useful decorative plant. The leaves are long and thin, bright gold and lively green, and the habit of growth is slightly pendulous and very elegant. If not deemed to be too thickly set with leaves it will make a very acceptable table plant. As a market plant it must be useful, as it colours so well in a small state.

—— Planting on Salisbury Plain.—Lord Churchill, who owns a considerable portion of the famous Salisbury Plain, stretching away from Devizes towards Stonehenge, is to be commended for the public spirit he has shown in planting avenues by the side of the road leading from West Lavington to Salisbury, for a considerable distance, and we believe to the very confines of his property. Elm has been used principally; in one portion, and for some distance, Lombardy Poplars have been planted with considerable success, also Sycamore, Lime, and Horse Chestnut. The position for miles is a very exposed one, but the trees are, on the whole, doing well. When they were first planted the inhabitants, actuated by a spirit of the blindest and most unreasoning prejudice, used to cut away the tops of the newly planted trees, but time and perseverance have conquered this spirit. Those who are accustomed to drive across the great stretch of Salisbury Plain will appreciate the public spirit of Lord Churchill which induced him to plant as he has done. For miles little else but naked downs (in so far as tree life is to be seen) stretch away on either hand till the cloud line appears to touch the horizon; and thus it is a shady avenue relieves the monotony of the scene, besides affording coolness to the traveller. If other landowners could but be induced to follow Lord Churchill's example, and complete the work he has begun, they would be national benefactors. Many a jaded bicyclist passing over the downs seeks the shelter of one of these trees with great delight, and resting in its agreeable shade recruits his strength for the prosecution of his journey.



Fig. 36.—Mr. D. B. Crawshay's Cattleya-house. (see p. 206.)

—— Begonia ricinifolia.—As a border plant this variety is well adapted for bedding purposes in certain situations. In a raised bed, margined with Ivy, it looks remarkably well. Its leaves are beautifully cut, and are of different colours, from green to bronze, according to age, and the younger leaves are of a metallic hue, which contrasts agreeably with its spikes of tiny pink flowers.

—— A Golden Black Currant.—There is growing in the garden of C. N. May, Esq., Elm Lodge, Devizes, a Currant bush of somewhat tall growth, in every characteristic of wood and leaf similar to the ordinary black Currant, but which produces fruit of a decidedly golden-amber tint, but with the size and shape of berry and flavour of the black Currant. The berries are decidedly of an amber colour up to the time when they are fully ripe, when streaks

of dark appear, more slightly on some berries than on others. Mr. MAY states that it originated as a sport in the garden of one of his workmen; the shoot which bore the amber fruit was taken off and struck as a cutting, and when the owner left Devizes he placed the plant in the hands of Mr. MAY. Each year it has borne fruit of the character described above, but whether it is unusual or not remains to be seen.

—— LIGUSTRUM JAPONICUM.—This beautiful evergreen shrub is now a conspicuous feature in the grounds of Devizes Castle. It has been planted plentifully by the sides of some of the more open of the winding walks which lead up to the Castle terrace, and the bushes are now throwing numerous panicles of white sweetly fragrant flowers that fill the air with a delightful perfume. It appears to do well under the shade of tall trees. It is generally recommended that it be planted against a wall, and no doubt this position shows off its glossy elegant foliage and panicles of flowers to the best advantage. It seems difficult to imagine anything sweeter in the open air at this season of the year.

—— HYACINTHUS CANDICANS.—This useful Lily-like plant is now flowering in some of the subtropical beds in Battersea Park, where it is growing and thriving luxuriantly, as may be seen from the healthy colour of its rich green leaves, and the size and vigour of the flower-spikes. Might we suggest to owners of small gardens in suburban districts the desirability, as well as the utility, of cultivating such plants more extensively as much for the beauty of their leaves as for their flowers? Any plant that furnishes a small front garden with healthy green leafage in defiance of climate should be worth a place everywhere, apart from the value of the flowers, which are so useful when wired to bouquetists and florists. The flowers are somewhat thinly produced upon the flower-spikes, and are bell-shaped and creamy-white. As the flowers open at the base of the spike the florist may remove them one by one without detriment to the plant or injury to the unopened blossoms.

—— ILLUSTRATED PERIODICALS.—The August number of the *Botanical Magazine* contains figures of Hedychium gracile, Tulipa Didieri, a very handsome crimsom-flowered species; Saxifraga Camposii, better known in gardens as S. Wallacei; Beschorneria bracteata, and Sonchus Jacquini.—The *Illustration Horticole* gives figures of Aërides Houllettianum, Anthurium Lindenianum, a very remarkable species.—The *Gartenflora* for July contains figures of Dendrobium lituiflorum var. Farmeri, Gentiana decumbens var. Pallasii et G. Kesselringhii.—The *Florist* for July has coloured plates of Regal Pelargonium, Mignonette, and double white Belle de Jour; also of "Sops in Wine" Apple. In the August number the plants represented are Nerine excellens and Harriet Plum.—The *Orchid Album* for July contains coloured plates representing Lælia autumnalis var. atrorubens, Zygopetalum Clayi, Cœlia bella, and Odontoglossum maculatum. Fuller details of these will be given in our list of Plant Portraits.

—— BAUERA RUBIOIDES is a charming little shrub from the Antipodes which will stand an ordinary English winter in the open air in sheltered places in many spots in the South and West of England. In the garden of the late Mr. JOAD, at Wimbledon Park, it used to produce a profusion of its pretty nodding deep rosy-red flowers, and had no protection during winter except that afforded by the wall near which it was planted. At Kew it is flowering well in the open ground. It makes a charming bush for conservatory decoration, is a quick grower, and, as it is readily propagated, it seems well worth while to try it wherever it can receive shelter during severe weather.

—— BERBERIS VULGARIS VAR.—In vol. iv. of the *Transactions of the Horticultural Society* some information, communicated by Baron JACQUIN, is given respecting a variety of the common Barberry which it was thought might become an agreeable addition to our list of table fruits. "It was discovered wild on a mountain bordering on the Austrian Alps by the late Mr. HENRY SCHOTT, gardener to the Emperor of AUSTRIA. Its fruit is perfectly sweet, and of a pleasant flavour. A plant of it is now alive [February, 1820] in the garden of an eminent nurseryman at Vienna, but he has not yet succeeded in propagating it." It would be interesting to know whether this is still in cultivation.

—— AGAPANTHUS UMBELLATUS AND LILIUM LONGIFLORUM.—We are so liable to depreciate the beauty of plants that have been long familiar to us that it is only now and then we are able to discover anything striking in old favourites. We were forcibly reminded of this a week or two ago when visiting the Exotic Nursery of Messrs. ROBERT VEITCH & SON, of Exeter, who have the centre of a house filled with the blue Agapanthus and the well-known white Lilium longiflorum. We have seen the blue Agapanthus used and abused in many ways, but do not recollect ever having seen it to better effect than upon this occasion, when the blue and white flowers arranged in alternate order had a most chaste and delicate appearance.

—— VINES AND VINE-CULTURE.—We understand that the excellent "Treatise on Vines and Vine-culture," by Mr. A. F. BARRON, which has been appearing in chapters during the last three or four years in the *Florist and Pomologist*, will shortly be published in a cheap book form. This will be a great boon to gardeners, especially those of the rising generation, as the practice inculcated is sound, and the instructions particularly full and clear, as was, indeed, to be expected from the well-known high standing of the author. Not the least valuable portion will be found in the copious and complete descriptions of all the better varieties of Grapes at present known, many of which are illustrated by characteristic woodcut figures. Indeed, there is no such complete descriptive list of Grapes extant.

—— ROYAL HORTICULTURAL SOCIETY.—The number of persons who entered the gardens at South Kensington on Monday last, on payment of *2d.* each, was 9530.

—— CEANOTHUS GLOIRE DE VERSAILLES.—One of the best and most beautiful of wall creepers; its numerous panicles of lavender-coloured flowers are never seen to better advantage than when a plant is loosely fastened to a wall, and both shoots and flowers droop naturally, mayhap touching or intermixed with the leaves and flowers of other plants of various forms and shades of colours. It requires a partially sheltered situation, and flowers during the present month.

—— SENECIO DONO.—A tall border plant, from 7 to 8 feet high, having pointed green leaves and yellow flowers, which are somewhat coarse, but at the same time striking at a distance for a shrubbery bed or border where choice subjects do not succeed.

—— BOCCONIA CORDATA.—A stately border plant, flowering during the present month. The finest specimen of it we have ever seen is now flowering in one of the long borders at Chiswick. The group of perpendicular shoots clothed with leaves of that peculiar light green hue, shine brilliantly under a flash of sunlight, and its long spikes of Spiræa-like flowers give it a truly majestic appearance. What a noble plant this would make for the summit of a large rockwork; but, of course, as the plant is a tall grower, the base of the rockwork would need to be of considerable proportions. By a little scheming, however, this difficulty might be surmounted—say by planting the plant a couple of feet or so lower down than the summit of the rockery, which would be bringing the proportion of things nearer to what they should be.

—— CEANOTHUS LE GÉANT.—This erect-habited variety flowers during the present month, and makes a good plant for the front of a shrubbery border. There seems no reason why we should not have whole beds of these plants as we have beds of Kalmias and Rhododendrons. Look at our pleasure-grounds during the month of August, and what have we in the shape of flowering shrubs worth looking at? For want of collecting material and planting them in groups our grounds look bare and unattractive. It may be urged that the flower-garden at this season supplies the deficiency, which it really does not. The flower-garden is very well in its place, but it cannot possibly compensate for flowerless beds a quarter of a mile away. As a practical suggestion, might we venture to ask gentlemen connected with the trade to compile lists of flowering shrubs for gardeners, giving their seasons of flowering; and we are sure that country gentlemen will only be too glad to act upon the hint during the coming planting season as well as their gardeners. Groups of plants of the same kind are what is wanted, or good centres edged with dwarf plants of distinct colour coming into flower at the same time.

—— KEW GARDENS were visited on Monday last by 75,879.

—— A MARVELLOUS DATE PALM.—A correspondent of the *Madras Times* has written to that journal an account of a wonderful Date Palm near Nellore, which has been recently deified, and in connection with which ceremonies of worship have been established. "The tree is situated in the village of Pedur, within 8 miles of the collector's headquarters. A fortnight ago the children of the Paraichery, who plucked some fruits from the tree at about 5 o'clock in the evening, found them unlike those of other Dates—very delicious even before ripening—and flocked to it early next morning to gather more. To their surprise, the crops which in the previous evening almost touched the ground were far above their heads. They ran to their parents with the singular story that a Date tree which they saw the first day lying on the ground was then standing. This circumstance drew the attention of the pariahs to the tree, and they observed that the tree had been changing its position every morning and evening. The news spread in all directions like lightning, and people from the neighbourhood flocked to the spot to witness the marvel with their own eyes. The report gained strength daily, and every observer corroborated the statements of his predecessor." A Brahmin of considerable experience was then selected to report on the matter, and he returned with the news that the diurnal fall and nocturnal rise of the date were facts beyond doubt. The correspondent himself then visited the spot, and from the measurements and observations made by him he was forced to agree to the truth of the popular belief. The whole story is reprinted in the *Globe* of Friday, July 28.

—— THE WEATHER.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending Aug. 7, issued by the Meteorological Office, London:—The weather has been generally dry and much more seasonable than of late; in the north-western parts of the kingdom, however, the sky has been almost continuously cloudy. The temperature has again been a little below the mean in "England, N.W.;" but in all other districts it was equal to, or slightly above, the normal value. The maxima, which occurred in England and Scotland on the 6th, were higher than any previously registered during the summer, and ranged from between 78° and 80° over south-western, central, and eastern England to 84° in "England, S." In "England, N.W.," however, the highest reading recorded was only 68°. The thermometer was generally lowest during the early morning of the 4th, when the readings over Great Britain varied from 42° in the Midland Counties to 48° in "England, N.W." In Ireland the lowest temperature experienced was 50°. The rainfall has been considerably less than the mean in all districts. Bright sunshine shows an increase on that recorded last week in most places, but a decided decrease in the east of Scotland and north of Ireland. The percentages varied from 56 in "England, S.W.," and 55 in "England, N.E.," to only 17 in "Ireland, N." Depressions observed:—During the whole of this period a rather extensive area of high pressure has existed to the south-westward or westward of our islands, while comparatively low readings have been reported from Scandinavia. During the earlier part of the week a depression of considerable depth and magnitude appeared over the north of Scotland, causing the wind to increase to a gale from the westward or north-westward on all our more northern coasts. As this disturbance travelled slowly on to Norway, the wind in our islands veered to the north-westward or northward, and moderated; and at the close of the period it was very light in force, and rather variable in direction.

GARDENING APPOINTMENT.—Mr. F. DARNELL, lately Foreman at Sudbourne Hall, Suffolk, has been engaged to succeed Mr. BENHAM, as Gardener to Lady ASHBURTON, Melchet Court, Romsey.

THE EXOTIC NURSERY, EXETER.

As a trade establishment the Exotic Nursery of Messrs. Robert Veitch & Son, of Exeter, is one of the most interesting in the West of England. The entrance to the nursery is off the New North Road, which is but a few minutes' walk either from the Queen's Street or St. David's stations. The main walk to the offices and houses is kept in perfect order, and is of a highly ornamental character. Owing to the rising nature of the ground there are stone steps introduced at certain distances, and over the sides of these, as indeed over the entire length of walk, there is a broad edging of Cotoneaster microphylla, or of blue Vinca, which is exceedingly pretty, and looks well as a margin where walks are made upon different levels. The borders are filled with shrubs of the choicest kinds, and are planted with a view of showing off the different forms and colours of the trees and plants. These consist of Wellingtonia gigantea, Cupressus Lawsoniana lutea, Retinospora obtusa aurea, Acer polymorphum atro-purpureum, a rare stock of hybrid Rhododendrons, and representatives of all the leading Conifers and flowering shrubs in cultivation. Of rock plants and herbaceous plants there is a choice and extensive collection, both of which are upon the right and left of the main walk near to the houses. Upon the rockery side there are four splendid specimens of Retinospora plumosa aurea, beautifully tapered, and in excellent health. In such a climate it need hardly be said that the rock and herbaceous plants are in fine health, and that the show of flowers is far beyond the average. It must not, however, be supposed that the plants enjoy any particular advantage as regards situation or shelter. The contrary is indeed the case, for the situation is high and exposed, and the plants are therefore as hardy as they look, and as healthy as they are hardy.

The most remarkable plants in the rockery are Arbutus Uva-ursi, Escallonia Phillipiana, Olearia Haasti, a beautiful rock plant, producing masses of white flowers; Campanula hirsuta, creeping over the stones; Veronica repens, Morina longifolia, a Thistle-like plant bearing whorls of pink flowers, which look like white beads before they open; Daphne fioniana (hyemalis), Lobelia littoralis, a creeping variety; Dryas octopetala, Veronica pinguifolia, an extremely pretty plant for a rockery; Dodecatheon Jeffreyanum, Aster speciosa, Rhododendron floribundum, Thymus lanuginosus, a little dwarf plant, colour bluish-gray, and of dense habit. Some of the Œnotheras also make good rock plants, they are showy, and are therefore useful for supplying that desideratum which makes a collection of rock plants more than a mere interesting botanical collection. In this respect the Messrs. Veitch have scored a point in advance of many cultivators, because the great bulk of growers require educating into the best method and style of arrangement in order to create a taking display, which will be showy to look at as well as interesting to inspect. The flowering plants of a striking type are Œnothera serotina, about 18 inches high, and bearing bright yellow flowers; Dianthus Napoleon III. (dark cardinal), Geranium pratense fl.-pl., Spiræa filipendula fl.-pl., Geranium Lancastriense, and the Creeping Jenny, Lysimachia Nummularia, always pretty on rockwork. But the variety does not end here, for to clothe or furnish a rockery requires plants of various sizes—a plant, for instance, may not be much to look at individually, but taken in combination with others it may be as indispensable as a more striking subject. Under this head may be mentioned Azara microphylla, many of the Ivies and other dwarf or creeping plants, which form a groundwork in which the showy subjects are set off to advantage. The Armerias are very pretty during the spring months, so also are the Saxifrages and Sedums, Then there are taller plants, such as Rubus coronarius fl.-pl. and Rosa rugosa rubra, which the Messrs. Veitch employ with good effect; even the little Abies pygmæa has its place, and walls are covered with the evergreen Ampelopsis sempervirens. One of the most striking little rock plants in the collection is Senecio argentea, a little dwarf white plant, which comes well against the green Saxifrages or Sedums.

The herbaceous collection is a very extensive one, and among them may be mentioned the following varieties, which are the very best in cultivation:—Statice elata, Aquilegia Skinneri and chrysantha, Geum coccineum fl.-pl., Potentillas in great variety, Dianthus Queen of England, Scabiosa caucasica, Œnothera speciosa alba, Senecio pulcher, Catananche bicolor, Onosma taurica, Artemisia Villarsii, Coreopsis lanceolata, Veronica candida, Hesperis matronalis alba, Gaillardia grandiflora, Harpalium rigidum, Spiræa aruncus, Hemerocallis flava, Funkia Sieboldii, Eryngium Bourgatti, which bears a curious Thistle-like flower of a violet shade; Œnothera macrocarpa, Papaver umbrosum, and Verbena venosa. There are duplicates of all these plants in small pots, so that they may be removed and planted out at almost any season of the year with a certainty of succeeding in any situation, as the growths are wiry and hardy, owing to their roots being restricted to space, and the plants being fully exposed to all changes of climate.

The glass-houses are well stocked with plants, among which may be found representatives from every quarter of the universe. A whole span-house is nearly occupied with a grand stock of young plants of Rhododendron exoniense, Statice Butcheri, and tuberous-rooted Begonias; and a second and larger span-house is stocked with Agapanthus umbellatus, Lilium speciosum rubrum, album, roseum, and L. auratum; Italian Tuberoses, bearing grand heads of their rich double flowers; and Fuchsias in variety. The intermediate stove is a continuation of the same range, and here there is a famous Stephanotis covering the roof, and a collection of other plants, consisting of Palms, Dracænas, Rhopala corcovadensis, and Callicarpa purpurea, the purple berries of which are so pretty and last for months. In the same house are several species of Orchids and plants for furnishing—a rare clean, healthy stock, ready for immediate use. Among the Orchids the beautiful Dendrobium McArthuræ is finely flowered; it is a gem of its kind, and is in rude health, as, indeed, is the whole collection.

The Camellia-house is a spacious structure, and besides Camellias contains many other valuable and interesting plants. Foremost among these may be mentioned a collection of filmy Ferns, grown in suitable quarters by themselves, including Todea superba, T. pellucida, T. Wilkesiana, and T. Fraseri, Hymenophyllum speciosum, which is more curled and rigid than H. radicans, and several others. The back wall is covered with Camellias, and the stock of pot plants is in the highest cultural condition, clean, and smothered with flower-buds. But here, as elsewhere in this nursery, there is that variety which is refreshing to the eye and instructive to those who are anxious to learn how to make the most of plants by arrangement. Tree Ferns are bearing large massive fronds, which overhang the deep green Camellias; the specimens of Cibotium Schiedei and Cyathea medullaris are very fine, as also Woodwardia radicans cristata, and others. Habrothamnus elegans grows with immense luxuriance; it is trained as a pillar plant for close upon a dozen feet, and then runs horizontally right and left under the glass roof where it has a rich, if not majestic appearance. Lapagerias also grow freely, both the white and rose-coloured varieties; and Brugmansia Knightii fl.-pl. enlivens the Camellias with its long drooping white flowers of singular beauty and substance.

In the next house — the plant stove — economy is the order of the day. Orchids and Pitcher-plants are suspended from the roof in baskets, but not a plant less is there in the house because of this. It is simply a matter of utilising space—a question of growing a great many plants within a given space at less cost to the vendor and purchaser. There are fine baskets of Nepenthes Rafflesiana and Hookerii, and the foliage plants and Palms consist of Arecas, Seaforthias, a large stock of Cocos Weddelliana, Geonoma gracilis really well done; and conspicuous miscellaneous subjects comprise large plants and select varieties of Anthurium Scherzerianum, Dracæna Goldieana, Paullinia thalictrifolia, Aralias, and a rare stock of Calanthes. The stock of exotic Ferns occupy a house by themselves, in the centre of which there are medium-sized specimens of Davallia Mooreana, Asplenium Veitchii, or Belangeri, A. laxum pumilum, Polystichum mucronatum laxum, Lastrea Richardi multifidum, Davallia polyantha, and thousands of Adiantums, Lomarias, Blechnums, Gleichenias, and other popular varieties. Of Azaleas there is a fine stock of specimen and half-specimen plants, and the original plant of Rhododendron exoniense, a neat bush with flower-buds set at the point of every shoot. The habit of the plant resembles the Azalea; the flowers are sweet-scented, and are remarkably freely produced.

The collection of British Ferns is a large one, and the plants are of various sizes, and in excellent health. Then follows a house of young Roses and choice named hybrid Rhododendrons, Princess Royal, Duchess of Teck, and Duchess of Edinburgh; also a capital show of Sarracenias, including a good example of Chelsoni, having nine well-coloured pitchers, and other good plants of S. purpurea, Drummondi, and flava. There are also young Crotons, Pavetta borbonica, and of novelties Sonerilla Hendersoni and superba, Bertolonia Van Houttei and Utricularia montana, with flowers nearly as large as a Phalænopsis. Eucharis amazonica is grown by the hundred in large and small pots, and the propagating-house contains a medley collection of young stock, most of them ready for a shift into other quarters. There are several houses filled with young Vines grown from eyes this year—a splendid stock of all the leading varieties.

Vine growing is, indeed, one of Messrs. Veitch's specialities. Next to the Vines comes an immense stock of Ampelopsis Veitchii, Lapagerias planted for layering, and a variety of other miscellaneous nursery stock, all of which is in excellent condition. The out-of-door stock is equally meritorious, large brakes of dwarf and standard Roses, single and double Dahlias are grown, besides quantities of fruit trees, Conifers, and ornamental trees and shrubs. The great show of fruit trees is at the Hoopern Fields branch nursery, where may be seen rare stocks of all kinds, conspicuous above everything being the maiden Peach trees and other dwarf trained trees equally fine. Here also are brakes of choice shrubs, standard and dwarf Roses, and out-of-door nursery stock generally. There is another branch nursery at Exminster, but suffice it to say that there is no lack of everything that is worth cultivating for pleasure or profit. The seed warehouse is at 54, High Street, the leading street in Exeter, with which there is telephonic communication with the office at the nursery, so that nothing is left undone which will in any way tend to good organisation and business dispatch.

PLANT PORTRAITS.

Amaryllis Rougieri, *Revue Horticole*, July 16.—A form from Bahia, with a 2-flowered inflorescence and rich crimson-scarlet flowers, with rather narrow petals.

Auricula Mabel, *Florist*, April, 1882.—A cross between the pollen of Silvia and the stigma of Marie. It is a grey-edged variety, which obtained the premium prize in 1881 as the best Auricula of any class in the exhibition. Raised by Mr. Douglas.

Azalea indica gardeniæflora, *Illustration Horticole*, June, t. 452.—Flowers white, medium size, very double and Gardenia-like. Hort. Linden.

Brodiæa laxa and vars., *Garden*, June 10, 1882.—Hardy North American bulbs, with umbels of long, funnel-shaped, 6-parted, violet or white flowers.

Cereus hypogæus, Weber, *Gartenflora*, June, tab. 1085.—Stems ribbed, glaucous, with tufts of straight slender spines, of which the central is the longest. Flower-tube brown. Petals oblong, mucronate, purplish, yellow-edged. Chile.

Cratægus pyracantha Lalandei, Hort., *Revue de l'Horticulture Belge*, July.

Epigæa repens, *Garden*, July 15.—A trailing shrub, from the North-eastern United States, with stalked, cordate, oblong ciliate leaves, and trusses o pink, salver-shaped flowers.

Gaillardia pulchella var. Lorenziana, *Gartenflora*, June, t. 1083.—The curious and beautiful form introduced by Lorenz, of Erfurt, and in which all the florets are regular and tubular.

Mesospinidium vulcanicum, *Garden*, April 29, 1882.—An epiphytal Orchid from the volcanic mountains of the Upper Amazon. The rosy-lilac flowers are of medium size, in many-flowered racemes. No details given.

Peach Chancellor, *Bulletin d'Arboriculture*, June.—Glands reniform; flowers small; fruit of moderate size, globular, with a well marked furrow, yellow-crimson on the sunny side; flesh white, vinous.

Pear Madame Chaudy, *Revue Horticole*, May 1.—Intermediate between Doyenné du Comice and Beurré Superfin. Excellent quality. Season, end of December.

The Herbaceous Border.

GENTIANA SEPTEMFIDA.—This, the easiest grown of the summer Gentians except G. cruciata, is now very beautiful here. It likes a moist peaty soil in partial shade, in spite of its flowers only opening in sunshine. It is very easily raised from seed, flowering, if properly treated, two years after it is sown. It is becoming common in gardens, but is almost always misnamed G. gelida. On a recent visit to some of the best collections of hardy plants in Surrey I tried to convince the owners of this, and at one place we agreed to refer the matter to a distinguished botanist well known at Kew, who was of the party. He kindly promised to consult the best written authority and let us know the result, which was that the plant in question was acknowledged to be G. septemfida. The characteristics given were as follows :—

G. septemfida.—Leaves 5-nerved, ovate or oblong-lanceolate. Flowers capitate, involucrate by the leaves. Corolla blue. Scales fimbriate, multifid.

G. gelida.—Leaves 3-nerved, oblong or linear-lanceolate. Flowers capitate or racemose. Corolla yellowish-white. Scales entire or bifid.

From this it appears that the flower of G. gelida is not blue at all; but we know that the colour of the corolla is often a mere accident as regards specific distinction, and the late Mr. Joad, a most careful botanist, who worked by the best authorities, had in his garden a plant labelled G. gelida, with blue flowers a stiffer and stouter plant than the ordinary G. septemfida. This plant is now in the collection at Kew, where I saw it last week, but the flowers were withered, and I did not examine it by the notes which I have since received. I may add that G. septemfida from seed, whilst preserving its other characters consistently, varies in colour from very light to very dark blue. My plants originally came from Mr. J. Smith, of Darley Dale, who raises them from seed, and sold them as G. gelida, but was persuaded by me to change the name. *C. Wolley Dod, Edge Hall, Malpas, Aug.* 7.

PROPAGATION OF LYCHNIS VESPERTINA FL.-PL.—Mr. Anderson-Henry's interesting notes have advised patience to those who try to raise rare plants from seed. This virtue is not less important in raising cuttings. As long as these retain any appearance of life they may be expected to make roots. In the case of Hollies, the late Mr. J. Standish, of Ascot, told me that cuttings sometimes struck after being two years in the ground; but it appears less credible that soft stems like those of Lychnis vespertina should require six months to take root. I find, however, that a large proportion of the cuttings put in last February are just now beginning to root. They have been exposed to the air: those put into heat nearly all damped off, as they will not be hurried. *C. Wolley Dod, Edge Hall, Aug.* 7.

CAMPANULA ISOPHYLLA AND FRAGILIS.—I have found it best to treat both these as half-hardy plants; as they thrive far better when so treated, and make a far better show on the rockery in summer. C. isophylla is a plant of excellent habit, of which the young shoots will strike readily if taken off at the ground line when about 2 inches long, whatever time of the year they may appear. When struck they soon assume a branching habit, and should be kept in pots, with the protection of a cold frame in winter until April, when they may be planted out in the upper nests of a rockery. Plants struck early in spring make good showy specimens by the end of July, and continue in flower into September, making in that time more than a hundred flowers upwards of 1 inch across. Of the white variety, which is a very beautiful plant, I received a specimen from Miss Owen, of Knockmullen, last autumn, from which I raised a dozen fine plants, which now adorn my rockeries. By the treatment I have mentioned the plant becomes as it were a perennial evergreen shrub, and is less easily lost. C. fragilis (of which a variety, which I cannot distinguish, is sold as C. Barrelieri) is treated in the same way. It makes much longer-trailing flower-stalks than C. isophylla, and is so brittle as to be easily broken by high winds. Hence it is more often grown as an indoor hanging or basket-plant, for which it is admirably suited; still, if sheltered amongst stones, it does well enough as a summer-rock plant. In this climate both of these species, if left to themselves, generally disappear the first winter, but both are hardy in more favoured parts of the kingdom. *C. Wolley Dod, Edge Hall, Malpas, Aug.* 7.

Home Correspondence.

The Gardeners' Royal Benevolent Institution.—The funds of this Institution, so far as I am aware, have not been assisted by contributions from horticultural societies, though it would be possible, probably, to obtain aid from those in flourishing circumstances. I make the suggestion knowing that charitable institutions have been benefited by a society in my own neighbourhood. *R. L.* [We have frequently advocated the making of collections on these occasions, and we would further suggest that in some of the large centres a special show, to be got up by the gardeners, might be made a means of increasing the funds. ED.]

Asteriscus maritimus.—This plant, which is neither herbaceous nor hardy, but is one of many half-hardy plants of which I keep cuttings through the winter in store pots, and which contribute greatly to the gaiety of the mixed beds in summer and autumn, is a yellow Composite of great merit. I first received it from a neighbour, who described it as growing in great beauty on the sandy Mediterranean coast of Spain. I treated it as hardy, and lost it. Mr. Harpur-Crewe next sent me cuttings, which have produced fine plants, branching from the base of the stalk, so as to form a circle 2 feet across and from 6 to 9 inches high, crowded with large durable stiff and well shaped golden flowers. The plant produces no barren shoots, but the flowering stalks, if taken young, will strike. It requires a deep sandy soil and a sunny situation, and with these conditions will beat most flowers of its class. I cannot say what its natural duration of life is, because it is renewed annually by cuttings. *C. Wolley Dod, Edge Hall, Malpas, Aug.* 7.

The Dublin Exhibition.—Visitors to this exhibition who are horticulturally inclined should not fail to visit the following places of interest, which are all easily reached by tram-car from Sackville Street. Glasnevin may be mentioned first, where a day may profitably be spent; then the Trinity College Botanic Garden, which is full of interest and should not be missed. Here will be found such fine herbaceous borders that the bedding-out of this climate, at least, can scarcely compete with, falling into the shade when the effect of the whole or colour alone is considered. Justice being done so far, we should take a car and drive round the Phœnix Park, which by Nature's endowment is finer far probably than any similar establishment that any other city can boast of. Its extent, the mountains in the distance, fine trees—the magnificent Hawthorns in particular—with beautiful glades and scenes, cannot fail to make an impression. Then there are two private places near together which are kept up in excellent style, and may be visited in succession. First we should take Mount Merrion, the seat of the Earl of Pembroke. It is situated on a hill, whence fine views are obtained of the mountains on the one side and the city of Dublin on the other. Gardening is well done here, and to take an example we may mention a fine plant of Darlingtonia with pitchers 2½ feet long. From this garden we easily reach Mount Annville Park, where also are fine examples of skill. The Lapagerias alone were worth going to see a short time since. After this, among other excursions, a pleasant one may be made to the Hill of Howth, half an hour from Amiens Street by rail. A car goes from the station to near the top, and the highest point, where Gorse is almost like moss beneath the feet, is soon reached. The view of Dublin Bay with Kingstown, backed by mountains in the distance, will not be forgotten; then by taking a path around by the eastern side further views of cliff, rock, and sea will well repay the walk. Geranium sanguineum here grows in great splendour, and plants of interest are sure to meet the botanical eye. *L.*

Cucumbers and Melons in the Same House.—I do not suppose any one claims this as a new discovery. It certainly is very old alike in frames, pits, and houses. It may often be convenient, and, in fact, in small houses may afford the only means of growing the two at all, as it is not every one who has two frames, pits, or houses. That it can be done there is abundant proof; for fifteen or more years we did it here annually. The house is a span one, running north and south, and we grew Cucumbers on the north side and Melons on the south side. Both did well and afforded a full supply for a large establishment. A passing visit from first the Cucumber and then the Melon disease caused us to relinquish the practice. However, I do not say the disease originated through the dual cropping; but we were able to grapple with it to better purpose, and to, in fact, master it in smaller and warmer houses, for the house in which we ran the Cucumbers and Melons was large and also very imperfectly heated, consequently a structure in which it was hopeless to attempt growing out these diseases by the express culture so recently graphically described in your columns. Experience, therefore, shows that the two crops may be grown together, while, in fact, this may be the only possible way of growing them in small places. Still I should hesitate to recommend this plan for general adoption. The two crops run well together until the Melons begin to finish. A dry and semi-arid atmosphere favours the fullest, richest flavour in Melons; this also unfortunately favours the production of red-spider, which quickly passes on to the Cucumber, and so is apt to disfigure and weaken them. Should they escape this risk and steer clear of this most destructive pest to Cucumbers, the mere dryness of the air, so useful to ripening Melons, checks the growth of and favours the production of bitterness in Cucumbers, supposing they are considered the most important crop and a moist atmosphere is maintained for them. This not only lowers the quality of the Melons, but is apt to rot them or cause their juices to ferment. No fruit is easier or more suddenly injured or destroyed by moisture than Melons when nearly ripe. The condensed drop of to-day becomes the decayed patch of to-morrow, and a mass of rottenness on the next day. No doubt the greater part of such risks may be avoided by cutting the Melons early, and ripening them in a dry warm plant stove or kitchen shelf. Still, where there is sufficient accommodation, and several houses, pits, or frames, there is no practical advantage but considerable drawback and risk in growing Melons and Cucumbers in the same house. *D. T. Fish.*

Erica Cavendishiana—The plant of which the illustration (fig. 37) is given is one of those fine specimens which has made the collection of J. Lawless, Esq., The Cottage, Exeter, famous all over the South and West of England. It is only one specimen among a considerable collection of hard-wooded plants which are cultivated and trained in first-rate style by Mr. George Cole, the gardener, one of the most successful plant growers of the day. The plant was in the winning collection of Mr. Cole exhibited at the late spring show held at Plymouth.

Young Vines Losing their Lower Leaves.—I observe "A. D.'s" remarks upon this subject at p. 184 of the last issue of the *Gardeners' Chronicle*. I would in the first place direct "A. D.'s" attention to the fact that he has omitted the first, and a very important word ("young") from the heading of his remarks. I should have some hope of our agreeing by-and-by if I could see that we were both writing upon the "same subject." But we are not. I have not put forth any "suggestions" or "theories" in regard to young Vines losing their bottom leaves, but have stated "matters of fact" which are evidently not known to "A. D." The Vines at Chiswick are from five to six years old, and are therefore not a case in point. I have not recommended any time or system of Vine planting, and I think matter of that kind would be best discussed under "another heading." When practical men take to mixing up subjects, those for whose instruction we write only become confused. If "A. D." has any practical information to give us upon this subject I shall be glad to hear it. *W. H.*

Goat's Rue.—The botanical name of Goat's Rue, enquired for in last issue but one of *Gardeners' Chronicle*, is Galega officinalis. *W. E. Gumbleton.*

Verbena vernosa.—What a useful thing this is to cut from, and to mix with other flowers, and yet how seldom do we see it grown. How well also it looks in the flower garden, mixed with white variegated Pelargoniums, or as a line in a ribbon border. Seeds sown in January in heat, and pricked out in boxes when fit, will give a fine lot of good plants at bedding-out time; it comes early into bloom, and continues so for a long time. The plant is quite hardy, and, what is better, free from the attacks of insects. *T. T.*

An Effective Bouquet.—A very effective and cool-looking bouquet may be formed at the present season by arranging blooms of the purple Clematis Jackmanni with those of the handsome yellow Hypericum calycinum. A few sprays of the variegated Japanese Maple added complete a bouquet which to be quite successful should be placed in a low, shallow, bowl-shaped receptacle of opal-white glass. *E. M.*

Tuberous Rooted Begonias.—Your notes on the above at Stansted Park (p. 136) induce me to give you my experience of their hardiness and adaptability as bedding plants. At Sandywell Park, on the Cotswold Hills, one of the coldest places in

England, I planted in April, 1879, a quantity of seedling bulbs which grew and flowered finely, and by way of experiment a number of them were left in the open ground during the winter entirely uncovered. The thermometer several times fell below zero, nevertheless in due course the Begonias made their appearance, they grew rapidly, and bloomed profusely, and so close and sturdy were the plants that no weather affected them in the least. Again in 1880 a larger number than before were planted out, and a quantity of them were left in the open ground, and although the winter proved one of the most severe on record, the thermometer marking 34° and 35° of frost, not a bulb was injured. Mixed seedling bulbs are now cheap, and are well adapted for mixed borders. In April this year I planted out a quantity here which are now coming into bloom; most of them were not larger than small Peas, and were never in pots at all. Some of them are now strong bushy plants with four and five trusses of flower. I regard them as the most valuable and most ornamental plants we have either for the flower garden or the shrubbery border; the latter appears their proper place, their fine foliage blending well with most evergreens. *Henry Eckford, Boreatton Park, Baschurch, Salop.*

Eucalyptus globulus in Pleasure Grounds.—When one sees the real beauty of this fast growing tree in a public park or private pleasure ground, it is hard to understand why there are so few of them in the country. Were they bad to cultivate or expensive one could understand their scarcity, but we are told they are not hardy, and therefore are not generally adapted for planting in our climate. Now is this a sufficient reason for our not growing them? We raise thousands of bedding plants every year that are consigned to the rubbish-heap in the autumn, and we do not scruple about trouble or expense. Surely therefore we might without much effort raise a few plants from seeds every year, and plant them out among our evergreen shrubs, of which Privets and Laurels unfortunately constitute a good part in many places, and a little variety among them would really do no harm. Considering that this Eucalyptus will make from 10 to 12 feet of growth in a season, we cannot reasonably complain that it is a slow grower, and in mild winters like the past one it will survive everywhere. We should therefore like to see more of them planted in suitable situations. What then is a suitable situation? The plant being a fast grower, and being liable to injury from frosts and cold winds, should have a dry, well-drained, sheltered site. The proper place to plant is upon the face of a sloping bank, where there is no excess of moisture, and in front of a background of English Yews or the common green Holly. The blueish glaucous hue of the older leaves, and the grey-tipped leaves of the younger shoots, give a tone and hue entirely distinct from any other plant or tree in the shrubbery, and its habit being graceful, is a further recommendation of its utility and usefulness. *W. H.*

Special Societies.—In a recent number attention was drawn to the exhibitions of special societies as furnishing suggestive considerations as to their effects upon each other, and upon their usefulness as a whole. It may perhaps be contended that the ultimate object of any special horticultural society is to produce some particular class of plant in the most approved exhibition form, and that the general embellishment of the garden and its usefulness are in great part neglected by such societies rather than assisted by them; but it must be conceded that a general love of the garden is frequently kindled through a primary hobby for some speciality, and horticulture and its societies generally become supported by those who might not otherwise have been votaries at such shrines. I wish now to draw attention, however, to societies for a special class of exhibitors rather than to those for particular plants, viz., to cottage garden shows, which are well calculated to educate those for whose especial benefit they are started, and to cause that emulation amongst them which surely leads to an improvement in the supply of vegetables in every parish where such a society is inaugurated. I was much pleased to see a very successful meeting of this description the other day at Margam, in South Wales. This Society has just held its fifth annual show in the Orange-house, and the exhibits were both numerous and good; indeed, it seemed wonderful that such generally fine vegetables could be brought together in a competition confined to the one parish. An interesting feature of the exhibition was a class for the tenants of the Margam estate, which was fairly filled with high-class produce. The standard of excellence has been steadily advancing from the first show; a reserve fund of £40 is already established, and the Society has proved itself of great use in the instruction of the labourers and others in making the best use of their time and their garden [and we presume of the best

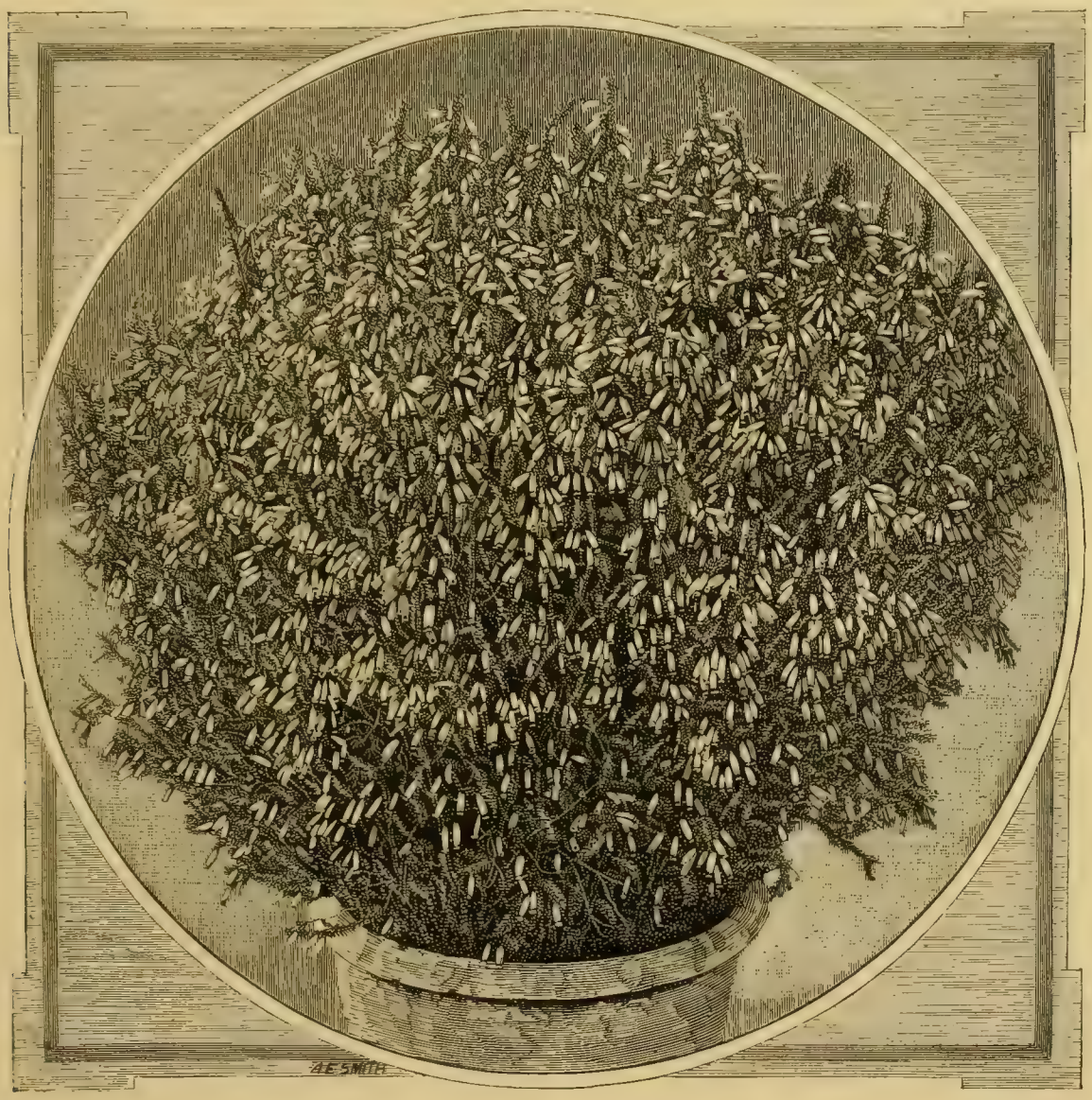


Fig. 37.—Erica cavendishiana, grown by Mr G. Cole. (see p. 212.)

and most suitable varieties of vegetables and fruit for the locality]. What has been so well done here might certainly be more frequently attempted elsewhere, although all societies might not have the attractions of situation afforded to visitors by the Margam pleasure grounds, so generously thrown open for the day by Mr. Talbot, nor the benefit of the services of an experienced exhibitor like Mr. Muir as secretary. *R. C.*

Double Pelargoniums.—Those who know anything of the modern requirements of private establishments are well aware that no greater favour can be conferred upon gardeners than that of keeping them well posted up in all information respecting plants and flowers that are likely to be useful to them for decorative purposes. Our more fortunate brothers of the craft who reside in the neighbourhood of the metropolis or some other horticultural centre, are not so thoughtful as they might be (for it is want of thought rather than want of sympathy), and do not as often as they have the opportunity write pithy notes upon new decorative plants of the useful type. Double Pelargoniums are second to none as useful plants to the practical gardener. As decorative subjects for the greenhouse or conservatory they stand in the first rank, but from a strictly practical point of view, it is as cut flowers for travelling long distances that they excel most. When there were but a few varieties of scarlet and pink in existence, cultivators made a great fuss over them, but now that they embrace all shades of colours there is less heard of them. The best double white is Candidissima plena, which is constant as regards colour, and does not run into pink like Nymphe, which was considered the leading white until the introduction of the former. Paul de St. Victor is of a magenta shade, and bears very large trusses; as also M. Got, a seedling of Lemoine's, which is an intense scarlet. M. Hardy, another of Lemoine's raising, is lilac-pink, and in addition to bearing large trusses of flowers, the individual pips are of unusual size, and are useful for wiring for bouquet work. Aglaia (Pearson) is bright magenta, and is also very fine; and Charles Darwin, a tall grower, is a deep shade of purple. August being the month for propagating Pelargoniums, it occurs to us that this hint may be useful, considering what may be done between now and next London season in the way of growing a stock of these plants, which will be of inestimable benefit to the gardener. *W. H.*

What is Sida?—Is there such a plant as Sida? and if so, is it hardy, and where is it to be seen? My object in asking the question is to try to obtain it, test its merits as a garden plant, and if it is approved, distribute it not only amongst my gardening friends but amongst nurserymen, that they may learn that neither Sidalcea oregana, nor Malva Moreni, nor Malva alcea, ought to be called Sida, as they now are. I have three distinct Sidalceas, all of which I have mentioned in the *Gardeners' Chronicle* at different times. Two of them, both of which have come as Sida malvæflora, amongst other classes, are called at Kew S. oregana; but the two forms are so very distinct that nothing short of Kew authority would convince me that they are the same plant. S. candida differs less from these than they do from one another; but Mr. W. Thompson, who gave it me, indignantly repudiates my suggestion, that it is a white form of the same plant. Then Malva Moreni, which I had last year not only in its own name but also as an "undoubted Sida," is a fine bold hardy perennial, growing here 6 feet high, and highly floriferous and ornamental, with flowers of at least twice the size and substance of Malva moschata. Malva alcea is paler in colour and smaller in flower, hardly as good. But I cannot get hold of a Sida. *C. Wolley Dod, Edge Hall, Aug. 7.* [One reason for our correspondent's perplexity may be found in the varying limitations given to the genus Sida by various botanists. We prefer in all cases, unless there is very good reason to the contrary, to follow Bentham and Hooker's *Genera* as the standard authority on the limitations of genera. ED.]

Cinerarias.—Last autumn some seedling self-sown Cinerarias came up on a gravel path in a sheltered corner, where they remained during the winter, and flowered early in the present summer. I do not know if this is a novel occurrence, but it may possibly interest some of your readers. I have known Cinerarias, both old plants and seedlings, get safely through the winter in sheltered spots, but they have always succumbed to the frosts or perhaps damp of the spring. This year, for the first time, the plants have not only survived the winter, but have flowered in due season. Of course, in such soil they were poor and small plants, but the blossoms were very fair. *G. H. W., St. Mary Church, South Devon.*

The Cost of Flues in Glass-houses.—If the country were polled from one end to another we wonder what would be the verdict as regards the cost of flues in glass-houses. When professional gardeners had no other means of heating but flues, it must be admitted that their crops were often not much behind what they are now, but it must also be admitted that there were occasional mishaps and vastly increased labour. But in the case of novices the management of flues is something like the old story of children playing with fire. Brown has a hobby for gardening during his spare hours, and builds a vinery heated with flues. He also grows a few Orchids, and instructs his man John to dry some sphagnum for dressing the Orchids upon the flue in the vinery. John, acting up to his instructions, spreads the sphagnum upon the flue, turns it over several times until it is dry enough to take fire, and one fine morning Mr. Brown awakens to find his sphagnum burnt to dust, and the Vine leaves along with it. John is called to account over the matter, but he touches his billycock with an air of profound obeisance, and looks so grave and concerned that his master feels it would be a pity to dispense with John's services for what at worst was only an accident to which both master and man had contributed about equal shares. Jones has a forcing-house, where he grows Melons and Cucumbers, and perhaps a few plants, also heated by a flue, and the man-of-all-work neglects to plaster up one or two holes, and the smoke escapes one night, leaving not a green leaf in the house. Robinson is more successful than his neighbours, he has not had a mishap for at least three years, but he grows over-confident, forgets to have the flue of the vinery cleaned out, until one frosty night he receives the disquieting information that the flue is choked up, and that even straw will not burn in the furnace without the smoke coming out at the door. The Vines are in flower, and the mason is sent for the following day to clear out the flue. No one is aware that there should be an awning put to screen the leaves and bunches from the hot, dry dust, and in a day or two it can be seen that there will not be a bunch of Grapes in the house worth looking at. Plenty of such cases as the above are happening every year, which would never take place if a little hot-water apparatus were substituted for the flue. In a few more weeks the warmth of summer will be gone, and Brown, Jones, and Robinson will have to fight the same losing battles over again. *W. H.*

Rubus nobilis.—I see by your journal of August 5, p. 179, that you do not know the origin of Rubus nobilis. It is of Dutch origin, having been raised by Mr. C. de Vos, of Hazerswonde, near Boskoop, who, in his *Manual of Shrubs and Conifers*, says of it:—"Rubus nobilis.—A hybrid raised from the common Raspberry (Rubus Idæus), male, and Rubus odoratus, female, and in character intermediate between the two. From the female parent it has the large leaves, the red flowers, and the strong branches, and from the male the trifoliate leaves and the shape of the flowers, but the panicles are larger. It is free and long-flowering, and thornless." *Arie Koster, Boomkweeker, Boskoop, Holland.*

A Floriferous Stephanotis—A few days ago we saw growing in the Handsworth Nurseries, near Sheffield, a real Stephanotis floribunda. It is well known that there are varieties of Stephanotis in the trade under the name of floribunda that are not free-blooming sorts, and are the source of endless disappointment to those into whose hands they happen to fall. This plant at the Handsworth Nurseries was growing in a cool house, the temperature during winter often falling below 40°. It was planted in a small border, or rather brick pit, 18 inches square, 18 inches deep, in peat and loam, and top-dressed with rotten cow manure. Its branches were trained to thin wires, which extended 28 feet in length and 11 feet in width. There had perhaps been cut off 300 trusses during the last fortnight, and 1450 developed and undeveloped bunches were left on the plant. The bunches were borne freely on the old wood, and at every joint on the growth of the current year. The house was filled with fine plants of greenhouse Rhododendrons. Had we seen nothing else at the Handsworth Nurseries the sight of this Stephanotis would have been worth a journey of 50 miles to see. *Q. R.*

Red Spider, its Cause and Cure.—To a great many struggling, industrious, and enthusiastic amateurs this universal garden pest is a source of annoyance, and often of considerable loss. Whether it be the imperfectly trained market grower who pays for his learning at the beginning of his career, or the amateur who cultivates Vines or other fruit trees or plants more for pleasure and recreation than for profit, the constant cry is, How can we eradicate or keep down red-spider? It is not always safe to recommend drastic measures to inexperienced people, and yet nothing short of a drastic remedy will oust the enemy from his position. Practical gardeners being fully aware of the dire effects of a serious attack of red-spider, follow the safe maxim that "prevention is better than cure," and therefore give the enemy no quarter. But with the amateur, the enemy comes as a thief in the night, and the sad work of destruction is well-nigh complete before he is aware of the fact. Vines, perhaps, suffer more from the attacks of the enemy than any other plant or fruit tree. Let us see in the first place what is the cause. In ninety-nine cases out of a hundred the cause is either absolute dryness at the roots of the Vines, or an unhealthy condition, brought about by defective drainage. Every amateur, aye, and every young gardener, should furnish himself with a long scoop made of iron, with a round handle, the scoop end to be about as long as the depth of compost in the Vine border, and armed with this implement, he should examine the condition of his Vine border occasionally. The scoop should be driven down until it is found to touch the drainage, natural or otherwise, and then twisted round a few times either to the right or left, until it is filled with soil, the examination of which will be a good index to the general condition of the border. If the border is at all dry, drench it thoroughly down to the drainage, and use the scoop again and again until you are certain that this is accomplished. If, upon the contrary, the drainage of the border is defective, or there is no drainage at all, prepare to lift the Vines during the coming autumn before the leaves have fallen, and lay a good foundation in the shape of a well-drained Vine border for another season. Depend upon it the man who, when there is anything the matter with the tops of his Vines, or anything else, proceeds to examine the roots as a first step, will succeed best in Grape growing. But there are other causes which bring about the attacks of red-spider. An amateur builds a vinery, and even heats it with hot-water pipes, but at one end of the house there is a bit of flue leading to the chimney, and from this flue there is a constant dry heat which is sure to breed red-spider. These flues should be done away with wherever it is practicable; but there are bad cases where immediate steps must be taken to keep down the enemy. In such a case make a mixture of sulphur and milk, with sufficient water added to give the mixture the consistence of thin-made paint, and rub it upon the hot-water pipes when the water is near the boiling point: the fumes of the sulphur will settle the enemy. Beginners at this business should perform this operation upon three consecutive nights. The first night raise the temperature of the house (from the hot-water pipes) to about 80° Fahrenheit. Paint the pipes over once or twice as directed, and examine the result of the operation next morning upon the leaves with an ordinary pocket lens. You will find a few dead but not many. The second night raise the temperature to 85°, and do the same; on the third night raise the temperature to close upon 90°, and after this time there will be few insects left alive. It need hardly be added that whoever performs the operation will not require to wear an overcoat, and he must not be a stickler as to personal comfort. It is always safest for amateurs not to paint flues with sulphur but to try the remedies advised at the beginning of these remarks, and as the Grapes are cut to ply the syringe among the leaves to keep the insect down as much as possible. It used to be an old-fashioned but barbarous practice to use the garden-engine in cases of this kind, but wherever such measures are resorted to and the edge of the leaves are cut up into fringes by the violence of the application, the cure is quite as bad in its effects as the disease. *W. H.*

Dogs in Gardens.—One of the penalties of becoming famous for possessing a collection of hardy plants is that many who know little or nothing about flowers come expecting to see a blaze of scarlet, and blue, and orange, and other bright colours in harmonised arrangement, and are evidently disappointed, and go away with a mixed feeling of pity and contempt. Nevertheless, they would be very welcome here if such persons did not invariably bring a dog with them; and these dogs, if they see a plant affording possible cover for a rabbit in the middle of a choice bed, generally investigate it, and in their search break down some cherished specimen for which the owner would not have taken £5, and which perhaps money will not replace. If visitors to gardens where choice plants are grown knew the agony which dogs amongst the beds cause to the growers they would hardly bring them. If the dogs are shut up during the walk in the garden some one lets them out, and matters are made worse by their scampering about in search of their master or mistress. *Gelidus canis.*

Heliotrope Miss Nightingale.—One of the best dark varieties of Heliotrope in cultivation for the flower garden. I recognised it among several others at Chiswick a few days ago as an old friend, and now desire to bring its high qualities prominently to the notice of horticulturists. If it is liberally cultivated it will produce heads of flowers as large as an ordinary sized Hydrangea which are as useful for cutting as they are distinct in a bed in the flower garden. We used to have large beds of Christine Pelargonium edged with a broad band of this Heliotrope which defied criticism. Where the flower garden is near to the house (as it was in the case referred to) gardeners may score a point by having a bed or two close to the

windows, where the fragrance of the Heliotrope will not escape the ladies' attention! The scent is strongest when the flowers are bathed with dew drops after sunset. *W. H.*

Reports of Societies.

Royal Horticultural: *August* 8.—The meeting on Tuesday last was of an interesting character throughout, although the duties devolving upon the committees were not of a laborious nature. Plants, cut flowers, and vegetables, were contributed in considerable force by two or three exhibitors; and a few dishes of fruits, and some fruit trees in pots, exhibited by Messrs. Veitch & Sons, of Chelsea, assisted materially in giving the meeting a general character.

Floral Committee. — The Rev. H. Harpur-Crewe in the chair. Among cut flowers the great attraction of the meeting was a fine collection of sixty spikes of Gladioli sent by Messrs. Kelway & Son, of the Langport Nursery, Somerset, who had First-class Certificates awarded for the following new varieties—viz., Bono, James McIntosh, Ala, and A. F. Barron. The best of the others were Egyptian King, Agricola, E. King, Pictum, Alboni, Dr. Denny, Kremilda, Shakespeare, Lentulus, Hon. E. Cubitt, Lord Leigh, Magnifica, Mr. Thornton, Lady Bridport, Maria, Lord Allington, Sir G. Nares, Captain Boyton, Lord Berwick, Brutus, Julia, Hermon, and Lady Salt. The same firm also sent a collection of single Pyrethrums. Messrs. James Veitch & Sons sent several stands of cut flowers (hardy), which were of an extremely interesting character, and consisted of bunches of Hydrangea paniculata grandiflora, Spiræa palmata elegans, Spirea sibirica, Spiræa callosa, S. callosa pumila alba, Ceanothus azureus grandiflora, C. albidus, C. Arnoldi, Clematis coccinea, Berberidopsis corallina, Escallonia macrantha, E. macrantha Ingrami, E. m. rubra, Calycanthus floridus, Pavia macrostachya, Veronica salicifolia, Indigofera floribunda, Lonicera japonica Halleana, Hydrangea stellata fl.-pl., and several varieties of Hypericums. The Messrs. Veitch also had a First-class Certificate awarded to them for Phalænopsis violacea Schröderi, having flowers of a deep purple shade, and a much superior variety to P. violacea, which was exhibited side by side with the former. From the General Horticultural Company (John Wills), Limited, came a splendidly grown specimen of Nepenthes superba, in a 7-inch pot, with twenty-six well developed pitchers; also a specimen of Nepenthes Hookeri. Messrs. H. Cannell & Sons, of Swanley, sent a collection of single, double, and treble double Dahlias, and cut flowers of Salpiglosis; and Mr. Francis Smith, Sen., Park Road, West Dulwich, sent a good collection of Balsams. Messrs. Carter & Co. showed a fine collection of Petunias, the best of which was Mrs. Dunnet, which obtained a First-class Certificate—a light ground flower, with purple blotches. Messrs. Carter were also awarded a similar honour for their splendid new Godetia Satin Rose, the colour of which is well described in its name. The committee awarded Mr. T. S. Ware of the Hale Farm Nurseries, Tottenham, a vote of thanks for a collection of single Dahlias and Phloxes; and Mr. W. Howard, of Southgate, obtained similar recognition for cut Carnations and other flowers. Mr. H. Eckford, gr. to Dr. Sankey, Boreatton Park, Shrewsbury, had a First-class Certificate for a new Sweet Pea, Bronze Prince, which is of a lovely bronze and purple shade, and an undoubted acquisition in its class. From the Society's Gardens, Chiswick, Mr. Barron sent a good collection of Gesneraceous and other plants; and among other contributors to the meeting were Messrs. James Dickson & Sons of Chester, who sent their white Carnation Duchess of Westminster, and Messrs. Saltmarsh & Son, of Chelmsford, who sent their double Begonia, Beauty of Chelmsford. There were also other miscellaneous exhibits of plants and cut flowers.

The awards made were:—

First-class Certificates.

To Messrs. Veitch & Sons, for Phalænopsis violacea var. Schröderi.

To Messrs. James Carter & Co., for Godetia Satin Rose.

To Messrs. James Carter & Co., for Petunia Mrs. Dunnett.

To Messrs. Kelway & Son, for Gladiolus A. F. Barron.

To Messrs. Kelway & Son, for Gladiolus Bono.

To Messrs. Kelway & Son, for Gladiolus Ala.

To Messrs. Kelway & Son, for Gladiolus James McIntosh.

Mr. H. Eckford, for Sweet Pea Bronze Prince.

Fruit Committee.—H. J. Veitch, Esq., in the chair. The exhibits upon this occasion consisted of seventeen dishes of early Apples, sent by Messrs. J. Veitch & Sons, of Chelsea, who received a First-class Certificate for a well grown dish of Negro Largo Figs, and who also showed samples of the same variety in pots. The same firm also showed samples of Carter's Red Emperor and Red Empress Tomato, the former corrugated and the latter a pretty, smooth oval variety. Messrs. J. Cheal & Sons, Crawley, sent a sample of their Apple Early Lowfield; and seedling Melons were sent by Mr. H. W. Cordle, Ulverston, Lancashire; Mr. B. K. Davies, Kelsterton Gardens, Flint, North Wales; and Messrs. James Dickson & Sons, of Chester, who sent a fruit grown from seeds sent from Morocco. Mr. J. Broadfoot, gr. to Colonel Miller, Shotover Gardens, Wheatley, had a Cultural Commendation awarded him for a very fine dish of Late Admirable Peaches, and a collection of Peas came from Mr. Eckford, Boreatton Park, Shrewsbury. Mr. Gilbert, gr. to the Marquis of Exeter, Burghley, Stamford, sent a fine collection of the "noble tuber," consisting of twelve varieties, which were awarded a Cultural Commendation—not a whit too much, considering the excellence of the exhibit. The varieties were Uxbridge Kidney, Beauty of Hebron, Grampian, International, Adirondack, Pride of America, Radstock Beauty, Carter's Holborn Favourite, White Mountain, Sutton's Fillbasket, Premier White, and Porter's Excelsior. In the entrance vestibule Messrs. Carter & Co. exhibited a large collection of Tomatos in pots. Messrs. J. Veitch & Sons had a Silver Knightian Medal awarded to them for a well grown collection of Peaches and Nectarines in pots bearing excellent crops of good sized well coloured fruits, which also occupied a place in the entrance vestibule.

Devizes Horticultural: *Aug.* 7.—For the first time since its establishment this Society was favoured with fine weather on the occasion of holding its summer show, for it was all that could be desired. The exhibition was held as usual in the splendid grounds of Roundway Park, the residence of C. E. Colston, Esq., which is close to the town. It was a most satisfactory exhibition, and the aim of the promoters to hold a show at which nothing of an indifferent character should be seen was fully realised. The schedule of prizes is a model of commendable brevity, and it was not too comprehensive to be of a representative character. One very large tent took the whole of the plants, and in this they were effectively arranged on the green turf; a separate tent containing the fruit and vegetables.

The prizes offered for a collection of twelve stove and greenhouse plants, six for bloom and six for foliage, tempted Mr. James Cypher to send a group from Cheltenham, and well worthy they were of the 1st prize awarded to them. The foliage plants consisted of fine examples of Pritchardia pacifica, Seaforthia elegans, Kentia Fosteriana, Cycas revoluta, Croton Sunset, very fine; C. Queen Victoria, very fine; and the following flowering plants:—Clerodendron Balfourianum, Allamanda nobilis, very good; Anthurium Scherzerianum, Ixora Williamsii, Erica Fairrieana, and E. Candolleana—a very nice, fresh and effective lot indeed, that were much admired by the Wiltshire folk. 2d, C. N. May, Esq., Elm Lodge (Mr. W. Sharp, gr.), who had a very creditable lot, the best plants being Latania borbonica, Dicksonia antarctica, Croton Veitchii, C. pictus, Cocos Weddelliana, Stephanotis floribunda, and Bougainvillea glabra. There was but one exhibitor in the class for six plants, W. P. Clark, Esq., Trowbridge, taking the 1st prize with Bougainvillea glabra, Allamanda Hendersoni, Phœnocoma prolifera Barnesii, Anthurium Scherzerianum, Stephanotis floribunda, and Ixora coccinea.

Fuchsias were as usual a great feature, and here Mr. James Lye, gr. to the Hon. Mrs. Hay, Cliffe Hall, Market Lavington, was in strong force, staging nine very fine specimens in the class for that number, all excellently grown and bloomed, the varieties being the Hon. Mrs. Hay, Lye's Favourite, Bountiful, Ellen Lye, a fine new light variety; Pink Perfection, Elegance, Beauty of the West, seedling dark; and Rose of Castille, all but the last named having been raised by Mr. Lye. 2d, W. C. Hitchcock, Esq., Conock (Mr. S. Offer, gr.), with good plants of Beauty of the West, Star of the West, Gazelle, James Lye, Elegance, War Eagle, Lye's Favourite, and Arabella. 3d, Dr. Hitchcock, Lavington, whose plants, though placed 3d, were far in advance of what is usually seen in the way of Fuchsias at country flower shows. The best six varieties came from T. Chandler, Esq., Devizes (Mr. A. Shadwell, gr.), who had excellently grown and flowered plants of Elegance, Marginata, Doel's Favourite, Arabella, Rose of Castille, and Charming. 2d, C. N. May, Esq., with Rose of Castille, Royal Standard, Charming, Arabella, Beauty of Wilts, and Elegance.

Groups of plants arranged for effect were a leading feature, 150 square feet being allowed for each. They were generally too much crowded and flat, as is commonly the case. Mr. Shadwell had the best arrangement; Mr. H. Clark, gr. to C. E. Colston, Esq., Roundway Park, being 2d; and C. N. May, Esq., 3d. Pelargoniums of the zonal class, both flowering and variegated, were represented by well grown plants, Dr. Hitchcock, Lavington, being 1st with nicely bloomed plants of Henri Jacoby, J. C. Musters, Mrs. Gladstone, Lady Emily, Circulator, and Regina, all free and with large trusses of bloom; 2d, C. N. May, Esq., the best specimens being Reine Blanche, Lady Sheffield, Mrs. Musters, and Marguerite Pontin. Mr. Lye had the best six variegated Pelargoniums, his specimens of Lass o' Gowrie, Beauty of Westfield, Dolly Varden, and Burning Bush being large and grandly coloured, much superior to what is usually seen; Dr. Hitchcock was 2d with smaller but bright looking plants. Mr. Lye was also 1st with six Petunias trained to oval wire frames, as is the usual case in this part of the country. They were all fine named varieties of the striped flowered section, viz., Beauty of Wilts, Blushing Beauty, Rosy Queen, Wiltshire Lass, Exquisite, and Purity; 2d, Mr. A. Shadwell. Mr. May was well 1st with six nice plants of Gloxinias, and also with six tuberous rooted Begonias, the last named being well grown and bloomed.

There was also a very good representation of foliage plants. The best six came from Mr. Cypher, who had good examples of Latania borbonica, Thrinax elegans, Cordyline indivisa, Croton Johannis, C. Williamsii, and Cocos Weddelliana; 2d, Mr. H. Clack, with a very good lot. Mr. Tucker had the best twelve Ferns—a good lot, the best examples being Dennstædtia davalloides, Gymnogramma sulphurea, G. decomposita, G. peruviana argyrophylla, Thamnopteris nidus, Adiantum farleyense, A. gracillimum, Lomaria gigantea, Davallia canariensis, &c.; 2d, J. Kemp, Esq. (Mr. Geo. Smith, gr.), who had good examples of Asplenium Belangeri, Microlepia strigosa, Thamnopteris nidus, Gymnogramma Laucheana, Adiantum farleyense, A. gracillimum, &c. Mr. H. Clack staged the best six Ferns, having good examples of Alsophila australis, Dicksonia antarctica, Lomaria gibba, Gymnogramma chrysophylla, Adiantum cuneatum, and A. gracillimum; 2d, C. N. May, Esq. The best six Coleus came from Mr. Shadwell—nice pyramid-trained specimens, well-grown and coloured; and Dr. Hitchcock was 2d.

Some liberal prizes offered for cut Roses brought a good competition, and exhibitors were allowed up till 2 o'clock in the afternoon to stage their flowers. In the class for thirty-six single blooms there were but two exhibitors, viz., Messrs. Mack & Sons, Catterick Bridge, Yorkshire, and Mr. George Cooling, nurseryman, Bath. After the awards were made, in the order of the names just given, Mr. George Prince, of Oxford, who had entered, and who had been detained by the lateness of the trains, owing to its being Bank Holiday, appeared on the scene. He had decidedly the best stand of thirty-six single blooms, and at the request of the judges Mr. Prince was awarded an extra 1st prize. There were superb blooms of the following varieties:—Alfred Colomb, A. K. Williams, Annie Wood, Duke of Wellington, François Michelon, La France, Madame Sophie Fropot, Madame Victor Verdier, Mdlle. Eugénie Verdier, Mdlle. M. Cointet, Marie Rady, E. Y. Teas, &c. Messrs. Mack & Sons, who had cut their flowers at 3 P.M. on Sunday, and started on their journey of 300 miles at 6 P.M., staged some very good and fresh flowers of J. S. Mill, Madame C. Wood, Star of Waltham, Auguste Rigotard, Emile d'Hausberg, Harrison Weir, Comtesse de Sereneyi, François Fontaine, &c. The 2d prize was awarded to Mr. Cooling. Mr. Prince had the best twenty-four varieties, three trusses of each, and had, as in the foregoing class, an extra 1st prize awarded to him. The 1st prize was awarded to Messrs. Mack & Sons, Mr. George Cooling being 2d. The best twelve bunches of Tea Roses came from Mr. Prince, who staged a collection of lovely flowers, consisting of Amazone, Anna Olivier, Catherine Mermet, Comtesse de Nadaillac, Innocenta Pirola, Jean Ducher, Madame Angèle Jacquier, Marcelin Rhoda, Maréchal Niel, Marie Van Houtte, Souvenir d'Elise Vardon, and Souvenir de Madame Pernet; Messrs. Mack & Sons were 2d.

Of fruit there was a small but very good show. The best six dishes came from Mr. T. King, gr. to R. V. Leach, Esq., Devizes Castle, and consisted of Black Hamburgh and Chasselas Musqué Grapes, Barrington Peaches, Pine-apple Nectarine, Best of All Melon, and Green Gage Plums; 2d, W. C. Hitchcock, Esq. (Mr. J. Newman, gr.). The best bunch of black Grapes came from Mr. King, who had well-finished Hamburgh. Mr. T. Chandler had the best bunch of white Grapes, staging very good Foster's Seedling. Dr. Hitchcock furnished the best dish of Peaches, staging fine Barrington; Mr. May was 2d with Acton Scott; and Mr. King 3d with Noblesse. The latter had the best dish of Nectarines, staging some good Pine-apple. The other fruits were poor.

Some very good vegetables were shown. Mr. Clack had the best collection of nine varieties; Mr. J. Lye being 2d. In the cottagers' class Mr. A. Hollier had the best six dishes. There was a class for four dishes of Potatos, which brought a capital lot of entries. Mr. W. Burgess was 2d with excellent examples of Reading Russett, Wonderful Red Kidney, International Kidney and Red Emperor; and the best lot was furnished by Mr. A. Hollier, who had perfect tubers of International Kidney, Wonderful Red Kidney, Blanchard and Red Emperior. The best dish of white Potatos was International Kidney, Red Emperor being the best red variety.

There was a class for the best nosegay of wild flowers, the competion confined to the Juvenile Foresters of Devizes, the prizes being given by the Devizes Court of this Ancient Order.

Weston-super-Mare Horticultural: *Aug.* 2.—This flourishing and well-managed Society held its annual show on the above date in the Grove and Rectory fields which, from their appearance and surroundings, add much to the enjoyable character of these exhibitions, which draw large numbers of visitors from Bristol and other surrounding places. Taken collectively the show was a very good one, although the fine collection of plants of Mr. Lawless, of Exeter, was this year absent. In the open class for twelve stove and greenhouse plants, in or out of bloom, the groups staged by Mr. Cypher, of Cheltenham, and Mr. Tudgey, gr. to J. F. G. Williams, Esq., Worcester, were both very good and so nearly balanced in merit that after a close

scrutiny they were awarded equal 1st. Mr. Tudgey's best blooming plants were Dipladenia amabilis, very good; Eucharis amazonica, carrying forty spikes of its snowy blossoms; Allamanda Hendersoni, Erica Paxtoni, and Anthurium Scherzerianum; his foliage plants included Pritchardia pacifica, Gleichenia rupestris, and Cycas circinalis. Mr. Cypher had, along with others, excellent examples of Allamanda nobilis, Erica Austiniana, E. tricolor impressa, Ixora amabilis, Clerodendron Balfourianum, Croton augustifolius, and C. Disraeli (very fine), Latania borbonica, and Thrinax elegans. Six stove and greenhouse plants in bloom (open).—Here Mr. Tudgey had 1st honours, his most noticeable specimen being Clerodendron Balfourianum, in fine order. Six ornamental plants (open).—In this class also Mr. Tudgey was to the fore with a group that contained good plants of Geonoma gracilis and Cocos Weddelliana, &c.; 2d, Mr. W. C. Drummond, Bath.

Six Ferns (open).—1st, Mr. S. Brown, Weston-super-Mare, Lygodium scandens, Onychium japonicum, Davallia Tyermanni, and Acrophorus hispida being his most telling specimens; 2d, Mr. W. C. Drummond. Six Adiantums (open).—1st, Mr. S. Brown, who had A. excisum multifidum, A. venustum, &c., in fine order; 2d, Mr. W. Pain, Weston-super-Mare. Hardy Ferns.—1st, Mr. S. Brown; 2d, Mr. W. Pain. Lycopodiums.—1st, Mr. G. Matthews, gr. to T. T. Knyton, Esq. With six Fuchsias—the best we have seen this year—Mr. S. Brown had 1st, 7½ feet pyramids, Mr. Mein, and Rose of Castile, being the most meritorious. Zonal Pelargoniums were nicely shown, not too much trained.—1st, Mr. S. Brown; 2d, Mr. A. T. Hall, Bath. Six variegated Pelargoniums.—1st, Mr. G. Garaway, Bath, a good half-dozen; 2d, Mr. S. Brown. Coleus, being well done, were fine and attractive, the 1st prize going to Mr. W. Pain, who, along with others, had Pillar of Fire and W. H. Sherriff; 2d, Mr. S. Brown. Petunias.—1st, Mr. G. Garaway, a well-flowered lot, but trained too flat; 2d, Mr. W. Pain. Achimenes.—1st, Mr. Hughes, gr. to H. Pethick, Esq., Weston-super-Mare; 2d, Mr. G. Pain, gr. to W. Ash, Esq., Weston-super-Mare. Six Gloxinias.—1st, Mr. Hughes, with all erect varieties; 2d, Mr. S. Brown. Balsams.—1st, Mr. C. Rowe, Weston-super-Mare.

Amateur classes: six stove and greenhouse plants in bloom.—1st, Mr. Tudgey, who, in a nice collection, had Erica Hartnelli virens, bright and highly coloured; E. ferruginea major, and Bougainvillea glabra; 2d, Mr. G. Pain, whose group contained the white Dipladenia boliviensis. Six foliage plants.—Here again Mr. Tudgey took 1st, Cycas Normanbyana and Kentia australis being his most telling plants; 2d, Mr. J. Matthews. Four exotic Ferns.—1st, Mr. Hughes, having along with others Pteris tricolor and Calanthe elegans; 2d, Mr. J. Davey, gr. to J. Carver, Esq., Bridgewater. Four Adiantums.—With these Mr. Hughes likewise came in 1st, his A. trapeziforme and A. Farleyense were very good; 2d, Mr. J. Lane, gr. to J. F. Taylor, Esq., Weston-super-Mare. Four hardy Ferns.—1st, Mr. Hall; 2d, Mr. G. Pain. Zonal Pelargoniums, both double and single, were in good form: Mr. M. Reading, gr. to J. Wright, Esq., taking the lead in both classes; Mr. W. L. P. Palmer coming in 2d for the singles, and Mr. G. Pain with the double varieties. Fuchsias.—1st, Mr. G. Garaway. Coleus were very bright and well grown, equal 1st being awarded to Mr. Bathe, gr. to J. P. Hill, Esq., Weston, and Mr. Reading. Achimenes.—1st, Mr. G. Pain; 2d, Mr. Hughes, both having good plants.

Cut flowers.—Roses were very good. For twenty-four varieties, three blooms of each (open), 1st honours went to Messrs. Mack & Sons, who had La France, Duke of Edinburgh, Marguerite Brassac, Marie Baumann, Alfred Colomb, Charles Lefebvre, François Lacharme, and Duchesse de Valombrosa, in splendid form; 2d, Messrs. Cooling & Son, Bath, their best blooms being Duchesse de Morny, Comtesse de Serenyi, and Emile Hausberg; 3d, Messrs. Parker & Son, Bristol. Twelve Tea Roses, distinct varieties (open).—Messrs. Mack & Sons were likewise 1st, the most noteworthy flowers being Comtesse de Nadaillac and Souvenir d'Elise; 2d, Mr. T. Hobbs, Lower Easton. Twelve Roses (amateurs).—1st, Mr. T. Hobbs, whose best blooms were Devienne Lamy, Mrs. Jowitt, Marie Baumann, and Duke of Edinburgh; 2d, Mr. W. B. Fortescue Torquay. Gladioli were in good order, Mr. S. Brown taking 1st with twenty-four spikes. Twenty-four bunches of cut flowers.—These were well shown, Mr. O'Brien, gr. to Mrs. King, being 1st, and Mr. Drummond 2d.

Centrepiece of fruit and flowers (amateurs).—1st, Mr. E. S. Cole, gr. to W. Pethick, Esq., with a very nice arrangement; 2d, Mr. M. Hookings. Stand for drawing room table (amateurs).—In this class also Mr. Cole and Mr. Hookings were respectively 1st and 2d. Hand bouquet (open).—1st, Mr. Cypher, as usual showing an elegant combination; 2d, Mr. Hookings, likewise a meritorious exhibit. Hand bouquet (amateurs).—1st, Mr. Hookings; 2d, Mr. W. B. Fortescue.

Fruit, eight dishes.—1st, Mr. Austen, gr. to Sir Greville Smyth, Ashton Court, Bristol, his best dishes being Black Hamburgh Grapes, Grosse Mignonne and Royal George Peaches, Negro Largo Figs, and Hero of Lockinge Melon; 2d, Mr. W. J. Crossman, Cossington. Single Pine.—1st, Mr. Austen, with a good Queen; 2d, Mr. J. Rodgers. Three bunches of white Grapes.—1st, Mr. Austen, for Muscat of Alexandria, good even berries—fairly coloured; 2d, Mr. Shelton, who likewise had Muscat of Alexandria. Three bunches of Black Hamburghs.—Here again Mr. Austen took 1st honours with well finished good bunches of fine even berries—black, and covered with bloom; 2d, Mr. Trotman, gr. to H. O. Wills, Esq., Bristol. Dish of Peaches.—1st, Mr. Daffurn, gr. to Mrs. Walker, with well coloured and fine fruit; 2d, Mr. Austen. Dish of Nectarines.—1st, Mr. Trotman, with very nicely coloured Pine-apple; 2d, Mr. Daffurn, with Elruge—highly coloured. Figs.—1st, Mr. G. Matthews, with a good dish of Brown Turkey; 2d, Mr. Austen. Melon, green-flesh.—1st, Mr. J. Weaving, Cheltenham; 2d, Mr. Reading. Scarlet-flesh Melon.—1st, Mr. Austen; 2d, Mr. G. Pain.

Vegetables were well shown, the 1st prize for a collection going to Mr. Tilley, gr. to Colonel Cotgrave, Banwell. Those who are in the habit of seeing the displays of excellent and artistic garden pottery-ware which Mr. Matthews, of the Royal Pottery, Weston-super-Mare, usually makes at the London and leading provincial shows, would naturally expect his coming out in force near home, and such was the case, his exhibit on this occasion being of a most comprehensive description, both as regards the useful and ornamental; the smooth artistic finish and beautiful colour of the latter being noteworthy.

Liverpool Horticultural Association: *Aug. 5 to 7.*—At this very successful exhibition, held in Sefton Park (see p. 208), Mr. Mease, gr. to C. W. Neumann, Esq., Allerton Priory, secured the 1st prize in the open class for twelve stove and greenhouse plants, six in flower and six fine-foliaged, with an excellent dozen, including Allamanda Hendersoni, Bougainvillea glabra, covered with highly coloured flowers; Clerodendron Balfourianum, fresh and profusely bloomed; these were each not less than 5 feet through; Erica retorta major, and E. Parmentieri rosea, good plants, full of flower; and Ixora coccinea. Amongst the foliage plants were three of the finest Crotons ever staged—C. Queen Victoria, C. angustifolius, and C. variegatus, each from 6 to 7 feet in diameter, and densely clothed with highly coloured leaves. Mr. Peers, gr. to R. Raynor, Esq., Allerton, was 2d with a creditable collection including a good Bougainvillea, Statice Holdfordii, and an unusually fine example of Calamus ciliaris with its beautiful feathery foliage, a plant deserving of much more general cultivation than it receives. With ten stove and greenhouse plants, half flowering and half fine-foliaged, Mr. Leadbeater, gr. to T. S. Timms, Esq., Aigburth, took the lead, showing a bright, fresh, well-grown group, in which were Ixora Dixiana, Stephanotis floribunda, Dipladenia amabilis, Statice profusa, nicely flowered; Crotons Weismanni and Queen Victoria were also in nice condition. Mr. Cox, gr. to W. H. Watts, Esq., Wavertree, was 2d. For six stove and greenhouse flowering plants, Mr. Mease again came in 1st, staging Stephanotis floribunda, large and full of flower; Ixora coccinea, well bloomed and good in foliage, a condition that this best of all the Ixoras is not so often seen in; and the white-flowered Heath, Erica jasminiflora. Messrs. Caldwell & Son, Knutsford, who were 2d, had, in a neat, well-flowered group, Bougainvillea glabra, highly coloured, Erica metulæflora, and E. insignis, well bloomed. Mr. Faulkner, gr. to F. R. Leyland, Esq., Woolton Hall, was 3d, with, amongst others, good specimens of Allamanda nobilis and Erica metulæflora superba, the latter very highly coloured.

In the class for a single stove plant, Mr. Mease took the lead with the best specimen of Anthurium Andreanum we have seen, bearing seven large expanded flowers, and several more on the point of opening. As in the case of A. Scherzerianum, individual plants vary much in the size and character of their flowers, yet the best forms of this newer species will evidently not disappoint the expectations formed when it was first seen. Mr. Leadbeater, who was 2d, had a nice example of Dipladenia amœna. For a single greenhouse plant in flower Mr. Mease was again 1st, with Kalosanthes miniata, and Mr. G. Butler, gr. to T. Drysdale, Esq., was 2d, with Kalosanthes coccinea. For four Heaths, Messrs. Caldwell & Sons, Knutsford, were 1st; and in the class for three Heaths Mr. Cromwell was the only exhibitor, taking the 1st prize with well-grown and nicely-flowered examples of æmula, Irbyana, and ampulacea Barnesii.

Orchids in moderate numbers were nicely shown. For four Mr. W. Sheridan, gr. to W. Sparke, Esq., was 1st, staging Disa grandiflora with eighteen strong spikes; Saccolabium Blumei major, Cattleya Leopoldii with numerous spikes, and Odontoglossum crispum. Mr. Edwards, gr. to Dr. S. Walker, who took the 2d prize, had Saccolabium Blumei major, Odontoglossum Pescatorei, Cattleya crispa, and Oncidium Lanceanum, all nicely grown and flowered; Mr. Bostock, gr. to E. Hardy, Esq., was 3d. For a single Orchid, Mr. E. Smith, gr. to R. D. Holt, Esq., was 1st, with a beautifully managed Aërides suavissimum bearing six very strong and long spikes from a single growth; 2d, Mr. Landon, gr. to Mrs. Banner, who had an unusually well-flowered example of Oncidium Lanceanum, carrying six spikes of its large highly-coloured flowers; 3d, Mr. Sheridan.

Fine-foliaged plants were present in large numbers and splendid form, 1st honours in the principal open class for eight being taken by Mr. Faulkner, who had a handsome well-grown lot, containing three fine Palms—Kentia australis, Areca Baueri, and Pritchardia pacifica—and Croton Queen Victoria. Mr. B. Cromwell, gr. to T. Moss, Esq., was 2d, with a well managed group, the most noticeable specimens in which were the distinct and handsome Anthurium Warocquianum, with leaves over 3 feet in length; Alocasia metallica, some 6 feet in diameter; and A. macrorhiza variegata; 3d, Messrs. Caldwell, with an even collection, in which were good examples of Gleichenia semi-vestita and Croton Weismanni. With six fine-foliaged plants Mr. Mease was well in front, staging a beautiful half dozen, including a splendidly grown and highly coloured example of the long, spiral-leaved Croton Prince of Wales, one of the best of this now extensive family; and C. Weismannii, equally well done. Mr. Leadbeater took the 2d prize with a fresh, well-managed lot, in which were Croton Disraeli and Davallia Mooreana, the latter some 9 feet in diameter.

Ferns were exhibited in quantity, and in excellent condition. For eight exotic kinds Mr. Gore, gr. to T. Holder, Esq., came in 1st, with a distinct and fine lot, including the procumbent Adiantum lunulatum, 6 feet across; A. cardiochlænum, also 6 feet in diameter; Davallia Tyermanni, and Nephrolepis davallioides furcans, with various tree species. Mr. Peers came in 2d, with a good group, in which were Cibotium Schiedei, C. regale, and Davallia polyantha. For six exotic Ferns, Mr. Cromwell secured the 1st prize with medium-sized, nicely managed examples, in which Lomaria zamiæfolia, Pteris scaberula, and Gleichenia flabellata were very well done; 2d, Mr. John Stephenson, gr. to Mrs. Horsfall, staging a clean, healthy collection, but containing too many Adiantums to admit of enough variety. In the class for ten hardy Ferns Mr. Faulkner scored 1st honours, staging in a good group nice plants of Trichomanes radicans Andrewsii, Lastræa Filix-mas Bollandiæ, and Adiantum Capillus-veneris; 2d, Mr. Holder, who in a nice lot had Trichomanes radicans and Adiantum pedatum, well grown. Lycopodiums. as here shown—fresh, dense, vigorous, and consisting of the best varieties—were a very pretty feature. Mr. W. Mercer was 1st, with a beautiful half-dozen, grown as pyramids; 2d, Mr. Wright.

Fuchsias were shown mostly in the form of large old plants full of flower. Mr. Butler was 1st for six, his best specimens being of Weeping Beauty, Rose of Castille, and Mrs. Marshall; 2d, Mr. Leadbeater, whose plants had the merit of being younger, though they were much smaller. For three Fuchsias Mr. Hurst, gr. to W. B. Bowring, Esq., was 1st; 2d, Mr. Wright, gr. to E. Lawrence, Esq. Petunias, as shown at Liverpool in the shape of dense profusely bloomed specimens 2½ to 3 feet in diameter, make a telling display. With six Mr. Littlemore, gr. to J. Williamson, Esq., was 1st, having a fine half-dozen furnished with good foliage and bright flowers; Mr. J. Stephenson, gr. to Major Pilkington, was a close 2d, with somewhat smaller but profusely flowered examples. Tuberous Begonias were in great force, and the plants unusually large and well bloomed. For six Mr. John Stephenson took the lead, showing a fine lot; 2d, Mr. Evans, gr. to Mrs. Lockett. For three tuberous Begonias Mr. Hurst came in 1st, with Paul Masurel, Charles van Eekhauet, and Monarch; Mr. Wright was a close 2d; and Mr. John Stephenson 3d. With a single specimen Begonia Mr. Mease came in 1st with an enormous plant of Vesuvius, 5 feet through, and well bloomed; 2d, Mr. John Stephenson. Messrs. Laing's 1st prize for nine tuberous Begonias, six single and three double varieties, was easily won by Mr. Hurst, Mr. Evans being 2d. For six Caladiums, which were well shown, Mr. Mease came in 1st with large stout plants; Mr. W. Mercer, gr. to Mrs. Crosfield, who was 2d, also had a well-managed lot.

Pelargoniums.—Zonals, for which there are classes in the shape of pyramidal trained and also the ordinary bush shape, were unusually well done, full of healthy foliage and bright flowers. For six bush-shaped specimens Mr. J. Stephenson was 1st, with medium-sized examples, densely flowered, Mr. Littlemore being 2d. Six pyramidal trained specimens were also well shown by Mr. Whitfield, gr. to J. T. Cross, Esq., who was 1st, and Mr. Evans, who came in 2d. Three bush-shaped.—1st, Mr. J. Stephenson; 2d, Mr. Finnigan, gr. to W. Burnyeat, Esq. Coleus were also well done, Mr. Warrington, gr. to T. Bright, Esq., coming in 1st for six with a bright lot, in which G. Simpson and Baron de Rothschild were the best.

Group of plants arranged for effect, occupying 150 square feet.—Here Mr. Cox came in 1st with a group of plants which were well selected with an eye to their adaptation for the purpose, and thoroughly artistically arranged; 2d, Mr. Mease, who also had a meritorious exhibit. With a group occupying 250 square feet the Liverpool Horticultural Company took the lead, Messrs. R. P. Ker & Sons being 2d. For a collection of hardy trees and shrubs the Society offer their Gold Medal, which was won by Messrs. Caldwell & Son, with a well assorted collection, all in excellent health—just the character of plants that an experienced planter would select. Messrs. R. P. Ker & Sons and Messrs. J. Dickson & Sons each exhibited in this class a large and well varied group.

Cut flowers.—Of these there was a very large display, including bouquets, the usual stands, miscellaneous stove and greenhouse varieties, Dahlias, Gladiolus, and Roses, the latter being unusually fine for so late in the season. In the open class for forty-eight singles, Messrs. Perkins & Sons, Coventry, were well to the fore, putting up a beautiful lot, amongst which were remarkable flowers of Charles Lefebvre, Leopold the First, Alfred Colomb, Star of Waltham, and Beauty of Waltham; 2d, Messrs. J. Dickson & Sons, Chester; 3d, Messrs. Mack & Sons, Catterick Bridge. For twenty-four Roses, three blooms of each, Mr. T. B. Hall, Rock Ferry, was 1st; and for twenty-four single blooms the highest prize went to Mr. T. B. Hall. With twelve blooms of one dark variety, Messrs. J. Dickson & Sons, came in 1st, with very fine Alfred Colomb; 2d, Messrs. Mack & Sons. Twelve blooms, one light variety.—Equal 1st, Messrs. J. Dickson & Sons and Messrs. Mack & Sons. The best and most tastefully arranged box of Roses, not less than twelve varieties—the prizes given by the Cranston Nursery Co.—came from Mr. T. B. Hall and Mr. Waterman, gr. to Alfred Tate, Esq. Eighteen varieties of cut flowers, stove and greenhouse, were well shown, Mr. Faulkner being 1st, and Mr. Mease, 2d. Twenty-four varieties of herbaceous flowers.—1st, Mr. Mease; 2d, Mr. Bostock. Bouquets likewise were good. With two, Messrs. Jones & Sons, Shrewsbury, had 1st; Mr. G. Downes being 2d. Single bouquets.—1st, Mr. G. Downes; 2d, Messrs. Jones & Sons.

Fruit was presented in large quantities, and mostly of good quality—Grapes in particular. With eight dishes,

distinct kinds, not more than two varieties of Grapes. Mr. Wood, gr. to T. H. Oakes, Esq., was 1st, staging a nice collection, which contained Black Hamburgh and Muscat of Alexandria Grapes, Bellegarde Peaches, and Violette Hâtive Nectarines; 2d, Mr. Faulkner, with an even lot, the best of which were Muscat of Alexandria and Madresfield Court Grapes, Prince of Wales Peaches, and a Queen Pine; 3d, Mr. J. Edmunds, Bestwood, Nottingham. Six dishes, Pines excluded.—1st, Mr. Mease, with black and white Grapes, Pine-apple Nectarines, Moor Park Apricots, Violette Hâtive Peaches, and Hero of Lockinge Melon, all in good condition; 2d, Mr. Elsworth, gr. to A. R. Gladstone, Esq., with, amongst others, Madresfield Court and Muscat of Alexandria Grapes, both nicely finished; Bellegarde Peaches, and Pine-apple Nectarines; 3d, Mr. Ferguson, gr. to Mrs. Patterson. Pines were better represented than usually seen now-a-days, Mr. Goodacre was 1st with two, and Mr. Faulkner 2d. Single Pine—1st, Mr. Faulkner; 2d, Mr. Whitfield. A very large quantity of Grapes were staged, mostly in good condition. With four bunches, two black and two white, distinct varieties, Mr. Young was to the fore, having Black Hamburgh, Muscat of Alexandria, Madresfield Court, and Foster's Seedling, all well finished; Mr. Wood was 2d with Madresfield Court, Black Hamburgh, Muscat of Alexandria, and Buckland Sweetwater, smallish bunches, but well up in colour and general finish. Black Hamburghs were beautifully shown, Mr. J. Stephenson being 1st with two bunches, splendid examples, alike fine in bunch and berry; Mr. Barker, gr. to Alderman Raynes, was a close 2d; Mr. Washington, gr. to T. John, Esq., 3d—larger bunches and good berries, but thin of bloom. Two bunches black Grapes, any variety.—With these Mr. Young was 1st—Black Muscat, in excellent condition, large bunches, good in berry, black and well covered with bloom; 2d, Mr. Ferguson with Madresfield Court. Two bunches Muscats.—1st, Mr. Blomily, who had Muscat of Alexandria, handsome bunches, well up in colour; 2d, Mr. Mease also showing the same excellent variety. In the class for white Grapes, any variety, Mr. Finnigan had 1st, with Buckland Sweetwater; Mr. Blomily being 2d. Peaches were very well shown, Mr. Elsworth taking 1st, with a fine dish of Bellegarde. Nectarines.—1st, Mr. Wallis, gr. to the Rev. W. Sneyd. Mr. Mease had 1st in the classes for scarlet-flesh and green ditto Melons, and likewise for Strawberries; Mr. Hanagan, gr. to R. C. Naylor, Esq., taking 1st for a collection of hardy fruit and also for Cherries.

Messrs. R. P. Ker & Sons, Liverpool, exhibited, not for competition, an interesting collection of new and rare flowering and fine-leaved plants. Mr. B. S. Williams, Holloway, contributed a similar group, containing a good selection of flowering examples associated with Palms, Ferns, and others of like character. Messrs. Laing & Co., Forest Hill, Sydenham, showed a selection of their best varieties of tuberous rooted Begonias, amongst which were some beautiful kinds. Messrs. J. Hooley & Sons, Stockport, had a nice group of Bouvardias in the shape of dense medium-sized bush-shaped plants, presenting an even head of flowers.

Royal Southampton Horticultural. — The annual summer exhibition of this prosperous provincial Society was held in an admirable site on a portion of old Bannister Park, just on the outskirts of the town, on the 5th, and was continued over to Bank Holiday, when, as is customary, the assemblage of visitors was enormous. A Society that has the honourable designation of "Royal," and enjoys the special patronage of the Duke of Albany, may well hold its head high, but something more than patronage and a name has obtained for it its 900 or more annual subscribers and filled so thoroughly the 100 classes of which the prize schedule is composed. Good as the Southampton shows usually are the recent one has eclipsed all others in the number of entries and the high quality of the exhibits, and indeed so onerous were the judges' duties that they occupied some four hours in sheer hard work, whilst the public were kept waiting at least two hours ere they could get admission to the fruit and vegetable tents. Clearly, if the committee do not wish to make themselves amenable to the law for the prevention of cruelty to animals they must increase their staff of judges another year. As the classes are literally open to the world, there is not only good but wide competition in many of them, and none evoked more interest than that for twelve stove or greenhouse plants, of which one-half were to be in bloom. On this occasion such great guns as Messrs. Tudgey and Cypher contended with their giants, taking the prizes in the order named. Mr. Tudgey had brought from Worcester a huge Pritchardia pacifica, a big Latania borbonica, gigantic Cycas circinalis and revoluta, a grand Anthurium Scherzerianum with fifty spathes, a noble Gleichenia rupestris, fine Crotons, Clerodendron Balfourianum, and other fine plants. Mr. Cypher, of Cheltenham, had also some noble Palms, grand Crotons angustifolius and Disraeli, a monster Cycas revoluta, several fine Ericas, and other well-flowered plants. The two collections were very even in quality, Mr. Tudgey having the advantage in size. The next class for eighteen miscellaneous plants brought chiefly local competitors. The quality throughout this class was excellent, and as some ninety plants were staged a big space was required to display them, causing to some of the exhibitors inconvenient crowding. Mr. Amys, gr. to the Hon. Mrs. Yorke, Netley Castle, who was placed 1st, was fortunate enough to get ample space, but his plants were good, and, indeed, so were all in the class. Mr. E. Wills, gr. to Mrs. Pearce Bassett, was 2d, having specially noticeable a huge Clerodendron Balfourianum, and that unusual plant, Tecoma radicans, in fine flower. Mr. Blandford, gr. to Mrs. Hazelport, West-end, had some fine-foliage plants, Anthuriums crystallinum and Warocquianum and also Cyanophyllum magnificum were grandly leaved. Mr. Cox, gr. M. H. Wyndham, Esq., Corhampton Park, was 4th. Then came another class for fifteen plants, the Messrs. Jackson & Sons, Kingston, taking first place easily with capital specimens—Statice profusa and Butcheri, Allamanda Hendersoni, &c., were very effective; Mr. Kingsbury, florist, Southampton, was 2d; Messrs. Oakley & Watling, nurserymen, coming 3d. There was even yet another class for nine stove and greenhouse plants introducing yet a fresh lot of exhibitors. Groups arranged for effect at Southampton, probably because placed in the centre of a tent and having to furnish four fronts to the visitors, are constructed in pyramidal form, and though very gay have no affinity whatever to the charming semicircular groups seen about the metropolis. The prizes in this class were awarded to Mr. Wills—who exhibited all taste possible under the imposed conditions—Mr. Amys, Mr. Kingsbury, Mr. Blandford, and Messrs. Oakley & Watling, in the order named. Fuchsias were represented by some truly grand pyramids from Mr. Wills, specimens such as are rarely seen out of the West of England. His six, composed of Elegans, Bountiful, James Lye, Arabella, Miss Lye, and Charming, were about 7 feet high, and flowering down to the ground. His single specimen Elegans was also another grand plant, as finely bloomed as a Fuchsia well could be. Mr. Allen, gr. to J. Bailey, Esq., Elmfield, Southampton, had a grand plant also of Elegans in the same class, and was 1st with four specimens nearly equal to Mr. Wills' plants in size and quality. Mr. Allen is also a first-class grower of zonal Pelargoniums, for he had the finest bloomed specimens in both the single and double classes. In the first section his six consisted of De Lesseps, a wonderful mass of colour; Lady Byron, The Shah, Melista, Samuel Plimsoll, and Lady Dudley, each about 30 inches through, and full of bloom. His six doubles were Lucie Lemoine, Buchner, Wonderful, Madame Baltet, and others imperfectly named. Mr. Wills had six capitally coloured variegated kinds in Marshal McMahon, and Sybil—bronzes; Sophie Dumaresque, and Mrs. Turner—golden tricolors; Lass o' Gowrie—silver tricolor; and May Queen—silver bicolor; Mr. Elcombe, of Romsey, and Mr. Hillier, of Winchester, both florists, exhibited large and interesting collections of zonal Pelargoniums, Mr. Elcombe having about 200 plants in rich bloom.

Ferns were largely shown, but the specimens of moderate dimensions. Mr. Wills had the best half dozen, including a superb piece of Davallia Mooreana. Some huge pans of Lycopods were shown, the largest being about 3 feet over, and finely done. Begonias were remarkably fine, and the best form the subject of a special note elsewhere. Mr. Allen had the best eight Gloxinias—really fine, well-flowered plants; and Achimenes, in 12-inch pans, were remarkably good, such old kinds as Dazzle and longiflora major being very effective, but all were admirably done. The best collection of Orchids came from the garden of Wilton House, where Mr. H. J. Buchan's fine collection is grown. Mr. Osborne, the gardener, put up about twenty plants, all of charming kinds. Mr. Blandford had the second best lot—larger specimens, if fewer of them. Coleuses were largely shown, and though of moderate size yet many were finely coloured. Mr. Amys had the best six, including Duchess of Teck, Mrs. Braxton, Mrs. J. Simpson, and Royal Purple. A remarkably fine lot of Cockscombs were staged, the majority being dwarf, and having huge deep coloured heads. These are but a moiety of the plant exhibits; but it is impossible to notice all as fully as they merit.

Cut flowers constitute an important feature in the Southampton show, the display on the 5th being of unusual excellence. Roses were, for the period of the year, finely shown—Messrs. J. Keynes & Co., Messrs. Brittan, and Messrs. Cross & Steer, all of Salisbury, showing twenty-four, and taking prizes in the order named. Owing to the pressure on the judges these were not judged till the unusual hour of 3.30, by which time the freshness of the blooms had been severely tested. Both stove and greenhouse and hardy cut flowers were finely shown, the latter indeed were specially interesting. Most striking in the nine boxes staged were Achilleas millefolia, rosea and filipendula, and A. ptarmica flore-pleno; Helianthemums, Phloxes, Delphiniums, Lathyrus in variety, Hyacinthus candicans, &c. Pelargoniums, Gladioli and Dahlias were also largely shown, and of these latter flowers specially beautiful was a box of the single varieties in mixed bunches, shown by Messrs. Keynes. Messrs. Cross & Steer exhibited their very fine tinted white Clove Carnation, Governor, in superb form. Several tables dressed with fruit and flowers, each for six persons, attracted much attention, as also did the single epergnes and ball and bridal bouquets, in each of which classes Mr. Cypher was placed 1st, with exhibits of great beauty.

The fruit classes were well filled, and the quality shown high. In the class for eight varieties, Mr. A. Miller, gr. to W. H. Long, Esq., Rood Ashton, Trowbridge, was placed 1st, with good Black Hamburgh and Foster's Seedling Grapes, Best of All Melons, Queen Pine, Violet Hâtive Peaches, Pine-apple Nectarines, and good Figs. Mr. F. Thompson, gr. to W. Baring, Esq., Norman Court, Salisbury, who came 2d, had good Muscats and Madresfield Court Grapes, Duke of Edinburgh Melon, Pine, Peaches, &c. Mr. Rudd, gr. to F. G. Dalgety, Esq., Lockerly Hall, Romsey, was 3d. In the class for six kinds, Mr. Sanders, gr. to J. East, Esq., Longstoke House, Stockbridge, was a good 1st, with Hamburgh and Muscat Grapes, Dell's Hybrid Melon, Violet Hâtive Nectarines, Grosse Mignonne Peaches, and Moor Park Apricots. Mr. J. Mair, gr. to the Hon. S. Calthorpe, Ryde, who was 2d, had capital fruit; and Mr. Molyneux, gr. to W. H. Myers, Esq., Swanmore Park, came 3d, having capital Madresfield Court and Muscat Grapes, but was weak in other dishes. In the Grape classes Mr. Molyneux was 1st in the class for three bunches of any black with fine Madresfield; Mr. E. Hillier, nurseryman, Winchester, coming 2d with good Hamburghs, and Mr. Horsefield, gr. to Lord Heytesbury, Heytesbury Park, 3d, with some Hamburghs admirably finished, but small in berry. In the corresponding class for white kinds, Mr. W. Hill, gr. to Viscount Gort, East Cowes Castle, was 1st, with admirable Muscat of Alexandria; Mr. Molyneux coming 2d with fine bunches of the same kind, but not sufficiently coloured. Mr. T. Hall, gr. to Captain Davidson, South Stoneham, coming 3d. Mr. Sanders had the two best white bunches, Mr. Osborne coming 2d with small but wonderfully coloured bunches of Buckland Sweetwater. The dual bunches of the black Grapes were not meritorious. Mr. Molyneux had the best single bunch of any black kind with Hamburghs, and Mr. Thompson was 1st with a single bunch of Muscat of Alexandria. The best Pine came from Merchwood Park, shown by Mr. Browning; the best scarlet-flesh Melon, Hero of Bath, came from Mr. Molyneux, and the best green-flesh Melon, William Tillery, came from Corhampton Park. The finest Peaches were Têton de Venus, sent by Mr. Burden, gr. to G. W. Mercer, Esq., Bassett; and the next best, richly coloured, were Golden Eagle. Hardy fruits were also largely shown. Vegetables were remarkably good, nine lots of twelve kinds being staged — Mr. Sanders taking 1st place; Mr. H. W. Ward, gr. to the Earl of Radnor, Longford Castle, coming 2d. These two collections were not only of high quality, but very even. Mr. Muller was 3d, and Messrs. Molyneux and W. Pope, grs. to G. Atherley, Esq., Bishop's Waltham, were placed equal 4th. There was a strong competition in the class for nine kinds, and the class for eight kinds of Potatos brought ten collections, all good, some very so. The best came from J. M. Wigram, Esq., Salisbury; Mr. Sanders having the 2d best lot. Of handsome kinds specially noticeable were Beauty of Hebron, Trophy, Vicar of Laleham, Adirondack, International, Woodstock Kidney, Grampian, Bedfont Prolific, Triumph, and Blanchard. The best Cucumbers were Telegraph, Victory of Manchester, and Model. Cottagers were large exhibitors, sending remarkably good products.

In all its features the show was both remarkable and a complete success, and reflects the highest credit upon its chief promoter and manager, Mr. C. J. Fuidge, the energetic secretary. A couple of splendid floral certificates, handsomely framed and glazed, and presented by Mr. Fuidge to the exhibitors who obtained the highest number of points in the plant and flower classes, and in the fruit and vegetable classes respectively, were awarded to Messrs. Wills and Molyneux.

Birmingham Botanical and Horticultural: *Aug.* 4 *and* 5. — The premier prize here is a cup, value 10 guineas, for twelve stove and greenhouse plants, six of them in flower. Two very fine collections were staged by Mr. C. E. Mathews, and Mr. Walter Showell. They ran extremely close together, and each deserved a 1st prize. Mr. Walter Jones, gr. to Mr. C. E. Mathews, was placed 1st, and in this lot were a grand Statice profusa, a very fine Kalosanthes coccinea, and a very fine Dicksonia antarctica. The 2d prize was awarded to Mr. W. H. Dyer, gr. to Mr. Walter Showell, and his lot included a good Queen Victoria Croton, a very fine Clerodendron Balfourianum, and an excellent Erica Kingscotiana. In the class for six stove and greenhouse plants Mr. Showell was placed 1st, and Mr. C. E. Mathews 2d; the prizes for three stove and greenhouse plants falling in the same order. Some really fine plants were put up for the single specimen stove or greenhouse plants, Mr. Showell taking the 1st prize with a very fine Clerodendron Balfourianum; Mr. C. E. Mathews 2d, with an extra fine Statice Holfordi; and the Right Hon. Joseph Chamberlain, M.P. (Mr. Cooper, gr.), sent a very fine Eucharis amazonica, to which an extra prize was awarded.

In the class for nine Orchids Mr. Charles Winn (gr., Mr. Shields) was awarded the 1st prize, with a fine lot, consisting of a fine plant of Epidendrum prismatocarpum, Lælia elegans Turneri, grandly coloured; Cattleya Leopoldi, Odontoglossum vexillarium, Oncidium Gardnerianum, very fine; Cattleya gigas, in fine character; Oncidium crispum, Aërides quinquevulnerum, and Odontoglossum Alexandræ. The Right Hon. Joseph Chamberlain (Mr. Cooper, gr.) was 2d, with Epidendrum nemorale, Oncidium crispum, Saccolabium Blumei Dayii, Odontoglossum vexillarium, Epidendrum vitellinum majus, Masdevallia Harryana, Disa grandiflora, and Cattleyas Mossiæ and Harrisoni. For three Orchids the 1st and 2d prizes fell in the same order of rotation.

Fuchsias are always exceedingly well shown here, and all the plants staged now were of great merit, not big unwieldy plants, but good, clean grown, well-bloomed specimens, not formally trained. For six plants Mr. William Mathews (Mr. Caldecott, gr.) was placed 1st, and Mr. Thomas Tonks, Harborne (Mr. W. Shingler, gr.), 2d. For three Fuchsias Mr. W. Mathews was 1st, and Mr. W. Player 2d. For six Marantas Mr. C. E. Mathews was 1st, and Mr. Walter Showell 2d. The Petunia classes were well filled, plenty of handsome, clean grown and admirably bloomed plants. For six exotic Ferns the competition was keen, and three very fine lots were staged, Mr. W. Mathews taking the 1st prize with Todea superba, Adiantum Farleyense, Gleichenia circinata semi-vestita, Davallia Mooreana, and two others. Mr. E. C. Mathews was 2d, in whose lot were very fine examples of Gleichenia Mendelii and Davallia Mooreana; and an extra prize was awarded to Mr. S. Eaton.

Some good Selaginellas were shown, all in good character, and in considerable variety, Mr. W. Matthews taking 1st honours. Some Gloxinias of superior growth were shown much better than are often seen at exhibitions. The two lots of six zonal Pelargoniums—Mr. J. Tonks taking 1st prize, and Mr. W. H. Hill, 2d—were very bright, well grown, and admirably-flowered specimens of considerable merit. Mr. C. E. Mathews took the 1st prize for three Ericas, medium-sized well-grown plants in good condition, one of them, E. æmula, being in glorious health and freshness. For six Dracænas Mr. W. Showell was placed 1st, and Mr. C. E. Mathews 2d.

The classes for new and rare plants were well filled, and in that for those in flower Mr. Charles Winn was placed 1st with Masdevallia species, one of the M. chimæra section, and very fine; Angræcum species, a miniature species of great beauty, with small ivory-white flowers; and Cypripedium selligerum. The Right Hon. Joseph Chamberlain was placed 2d with Anthurium Andreanum, Masdevallia Davisii, and a most beautiful and very fine white variety of Odontoglossum vexillarium to which Special Commendation was also awarded. For a single specimen new and rare plant, Mr. Chas. Winn took the 1st prize with a very beautiful Cypripedium species, which resembles C. caudatum, and is remarkable for one tail being longer than the other. In the class for three new and rare plants for foliage, Mr. C. E. Mathews was 1st, with Crotons Hawkesi and Prince of Wales, and Adiantum Williamsii. Amongst the novelties in the exhibition was a charming plant of Cephalotus follicularis, rarely seen in such a high state of cultivation, exhibited by Mr. Albert Ratcliffe, and to which a Special Commendation was awarded. Mr. Vertegans, of the Chad Valley Nurseries, also obtained a Special Commendation for a group of Primula capitata. Two good groups of plants exhibited by Mr. Hans Niemand and Mr. Vertegans were each rewarded with a Special Commendation. Mr. Niemand exhibited a very tasteful arrangement with a centre of Palms, with groups of Eulalia japonica zebrina, and E. japonica variegata, two beautiful decorative plants; and in the arrangement were Dactylis glomerata aurea elegantissima, Heliotropium White Lady, very fine; Tillandsias zebrina and zonale viridis; Adiantum Lathomii in very fine character; Bouvardias, Gloxinias, and other plants, and one of the handsomest bouquets we have ever seen, and to which a Special Commendation was awarded. Mr. Vertegan's group was made up of good plants, in which Adiantum glaucophyllum, Crotons Baroness de Rothschild and Mortier, and Coleus Dolly Varden, were conspicuous. A singularly effective and prettily arranged bouquet, sent by Miss Chinn, Sutton Coldfield, was awarded a Special Commendation. Two good stands of Gladioli were exhibited, Mr. R. C. Bradley taking the 1st prize. Dahlias are very late in this district, and the display on this occasion was not up to the usual standard. Mr. A. H. Griffiths, a leading local amateur grower, showed a fine stand of twelve Roses, which took the 1st prize; and Mr. Vertegans contributed a good display of Phloxes and other hardy herbaceous plants. Mr. Hans Niemand staged twelve varieties of single Dahlias, cut blooms, Crimson Beauty being very fine indeed. Mr. Samuel Brown, a well-known veteran grower of Picotees and Carnations, showed very fine blooms of both, and took 1st honours in Carnations—Mr. Grim and Thomas Moore were very fine; and in Picotees there were grand blooms of Baroness Burdett Coutts and Mrs. Bower, and a bloom of Mary was the perfection of refinement and quality.

The display of fruit was not so large as usual, as the exhibition was placed at an earlier date. For two bunches of black Grapes, Mr. H. H. Hill was 1st, and the Rev. J. Thorneycroft 2d. For two bunches of white Grapes, the Rev. J. Thorneycroft was placed 1st with Muscat of Alexandria, and Mr. C. Webb 2d, with Golden Champions, very fine in berry. Mr. Thomas Hall (Mr. W. Herne, gr.) was 1st for ten varieties of fruit—a good lot, and the 1st prize—six Peaches from Mr. C. L. Browning—were a very fine sample of Royal George. Some good Nectarines, Melons, &c., were also staged. The Gooseberries were good, one dish of Leveller, sixteen berries, weighing close upon 18 oz.

The Apiary.

THE ANNUAL SHOW OF THE BRITISH BEE-KEEPERS' ASSOCIATION, held in the garden of the Royal Horticultural Society at South Kensington from August 3 to 8, has been an eminently satisfactory one. The display of hives and bee-keeping appliances was very large, the total number of entries being between 350 and 400.

On Thursday the quarterly meeting of the committee to confer with county representatives was numerously attended, and the driving competition in the bee tent created great interest. The prizes were awarded as follows:—1st, Mr. T. Filby; 2d, Mr. J. Walton; 3d, Mr. W. Martin. The judges were the Rev. T. W. Sisson and Mr. Godfrey. Mr. T. B. Blow explained the object of bee driving, &c.

On Friday the Standard Frame Committee had their final meeting, and decided that the frame should measure 14½ by 8½ inches, with a top bar 16 inches long. The means of keeping the bars at the requisite distances apart were left open to the option of the several makers. It is probable, however, that the wide metal end invented by Dr. Pine will be the one adopted in the future. Dr. Pine entered into several contracts with various large makers to supply these ends in quantities, and it was generally admitted that they were the most perfect arrangements that have yet been brought out.

At 5 P.M. a large assemblage gathered in the conservatory to witness the distribution of prizes by the Baroness Burdett Coutts, in place of H.R.H. the Duke of Teck.

The chief point of interest on Monday and Tuesday was the examination of candidates for the posts of experts. About seventeen candidates presented themselves for examination.

The classes for bees were well filled. In class 1, for the best stock of Ligurian bees, the 1st prize was taken by Mr. G. Neighbour, the 2d by Mr. T. B. Blow, and the 3d by Mr. G. Bertoli. Mr. Bertoli's bees were the finest Ligurians we ever saw, but owing to the stock being a small one is the reason that it only obtained the 3d prize. In class 2, for English bees, the 1st prize went to Mr. T. B. Blow, and the 3d to Mr. G. Neighbour. For foreign bees Mr. T. B. Blow was also 1st and 2d, and Mr. G. Neighbour 3d. Mr. T. B. Blow made a grand display in this class—Cyprian, Syrian, Palestine, and Carniolan bees being shown. For the best observatory hive Mr. G. Neighbour was 1st, Mr. H. Gibbons 2d, and Mr. T. B. Blow 3d. The hives shown were of high excellence, being quite a new departure in what we consider the right direction. Owing to the inadequate means for allowing the bees to take flight many hundreds of them got into the windows, and there being no openings they died.

The best bar frame hives came from Mr. F. Search; 2d, Messrs. Abbott Brothers; and 3d, Mr. J. M. Hooker. The best frame hives, in cost not exceeding 15*s.*, from Messrs. Dines & Son, Mr. J. Best, and Mr. T. B. Blow; while the best frame hives, in cost not exceeding 10*s.* 6*d.*, were those of Messrs. Dines & Son, Mr. A. Blake, and Mr. J. Best. The best hives—the work of an amateur—came from Mr. A. Benthall, Mr. J. S. Brooks, and Mr. D. Stewart; and the best straw hive from Mr. T. Sells.

The hive classes were very well filled, but we think that a step in the wrong direction is being taken—viz., the too great elaboration of the hives—the prizes being awarded seemingly for the most elaborate contrivance. The 1st prize hive in class 5 is constructed on a principle which is now quite an exploded idea. The judges, too, should take another matter into consideration—the cost. In the opinion of several competent persons many of the hives were there simply to take prizes, it not being possible to produce them in commercial quantities at the prices stated.

The best bee supers for frame hives came from Messrs. Abbott Brothers, Mr. A. Blake, and Mr. T. W. Cowan; and for straw skeps from Mr. T. B. Blow and Messrs. Abbott Brothers. It is surprising to note the very imperfect way in which supers are turned out, there being but two in this class that had covers on to keep the supers warm—Nos. 97 and 98.

For thick comb foundation the Bronze Medal was awarded to Messrs. Abbott Brothers. Mr. Rait had some fine specimens of foundation, and Mr. Blow showed Dunham foundation—a newly introduced sort—which took the 1st prize at the Royal Agricultural Society's Show at Reading. For thin foundation the Bronze Medal was also awarded to Messrs. Abbott Brothers.

In the foreign and colonial class there was but one entry. In class 33, for the best mead, metheglin, or any beverage in which honey forms the principal ingredient, with recipe attached, the recipe to become the property of the committee, Mr. Cowan made a new departure that will rejoice the hearts of teetotallers—a non-intoxicating drink made of honey; and we can testify to its great excellence. It should take a high place among the non-alcoholic beverages of the day.

For the best collection of appliances connected with modern bee culture Mr. G. Neighbour was 1st; 2d, Mr. T. B. Blow; 3d, Mr. A. Rusbridge. The collections of Messrs. Neighbour and Blow were excellent. We remarked last year that it was surprising that makers would take the trouble to bring large collections for the small value (other than honorary) of the prizes. The number of exhibitors of collections was very small this year, and the committee, it is hoped, will see their way to giving large money prizes rather than medals.

For the best honey extractor Mr. Cowan deservedly carried off all the prizes, he having made extractors a special study.

Class 38, for the best crate for conveying honey in sections—1st, 2d, and 3d prizes were taken by Mr. T. W. Cowan. Class 39, for the best crate for conveying honey in bottle.—1st, Mr. T. B. Blow; 2d and 3d, Mr. T. W. Cowan. Class 40, for any invention calculated to advance bee culture.—Silver Medal for foundation fixer, Mr. T. W. Cowan; Bronze Medal for bee-feeder, Mr. T. B. Blow; Bronze Medal for metal frame ends, Dr. Pine. Class 42, for bee flora.—Silver Medal, Messrs. Abbott Bros.

Considering the season the honey exhibits were good, though the finish of many of the sections was not first-class. Messrs. Thorpe & Brown, of Lincolnshire, seem to have been exceptionally fortunate in getting a lot of honey; but they do things in a thoroughly business-like way, always leading to success. Miss Gayton, of Hadham, Herts, was again to the fore, showing how well bee culture can be managed by ladies. The honey of Mr. Rusbridge deserves mention on account of its high quality.

Florists' Flowers.

DWARF CHRYSANTHEMUMS.—Nothing looks better during the dull months of November and December than a stand of well-grown dwarf Chrysanthemums of the incurved section in small pots. Large plants are very well in their places, but they are not very convenient for use in sitting-rooms, nor is it possible to touch them up in the same way that one can manage with little plants. The plants should be no higher when in flower than from 12—15 inches, and should be grown in pots about 4 inches in diameter. They are obtained in the following way. Where there is a good collection of strongly-grown bush plants, take a cutting or two from each plant as soon as the buds are set, and it can be seen that they (the buds) are of a globose form, and likely to develope into good sized flowers. These buds are now in process of development, and the cuttings may be taken about the last week of the present month. In order that no one may be disappointed, it may be as well to state that full-sized flowers are not obtained from the terminal bud. Before taking the cuttings have a mild hotbed ready for their reception. Do not upon any account attempt propagation in a modern propagating-house, but have a slight hotbed made up specially, composed of stable litter and short grass turned over several times before it is used, and make up the bed in a situation where much shading will not be necessary. Fill the pots to within an inch or so of the brim with rich open compost, and lay a little leaf-mould and sand over it, into which insert the cutting. In taking the cuttings let one clean cut suffice—that is to say, cut halfway between the leaves, of which none should be removed. The great beauty of the little plants in the autumn will consist in having large fresh green leaves down to the rim of the pot; therefore, when the cuttings are inserted in the compost remove them at once to the frame prepared for them, and plunge up to the rim of the pot; then dew the leaves over with tepid water, and keep the frame closed for a few days until the cuttings are rooted. If there is much steam in the frame put a pebble under each sash at the top to allow of its escape, but a gentle circulation of vapour is both necessary and beneficial in sustaining the leaves until the cuttings become rooted plants, which will be in a very short time under the treatment recommended. As soon as the plants are rooted gradually elevate them upon the surface of the bed, and give more air, but shade from strong sun until the leaves fully recover their normal hardihood. The chief point in the cultivation of those little plants is to get them rooted as quickly as possible before they get drawn or receive any check by which the lower leaves would fall off. They should be abundantly supplied with water, and frequently with weak liquid manure-water during the autumn months, and when housed they should occupy a position in an airy struc-

ture near to the glass. Keep the atmosphere of the house dry and buoyant when the flowers are expanding, in order to get the "centres of the flowers well up, which adds considerably to their appearance, and when fully open, if arranged in a groundwork of Maidenhair Ferns, they have a beautiful effect. The varieties that are best suited for this purpose are George Glenny, Mrs. George Rundle, Mrs. Dixon, Prince Alfred, and others of the same type. *W. H.*

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, AUGUST 9, 1882.

Month and Day.	Barometer. Mean Reading Reduced to 32° Fahr.	Barometer. Departure from Average of 16 years.	Temperature of the Air. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years	Hygrometrical Deductions from Glaisher's Tables 6th Edition. Dew Point.	Degree of Humidity, Sat = 100.	Wind. Average Direction.	Rainfall
Aug	In.	In.	°	°	°	°	°	°			In.
3	30.03	+0.29	67.0	52.5	14.5	58 0	— 4.2	45.3	63	N.W. : N.	0.00
4	30.10	+0.35	68.5	52.0	16.5	59.1	— 3.1	47 0	65	N.N.W	0.00
5	30.05	+0.30	69.0	54.0	15.0	60.6	— 1.5	51 6	71	W.N.W : N.N.W	0.00
6	29.97	+0.22	79.0	52 6	26.4	63.8	+ 1.7	51.5	66	W.	0.00
7	29.99	+0.24	73.0	58.0	15 0	63.0	+ 1.0	53.6	72	N. : N.W.	0.00
8	30.03	+0.28	72.0	53 0	19.0	59.8	— 2.2	49.0	70	N.	0.00
9	30.07	+0.31	70 5	50.5	22.0	58.7	— 3 4	51.7	77	N	0.00
Mean	30.03	+0.28	71 3	53.2	18.1	60 4	— 1.7	50.1	69	N.	0.00

Aug. 3.—A dull morning; sun's place visible; fine bright afternoon. Fine night.
— 4.—A fine bright day and night.
— 5.—Fine day, but overcast. Fine night with gentle wind.
— 6.—Fine day and night.
— 7.—Fine morning, but overcast. Fine day and night.
— 8.—A dull overcast morning. Fine bright day and night; stars bright.
— 9.—A dull overcast morning; fine bright afternoon; blue sky, no clouds visible. Fine night.

LONDON: *Atmospheric Pressure.*—During the week ending August 5, the reading of the barometer at the level of the sea decreased from 30.14 inches at the beginning of the week to 30.03 inches by 3 P.M. on the 30th, increased to 30.31 inches by 9 A.M. on the 1st, decreased to 30.04 inches by 3 P.M. on the 2d, increased to 30.29 inches by 9 A.M. on the 4th, decreased to 30.27 inches by 3 P.M. on the 4th, and was 30.23 inches by the end of the week.

The mean reading for the week at the level of the sea was 30.19 inches, being 0.10 inch higher than last week, and 0.26 inch above the average of the week.

Temperature.—The highest temperature in the shade in the week was 79°, on Aug. 2. On the 3d the highest temperature was 67°. The mean of the seven high day temperatures was 72°.6.

The lowest temperature in the shade in the week was 52° on the 4th; on the 1st the lowest temperature was 59°.5. The mean of the seven lowest temperatures was 55°.1.

The greatest range in one day was 20°.9, on the 30th; the smallest was 14°.5, on the 1st and 3d. The mean of the seven daily ranges was 17°.5.

The mean temperatures were—on the 30th, 64°.9; on the 31st, 61°.8; on the 1st, 65°.2; on the 2d, 66°.5; on the 3d, 58°; on the 4th, 59°.1; and on the 5th, 60°.6; of these the 30th, 1st, and 2d were above their averages by 2°.6, 2.°9, and 4°.2 respectively; and those of the 31st, 3d, 4th, aad 5th, were below their averages by 0°.5, 4°.2, 3°.1, and 1°.5 respectively.

The mean temperature of the air for the week was 62°.2, being 2°.3 higher than last week, and of the same temperature as the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo, placed in the full rays of the sun, was 138° on the 2d; the highest on the 1st was 91°. The mean of the seven readings was 118°.4.

The lowest reading of a minimum thermometer with its bulb placed on grass and fully exposed to the sky was 48.°2 on the 4th. The mean of the seven readings was 50°.7.

Rain.—Rain fell on the 2d, to the amount of 0.05 nch.

ENGLAND: *Temperature.*—During the week ending August 5 the highest temperatures were 79° at Blackheath, 78°.8 at Cambridge, and 78°.1 at Plymouth The highest temperature at Bolton was 64°.5, at Liverpool 66°.6, and at Bristol 68°.8. The general mean was 72°.8.

The lowest temperatures in the week were 44°.2 at Nottingham, 45°.2 at Bristol, and 45°.8 at Wolverhampton and Bolton. The lowest temperature at Liverpool was 53°.8, at Blackheath 52°, and at Plymouth and Leeds, 51°. The general mean was 48°.5.

The greatest ranges of temperature in the week were 31°.5 at Nottingham, 30°.2 at Cambridge, and at Sunderland 29°. The least ranges were 12°.8 at Liverpool, 18°.7 at Bolton, and 21° at Sheffield. The general mean was 24°.3.

The mean of the seven high day temperatures was highest at Cambridge, 74°.3, at Blackheath 72°.6, and at Brighton 72°.2; and was lowest at Bolton, 61°.7, at Liverpool 62°.4, and at Wolverhampton 66°.6. The general mean was 68°.7.

The mean of the seven lowest night temperatures was highest at Liverpool, 55°.9, at Blackheath 55°.1, and at Leeds 54°.6; and was lowest at Bolton, 47°.9, at Hull 49°.7, and at Wolverhampton 52°. The general mean was 52°.9.

The mean daily range was greatest at Cambridge, 21°.9, at Hull 19°.3, and at Brighton 18°.6; and was least at Liverpool, 6°.5, at Bradford 12°.8, and at Bolton 13°.8.

The mean temperature was highest at Blackheath, 62°.2, at Cambridge 61°.6, and at Plymouth 61°.2; and was lowest at Bolton, 53°, at Liverpool 57°.4, and at Wolverhampton 57°.5. The general mean was 59°.

Rain.—The largest falls were 1.30 inch at Bolton, 0.47 inch at Sunderland, and 0.40 inch at Liverpool. The least falls were 0.01 inch at Bristol, and 0.02 inch at Wolverhampton and Bradford. No rain fell at Plymouth. The general mean was 0.18 inch.

SCOTLAND: *Temperature.*—During the week ending August 5 the highest temperature was 73°, at Dundee; at Glasgow the highest temperature was 65°.5. The general mean was 68°.3.

The lowest temperature in the week was 46°.2, at Edinburgh; at Glasgow the lowest temperature was 54°. The general mean was 48°.7.

The mean temperature for the week was 58°.6, being 1°.6 above that of the week immediately preceding, and 0°.9 above that of the corresponding week of 1881, and was highest at Glasgow, 59°.9, and lowest at Greenock, 56°.9. The general mean was 58°.6.

Rain.—The largest fall was 0.46 inch, at Greenock; the smallest fall was 0.10 inch, at Dundee. The general mean fall was 0.27 inch.

JAMES GLAISHER. F.R.S.

Answers to Correspondents.

ABIES LASIOCARPA: *J. M.* We believe you are correct. Very likely the leaves were wet, and in that condition got sunburnt.

APPLE: *S. Hallatrow.* White Juneating.

COLEUS: *T. H.* We are sorry we cannot oblige you, but there are too many varieties about now for us to name them from single leaves.

ELM: *B.* The Elm you mention in the forecourt garden is U. Rosseelsii, a sport from the common campestris, with bronzy-golden leaves. It is one of the most desirable of the ornamental forms.

FUNGUS: *W. D., Wierton.* The "curious fungus found by mowers in a hayfield," after cutting the hay, is Xylaria polymorpha. It usually grows on or near stumps. Your specimens, some of them measuring 5 inches in height and 1 inch in width, are the largest we have ever seen.

GARDENIA: *W. E. D.* In the flowers sent the sepals were leafy, other portions of the flower also are more or less leafy, and arranged along a prolonged axis. The flower is, in fact, partly replaced by a branch. We do not know what has caused this appearance, but it is evident the plants went on growing when they should have had a check.

INDIAN FORESTRY: *Iota.* Gamble's *Manual of Indian Timbers;* Beddome's *Flora Silvatica,* Madras; Brande's *Forest Flora N.-W. India;* Kurz' *Forest Flora of Burmah.* For the details of practical management we do not know any single book, but there is a large amount of information scattered through various reports by Brandis and other; you should also consult the *Indian Forester.* None of these books, however, are easily accessible, but you may see them at the large botanical libraries in London and elsewhere.

LARCH APHIS: *H. D.* It is not a fungus, but the Larch bug (Chermes larycis).

NAMES OF PLANTS: *J. J. Foster.* 1, Lonicera Ledebourii; 2 and 3, not recognised—"438." 1, Phlomis fruticosa; 2, Lonicera aureo-reticulata; 3, Spiræa Nobleana; 4, Ceanothus azureus, a good variety; 5, Bocconia cordata; 7, Stachys lanata; 9, Linaria vulgaris. The spiny shrub with orange flowers is Desfontainea spinosa. — *F. P.* Heuchera, species not recognised. — *W. Dawson.* Staphylea pinnata. — *L. J. Jennings.* Linum usitatissimum (the common Flax).—*T. R. O. K.* 1, Rhus Cotinus; 2, Euonymus latifolius; 3, Staphylea pinnata; 4, Betula lenta; 5, Cotoneaster buellaris.—*D. E.* 1, Athyrium Filix-fœmina; 2, Aspidium falcatum, one of the many crested forms; 3 seems to be a very luxuriant form of Salvia Grahami.—*E. E., Barton.* Galega officinalis.—*M. A. Z.* Galega officinalis. You ought to be able to obtain it from any nurseryman who deals in hardy herbaceous plants.—*W. M.* 1, Helianthemum vulgare, var.; 2, Alyssum argenteum; 3, indeterminable without flowers; 4, Hypericum calycinum.—*J. W.* An Omphalodes, but we cannot say what species from the miserable scraps sent.—*R. C. Bell.* 1, Œnanthe phellandrium; 2, Potamogeton praelongus; 3, Nepeta cataria.—*W. B.* Athyrium Filix-fœmina.—*Subscriber.* 1, Lastrea æmula (fœniseeii); 2, L. dilatata; 3, Athyrium Filix-fœmina rhæticum.—*F. Batchelor.* Funkia grandiflora, the best of the genus, and certainly well worth growing.—*Messrs. Cripps.* Not Virgilia lutea, but Cladrassis amurensis.

PEAS: *Paul.* We see neither insect nor fungus, except mould from excessive damp. The roots are dead, and the stems also for some distance. Is the land sufficiently drained?—*L. J. Jennings.* Your case is by no means an isolated one. Mildew has been brought on this season through the young haulm sustaining a severe check from the extreme cold weather, which lasted over a considerable period prior to the late agreeable change. You are quite right as regards drought being the chief cause of mildew in Peas, but extremes of any kind are liable to bring it on.—*J. L. C.* The Peas are in a dreadful state, rotten at the base, and infested with fungi and insects. We do not believe the seed had anything to do with it, but as we are ignorant of the conditions under which grown we cannot assign the true cause of the malady.

TELEPHONE PEA: *J. H., Regent House.* In 1878.

TRUFFLES: *Pauline.* Search for them in the autumn. A trained eye can tell at once the spots in which they are likely to be found.

VINES: *G. N.* We have examined your Vine roots, and fail to discover any trace of the Vine Phylloxera. The Phylloxera, however, does not attack the points of the young roots, but those that are about twelve months old. Send us some of those wrapped in damp moss, and enclosed in a small tin box, and we will examine them and report the result. We are, however, more disposed to think that the cause of the young rootlets disappearing is the result of a cold, over-wet border which is not properly drained. If the soil is of an adhesive character you should water carefully. The soil of the border may have been rendered unhealthy by applications of liquid manure, and it appears very likely that this is the case. The young rootlets will die back after a heavy drenching of cold water if the border is not perfectly porous. When they change to a brown colour, later in the autumn, they will stand more water. Fungus or wireworm hardly account for the symptoms.

WHICH "CONSTANT READER," *Dover?* Which one? We have so many. In any case we are much obliged to him, but would remind him that the witches' cauldron was of very complex constitution, not uniform, and that variety *is* singular.

CATALOGUES RECEIVED.

WM. CUTBUSH & SON, Highgate, N.—Dutch and Other Bulbs, &c.

JAMES DICKSON & SONS, 32, Hanover Street, Edinburgh—Dutch Flower Roots.

ALEX. DICKSON & SONS, Belfast—Dutch and French Flowering Bulbs.

DAMANN & CO., Portici, Italy—Wholesale List of New Vegetable and Flower Seeds.

HAAGE & SCHMIDT, Erfurt — Flower Bulbs and Roots, &c.

H. THORNTON & CO., Dancer's Nurseries, Fulham, S.W.—Dutch Flower Roots, &c.

DICKSONS & CO., 1, Waterloo Place, Edinburgh—Select Flower Roots.

COMMUNICATIONS RECEIVED.—A. de C., Geneva.—E. H. K.—H. C.—B. R.—D. D.—H. J. E.—T. S.—W. H. F.—Prof. Kanitz, Kolosvar.—W.—H. S.—R.—A. W.—F. L.—Dr. Valardi, Milan.—M. S.—D. T. F. (specimen received with thanks).—J. S.—J. George.—T. T.—E. Webb & Sons.—H. D.—F. C.—Subscriber.—E. C. H.—A. N.—F. Sander & Co.—S. and S.—C. W. D.—Paul.—J. F. J.—T. B.—N. E. B.

Markets.

COVENT GARDEN, August 10.

Trade quiet. Soft fruit nearly finished. *James Webber, Wholesale Apple Market.*

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, per doz.	.. ..	3 0– 6 0	Herbs, per bunch	..	0 2– 0 4
Asparagus, English, natural, per bun.	..	7 0– ..	Horse Radish, bund.		4 0– ..
— Sprue, per bund.		1 0– ..	Lettuces, Cabbage, per score	.. ..	1 6– ..
Beans, French, English grown, p. lb.		0 4– ..	Mint, green, bunch	..	0 4– ..
Beet, per doz.	..	1 0– ..	Mushrooms, p. baskt.		1 6– 3 0
Cabbages, per doz.	..	1 0– 2 0	Onions, per bushel	..	4 0– ..
Carrots, per bunch	..	0 4– 0 6	— Spring, per bun.		0 6– ..
Cauliflowers, English, dozen	..	2 0– 4 0	Parsley, per bunch	..	0 4– ..
Celery, per bundle	..	1 6– ..	Peas, per qt.	..	1 6– ..
Cucumbers, each	..	0 6– 1 0	Radishes, per doz.	..	1 6– ..
Endive, per doz.	..	2 6– ..	Small salading, pun.		0 4– ..
Garlic, per lb.	..	1 0– ..	Spinach, per bushel		3 0– ..
			Tomatos, per doz.	..	2 0– ..
			Vegt. Marrows, doz.		3 0– ..

POTATOS:—Foreign Potatos finished. Regents, 80s. to 100 Myatt's, 100s. to 120s.; Magnums, 100s. to 110s. per ton.

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	3 0	4 6	Lemons, per 100	5 0	7 0
Currants, Black, per ½-sieve	4 6	5 6	Melons, each	2 0	4 0
— Red, per ½-sieve	2 3	3 3	Peaches, per dozen	6 0	12 0
Figs, per dozen	2 0	3 0	Pine-apples, Eng., lb.	3 0	4 0
Filberts, per lb.	0 6	0 7	Plums, ½-sieve	5 0	8 6
Grapes, per lb.	1 0	3 0	Raspberries, per lb.	0 3	0 6
			Strawberries, per lb.	0 6	1 0

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldii, doz.	12 0	24 0	Foliage Plants, various, each	2 0	10 6
Arbor-vitæ (golden), per dozen	6 0	18 0	Fuchsias, per dozen	4 0	9 0
— (common), dozen	6 0	12 0	Genista, per doz.	8 0	12 0
Balsams, per dozen	3 0	6 0	Gloxinea, per dozen	12 0	18 0
Begonias, per doz.	6 0	12 0	Heliotrope, per doz.	3 0	6 0
Calceolaria, doz.	4 0	9 0	Hydrangea, doz.	9 0	12 0
Cockscombs, dozen	4 0	6 0	— paniculata, doz.	12 0	30 0
Cyperus, per dozen	6 0	12 0	Lilium, in var., doz.	18 0	42 0
Dracæna terminalis	30 0	60 0	Marguerite Daisy, per dozen	9 0	18 0
— viridis, per doz.	12 0	24 0	Myrtles, per doz.	6 0	12 0
Euonymus, various, per dozen	6 0	18 0	Palms in variety, each	2 6	21 0
Evergreens, in var., per dozen	6 0	24 0	Pelargoniums, doz.	6 0	12 0
Ferns, in variety, per dozen	4 0	18 0	— scarlet, per doz.	2 6	6 0
Ficus elastica, each	1 6	7 0	Rhodanthes, doz.	6 0	12 0
			Solanum per doz.	9 0	12 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 blooms	0 2	0 4	Pelargoniums, 12 sprays	0 9	1 0
Arum Lilies, per doz.	4 0	6 0	— zonal, 12 sprays	0 3	0 6
Bouvardias, per bun.	0 9	1 6	Pinks, 12 bunches	2 0	6 0
Calceolaria, 12 bun.	6 0	12 0	Primula, double, per bunch	1 0	1 6
Carnations, 12 bun.	2 0	6 0	Pyrethrum, 12 bun.	3 0	9 0
Cornflower, 12 bun.	2 0	4 0	Rhodanthe, 12 bun.	6 0	9 0
Eucharis, per doz.	3 0	6 0	Roses (indoor), doz.	1 0	3 0
Fuchsias, 12 bunches	6 0	8 0	— (outdoor), doz.	0 4	0 9
Gardenias, 12 blms.	3 0	8 0	— Coloured, doz.	1 0	2 0
Gladioli, 12 bun.	6 0	12 0	Stephanotis, 12 spr.	3 0	6 0
— brenchleyensis, 12 sprays	1 6	3 0	Stocks, 12 bunches	4 0	9 0
Heliotropes, 12 sp.	0 6	1 0	Sunflower, 12 blooms	0 6	2 0
Lapageria, white, 12 blooms	3 0	6 0	Sweet Peas, 12 bun.	2 0	6 0
— red, 12 blooms	1 0	3 0	Sweet Sultan, 12 bun.	4 0	6 0
Lilium various, 12 bl.	3 0	6 0	Tropæolum, 12 bun.	1 0	2 0
Marguerites, 12 bun.	4 0	6 0	White Jasmine, 12 bunches	4 0	9 0
Mignonette, 12 bun.	1 6	4 0			
Pansies, 12 bunches	1 0	3 0			

SEEDS.

LONDON: *Aug.* 9.—The seed market to-day was poorly attended, and there was but little business doing. For Trifolium incarnatum there is a somewhat increased inquiry. More money is asked for new Rape seed. The demand for sowing white Mustard is slightly better. The new Essex Rye now selling shows fair quality. Haricot Beans, being exceedingly scarce, are held for more money. For Canary seed values are also hardening. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

Monday being Bank Holiday there was no business done at Mark Lane. The amount of business transacted on Wednesday was extremely small. Two or three small samples of new English Wheat were on offer, but not in sufficient quantity to establish quotations. Of foreign arrivals are liberal, and the market was flat with an adverse tendency. The same was the case in the floating cargo trade. Flour was dull, Barley slow on the spot and forward, Maize firm, and Beans and Peas steady and unchanged. Though there have been large arrivals of Oats rates were upheld.—Average prices of corn for the week ending August 7:—Wheat, 51*s.* 3*d*; Barley, 29*s.* 1*d.*; Oats, 25*s.* 3*d.* For the corresponding period last year:—Wheat, 46*s.* 9*d.*; Barley, 30*s.* 1*d.*; Oats, 24*s.* 4*d.*

CATTLE.

At the Metropolitan Market on Monday early sales were made in the beast market at the previous Monday's rates, but the demand afterwards fell off, and the market finished flatly at rather lower rates. The sheep and lamb trades lacked activity; rates were upheld, but the tendency was adverse, and the pens were not entirely cleared. The calf trade was very dull. Quotations:—Beasts, 4*s.* 4*d.* to 5*s.* 4*d.* and 5*s.* 6*d.* to 6*s.* 2*d.*; calves, 4*s.* 8*d.* to 5*s.* 8*d.*; sheep, 5*s.* 4*d.* to 6*s.* and 6*s.* 4*d.* to 7*s.*; lambs, 7*s.* to 8*s.*—Thursday's trade was fairly good, both as regarded beasts and sheep, and prices ruled steady. Calves were firm at full prices; lambs also were firm, and pigs steady.

HAY.

Tuesday's Whitechapel report states that trade was very dull, and straw depressed in value. Quotations:—Clover, first quality, 100*s.* to 145*s.*; inferior, 75*s.* to 90*s.*; new ditto, 90*s.* to 110*s.*; hay, first quality, 100*s.* to 128*s.*; inferior, 55*s.* to 90*s.*; new, 70*s.* to 95*s.*; and straw, 30*s.* to 60*s.* per load.—Thursday's supply was rather large, and trade was dull, except for best stuff, prices for which remained firm.—Cumberland Market quotations:—Superior old meadow hay, 126*s.* to 135*s.*; inferior, 90*s.* to 105*s.*; new hay, 70*s.* to 110*s.*; superior old Clover, 135*s.* to 147*s.*; inferior, 90*s.* to 120*s.*; new, 90*s.* to 110*s.*; and straw, 58*s.* to 65*s.* per load.

POTATOS.

The Borough and Spitalfields Markets reports state that supplies are moderate and meet a slow sale. Quotations:—Kent Regents, 80*s.* to 90*s.*; ditto, kidneys, 100*s.* to 120*s.*; Essex Regents, 70*s.* to 80*s.*; ditto, kidneys, 90*s.* to 100*s.*; Magnum Bonums, 100*s.* to 110*s.* per ton.—There were no imports into London last week.

COCOA-NUT FIBRE REFUSE, by Chubb's Patent Process, as supplied to all the Royal Gardens and principal Nurseries of Europe; useful at all seasons. Invaluable for Potting, Plunging, Forcing, Ferneries, Strawberries, Bedding-out Plants, &c.; Destroys all Slugs and Insects.

JULY 1, 1882.—In consequence of the great scarcity of husks and enormous Continental demand for our "Refuse," we are compelled from this date to advance prices as follows, and only Orders accompanied by remittance will receive attention (in rotation). We also find it necessary to caution purchasers to beware of spurious imitations and buy the genuine "Refuse" direct. Sacks, 1*s.* 6*d.* each; 10 Sacks, 13*s.*; 15 Sacks, 18*s.*; 20 Sacks, 23*s.*; 30 Sacks, 30*s.* (all Sacks included); Truck-load, free on rail, £2. Limited quantities of P.M. *Special Quality*, granulated, in sacks only, 2*s.* 6*d.* each (2 prize medals), valuable for potting and use in conservatory. Terms strictly cash with order.—To obtain the genuine article, buy direct from the Manufacturers, CHUBB, ROUND AND CO., Fibre Works, West Ferry Road, Millwall, London, E.

LOAM, splendid Yellow Fibrous, 15*s.* 6*d.* per ton. Useful Brown PEAT, 22*s.* per ton, free to Bricklayers' Arms, S. E. R. Fine ORCHID PEAT, as supplied to the principal Orchid Growers. Prices on application.
A. FOULON, 32, St. Mary Axe, E.C.

12-oz. Sample Packets, free by post, 12 stamps.
FIBROUS PEAT for ORCHIDS, &c.—BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6*s.* per truck. BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, 15*s.* per ton per truck. Sample bag, 5*s.*; 5 bags, 22*s.* 6*d.*; 10 bags, 45*s.* Bags included. Fresh SPHAGNUM, 10*s.* 6*d.* per bag.
SILVER SAND, Coarse or Fine, 52*s.* per truck of 4 tons. Red Sandstone ROCKWORK, £5 per truck of 4 tons. GRAVEL, good colour, 25*s.* per truck of 6 tons.
WALKER AND CO., Farnborough Station, Hants.

Thomson's Vine and Plant Manure.
Manufactured and Sold by
THE LIVERPOOL HORTICULTURAL COMPANY
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This is the Manure used to produce the splendid Grapes grown at the Tweed Vineyard, Clovenfords.
Full particulars on application. The Trade supplied.
All Letters to be addressed to THE MANAGER, The Vineyard and Nursery, Garston, near Liverpool.

WASP DESTROYER.—Davis' Improved will Destroy Wasps, Flies, &c., and Clear Vineries, Houses, and Fruit Trees of these Pests in a short time. Post-free 1*s.* 9*d.* and 2*s.* 10*d.* per Bottle. Securely packed.
B. R. DAVIS, Yeovil Nurseries, Yeovil, Somerset.

GISHURST COMPOUND.—Used by many of the leading Gardeners, since 1859, against Red-spider, Mildew, Thrips, Greenfly, and other Blight, in solutions of from 1 to 2 oz. to the gallon of soft water, and of from 4 to 16 oz. as a winter dressing for Vines and Fruit Trees. Has outlived many preparations intended to supersede it. In Boxes, 1*s.*, 3*s.*, & 10*s.* 6*d.*

AMERICAN BLIGHT on APPLE TREES CURED by rubbing a wet hard Painter's brush on Gishurst Compound, and working the lather into the infected part.

GISHURSTINE keeps feet dry, softens hard boots, preserves leather, takes a polish. In boxes, 6*d.* and 1*s.* each.—Wholesale by PRICE'S PATENT CANDLE COMPANY (Limited). Retail by Seedsmen and Oilmen. Complaints are made of difficulty in getting Gishurstine. Some leading Nurserymen have put it on their lists, others are requested to do so.

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PURCHASERS of HORTICULTURAL SUNDRIES for AUTUMN STOCK are especially invited to inspect our Show Rooms, which are now complete, with every novelty and necessary article required in a Seed or Nursery Business.
Our new CATALOGUE sent gratis on application.
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Horticultural Sundries Merchants and Manufacturers,
18, FINSBURY STREET, LONDON, E.C.; and SHAD THAMES, LONDON, S.E.

ARCHANGEL and PETERSBURG MAT MERCHANTS and IMPORTERS.—All the usual kinds at reduced rates. Sacks and Seed Bags, new and second-hand, of every description. Raffia Fibre, Netting and Tiffany, Tarpaulins, Rick-covers, Horse-cloths, Ropes, Lines, and Twines. Price LIST on application to J. BLACKBURN AND SONS, 4 and 5, Wormwood Street, London, E.C.

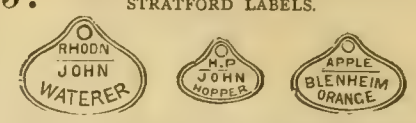
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The best and most durable are those made from extra all long Flax Sail Cloth. A quantity in stock, for sale or hire.
SHADING CANVAS, from 2½*d.* per yard, and upwards.
TANNED NETTING, from 1 to 4 yards wide, 1*d.* per sq. yard.
RUSSIA MATS. RAFFIA FIBRE.
BEST ROLL TOBACCO PAPER.
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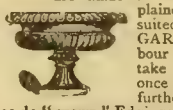


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Samples and Price Lists free.
J. SMITH, The Royal Label Factory, Stratford-on-Avon.

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GARDEN VASES, FOUNTAINS, &c., in Artificial Stone, very durable and of superior finish, and in great variety of design.
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Agents for LOOKER'S PATENT "ACME FRAMES," PLANT COVERS, and PROPAGATING BOXES; also for FOXLEY'S PATENT BEADED GARDEN WALL BRICKS.
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ORNAMENTAL PAVING TILES, for Conservatories, Halls, Corridors, Balconies, &c., from 3*s.* per square yard upwards. Pattern Sheet of Plain or more elaborate Designs, with Prices, sent for selection.
WHITE GLAZED TILES, for Lining Walls of Dairies, Larders, Kitchen Ranges, Baths, &c. Grooved and other Stable Paving of great durability, Wall Copings, Drain Pipes and Tiles of all kinds. Roofing Tiles in great variety, Slates, Cement, &c.
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KENT PEATS or LOAM supplied at lowest rates in any quantities.
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B. & Son have always a large stock in London of 20-in. by 12-in., 20-in. by 14-in., 20-in. by 16-in., 20-in. by 18-in., in 16-oz. and 21-oz.; and also large sizes in all qualities for cutting-up purposes, in 200-ft. and 300-ft. cases.

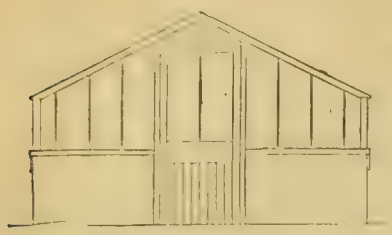
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21 oz. Foreign, of the following sizes, in boxes of 100 and 200 feet, 3ds and 4ths qualities always kept in stock:—

14×12	20×12	20×14	20×16	20×18
16×12	16×14	20×15	22×16	22×18
18×12	18×14	18×16	24×16	24×18

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PLATE, SHEET, CROWN GLASS.
Horticultural and all kinds of Glass having so much advanced, we are compelled to withdraw our prices, but on receipt of application the prices will be forwarded, but will be only from day to day until the market is in a more settled state. We have some bargains in 21-ounce, from 9×7 to 14×10 and upwards; sizes sent if required. Propagating Glasses, Hand Frames, Cucumber and Horticultural Glass, genuine White Lead, best Linseed Oil Putty, Paints, Oils, and Colours.

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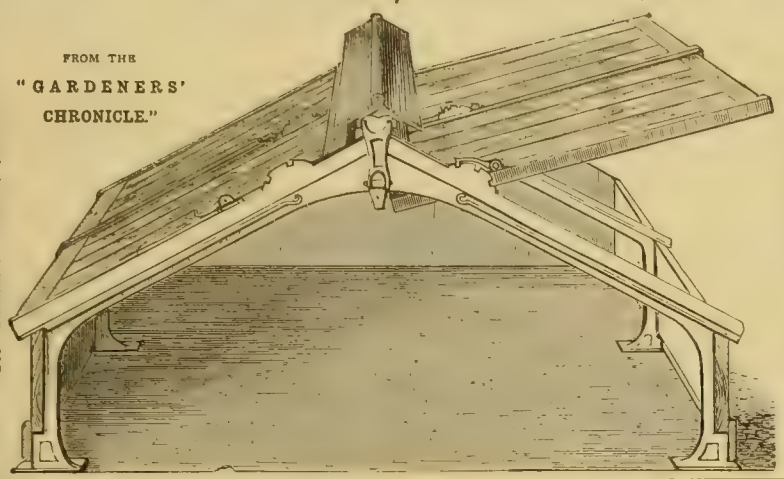
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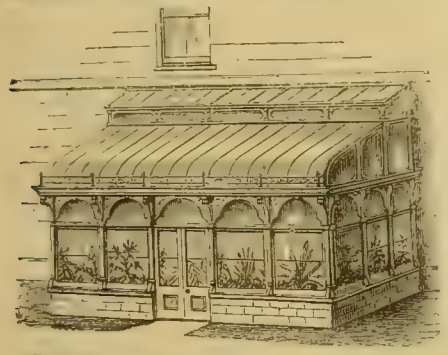
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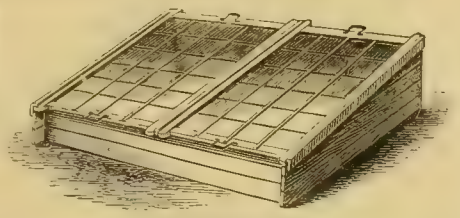
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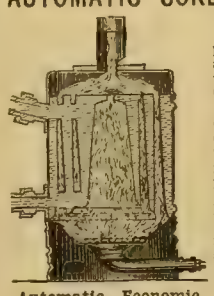
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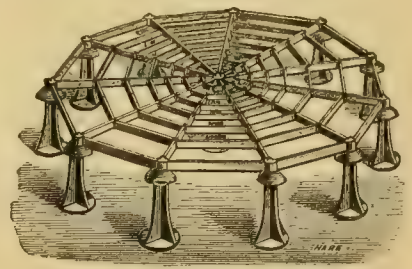
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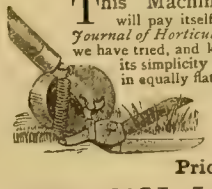
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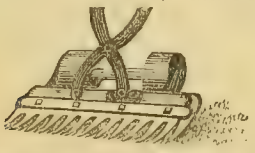
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ADVANTAGES.
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Are very Damp Proof
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WANTED, a HEAD WORKING GARDENER, to take entire Charge, with the exception of the Orchid-houses. Cottage, fuel, and vegetable found.—Apply, by letter, stating reference, salary required, &c., A. J. HOLLINGTON. Forty Hill, Enfield.

WANTED, a GARDENER, thoroughly understanding his business in all its branches—married, no family, preferred. Wife a good Laundress; place small, good house in the garden; help given.—W., Mr. W. H. Milnes, Bookseller, Wakefield.

WANTED, a SINGLE-HANDED GARDENER, young and sober. To live on the premises, and the wife to assist in the house during the summer months. No children.—Apply at 144, Fulham Road, S.W.

Under Gardener.

WANTED, a married MAN, without family, to live in lodge; Wife to attend to Gate.—Apply, stating age, wages required, and references, to W. E., Mr. James Lea, Bromsgrove.

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WANTED, a thoroughly practical man as PROPAGATOR and GROWER for Market. None need apply unless experienced in the London Trade. — F. BAKER, Plumstead Nursery, Kent.

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THE LIVERPOOL HORTICULTURAL CO. (JOHN COWAN), Limited, are in WANT of a MAN in the above capacity, who must be a thoroughly competent Accountant, and capable of Superintending all Office Work. Salary, £150 per annum.—Apply, giving references, to the MANAGER, The Vineyard and Nurseries, Garston, near Liverpool.

WANTED, a CLERK and SHOPMAN.—KELWAY AND SON, Langport.

WANTED, an energetic SHOPMAN—one who has a thorough knowledge of the Trade. Permanent situation to a really competent man.—Full particulars to ALPHA, Messrs. Nutting & Sons, 60, Barbican, London, E.C.

WANTED, a SHOPMAN, for Seed Business in North of England. Apply, with full particulars, to J. M., Messrs. Hurst & Son, 152, Houndsditch, London.

WANTED, a SHOPMAN, who knows the Seed Trade, to take charge of a Provincial Seed Business.—Apply, by letter only, stating salary required and with references to former employers, to HOWCROFT AND WATKINS, Seedsmen, Covent Garden, W.C.

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WANTED, an experienced man as SHOPMAN, also to assist in Travelling in the neighbourhood of Nottingham. Unexceptional references required.—Apply, stating full particulars to FRANK YATES, Seedsman, 22, Pelham Street, Nottingham.

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LITTLE AND BALLANTYNE, NURSERYMEN, Carlisle, have exceptional opportunities for assisting Noblemen and Gentlemen in securing the services of first-class GARDENERS, UNDER GARDENERS, BAILIFFS and FORESTERS. They have at present several very excellent men on their Register, and will be glad to send particulars of them to any in want of such.

B. S. WILLIAMS begs to intimate that he has at present in the Nursery and upon his Register some excellent Men, competent either to fill the situation of HEAD GARDENER, BAILIFF, FOREMAN, or JOURNEYMAN. Ladies and Gentlemen requiring any of the above will please send full particulars, when the best selections for the different capacities will be made.—Holloway, N.

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E. G. HENDERSON AND SON have always in their employ a number of selected men of tested ability and good character waiting re-engagements as HEAD GARDENERS, GARDENERS and BAILIFFS, FOREMEN, and JOURNEYMEN, of various qualifications, to suit any requirement, and would be pleased to send full particulars to any Nobleman or Gentleman requiring such.—Pine-apple Nursery, Maida Vale, W.

THE LIVERPOOL HORTICULTURAL COMPANY (John Cowan), Limited, are in a position to recommend an exceptionally good man as GARDENER, or STEWARD and GARDENER, to any Nobleman or Gentleman requiring such.—Address the MANAGER, Vineyard and Nurseries, Garston, near Liverpool.

GARDENER (HEAD), to any Lady or Gentleman requiring a practical and trustworthy man.—S. PUTNEY, Esq., will be pleased to recommend his present Head Gardener—THOMAS WOOD, The Woodlands, Reigate.

GARDENER (HEAD); age 29, married.—Five years' thorough experience in all branches of the profession, Early and Late Forcing. Good character.—F. SOUTHCOTT, Bury Cross, Lapford, North Devon.

GARDENER (HEAD); age 45, married, one child (5 years).—A GENTLEMAN wishes to recommend his Head Gardener—an exceptionally hard working man, of good character, and with a thorough knowledge of the profession.—C. J. HAGAN, Esq., Bucknall, Watford.

GARDENER (HEAD).—WILLIAM IRELAND can with confidence recommend a trustworthy man as above; fourteen years with Sir G. S. Stucley, Bart., in Hampshire, and at Moreton House, Devon.—Apply, in first instance, to W. I., Pilton Nurseries, Barnstaple.

GARDENER (HEAD).—Aged 27, married, one child; seven and a half years' experience, two years as Head Gardener. Satisfactory reason for leaving. Can manage Kitchen and Flower Garden, Stove and Greenhouse Plants. Town or country.—L. S., 79, High Street, Fulham, S.W.

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GARDENER (HEAD). — A GENTLEMAN desires to recommend a first-class Man, who is in every way competent to give satisfaction where Fruit, Flowers, and Vegetables are wanted in perfection. Has been used to the Management of Large Gardens and carrying out Extensive Ground-work Alterations.—SYDNEY C. AUSTIN, Esq., Lingfield, Surrey.

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GARDENER (HEAD).—MORTON SPARKE, Esq., Charlwood House, Huyton, Liverpool, can with the utmost confidence recommend his Head Gardener, William Sherwin, in the above capacity, as possessing a thorough practical knowledge of the profession in all its branches. He will be especially recommended as an Orchid Grower, and will receive from his employer the highest testimonials, not only as regards his professional knowledge, but also as to his integrity and uprightness of character.—WM. SHERWIN, Charlwood House, Huyton, Liverpool.

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GARDENER (HEAD WORKING).—Age 29, married, one child; understands Fruit and Plant Growing, Flower and Kitchen Gardening. Three years' good character.—B. S., Sandridge, Melksham, Wilts.

GARDENER (HEAD WORKING), where one or two are kept.—Thoroughly practical; eight years' character from present situation, which will bear strict investigation.—F. P., Boyton Manor Gardens, Codford, Wilts.

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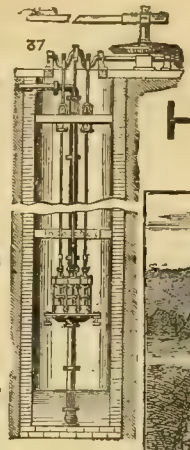
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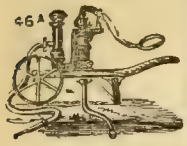
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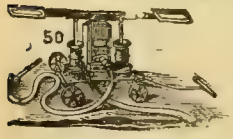
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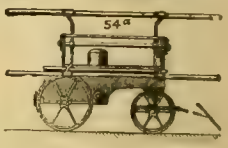










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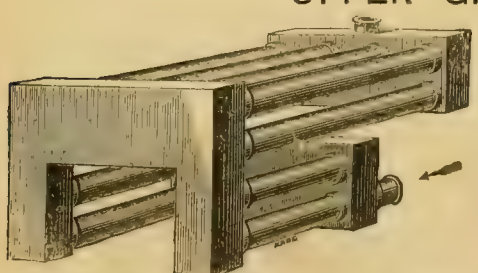
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THE

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C. VUYLSTEKE, NURSERYMAN, Loochristi, near Ghent, Belgium. Wholesale CATALOGUE may be had free of Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, London, E.C. N.B. Plants grown specially for English Trade.

NEW DOUBLE GLOXINIA, Red and White. 1 Plant or Bulb, 10s.; 12 Plants or Bulbs, £5. GEORG YUNG, 5, Geleitstrasse, Offenbach-o-M., Germany.

DOUBLE PRIMULAS.—Strong, in large 60's, 45s. per 100. Also BOUVARDIAS, of sort, strong, ready for shifting, 20s. per 100. Cash. ROBERTS BROTHERS AND ARNOLD, East Grinstead.

CREEPERS for WALLS, TRELLISES, &c., in great variety. See Descriptive LIST. Most of these plants being in pots, may be moved now. RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Important to Nurserymen.

TRUE NATIVE SCOTCH FIR.—Orders are now being booked for fine 2-year seedlings, at the lowest figure ever quoted. Post samples and price free on application. W. WISEMAN, The Nurseries, Cawdor Road, Nairn.

A Special Cheap Offer of

HARDY PLANTS will be found enclosed in my new A B C BULB GUIDE for 1882. Free on application. THOMAS S. WARE, Hale Farm Nurseries, Tottenham, London.

CAULIFLOWER, BRUSSELS SPROUT PLANTS. VEITCH'S AUTUMN GIANT, 3s. 6d. per 1000. BRUSSELS SPROUTS, 3s. per 1000. Packages 3d. per 1000 extra. Order of R. BATH, Crayford; or J. BATH, 34, Wellington Street, Covent Garden, W.C.

SALES BY AUCTION.

Dutch Bulbs.—Special Trade Sale.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Mart, Tokenhouse Yard, City, E.C., on MONDAY, August 21, at half-past 11 o'Clock, an extensive consignment of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from Holland, specially selected and lotted to suit the Trade and other large buyers.

Catalogues at the Mart and 8, New Broad Street, E.C.

George Lane, Woodford, close to Station.

CLEARANCE SALE.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. P. K. Fripp (who has sold the business) to SELL by AUCTION, on the Premises, The Nursery, Tavistock Road, George Lane, on THURSDAY, August 24, at 12 o'Clock, without reserve, about 15,000 GREENHOUSE PLANTS, including 1500 Genistas, 2000 Callas, 3000 Chrysanthemums, 2000 Hydrangeas (Thomas Hogg), 2000 Solanums, GARDEN IMPLEMENTS and Effects.

Catalogues had on the Premises, and of the Auctioneers, 8, New Broad Street, E.C.

Tottenham, N.—Annual Sale.

MESSRS. PROTHEROE AND MORRIS beg to announce that they have received instructions from Mr. John Maller to hold his ANNUAL SALE of WINTER BLOOMING HEATHS and other PLANTS on THURSDAY, September 21.

The Stock is in remarkably fine condition, and an inspection is solicited.

Preliminary Notice.

By order of the Executors of Mr. R. N. Osborn, deceased.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from the Executors to SELL by AUCTION, at the Mart, Tokenhouse Yard, City, E.C., on THURSDAY, October 5, the following properties:—

FULHAM.—An attractive FREEHOLD BUILDING ESTATE, situate in Munster Road, Fulham, frontages of 3274 ft. to proposed new roads, and containing a total area of 4 a. 0 r. 11 p.; also the detached brick-built Residence and Conservatory attached.

SUNBURY.—The productive FREEHOLD ESTATE known as Osborn's Old Nursery, containing 17 a. 0 r. 11 p., together with the Goodwill of the Nursery and Seed Business, established for so many years, and enjoying a world-wide reputation. There is also a detached eight-roomed House, thirteen newly-erected Greenhouses, heated upon the most improved principles, Pits, Sheds, Stabling, and other Out-buildings. The property could be profitably utilised for building purposes, without interfering with the remainder of the land for carrying on the present business.

HAMPTON (ten minutes' walk from Fulwell Station).—A compact FREEHOLD ESTATE known as Osborn's Nursery, Broad Lane, Hampton, containing an area of 5 acres. It is now cultivated and cropped with Fruit Trees and other nursery stock, but is also adapted for building purposes.

Particulars and plans of the several estates are in course of preparation, and may be had on application of Messrs. WALKER, BELWARD, AND WHITFIELD, Solicitors, 5, Southampton Street, Bloomsbury, W.C., or of the Auctioneers and Surveyors, 8, New Broad Street, E.C., and Leytonstone.

N.B. Messrs. P. & M. would urge the Trade and others to make an early inspection of the thriving young Nursery Stock growing at Sunbury and Hampton. The Evergreens and Fruit Trees, as well as the Roses (which are now in bloom), for careful selection of sorts, and luxuriance of growth, cannot be surpassed. The whole will be sold by Auction, unless the purchasers of the Freehold Estate agree to take the Stock at a valuation.

Lee, Kent.

PRELIMINARY NOTICE.

MESSRS. PROTHEROE AND MORRIS are instructed by

Mr. BENJAMIN MALLER

to conduct his ANNUAL SALE of ERICAS, &c., on the Premises as above, on TUESDAY, September 19, 1882.

8, New Broad Street, E.C.

Bulbs from Holland.—Trade Sales.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on SATURDAY, August 19, WEDNESDAY, August 23, and SATURDAY, August 26, at half-past 12 o'Clock precisely each day, consignments of first-class DUTCH BULBS, comprising Double and Single Hyacinths, Tulips, Crocuses, Narcissus, Snowdrops, and other BULBS, just received from well-known farms in Holland, and lotted to suit the Trade and private buyers.

On view mornings of Sale and Catalogues had.

Wednesday Next.

PHALÆNOPSIS VIOLACEA, var. SCHRŒDERI, PHALÆNOPSIS VIOLACEA, CATTLEYA VELUTINA, LÆLIA PURPURATA.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, August 23, at half-past 12 o'Clock precisely, by order of Messrs. Hugh Low & Co., fine imported plants in splendid condition of PHALÆNOPSIS VIOLACEA, from an entirely different locality to that whence supplies have usually been derived; LÆLIA PURPURATA, grand masses just received by R.M.S. *Tagus*; ZYGOPETALUM GAUTIERI, ODONTOGLOSSUM GRANDE, LYCASTE SKINNERI, ODONTOGLOSSUM ALEXANDRÆ, very fine pieces. At the same time will be offered a good plant in flower of the new and lovely PHALÆNOPSIS VIOLACEA var. SCHRŒDERI; the rare CATTLEYA VELUTINA, and other choice ORCHIDS.

On view morning of Sale, and Catalogues had.

Thursday Next.

ODONTOGLOSSUM MIRANDUM.

MR. J. C. STEVENS has been instructed by Mr. F. Sander to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, August 24, at half-past 12 o'Clock precisely, a splendid importation of ODONTOGLOSSUM MIRANDUM. It is extremely rare, very handsome, and well worthy of a place in all collections; very few plants are as yet in Europe, but it was flowered in January last, and described in the *Gardeners' Chronicle* on page 82 for the current year. Also will be offered a consignment in superb condition of CATTLEYA ELDORADO SPLENDENS, the plants of which are full of perfectly green leaves and unbroken eyes; together with ONCIDIUM LANCEANUM, grand plants; CATTLEYA SUPERBA SPENDENS, ODONTOGLOSSUM PULCHELLUM, PILUMNA FRAGRANS, ODONTOGLOSSUM ALEXANDRÆ, St. Albans varieties, &c.

May be viewed morning of Sale, and Catalogues had.

Thursday Next.—From Bogota.

24 cases of ODONTOGLOSSUMS and CATTLEVAS received direct.

MR. J. C. STEVENS will include in his SALE by AUCTION, on THURSDAY, August 24, 24 cases of ODONTOGLOSSUM ALEXANDRÆ and varieties, CATTLEYA MENDELII, &c., in fine condition.

On view morning of Sale and Catalogues had.

Auction Rooms, and Offices 38, King Street, Covent Garden.

Highly Important Sale of Orchids.

MESSRS. SMITH AND DEWAR, 79, George Street, Edinburgh, beg to intimate that they have been instructed to SELL by AUCTION, on THURSDAY, September 14, at 12 o'Clock noon, a very valuable lot of SPECIMEN ORCHIDS, the property of Alex. Paterson, Esq., M.D., Bridge of Allan, whose houses are getting too crowded, and is thus compelled to sell some of his larger specimens to make room. The plants offered are in perfect health, and are worth the attention of all Orchid buyers. They consist of specimen Vandas of the best varieties of tricolor and suavis, Cattleya Warneri, with 79 bulbs and nearly 30 inches across; Cattleya labiata, true Cattleya Trianæ Symei, Cattleya Mendelii, "Boyd's var.;" Aërides suavissimum, original var.; A. Reichenbachii, Chysis bractescens, largest known plant; a splendid Anthurium Scherzerianum, Veitch's var., nearly 15 feet in circumference, &c.

There will also be SOLD, same day and place, a very valuable consignment of ORCHIDS, the property of Mr. Sander, St. Alban's, consisting of Cypripedium Spicerianum, Cattleya Sanderiana, a lot of very rare Masdevallias, such as M. Macrura, M. Winniana, M. Roezlii, &c. Catalogues will be issued shortly, and any one omitted can have one sent by applying to Mr. WM. THOMSON, Jun., Clovenfords, by Galashiels, N.B., who has charge of the sale, and who will also be glad to execute commissions for any one who is unable to attend.

To Nurserymen, Seedsmen, and Florists.

TO BE SOLD, by Trustees, the BUSINESS, PLANT, STOCK in TRADE, DEBTS, and EFFECTS, of an old-established Nurseryman, Seedsman, and Florist, at Bradford, Yorkshire.

Apply to Mr. CHARLES BUTCHER, Solicitor, 156, Cheapside, London, E.C.

To Gardeners and Florists.

TO LET, about 1¼ Acre of GROUND, situated in one of the best parts of Lewisham, and admirably suited for the above, at the nominal Rental of £7 per annum.

For further particulars address, W. H. L., care of Hartrop, Stationer, 105, High Street, Lewisham, S.E.

To Market Gardeners, Florists, and Fruiterers.

TO BE LET, by Tender, the GARDENS of a park of 30 acres, situate at Sunbury-on-Thames, including range of Greenhouses and Forcing-houses, an extensive Vinery, Wall Fruit, Orchard, and Kitchen Garden, the whole forming the gardens of a mansion at present unoccupied. Or the gardens would be let with the park-land for grazing, or in any other manner to suit the convenience of tenant. The owner does not bind himself to accept the highest or any other tender.

Apply to WALTER SNELL, Surveyor, 2, Southampton Street, Bloomsbury, W.C.

Nursery Gardens, Truro, Cornwall.

TO BE LET, for a Term from Michaelmas next, all those old-established Nursery Gardens known as Treseder's Nurseries, situated within the Borough of Truro, late in the occupation of Mr. H. C. Browne, containing in the whole 7½ acres of land. There is a good cottage on the premises, and a large walled garden, together with Greenhouses, Forcing Pit, and Potting Sheds. The gardens are well sheltered, and have a good aspect; and the soil is of excellent quality for nursery purposes.

To view, apply to Mr. MITCHELL on the premises, and for Terms of Letting and all further particulars to Mr. REGINALD C. GLANVILLE, 80, Lemon Street, Truro.

DESIGNS Made and Works EXECUTED

In the Arrangement of TERRACES, CONSERVATORIES, FLORAL CORRIDORS, ROOF GARDENS on uninteresting Lead Flats, &c., formed with substantial PULHAMITE KERB for the FLOWER BORDERS, JARDINIERE, &c., in TERRA-COTTA or ARTIFICIAL STONE of various colours.

BALUSTRADES, VASES, PEDESTALS, FIGURES, FOUNTAINS, CONSERVATORY and WINDOW BOXES in great variety, suitable for any style of House.

Various Specimens of KERB or EDGING, PULHAMITE PERMANENT GRAVEL PATHING for GARDEN, TERRACE and other WALKS and FLOORS, to be seen at the Horticultural Company's, Regent Street, W.; at The Orchard, Philip Lane, Tottenham; and at our Brixton Depot there is the greatest variety of the above to be seen. DURABILITY GUARANTEED.

A Photographic Book of over 200 Illustrations, with Sizes and Prices, sent for Inspection on receipt of twelve stamps.

Address—

PULHAM & SON, The Works, Broxbourne.

(Established in 1837.)

To Landscape Gardeners.

THE MATLOCK BATH PAVILION AND GARDENS CO. (Limited) are desirous of RECEIVING DESIGNS for LAYING OUT about 9 Acres of LAND in Terraces, Lawns, Tennis Courts, Bowling Greens, Grottos, &c., for which the following Premiums will be given—viz., for the Best Design, selected by the Directors, £25; for the Second Best Design, £15. Such premiated designs to become the property of the Company, and, if thought proper, to be used by the Company; but the Company do not bind themselves to employ the authors of such designs.

DESIGNS to be sent in to the Secretary under Motto, with sealed envelope marked by the same motto, containing author's name and address, by September 25, 1882.

PLANS OF SURVEY, scale 40 feet to an inch, levels, and all particulars, may be had on application to Mr. J. NUTTALL, Surveyor, Matlock Bridge.—By order,

GEO. J. ROWLAND, Secretary.

Dovedale House, Matlock Bath, Derbyshire.

PROTHEROE AND MORRIS, HORTICULTURAL, MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 8, New Broad Street, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

GILBERT'S CHOU DE BURGHLEY.

To make Advertisements attractive, so that the Public appreciates them, the beaten track should be abandoned, and sprightly sentences only should appear.

A Specimen:—"Unquestionably the Best New Vegetable introduced of late years."—EDITOR, *Gardeners' Chronicle*, July 22, 1882.

2s. 6d. per ¼ oz. Packets. Trade supplied liberally.

Apply, R. GILBERT, Stamford.

To the Trade only.

E. H. KRELAGE AND SON, NURSERYMEN, SEEDSMEN, and FLORISTS, Haarlem, Holland. The Wholesale CATALOGUE (No. 358A) of Dutch Flower Roots and Miscellaneous Bulbous and Tuberous-rooted Plants for 1882-83 is now ready, and may be had free on prepaid application, by Nurserymen, Florists and Seedsmen.

EARLY WHITE ROMAN HYACINTHS.—Just arrived in splendid condition. Price per doz., 100, or 1000, on application to

SAMUEL HAY, Seedsman, Leeds.

DUTCH BULBS.

DIRECT FROM THE GROWERS.

ANT. ROOZEN AND SON, NURSERYMEN, Overveen, near Haarlem, Holland.

Before ordering Dutch Bulbs, read ANT. ROOZEN AND SON'S CATALOGUE for 1882, which their Agents, Messrs. MERTENS AND CO., 5, Billiter Square, London, E.C., will forward post-free on application.

TEN THOUSAND ROSES IN POTS.

On own roots and Seedling Briers.

TEA, NOISETTE, CHINA, and HYBRID TEAS, a select LIST of the leading varieties.

5-inch pots (1st selection), fine, bushy, 1½, 2 to 2½ feet.
5-inch pots (2d selection), fine, bushy, 1, 1½ to 2 feet.
7-inch pots, suitable for forcing.

CLIMBING ROSES, 5 to 7 inch pots, 4, 5, 6 to 8 feet.

Second to none in quality.

GEO. JACKMAN AND SON, Woking Nursery, Surrey.

SPECIAL OFFER OF PLANTS.

ACACIA LOPHANTHA, in 54-pots, 3s. per dozen.
GREVILLEA ROBUSTA, in 48-pots, 6s. per dozen.
" in 60-pots, 20s. per 100.
BEGONIA PEARCII, in 60-pots, 20s. per 100.
CYPERUS ALTERNIFOLIUS, in 60-pots, 20s. per 100.
" in 48-pots, 4s. per dozen.
PRIMULA SINENSIS FIMBRIATA, red and white, in thumb-pots, 12s. per 100.
CHRYSANTHEMUMS, leading sorts, in 54-pots, 3s. per doz.
THOMAS PERKINS AND SONS, 34, Drapery, Northampton.

NEW GOLDEN BEDDING PANSY, KING OF YELLOWS — the largest, freest, and brightest of all golden-yellow Pansies; strong plants, 1s. each, 9s. per dozen.

PANSY THOS. GRANGER, rich glowing Crimson, 5s. per dozen.

PANSY SUNBURST, fine Red, 16s. per 100, 3s. per dozen.

Fine collection of all leading sorts.

RODGER, McCLELLAND AND CO., Nurserymen, &c., Newry.

SPIRÆAS for Forcing:—

JAPONICA, strong clumps.
PALMATA, "
PALMATA ELEGANS, strong clumps.
IRIS KÆMPFERI, named varieties.
PRIMROSES, double, yellow, strong.

Price on application. Carriage-free to Rotterdam.

G. T. ALBERTS AND CO., Boskoop, Holland.

The New Zonals and Fuchsias of 1881-2.

RICHARD PANNETT, NURSERYMAN, Crawley, Sussex, will send 1 doz. of each, in good plants, for 12s.; ditto of 1880 for 7s.

Cuttings, to include new sorts of 1880 and older, 10s. per 100 varieties.

Descriptive CATALOGUES of the best in cultivation post-free on application.

SIX HUNDRED GARNATION, SOUVENIR DE LA MALMAISON, strong, for early flowering, price per 100 on application.

A. COTEMAN, 35, New Square, Cambridge.

Hyacinths, Tulips, &c.

BUDDENBORG BROTHERS, BULB GROWERS, House Bloemswaard, Hillegom, near Haarlem, Holland. Wholesale CATALOGUE now ready, and will be sent, post-free, on application.

STRAWBERRIES.—Strong roots for present planting and for fruiting next year, 4s. per 100. Descriptive LIST and price for plants in pots for forcing on application.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Strawberry Plants.—In consequence of

H. CANNELL AND SONS being located in the midst of hundreds of acres of the above (runners are this year unusually fine and early), they would be pleased to quote price for any quantity and any sorts.

Swanley, Kent.

STRAWBERRIES.—Strong healthy PLANTS from Ground, also in pots, are now ready. Descriptive and Priced List of all the best kinds will be sent post-free on application.

THOMAS RIVERS AND SON, Sawbridgeworth, Herts.

STRAWBERRY RUNNERS.—Strong, healthy, and well-rooted, from all the best market varieties. Sample and Price LIST post-free. Manual on Strawberry Culture, 6d.

W. LOVEL AND SON, Strawberry Growers, Driffield.

A Cheap Offer of

MISCELLANEOUS HARDY BULBS will be found on page 23 of my A B C BULB GUIDE. Free on application.
THOMAS S. WARE, Hale Farm Nursery, Tottenham, London.

Novelty.
GRAND NEW BEDDING PLANT.
First-class Certificate Leeds Horticultural Society.

LOBELIA "ANDREW HOLMES."
By far the best dark blue. See Advertisements in June numbers of *Gardeners' Chronicle*. Price, 1*s*. each, 9*s*. per doz., 60*s*. per 100. The usual discount to the Trade.
GEORGE HOLMES, Florist, York.

Bulbs - Bulbs—Bulbs.

SEGERS AND CO., BULB GROWERS, Lisse, near Haarlem, Holland, are now booking orders for Dutch Bulbs of every description. Samples may be had from yellow Crocus, Scillas, Snowdrops, Tulips, &c., free by post.
CATALOGUES may be had free on application. No Auction Sales or Retail Trade supplied, but the Wholesale only.
☞ Please observe name and address.

Tuberous Begonias.

JOHN LAING AND CO.'S Gold Medal Collection is unrivalled. They have now in cultivation 100,000 Begonias, which present to the public an unprecedented floral display of single and double flowers. A visit is solicited (Catford Bridge Station, South-Eastern Railway).
Prices, 12*s*. to 60*s*. per dozen.
CATALOGUES on application. Address
JOHN LAING AND CO., Forest Hill, S.E.

UNSURPASSED SEEDS for present sowing of the choicest kinds of CABBAGES, ONIONS, CAULIFLOWERS, &c., at moderate prices.
See Descriptive LIST free on application.
RICHARD SMITH AND CO., Seed Merchants and Nurserymen, Worcester.

B. MALLER begs to offer a large stock of the following:—ERICA HYEMALIS and other varieties; EPACRIS, GENISTAS, AZALEAS, CYCLAMEN, BOUVARDIAS, SOLANUMS, ADIANTUM CUNEATUM and other FERNS, FICUS ELASTICA, GREVILLEAS, VINES in pots, &c., all in splendid condition. A finer lot of plants were never offered in the trade. An inspection is invited.
Trade CATALOGUE forwarded on application.
The ANNUAL SALE by AUCTION will be held in September.
Burnt Ash Lane Nurseries, Lee, S.E.

NEW ROSES of 1882, in pots.—Vendors' Selection, 30*s*. per dozen; Purchaser's, 36*s*. per dozen. The above comprise all the best English and French raised Hybrid Perpetuals, Perpetual Polyantha, Teas, Hybrid Teas, and Perpetual Moss.

ROSES of 1881, of above-named classes, 18*s*. to 24*s*. per dozen, in pots.

CHOICE ROSES.—Tea-scented, Hybrid Tea, Noisette, China, and Bourbon, 18*s*. to 24*s*. per dozen, strong plants in pots.
Descriptive LIST on application.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

EARLY WHITE ROMAN HYACINTHS.
DOUBLE ROMAN and PAPER WHITE NARCISSUS.

JAMES VEITCH & SONS
BEG TO ANNOUNCE THAT THEY HAVE RECEIVED THEIR USUAL CONSIGNMENTS OF
THE ABOVE VALUABLE BULBS FOR EARLY FORCING,
and will be pleased to receive Orders for immediate delivery.
BULB CATALOGUE for 1882, *Illustrated with upwards of* 60 *Woodcuts, is now ready, and will be forwarded post-free on application.*
ROYAL EXOTIC NURSERY, KING'S ROAD, CHELSEA, LONDON, S.W.

SPECIAL CULTURE OF FRUIT TREES AND ROSES.

MESSRS. RIVERS & SON
Beg to invite all those interested in the above to visit their Nurseries.
The Orchard Houses are full of Fruit this season, as usual, and contain many interesting sorts of Peaches and Nectarines.
A large Collection of all the best varieties of Roses on bloom.
☞ *The Nurseries are situate about one mile from the Harlow and Sawbridgeworth Stations, Great Eastern Railway (Cambridge Line).*
SAWBRIDGEWORTH, HERTS.

JAMES GRAY,
HORTICULTURAL BUILDER AND HOT-WATER APPARATUS MANUFACTURER,
30 and 31, Danvers Street, Paulton Square, Chelsea, London, S.W.
Plans and Estimates given for Horticultural Buildings of every description, in Wood or Iron.
Heating by Hot-water on the Most Improved Principles, &c.
A Book of Designs of Conservatories, Greenhouses, &c., and Priced Lists of GRAY'S OVAL TUBULAR BOILER, Stevens' Trentham Improved Cornish Boiler, and Miss Malling's Patent Indoor Plant Cases forwarded, post-free, on application.
Other descriptions of Boilers, including the most improved forms of Saddle Boilers, and Hot-water Pipes and Castings in great variety, always kept in stock.
Ventilating Apparatus of all kinds, Shading, Blinds, and Wiring for Conservatories, &c., supplied and fixed. Garden Boxes and Frames made to order.
Tenders given for Heating Mansions, Warehouses, Churches, Schools and Public Buildings of every description.

NOTICE.
SELLING OFF OF NURSERY STOCK.

EWING & CO.,
EATON, near NORWICH.
Great Reduction in Price for Cash Payments, viz.,
15 per Cent. for Cash before delivery.
10 per Cent. for Cash within One Month of date of invoice.
5 per Cent. for Cash within Three Months of date of invoice.
After Three Months no discount can be allowed.
In addition to their immense Outdoor Stock of ROSES; FRUIT TREES, Bushes and Roots; ORNAMENTAL TREES and SHRUBS, they have ready for immediate Sale a very extensive Stock of New and Scarce ROSES in Pots; Tea and Noisette ROSES in Pots; CLEMATISES of best Old and New Varieties, in Pots; Variegated and Choice Green-leaved IVIES, in Pots; AMPELOPSIS VEITCHII, and many other Hardy CLIMBING and CREEPING PLANTS, in Pots, &c.
N.B. Cut Roses, &c., can be supplied at cheap rates, carefully packed for travelling long distances.
A slight extra charge must in most cases be made for packing Where cash in payment of goods is sent *with the order*, the amount for *package* may be forwarded in stamps *after* despatch of goods.
N.B. Post-office Orders should be made payable to EWING AND CO., at Eaton, near Norwich. Cheques crossed GURNEY AND CO., Norwich.
Trade Terms on application.

ORNAMENTAL PALMS.
SEED of OREODOXA, the most graceful of Palms. In good condition and fresh. Price, 40*s*. per bushel.
THOS. CHRISTY & CO.,
155, FENCHURCH STREET, LONDON, E.C.

STRAWBERRIES A SPECIALITY.
Strong Runners from ground, and in small and large pots, of all the leading varieties.
Guaranteed true to name.
LIST OF SORTS AND PRICE
ON APPLICATION TO
CRANSTON'S NURSERY and SEED CO.
(LIMITED),
KING'S ACRE, HEREFORD.

STRAWBERRY PLANTS, HERBACEOUS CALCEOLARIAS, CUTTINGS of SOFT WOODED PLANTS.
STRAWBERRY PLANTS in 50 of the finest varieties, true to name. Catalogues post-free. Purchasers selection, per 100, from ground, 3*s*. 6*d*.; in 5-in pots, 25*s*.; in 2½-in. pots, 12*s*. 6*d*. Our selection, per 100, from ground, 2*s*. 6*d*.; in 5-in. pots, 20*s*.; in 2½-in pots, 10*s*.
500 plants, our selection, in 20 good varieties, for 21*s*.
100 plants, our selection, in 40 good varieties, for 5*s*.
HERBACEOUS CALCEOLARIAS, of a beautiful strain dwarf, and in good variety of colour, strong seedlings for potting, 1*s*. 6*d*. per doz., 10*s*. per 100; also in 2½-in. pots, 3*s*. per doz., 20*s*. per 100.
CUTTINGS of FUCHSIAS, GERANIUMS, HELIOTROPES, LANTANAS, PHLOXES, PENTSTEMONS, SALVIAS, ABUTILONS, COLEUS, PANSIES, our selection, all named, 12 of any of above for 1*s*. 3*d*., post-free: plants of any 12 sorts for 2*s*. 6*d*.
WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

GRAPE VINES and ORCHARD HOUSE TREES in POTS.—GRAPE VINES, extra strong, short jointed and well ripened; Planting Canes, 3*s*. 6*d*. to 5*s*. each; extra strong Fruiting Canes, 7*s*. 6*d*. to 10*s*. ORCHARD-HOUSE TREES, fruiting in pots, consisting of Peaches, Nectarines, Apricots, Plums, Cherries, Pears, Apples, and Figs. Descriptive Price LIST for 1*d*. stamp.—RICHARD SMITH AND CO., Nurserymen and Seedsmen, Worcester.

CAULIFLOWER, BRUSSELS SPROUT PLANTS.
VEITCH'S AUTUMN GIANT, 3*s*. 6*d*. per 1000.
BRUSSELS SPROUTS, 3*s*. per 1000.
Packages 3*d*. per 1000 extra. Order of
R. BATH, Crayford; or J. BATH, 34, Wellington Street, Covent Garden, W.C.

Mushroom Spawn.

OSBORN AND SONS desire to call the attention of all Growers of Mushrooms to their celebrated Spawn, which with ordinary care is certain to produce most satisfactory results. Copies of testimonials will be found in the Seed CATALOGUE for 1882, which will be sent post-free to all applicants. Price 5*s*. per bushel, package extra. Trade price upon application.
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GARDENERS' CHRONICLE

FOR

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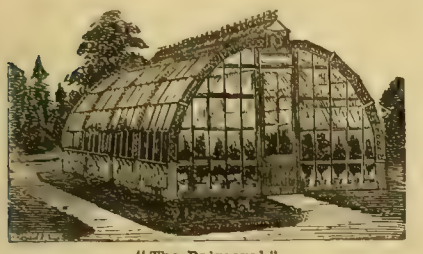
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THE]

Gardeners' Chronicle.

SATURDAY, AUGUST 19, 1882.

GREENHOUSE RHODODENDRONS.

IT seems desirable once again to call attention to the geenhouse Rhododendrons raised in Messrs. Veitch's establishment, not so much for the sake of recommending them to the notice of gardeners—for that is not necessary, at any rate to those who have seen them—as for recording certain facts which at the present rate of progress may in future be overlooked, and thus some suggestive historical indications may be lost, for the plants themselves, though to a certain extent tell-tales, now are telling very varied tales, and by-and-bye as they get fixed the evidence they will be able to give will not be trustworthy as regards their origin unless by accident they happen to sport and reveal somewhat of their origin to those who may happen to remember the intermediate stages. The earliest hybrid of this section, Messrs. Veitch inform us, was Princess Royal (light pink, or rose), raised from R. jasminiflorum (white), *Bot. Mag.*, tab. 4524, crossed with R. javanicum (buff-yellow), *Bot. Mag.*, tab. 4336. The next result was R. Princess Alexandra (French white), obtained from R. Princess Royal and R. jasminiflorum. The later introductions of R. Lobbi (crimson) and R. Brooki gracile (pale yellow) furnished new elements of colour. The subsequent intercrossings of these species and the two hybrids above named resulted in a wide range of colour, from the deep crimson-scarlet of R. Duchess of Connaught to the pale rose of R. Maiden's Blush. In the second batch of seedlings raised from these intercrossings there appeared in a truss of one of the plants a single flower that showed a tendency to become double; this flower was fertilised with its own pollen, and some dozen and a half of seedlings were obtained, among which were R. balsaminiflorum, and its varieties, R. b. album and aureum.

Thus, as was pointed out at a recent meeting of the Scientific Committee by the Rev. G. Henslow, the first result of crossing to be noticed is R. jasminiflorum, which has a long slender white tube and abortive calyx, crossed by the open-mouthed and much larger orange-coloured blossom of R. javanicum. The seedling produced (Princess Royal) showed no trace of yellow, but retained the pink from the orange. The tube, however, was longer than in R. javanicum, but larger mouthed than in R. jasminiflorum. Crossing this rose-pink hybrid with R. jasminiflorum, the result was to eliminate the pink, and to obtain a flower of the same shape and size as the Princess Royal, but pure white. In none was the calyx fully developed.

The second instance was a cross between R. Brooki gracile, a large and yellow-flowering species, and R. Lobbi, a large-flowering tubular kind, of a deep crimson colour. Many seedlings were raised. In the second generation, as above stated, one of the plants had one flower only in a truss with a tendency to become

semi-double, inasmuch as one stamen only was slightly "petaloid." The stigma of this flower was touched with the pollen from a stamen in the same flower as the pistil, thus "self-fertilisation" was artificially effected. From this pod twenty seedlings were raised. Of these five only have as yet bloomed; one was deep rose-pink, called balsaminiflorum, which has received a First-class Certificate (upper flower in fig. 38). The four others were respectively a large and massive double white, a salmon with a short thick green tube, semi-double yellow, with a rather large and thicker tube (lower flower, fig. 38), a semi-double rose, resembling Princess Royal, only the latter was single, so that from one flower offspring were produced of colours varying from white to pink, and to yellow, while some were single and others double. Fifteen more have yet to bloom.

A curious botanical feature attaching to these seedlings was pointed out by Mr. Henslow, in the development of a rudimentary calyx. It is well known that plants which bear small flowers much crowded together, as Elder, Ivy, Honeysuckle, Valerian, "Composites," Galium, &c., have none, or at least a very rudimentary calyx; and R. jasminiflorum, which produces dense tufts of small tubular flowers, is also without one, which, however, is present in the larger-flowering kinds; so that those seedlings which bear much larger blossoms than R. jasminiflorum are reproducing the feature of a calyx characteristic of larger flowers.

The genus Rhododendron has been taken in hand for hybridising purposes not only by those who have had commercial objects in view, but by experimentalists and botanists, from a motive of intelligent curiosity, the result of which is that we possess a body of carefully recorded information on the subject which will be of the greatest value to the physiologist, and can hardly fail to be of very great importance to the cultivator. This is proved by what has been accomplished by the Standishes, the Waterers, the Rollissons, the Lanes, the Veitches, the Davieses (some notes on the origin of whose Rhododendrons will be found in our columns on August 16, 1879, p. 201), and among amateurs especially by Mr. Anderson-Henry and Mr. Mangles. For the literature of the subject the reader should refer to the papers of Dean Herbert, Mr. Anderson-Henry, and Mr. Mangles, in our columns, and in the *Journal of the Royal Horticultural Society;* while for a brief summary of results obtained up to the date of publication Mr. Burbidge's very useful *Cultivated Plants* may be profitably consulted.

New Garden Plants.

MASDEVALLIA HIEROGLYPHICA, *nov. sp.**

THIS is very near Masdevallia Arminii, yet the whole outer perigone is most distinctly formed in a novel manner. The odd sepal stands upright, is flat, not galeate, the lateral ones are nearly square, and the long tails are suddenly bent down, surpassing three times the length of the perigone itself. The base of this is almost funnel-shaped. The colour appears pallid, and may have been white, or lightest ochre. The odd sepal has three dark lines, and numerous small dark spots between and on the borders. The lateral sepals have a dark brownish-purple area, surrounded by that pallid colour. It has flowers as large as those of Masdevallia Estradæ, and must prove very elegant. It came from New Grenada, and was sent by Mr. F. Sander in dried specimens. *H. G. Rchb. f.*

* *Masdevallia hieroglyphica*, nov. sp.—Aff. Masdevalliæ Arminii: perigonio basi infundibulari; lacinia impari triangula obtusangula plana, lateralibus subquadratis, caudis elongatis perigonium plus ter excedentibus, lateralibus deflexis; tepalis ligulatis apice minutissime tridentatis, basi lacinula lineari inflexa; labello oblongo apice retuso cum apiculo, brevissime reflexo. New Grenada. *H. G. Rchb. f.*

PACHYSANDRA TERMINALIS.*

The old Pachysandra procumbens is one of those very peculiar looking plants which offer few attractions except to the professed botanist and the lover of curiosities. By such its peculiar habit, conformation, and its quaint spring-developed blossoms are sure to be appreciated. The plant we have now to call attention to appeals to a wider public, though we do not think a purely æsthetic tribunal would award it a First-class Certificate. It is a hardy Japanese herbaceous perennial, or possibly of shrubby growth, of low stature, and somewhat stiff habit. The leaves are crowded towards the ends of the shoots, those lower down being early deciduous. Each leaf is about 2 inches in length by three quarters of an inch in breadth, broadly obovate, tapering gradually towards the base into a long slender leaf-stalk, coarsely toothed at the margins, glabrous, coriaceous, green in the centre, and with a whitish marginal variegation. Growth at the margins being stopped by the absence of chlorophyll the disc continuing to grow becomes cup-shaped, the white margin acting as a curb, as in the case of many variegated Ivies and similar plants. Another peculiarity worth notice is the ascending direction of the leaf-stalks,



FIG. 38.—RHODODENDRON BALSAMINIFLORUM: DOUBLE WHITE; AND A SEMI-DOUBLE FORM, YELLOW; BOTH FROM THE SAME SEED-POD. (SEE TEXT.)

which do not spread as usual, but ascend parallel to the stem, and thus the terminal group of leaves resembles a vase in shape. The flowers, which we have not seen except in the dried specimens, resemble those of the better known species, and in conformation are closely allied to those of the common Box. This is one of the many instances of close relationship between the plants of Japan and of Eastern North America pointed out by Dr. Asa Gray. For gardens, its chief value will be as a hardy dwarf, sub-evergreen, variegated plant, at once cheerful-looking and peculiar. It would be well suited for the rockwork. We met with the plant recently in the High Beech nurseries of Mr. George Paul.

SPIRÆA CALLOSA.—A dwarf, hardy, free-flowering variety, suitable for the rockery, and bearing medium-sized clusters of creamy-white flowers, which will suit the amateur grower for cutting as well as furnishing his rockery. The flowers are the same colour as those of S. Douglasii, which is a taller and much stronger grower, and of course bears flowers proportionately larger than its dwarfer congener.

* *Pachysandra terminalis*, Sieb. et Zucc. *Fam. Nat.* 127; Miquel, *Prolusio Japon.*, p. 292; Franchet et Savatier, *Enum. Pl. Japon.*, t. 428.

HARDY HEATHS.

THERE are few more desirable plants than these—spring, summer, and autumn alike, they are to be found in bloom, their stiff wiry foliage giving the impression of hardihood, their profusion of flowers that of cheerfulness and beauty. The earliest to flower is E. carnea, much used for spring bedding, and just now and during the autumn months there is a wealth of them. Messrs. Veitch have kindly sent us a collection from their Combe Wood Nurseries, including many varieties of common species and many of great interest. For our present purpose we include under Heaths, Menziesias, Dabeocias, Callunas, and Ericas.

MENZIESIA POLIFOLIA ALBA.—Differing only from the common form in its white flowers.

MENZIESIA POLIFOLIA ATRO-PURPUREA.—A neat, hardy Heath, with small lanceolate leaves, white on the under-surface, and with erect racemes of deep purple, bell-shaped, nodding flowers. The present variety differs from the ordinary form in the deeper colour of the flowers.

CALLUNA VULGARIS ALBA NANA.—A form of the common Ling, with elongate, slender, erect branches, with cymes of white, horizontally placed, bell-shaped flowers at intervals on each side of the stem. On the weaker branches the flowers are solitary in the axils of the leaves.

CALLUNA VULGARIS TENUIFOLIA ALBA.—A form with flowers solitary in the axils of the leaves, the short stalks so twisted as to bring all the flowers into two close ranks, the flowers themselves being ascending.

CALLUNA VULGARIS RIGIDA.—A dwarf, very compact form, with closely set, shortly stalked, white ascending flowers.

CALLUNA VULGARIS AUREA.—A form with loose growing erect or ascending branches, clad with yellowish leaves, rather less closely set than in the ordinary type, and rather longer. The flowers are small, whitish, shortly stalked, stalks solitary in the axils of the leaves.

CALLUNA VULGARIS COCCINEA.—A form of spreading habit, with densely packed, short green leaves, and closely set, two-ranked, ascending violet flowers, one in the axil of each leaf.

CALLUNA VULGARIS GLOBOSA.—A very remarkable dwarf form, with the shortened branches and contracted stem so arranged as to form a globose tuft or hummock. Flowers solitary, ascending, rosy-lilac.

ERICA CINEREA ATRO-PURPUREA.—A form of this common English species, with much darker flowers than usual.

ERICA CINEREA ALBA.—A form with pure white flowers, while E. cinerea coccinea, has somewhat paler flowers than ordinary.

ERICA VAGAN (the Cornish Heath).—A dwarf shrub with linear ascending leaves, and close racemes of pink bell-shaped flowers, from which the anthers protrude. Unlike most Heaths, the anthers are destitute of awns. This plant occurs wild in Britain only in Western Cornwall, but, as it is found in Western France and Spain, it is supposed to be of the same lineage as the French and Spanish plants, but cut off from them in olden, very olden times, by the subsidence of the land between the two countries.

ERICA VAGANS ALBA, is like the species, but has white flowers only.

ERICA TETRALIX VAR. RUBRA.—A deeper coloured variety of the cross-leaved Heath, and var. alba with white flowers.

ERICA MACKAIANA.—A dwarf form with the inflorescence of E. Tetralix, but with broader, flatter leaves. At present we have had no opportunity of comparing this with the typical plant which is found in Galway and in Spain, and is supposed to be a hybrid between E. Tetralix and E. ciliata. Our specimen differs from both in the foliage, it has the inflorescence of E. Tetralix, while the form of the corolla is more that of E. ciliata. The branches are brown, rather thickly beset with white shaggy hairs. The leaves are in whorls of four, spreading ovate oblong, green above, white beneath, the margin provided with long gland-tipped hairs. The flowers are in one-sided terminal heads, as in Tetralix; corollas pale lilac, curved, distended, contracted at the throat, with a very short limb, stamens and style included.

Our plant does not wholly agree with the description in the *Student's Flora*.

Recently, at High Beech, we observed that Mr. George Paul was trying the hardihood of Erica hiemalis, as grown entirely out-of-doors, but we fear such winters as we experienced in the last of the seventies, and the first of the eighties, would not be propitious to such an experiment. Last winter, of course, afforded no real test.

ON THE CONNECTION OF THE WHEAT MILDEW WITH THE BARBERRY.

Has the Barberry really anything to do with the mildew in Wheat? This question is one of great practical importance to the agriculturist and through him to all classes of the community. It is by no means a novel one, and cannot be shelved as a new-fangled notion too crude to be worth investigation; for it is just a century ago, this present year, that the first recorded experiment bearing upon the question was performed, in the same county in which these lines are penned. Seventeen years ago the connection was proved to the satisfaction of Continental botanists, but many of us in this country and in America either denied it altogether or accepted it in a half-hearted sort of way. The magnitude of the interest at stake, as well as the great importance of the subject from a scientific point of view, demand that we should take the trouble to decide one way or the other. If the experiments upon which the assertion of this connection is based, will not bear repeating, let us cast the vaunted theory to the winds and have done with it. But if, upon the other hand, these experiments prove the connection, let us accept it although it does uproot our prejudices and entails the acceptance of a great deal which at present we regard as too wonderful to be true, for Puccinia graminis is by no means the only case of the kind.

It was in the hope of being able to arrive at a definite conclusion one way or the other, that the writer in the summer of 1881 performed a series of experiments* by infecting a number of Wheat plants with ripe spores of the Barberry fungus, with this result, that while 76 per cent. of the infected plants took the disease, no less than 70 per cent. of similar Wheat plants, which were kept as check plants, became spontaneously affected with mildew. The natural conclusion arrived at was, that 6 per cent. was not conclusive evidence. It is obvious that mildew is a highly infectious disease, and the necessity for a less rough method of experiment is demanded if unequivocal results are to be obtained.

In the spring of this year (1882) another series of experiments was instituted, in which not only was the Barberry fungus sown upon Wheat, under circumstances which should, as far as possible, preclude the agency of accidental infection, but conversely the Wheat mildew was sown upon Barberry plants—with the result, it may be premised, of once again demonstrating that the Barberry fungus and the Wheat mildew are two states of one and the same fungus. Lest it should be thought I have jumped too eagerly to this conclusion it may here be said that when I began these experiments this year it was with a mind biased against the theory of "heteroecism" (that is, the occurrence of the same fungus in different phases of its growth on totally different plants), that the experiments now amount to more than a hundred, and that they have embraced many other species of Uredines besides the one which forms the subject of this paper. Had we given our forefathers more credit for the faculty of observation it would not have taken us a hundred years to arrive at our present position; nor will the time be wasted if we glance in detail at some of their writings on this subject.

History of the Subject.

The mildew of Wheat has, as a blight, probably been known from remote antiquity. The Romans held a festival on April 25—the Robigalia, or Rubigalia—with the object of protecting their fields from mildew. The sacrifices offered on this occasion consisted of the entrails of a dog and a sheep, accompanied with frankincense and wine.† The fungoid nature of the mildew was not known until the latter half of the last century, for Tull,* writing in 1733, attributes it to the attacks of small insects "brought (some think) by the east wind," which feed upon the Wheat, leaving their excreta as black spots upon the straw, "as is shown by the microscope!" Felice Fontana,† some thirty years later, published an account of the fungus with figures. Persoon,‡ in 1797, gave it the name it still bears (Puccinia graminis), and also figured it, as did Sowerby,§ in 1799, under the name of Uredo frumenti.

The first mention of the subject immediately under consideration is by Marshall,‖ who, writing in 1781, says:—

"It has long been considered as one of the first of vulgar errors among husbandmen that the Berberry plant has a pernicious quality (or rather a mysterious power) of blighting the Wheat which grows near it.

"This idea, whether it be erroneous or founded on fact, is no where more strongly rooted than among the Norfolk farmers; one of whom mentioning, with a serious countenance, an instance of this malady, I very fashionably laughed at him. He, however, stood firm, and persisted in his being in the right, intimating that, so far from being led from the cause to the effect, he was, in the reverse, led from the effect to the cause; for observing a stripe of blasted Wheat across his close, he traced it back to the hedge, thinking there to have found the enemy; but being disappointed, he crossed the lane into a garden on the opposite side of it, where he found a large Barberry bush in the direction in which he had looked for it. The mischief, according to his description, stretched away from this point across the field of Wheat, growing broader and fainter (like the tail of a comet) the farther it proceeded from its source. The effect was carried to a greater distance than he had ever observed it before, owing, as he believed, to an opening in the orchard behind it to the south-west, forming a gut or channel for the wind.

* * * * *

"Being desirous of ascertaining the fact, be it what it may, I have inquired further among intelligent farmers concerning the subject. They are, to a man, decided in their opinion as to the fact, which appears to have been so long established in the minds of the principal farmers, that it is now difficult to ascertain it from observation. Berberry plants having (of late years more particularly) been extirpated from farm hedges with the utmost care and assiduity; one instance, however, of mischief this year I had related to me; and another I was myself eye-witness to. Mr. William Barnard, of Bradfield, says that this year, seeing a patch of his Wheat very much blighted, he looked round for a Barberry bush, but seeing none conspicuous in the hedge, which was thick, he with some difficulty got into it, and there found the enemy. He is clearly decided as to the fact. Mr. William Gibbs, of Rowton, telling me that a patch of his Wheat was blighted in the same manner, and that he believed it to proceed from some sprigs of Barberry which remained in the neighbouring hedge (which a few years ago was weeded from it), I went to inspect the place, and true it is that near it we found three small plants of Barberry, one of which was particularly full of berries. The straw of the Wheat is black, and the grain, if it may be so called, a mere husk of bran, while the rest of the piece is of a much superior quality.

"These circumstances are undoubtedly strong evidence, but do not by any means amount to proof."

On October 16, 1782, Marshall¶ writes:—

"To endeavour to ascertain the truth of this opinion I had a small bush of the Barberry plant set in February or March last, in the middle of a large piece of Wheat.

"I neglected to make any observations upon it until a little before harvest, when a neighbour (Mr. John Baker, of Southrepps) came to tell me of the effect it had produced.

"The Wheat was then changing, and the rest of the piece (about 20 acres) had acquired a considerable degree of whiteness (white Wheat); while about the Berberry bush there appeared a long but somewhat oval-shaped stripe of a dark livid colour, obvious to a person riding on the road at a considerable distance.

"The part affected resembled the tail of a comet, the bush itself representing the nucleus, on one side of which the sensible effect reached about 12 yards, the tail pointing towards the south-west, so that probably the effect took place during a north-east wind.

"At harvest the ears near the bush stood erect, handling soft and chaffy; the grains slender, shrivelled, and light. As the distance from the bush increased the effect was less discernible, until it vanished imperceptibly.

"The rest of the piece was a tolerable crop, and the straw clean, except on a part which was lodged, where the straw nearly resembled that round the Barberry, but the grain on that part, though lodged, was much heavier than it was on this, where the crop stood erect.

"The grain of the crop, in general, was thin-bodied; nevertheless ten grains, chosen impartially out of the ordinary corn of the piece, took twenty-four of the barberried grains, chosen equally impartially, to balance them."

In 1784 Marshall repeated his experiment at Statfold in Staffordshire, with the same result. He says:*—"Upon the whole, although I have not from this year's experience been able to form any probable conjecture as to the cause of the injury, it nevertheless serves to fix me still more firmly in my opinion that the Barberry is injurious to Wheat."

Withering, writing in 1787 of Berberis vulgaris, says:†—"This shrub should never be permitted to grow in corn lands, for the ears of Wheat near it never fill, and its influence in this respect has been known to extend as far as 300 or 400 yards across a field."

In 1804 this country suffered severely from an outbreak of Wheat mildew, in consequence of which Mr. Arthur Young, the Secretary to the Board of Agriculture, issued a circular of questions, so as to obtain a consensus of opinion, from farmers, landowners, and others, interested in the subject, as to various points connected with causation of mildew. The ninth question ran thus:—"Have you made any observation on the Barberry as locally affecting Wheat?" The replies to these questions were published,‡ and from them the following evidence bearing upon the question we are considering are selected.

Isaac King, Esq., Wycombe, Bucks, in answer to the question about the Barberry says:—"In 1795 a field of about 20 acres had two large Barberry bushes growing within 20 yards of it. These appeared to be the focus of destruction to several acres; in front, close to the hedge, the Wheat was as black as ink, and further off it was affected to a less degree . . . In short, I had 15 acres very good, and 5 of very little value. You may conclude the Barberries were destroyed."

Mr. S. Johnson,§ Thurning, Norfolk, says:—"My observations on the Barberry have been for several years. I have seen the blast from a small stem blown on the Wheat in one direction upwards of 2 furlongs like smoke from a chimney."

Mr. W. Maxey,‖ Knotting, Bucks, says:—"When passing a Wheat field a few years ago on the eve of harvest I noticed some streaks of a different and darker hue across a furlong of Wheat from the hedge directly opposite; at the end of each streak was a Barberry bush."

Mr. James Sheppard,¶ Chippendale, Newmarket, says:—"I have never seen an instance of Wheat growing near a Barberry not being injured more or less."

It is quite unnecessary to quote any further from Mr. Young's correspondents upon this point.

Sir Joseph Banks, in his paper on "Wheat Mildew," alluding to the subject before us, mentions the belief as being prevalent amongst farmers, but scarcely credited by botanists, and points out the resemblance the yellow fungus on Barberry has to rust, although it is larger. He says:**—"Is it not more than possible that the parasitic fungus of the Barberry and that of Wheat are one and the same species, and that the seed is transferred from the Barberry to the corn?"

This is precisely what Professor De Bary did sixty years afterwards, when he actually produced the Wheat mildew from the Barberry fungus. It must be remembered that, although these statements were made half a century ago, this in no way affects their veracity; but it may be well to quote a more recent instance in which the deleterious influence of the Barberry is shown. M. Gabriel Rivet,†† writing in 1869, alluded to the fact that the Paris and Lyons Railway Company planted a Barberry hedge

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* Plowright, *Grevillea*, vol. x., p. 33—41.
† Smith, *Smaller Dictionary of Greek and Roman Antiquities*, 5th edit., 1863. p. 322.

* Jethro Tull, *Horse Howeing Husbandry*, 3d. edit., 175-, p. 151-2.
† Felice Fontana, *Osservazioni sopra la Ruggine del C ano*, Lucca, 1767.
‡ Persoon, *Tentamen Dispos. Method. Fungorum*, 1797, p. 39. t. iii., f. 3.
§ Sowerby, *English Fungi*, vol ii, 1799, t. 140.
‖ Marshall, *Rural Economy of Norfolk*, 2d edition, London, 1705. vol. ii., p. 19.
¶ Marshall, *loc. cit.*, p. 359.

* Marshall, *Rural Economy of the Midland Counties*, 179-, vol. ii, p. 11.
† Withering, *Botanical Arrangement*, 1787, edit. ii., p. 366.
‡ A. Young, *Annals of Agriculture*, vol. xliii, 1805, p. 457.
§ Marshall, *loc. cit.*, p. 469.
‖ *Loc. cit.*, p. 505.
¶ *Loc. cit.*, p. 510.
** Banks, in *Annals of Agriculture*, vol. xliii, p. 521.
†† Rivet, in *Bulletin de la Société Botanique*, vol. xvi., p. 331—334. *Influence de plantations d'epine-vinette sur la developpement de la rouille des céréale.*

beside their line. The neighbouring proprietors drew up petitions, and asked the company to remove the hedge. The company made trials, by cutting a part of it down to see if it was really as hurtful as was alleged, and found the mildew so much diminished thereby that they had the whole hedge removed.

On July 17, 1882, I examined a field of Wheat at Flitcham, Norfolk, in the hedge of which were three Barberry bushes. Although they had been cut down a fortnight previously there was no difficulty in finding the place where each had been from the extent to which the corn was destroyed by mildew in a semicircle, about 10 yards in diameter, opposite each bush. The rest of the field was free from the disease. As a matter of fact the three Barberry bushes, or rather the places where they had been, were found by looking for the mildewed places in the Wheat. It was felt at the time that had any disbeliever in the heterœcism of the Wheat mildew been present he would have been, then and there, convinced by the logic of facts.

Life-history of the Fungus.

Since Persoon gave to the fungus which causes the Wheat mildew the name of Puccinia graminis, in the year 1797, our knowledge of its life history has progressively increased, owing to the researches of Tulasne and De Bary, who have shown, first, its connection with rust; then its mode of germination; and lastly, its heterœcismal character. The genus Puccinia is purely a parasitic one. Up to the present time some eighty species have been met with in Great Britain. A perfect Puccinia has no less than five kinds of reproductive forms, to which the following names have been applied, viz.:—Æcidium, Spermogonia, Uredo, Puccinia, and Promycelium. Since these various forms of fructification constitute a cycle it matters but little which we commence with, for if they be only taken consecutively we shall come round to the one with which we started. Perhaps it will be most convenient to begin with the Uredo.

First Stage: Rust—or Uredo-spores (fig. 39).

Uredo linearis.—The well known rust of Wheat consists, as its names imply, of elongated masses of orange spores, which, during the summer months, occur abundantly upon the living leaves of various grasses and cereals. It is not confined to the leaves, for it frequently is found upon their sheaths, upon the stem, and also upon the glumes. If a speck of rust be examined through a common lens, it will be seen to consist of a mass of golden dust around which can be seen the torn edges of the epidermis. This yellow powder consists of oval spores, measuring from 25 to 35 mk. long by from 15 to 20 mk. wide. They are not uniform in shape, some being more globose than others, but they are all studded with minute protuberances, so as to present a warted appearance. They were originally formed beneath the cuticle of the plant, which, as they increased in size and number, they ruptured. When mature, these spores readily fall apart, and are scattered and carried away by the faintest breath of air. Examined more attentively, the majority will be found to possess at one end an appendage marking the point of their attachment to the leaf from which they sprang. If a young pustule of rust be examined in section, it will be found that each spore springs separately from a single transparent thread or tube, a portion of the mycelium or spawn of the fungus. This mycelium consists of an entanglement of hyaline tubes, ramifying between the cells of the plant that bears it; at certain points these accumulate together and give off a mass of branches, parallel to each other, all pointing towards the cuticle of the leaf. These branches become enlarged at their superficial extremities, where eventually each one produces a single spore. These spores are at first like the mycelium—colourless, but soon become filled with yellow endochrome; they then by their combined pressure rupture the cuticle, and constitute the Uredo abovementioned.

If a few fresh, ripe spores be placed upon a drop of water on a glass slide and kept in a damp atmosphere, they will in three or four hours germinate. This process is very interesting, and can easily be watched by any one who cares to take the trouble to do so. In from two to four hours most of the spores will have protruded two germ tubes from the middle of their length. These tubes come through two circular openings in the thick wall of the spore; in from five to six hours the germ tubes will be twice or thrice the length of the spore, and in them will be seen yellow granules from the interior of the spore. As a rule only one of these germ-tubes continues its growth, which it does so rapidly that in from twenty to twenty-four hours it has become many times the length of the spore. During this time nearly the whole of the yellow endochrome (contents of the cell) has passed from the interior of the spore, and from the abortive tube, to the extremity of the growing one. This tube has not only grown longer, but has taken a variable number of spiral twists like a corkscrew. It now, at the end farthest from the spore, gives off a number of irregular branches at a more or less rectangular direction. The lower end of the tube is now cut off by a septum from the empty spore-case.* If this germination has taken place upon the cuticle of the Wheat plant (or any other grass upon which the Uredo is parasitic), one or more of the branches gains an entrance into the interior of the leaf through the stomata. Once inside the leaf, the mycelium is in its proper soil and luxuriates, as before said, by ramifying between the cells of the host-plant, and in due course produces Uredo-spores. But the host plant does not live for ever; on the contrary, many of the grasses die down in winter, and although Uredo-spores have under favourable circumstances been known to retain their germinative power† for some time, yet they lose it if kept dry for one or two months at most. Probably in a state of Nature they would germinate soon after they were ripe, and so become effete. How, then, is it that this rust re-appears year after year?

Second Stage: Resting-spore—Puccinia or Mildew (fig. 40).

Towards the end of summer the mycelium, which has been continuously developing Uredo-spores, produces a resting-spore—or a body which has the faculty of lying dormant throughout the winter and germinating in spring. These resting.spores, or "teleutospores," constitute the Puccinia graminis or Wheat mildew proper. They are produced in a similar manner to the Uredo-spores, but are very different in structure. Each teleutospore is club-shaped, and divided transversely into two compartments by a septum. In colour, when seen by transmitted light, they are a rich clear brown, but appear almost black when viewed *en masse*. Inferiorly each spore has an elongated stem, by which it is permanently attached to the host-plant. They occur in elongated patches upon the straw, sometimes upon the glumes. Each patch is surrounded by the torn everted edges of the epidermis, so that mildewed straw when drawn through the fingers feels rough. The teleutospores measure from 30 to 60 mk. in length, by from 10 to 20 mk. in breadth. Germination takes place only after a prolonged rest of some months, and consists in the protrusion of a germ-tube (the "promycelium" of De Bary), through an opening in the wall in each division of the teleutospore. These germ-tubes are of definite length, straight below, usually curved towards the

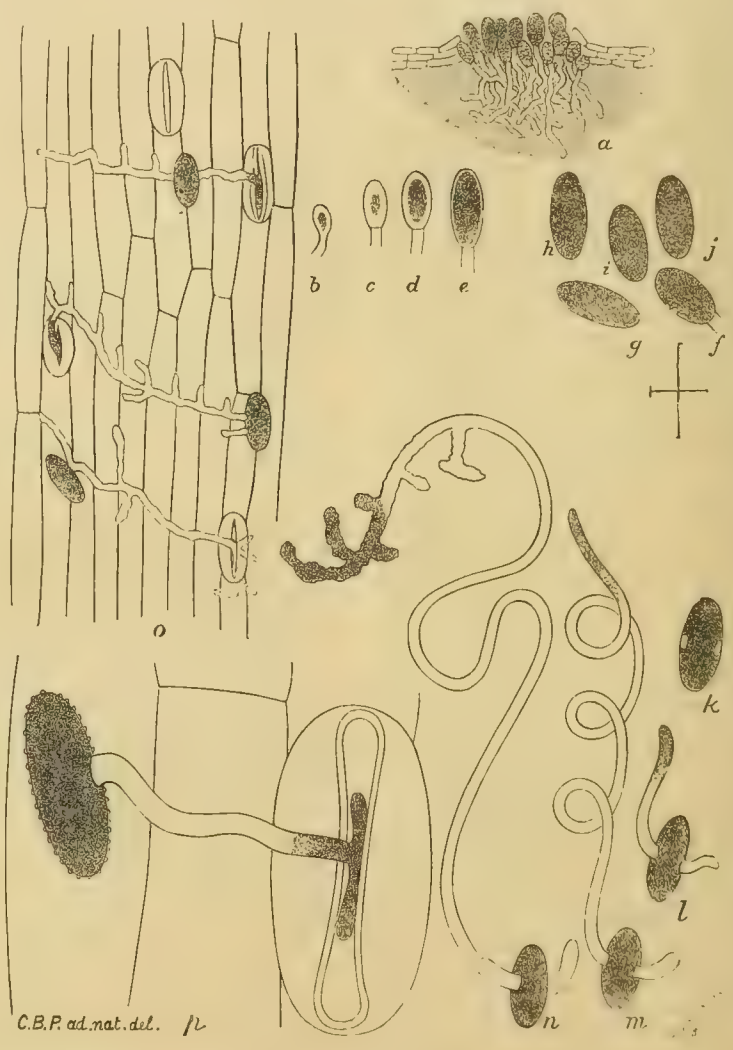


Fig. 39.—Uredo linearis.

a, cluster of Uredo-spores springing from mycelium in a Wheat-plant surrounded by the ruptured epidermis; *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, Uredo-spores of various ages; *k*, Uredo-spore germinating in water, the first change; *l*, *m*, *n*, further stages of germination in water as explained in the text; *o*, Three spores of Uredo germinating upon the cuticle of Wheat, the germ-tubes of which are entering the stomata, 8—10 hrs.; *p*, Germ-tube from a Uredo-spore squeezing itself into a stomate (7 hrs.)

* For further account of the germination of this and other Uredines, see Plowright, *Grevillea*, vol. x., p. 138, pl. 159.

† De Bary, *Neue Untersuchungen über Uredineen*, 1865, p. 24.

extremity, often like the hook of a walking-stick. The upper part of the germ-tube gives off three simple branches which taper from base to apex; where each bears a single oval, or subreniform hyaline spore from 8 to 12 mk. by 5 to 8 mk. The end of the germ-tube is divided into three parts by septa, from each of these divisions a tapering spore-bearing branch arises. The spores, although hyaline, are faintly tinged of a pale yellowish hue. These spores, when placed in water, after a short time again germinate by sending out a slender germ-tube. Now it is upon the life-history of these spores, or promycelium spores, as they may for distinction's sake be called, that the main question we have under consideration hinges. If they be placed upon a Barberry leaf their slender germ-tubes bore right through the epidermis of the leaf into its interior, where they produce a mycelium, which, in the course of about eight days, manifests its presence by development of the first signs of the Æcidium or Cluster-cup. This is no mere figment of imagination, but a physiological fact, that can be proved by any person so disposed.

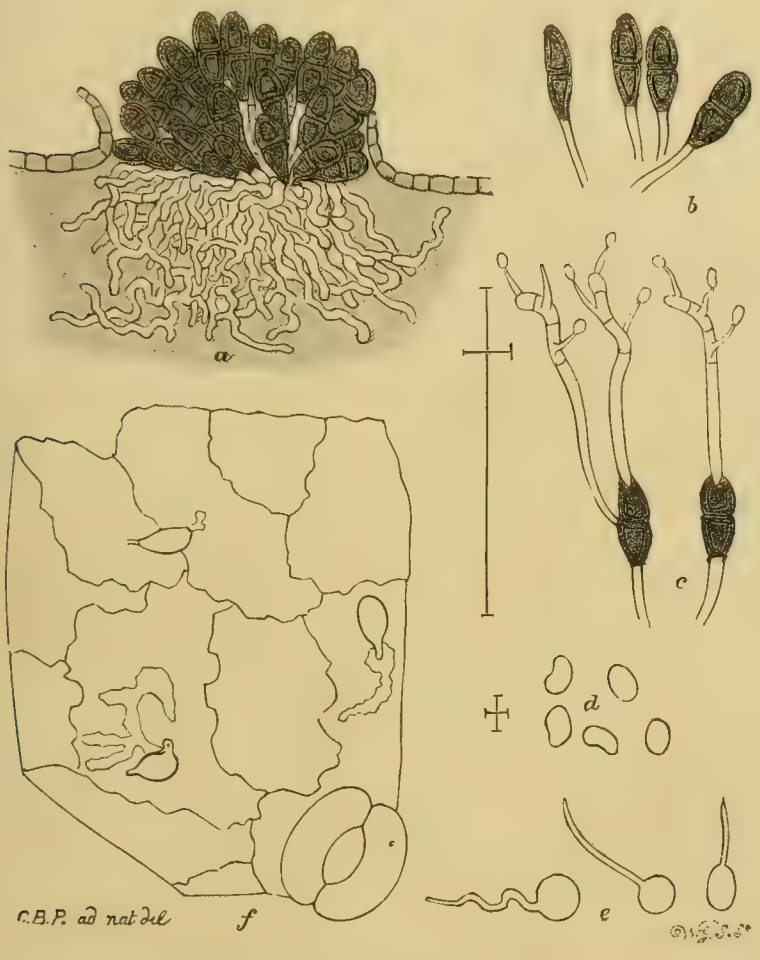


Fig. 40.—Puccinia graminis.

a, Mass of teleutospores springing from the mycelium and rupturing the epidermis; *b*, Four teleutospores; *c*, Germinating teleutospores bearing a promycelium and spores; *d*, Promycelium spores; *e*, Promycelium spores germinating in water; *f*, Three promycelium spores which have germinated upon the skin of a Barberry leaf. Their germ-tubes have bored their way through the epidermal cells, and have begun to form mycelium (24—48 hours).—After De Bary.

Experiments with pro-Mycelium Spores.

In the spring of this year (1882) Mr. James Bird, of Downham, kindly gave me six small Barberry bushes (Berberis vulgaris), about 10 inches high. On April 14, April 17, and May 9 respectively I infected one of these with spores from the promycelium of Puccinia graminis from Wheat and Twitch, and kept the remaining three Barberries as control plants. In due course the Æcidium appeared upon the infected plants, the control plants remaining free from Æcidium, and they continued so for two months, when they were cut down, the experiment being then ended. If the promycelium spores, however, are placed upon the epidermis of a living Wheat plant, contrary to what one would expect, they do not enter it. De Bary* says, "The sowing of the promycelium spores gave me, as they had previously done†, the unexpected result that the germ-tubes did not penetrate the epidermis of the mildew or teleutospore-bearing host-plant. Upon the various parts of Triticum repens, T. vulgare, and Avena sativa, they remained as if they had been sown upon a glass plate; the tubes turned irregularly in the most different directions and died off, the infected grass-plant remaining intact."

On April 15 and 17 I placed upon nine Wheat seedlings some of the same promycelium spores which were used for infecting the Barberries, and upon May 7 one of the Wheat plants had rust or Uredo upon it. As these plants were, however, exposed to the air for fourteen days, an element of doubt is admitted, although an equal number of check plants grown in the open air in the same garden remained free from Rust. That they did not contract the parasite from the Barberries in my garden is clear from the fact that there were no Æcidium-spores there until many days later.

Third Stage: Cluster-cups—Æcidium (Fig. 41, p. 236).

The Æcidium berberidis, which, under any circumstances, must be regarded as the result of the promycelium spores of Puccinia graminis is a far more attractive fungus from an æsthetic point of view than either of the preceding forms, when seen by a low magnifying power, it is seen to consist of a beautiful cluster of minute cups filled with golden-yellow spores. These cups are formed of a membrane, which forms a circle of whitish teeth round their mouths. They are always in groups, and are cylindrical in form. The spores which fill them are subglobose, smooth, golden-yellow, and measure from 15 to 25 mk. in diameter. They, like the Uredo-spores, are developed from mycelium, but in quite a different manner; for, instead of being produced singly, they are formed in chains, one above another, from the bottom of the cup. The oldest and ripest spore being at the top—this, when mature falls off, to be succeeded in the course of a few hours by the one next below it. If a leaf with the Æcidium upon it be put upon an object-glass, it, in the course of a few days, will deposit a mass of yellow dust. If a small quantity of this powder, which, of course, consists of spores that have been shed by the Æcidium, be placed on a drop of water, few, if any, of the spores will germinate, for the reason that they are immature and have fallen out of the cup because the plant has lost some of its moisture by evaporation. It is important to bear this in mind, as it is often the cause of failure in experimenting with the Uredines. The ripe Æcidium-spore germinates in the same manner as the Uredo-spore does. The germ-tube is protruded through one of the six openings which exist, at any rate potentially, in the epispore. The yellow endochrome is passed in the same way to the end of the convoluting branched germ-tube, which is destined to enter the stomata of a graminaceous plant. If, however, the Æcidium-spores fall—as they, of course, constantly do—upon the Barberry leaves, they do not reproduce the Æcidium berberidis, for if their germination be watched upon the cuticle, it will be found that their germ-tubes do not enter the leaves. Hence they differ very considerably from the Uredo-spores, which, it will be remembered, continuously reproduced themselves upon their host-plant. Neither will the germ-tubes of the Uredo-spores, if the latter be sown upon Barberry leaves, enter them. Nor is the Æcidium ever produced from the Uredo-spores.

Fourth Form: Spermogonia (Fig. 42, p. 237).

Besides the Cluster-cups there exists in company with the Æcidium another important set of reproductive organs, which are developed from the same mycelium, and to which the name Spermogonia has been applied. Spermogonia can be seen as minute dark specks upon the opposite side of the leaf, and immediately over the place occupied by the Æcidium. In point of time they are the first organs produced by the mycelium of the promycelium spore, and they last as long as the Æcidium does. Sometimes they are produced alone, and are not accompanied by the Æcidium,* but this is an exceptional although not unique occurrence. Each spermogonium consists of a flask-shaped body, sunk in the substance of the leaf, formed of exceedingly delicate threads about half the diameter of those of the mycelium, and originating from them (De Bary). The mouth of the flask is conical, and by pressure is easily split from top to bottom into parallel fibres or elongated cells. The interior is filled with delicate threads which bear upon their ends chains of exceeding minute bodies, called spermatia. The spermatia vary a good deal in size and form, some are elongated, others nearly spherical; they measure from 2 to 3 mk. by .5 to 2 mk. Their function has not as yet been absolutely demonstrated, but there is little doubt that they play the part of the male element. If I am not greatly mistaken, they are the bodies one so constantly sees surrounding and adherent to the spores of many species of Æcidium.† The germination of ripe Æcidium-spores may be watched upon the cuticle of a Wheat plant, and the way in which their germ-tubes squeeze into the stomata easily seen.

Experiments with Æcidium-Spores.

On May 23 I infected twenty Wheat plants with ripe Æcidium spores that had been sent me from Drayton Rectory. These Wheat plants had been carefully protected from accidental infection by being continuously covered with a bell-glass from the day they were sown until the experiment was concluded. On June 4, Uredo appeared upon ten of these plants. I then removed the plants to my study, where day by day the Uredo made its appearance upon fresh plants until the whole were affected. An equal number of Wheat plants were kept as a control experiment; they were protected in the same way from accidental infection, and remained perfectly free from Uredo the whole time.

* De Bary, *loc. cit.*, p. 24, 25.
† De Bary, *Champ. Paras.*, p. 86.

* Cooke, *Microscopic Fungi*, edit. 4, 1878, p. 29.
† Plowright, in *Grevillea*, vol. x., p. 147, t. 159, f. 2 3.

Concerning the Barberry Æcidium it only remains to add, that there are at least two other Æcidia upon various Barberries that are in no way connected with Puccinia graminis. One of these has only been found in Chili, where Gay met with it some forty years ago. It is mentioned by Montagne* as occurring in company with a Puccinia on the leaves of Berberis glauca. De Bary† examined an original specimen of Montagne's plant, and found the spores to be twice the size of the Puccinia graminis Æcidium, and he also found the Puccinia berberidis, Mont., differed not only from P. graminis but from all other European Pucciniæ.

In 1875 Dr. P. Magnus‡ drew attention to the occurrence in various parts of Europe of an Æcidium upon Barberry, which was originally described under the name of Æ. magelhanicum by Mr. Berkeley§ from specimens collected by Captain King at Port Famine, in the Straits of Magellan, upon Berberis ilicifolia. It differs from the Æcidium of Puccinia graminis in appearing earlier in the year, in its cups being less elongated, and in their being scattered upon the under-side of the leaf, in the spores being larger, and in their germ-tubes not entering the leaves of grasses. It is probably identical with the Æ. graveolens collected by Shuttleworth at Berne in 1833, as mentioned by Dr. Cooke.‖

The foregoing account of Puccinia graminis includes the principal facts at present known concerning its structure and life-history. That one stage of its existence is passed as a parasite upon the Barberry does not admit of doubt. But the question presents itself, Is this an absolutely essential stage, or can the mildew be propagated without the intervention of the Æcidium state? The principal reason which suggests this question is the disproportion which exists in England between the amount of mildew and the number of Barberry bushes. Especially does this obtain in Norfolk, where this shrub has been to a great extent exterminated. It is a matter of common observation that stray Wheat plants, grown upon a heap of farmyard manure, are almost invariably attacked by mildew. This has been asserted to be due to over-nitrogenous stimulation, but no amount of nitrogen has ever yet produced a Uredo or any other spore. It is worth remembering that a Wheat plant, so situate, must, during the spring, be surrounded by an atmosphere loaded with promycelium spores from the Puccinia, which is invariably formed upon straw, and it is only reasonable to suppose that these spores have a greater chance of infecting a plant than when in artificial culture a limited number is placed before the fragment of a leaf and examined under the microscope.

But assuming that De Bary is right in his view, that these promycelium-spores cannot enter the Wheat plant, is there any way in which the Uredo can be produced other than by the implantation of Æcidium-spores? It is improbable that the mycelium is perennial even when affecting perennial grasses.¶ During the winter months in a not exceptionally severe winter it is possible to find stray pustules of Uredo either upon Wheat, or more commonly upon Twitch, growing in sheltered situations. Thus last December (1881) I found a fresh pustule of Uredo upon Twitch (T. repens) in a wood, and also one in the month of March on a hedge bank at Flitcham. This spring our Norfolk and Suffolk Wheats were much affected with rust; some of this may and probably was due to Uredo linearis, kept alive from the previous autumn, but the bulk of it was due to the Uredo of Puccinia straminis, which is always an earlier Uredo than that of P. graminis.

There is a wonderful difference in the amount of injury done by mildew when derived directly from the Barberry, and when derived from Uredo that has reproduced itself through several generations. This is very obvious from the fact, that the Uredo is to be found every year in almost every—if not in every—cornfield, but the farmer takes no notice of it, as it does not appreciably diminish the yield. But with the mildew, which occurs in the middle of the Barbery bush the case is different. The fungus grows with such energy that it so injures the Wheat plant as to prevent it producing more than a few starved kernels. With such vigour does the mycelium grow and fructify at the expense of the Wheat, that the straw of the latter frequently does not ripen, but dies green. This is only what one would expect when the fact is taken into consideration, that the Æcidium spore is a sexual product, whereas the Uredo spore is not.

The practical inference clearly is, that the fewer the Barberry bushes in a district the less will that district suffer from mildew. The Æcidium of Puccinia graminis is, however, not confined to the common Barberry (Berberis vulgaris), but also occurs upon B. ilicifolia, B. canadensis, and B. nepalensis,* upon B. amurensis, B. aristata, and B. atro-pupurea,† and also upon Mahonia glauca.‡

I have been informed, that during the last few years the game preservers of Norfolk have been rather extensively using some varieties of Barberry as cover for game in their plantations; which variety has been employed I cannot say, but the practical importance to the agricultural community is considerable. Appended is a list of the grasses upon which Puccinia graminis is known to occur in this country, and I have met with it upon Wheat, on Twitch (Triticum repens), Dactylis glomerata, Poa pratensis, Lolium perenne, and Avena elatior.

List of Grasses upon which Puccinia graminis has been known to occur:—

Phleum pratense	Dactylis glomerata
Alopecurus pratensis	Festuca gigantea
,, fulvus	,, spectabilis
Phalaris arundinacea	,, tenella
Agrostis vulgaris	Bromus mollis
,, alba	,, tectorum
Calamagrostis epigejos	Triticum vulgare
Aira cæspitosa	,, repens
Avena sativa	,, caninum
,, fatua	Secale cereale
,, pratensis	Lolium perenne
,, flavescens	Elymus arenarius
,, elatior	,, glaucifolius
Poa annua	Hordeum vulgare
,, nemoralis	,, sylvaticum
,, pratensis	,, murinum
Molinia cœrulea	,, distichum
Holcus lanatus	

Charles B. Plowright, King's Lynn, July 20.

SPOT IN LILIES.

ABOUT this time last year Mr. Berkeley examined and reported on some Lily stalks and flowers which were sent from this garden to the *Gardeners' Chronicle*, and which were badly affected by the parasitic fungus producing "spot," a disease too well known to cultivators of Lilies. On meeting Mr. Berkeley soon after reading his report I had some conversation with him on the subject, wishing to obtain an opinion whether this parasitic growth was the cause or the symptom of unhealthiness in the plant, and whether the germs of it were contained in the Lily itself, and carried up with it in its growth, or were hanging about the soil, or were brought from a distance in the air. On these points Mr. Berkeley would not express any decided opinion. During five years that I have grown Lilies in the open soil they have never in any season been free from spot, which affects different Lilies in different ways, and is developed later in some seasons than others. Last year most Lilies did well until the end of July, then came dismal cold and wet weather, and the epidemic of spot became general and destructive. This year spot was visible on many Lilies by the middle of June, but its progress has been slower than last year.

L. auratum affords the best means of observing the effects of spot here, not only because it seems especially liable to it, but because it is grown in large quantities. Different kinds of Lily, however, are, as I said before, affected by it in different ways. Few kinds are quite exempt. I never saw any sign of it on L. giganteum or L. Martagon; L. colchicum suffers little, if at all; and L. tigrinum, though it seldom shows distinct spot, almost always withers prematurely from some cause. The early flowering Lilies suffer least, even when liable to spot. L. croceum and its varieties, though flowering well, have their leaves attacked after flowering with the most decided and typical form of spot; but they seem to flower none the worse for it next year. L. Humboldti when grown out-of-doors seldom gets through its flowering without being destroyed by spot. The attack begins about the time the first flowers open. The leaves turn black and rot away as if frost-bitten, and the flower-buds cease to open, and dry up. A flower-stalk which this year developed thirty healthy looking buds, opened only the ten lowest, and the rest withered. L. pardalinum, which grows here exceptionally strong seems to have a constitution capable of resisting the effects of spot, for though the stalks and leaves are often marked, the flowering is hardly ever affected. L. superbum, one of the latest to flower, suffers more in the flower-bud than in the stalk or leaf, and many buds open imperfectly or not at all, becoming quite dried up. As for L. speciosum, it so seldom reaches flowering in our cold summers, that I hardly grow it out-of-doors at all. L. auratum, however, affords abundant opportunity for observation, coming into flower as it does at all times from the beginning of July till October.

I also took especial notice of it this year in some gardens in Surrey, which I visited about the end of July, including those of Mr. G. F. Wilson, at Weybridge and Wisley; Mr. McIntosh, near Walton; Mr. Bowman, near Dorking, and some others. From my observations I am beginning to believe that we have been misled about the likings of Lilies generally, and of L. auratum in particular. The accounts we hear of the great rainfall in Japan during the early growth of the Lilies has led growers to believe that it is more fond of wet and watering than it really is. The only two gardens in which I have this year seen all the L. auratum quite healthy and free from spot were Mr. Wilson's, Weybridge Garden, and Mr. McIntosh's, near the Oatlands Hotel. In both these the soil is light and sandy, and the Lilies probably send their roots to a great depth to obtain moisture. In both the air is dry; but evaporation from the surface where the Lilies grow is prevented by the outer branches of Rhododendrons, the roots of which are too far from the Lilies to affect the soil in which they are planted. This kind of shelter is probably of advantage where the soil would otherwise burn; but I have seen nothing in any garden to lead me to think that the flower-head of L. auratum prefers shade to sunshine; but, on the other hand, the flowers seem to do better when exposed to full sun.

It will be interesting to know whether Lilies in perfect health can resist the attacks of spot, and I am doing my best to solve this problem by tying the petals over-run with the spot fungus to some of the healthiest and cleanest buds. We know, however, that L. auratum dies off in large numbers without showing any symptom of spot. The leaves and buds drop off one by one at all stages of growth, leaving at last the bare stalk. The cause of this is hard to explain, but it is not spot. The first indication of spot is generally in the flower-bud. The tip of the bud looks as if it had been scalded or burnt; vast coloured patches appear on other parts of it: when once the bud is affected ever so slightly the flowering of that bud is spoilt. The time at which the disease spreads most rapidly is when cold wet weather succeeds hot weather, during which the growth has been rapid, and is suddenly checked. Hot sun and dry air stops its progress. During the first fortnight of this August the dry air and bright sunshine, though the nights have been cold, have been most unfavourable to spot. In that time no fresh attack has attracted my notice, though I have been constantly on the look-out. The Lilies in the open ground which are most free from spot are those planted in well-drained borders where the soil is light, and contains no peat, and is exposed to full sun. Though the growth of the bulbs is not strong the flowering is good and healthy. Spot does not seem to be hereditary: the finest bunch of L. auratum I have this year is in a specially prepared peat bed in which spot is prevalent, but this bunch, which has been planted three years, and which was labelled last autumn as having "bad spot," has this year produced amongst other stalks three which are 8 feet high, and 3 inches in circumference at the base, and have between them more than fifty forward buds, hitherto quite free from spot.

I have tried, by Mr. Berkeley's advice, flowers of sulphur as a remedy, and find it of some use in retarding the spread of the malady, but it is not a cure; nor is its effect so good as that of bright sunshine. As regards spot on Lilies grown under glass, I have a covered frame, abundantly ventilated at the sides, having the lights drawn back at the top so as to leave 1 foot on each side of the ridge open above the central path. It is filled with made soil to a depth of 4 feet up to the ground line; but I believe if I could have made the soil 4 feet above the ground level, it would have been better. The result is not very successful: last year the late Lilies suffered from spot, up to this time there has been no spot inside the frame this year, and L. Humboldti has flowered pretty well in it. In the greenhouse which is open as much as the lights allow by day and night, and the glass stained with buttermilk, there are about twenty pots of L. auratum in full flower, which show no symptom of spot. I conclude, therefore, that the conditions

* Montagne, *Sylloge*, p. 314, No. 1138.
† De Bary, *loc. cit.*, p. 31, 32.
‡ Magnus, *Hedwigia*, vol. xv., No. 1876, p. 2.
§ Berkeley, in Hooker's *Flora Antarctica*, vol. ii., p. 450, pl. 163, fig 2.
‖ Cooke, *Fungi, their Nature, &c.*, p. 203, f. 108.
¶ De Bary, *loc. cit.*, p 23.

* De Bary, *Untersuchungen über Uredineen*, ii., 1866, p. 207.
† Winter, *Hedwigia*, vol. xix., 1880, p. 41.
‡ Berkeley and Browne, *Annals Nat. Hist.*, Jan. 1875. It was found by my friend, Rev J Stevenson, at Glamis, Forfarshire; but he informs me he has not met with it since upon this plant.

most favourable to spot are damp air, damp soil, and sudden changes of temperature; and I believe that if Lilies were planted in drier situations than those generally assigned to them, that they would be less liable to be attacked. *C. Wolley Dod, Edge Hall, Aug.* 14.

EARLSTOKE PARK.

This fine domain, the residence of Simon Watson Taylor, Esq., is situated about 3 miles from Market Lavington, on the road to Broughton and Westbury, and is a magnificently wooded estate of considerable extent. The highway through the pretty and picturesque village of Earlstoke cuts through the park, but the grounds from either side can be reached by means of bridges thrown across the roadway, and so covered with Ivy and other plants that any one walking about the grounds and passing along one of these bridges would scarcely be aware he was crossing over a public roadway, which, moreover, is to a considerable extent in a deep cutting with umbrageous trees on either side. On the right-hand side of the highway, going from Market Lavington to Broughton, the grounds are entered by a carriage-drive, which, gradually rising to the higher ground, passes round on the north side of the mansion, and issues again close to the foot of the village, which lies on both sides of a hill. Were it not for the homely English architecture, varied by some stonework of many years' standing, the visitor might almost fancy himself as having found his way into a snug alpine village, surrounded, however, with thickly covered woodland heights instead of bare mountain sides. The village is sheltered on all sides, and the steep cottage gardens, which are on a somewhat abrupt ascent with a full south aspect, produce early Potatos, which command good prices in the Bristol and Trowbridge markets. Springs abound in the locality, and from one of a plentiful character at the top of the village water is laid on to all the cottage residences. Close to the lodge entrance, at the foot of the village is the new church of Earlstoke, recently erected by Mr. Taylor, and which stands just within the park. The site of the old church and disused churchyard is a few hundred yards further within the park, and close by where once stood the old mansion before the new one was erected on its present commanding position. Mr. Smith, a former owner, it is said, built the new residence, formed the lake in great part, and greatly beautified and extended the grounds.

In the year 1820 the property came into the hands of the family who now own it. The manor and estate of Earlstoke, with those of Edington and Coulston, consist of at least 8000 acres of land, including a large deer park, finely stocked with timber trees, and abounding with rapidly maturing and thriving plantations. The present park and pleasure-grounds consist of about 600 acres, and are distinguished by great variety of surface. Bold eminences, with narrow winding valleys, enriched and ornamented with abundance of trees and water, form the natural scenery. About a mile to the south of the house is the northern boundary of Salisbury Plain, which presents a lofty and commanding ridge, extending in an undulating and irregular line from west to east for several miles. Stonehenge is distant about 15 miles from Earlstoke, with Salisbury on the right. The plain slopes rapidly to the north, abounds with deep and romantic hollows or dells, and is mostly covered with a thin turf; but on the Earlstoke estate it is clothed with thick and extensive plantations of Firs, Larch, Beech, and other timber trees. From one of these narrow dells, embosomed in a lofty circle of woodland, emerges a copious spring of fine water, which winds its course through a very beautiful and secluded pleasure ground, and is, in places, extended into small lakes, forming also, in its passage over ridges of rocks, several beautiful cascades. In the park the accumulated waters are swelled into a broad and noble lake, which presents a pleasing and animating feature from the northern and western sides of the house.

The mansion is seated on the brow of a steep knoll, or hill, and is partly embosomed in fine old forest trees, and partly open to distant prospects. The approach and entrance were formerly on the south, but on that side a pretty flower garden, planned for the late Mr. Watson Taylor, was laid out and enclosed from the park by a light high wire fence, and at that time formed a very pretty feature from the windows, but it no longer exists; and a new road was made, and an entrance portico erected on the north side of the house. A flight of steps leads, beneath a portico of eight Doric columns, to the entrance hall, formerly the library. The rooms within the mansion are spacious and lofty, and quite in keeping with the plan of the building.

On both the north and south fronts of the dwelling there is a sweep of green turf stretching away till it is lost in the woodland, and not a particle of flower-bed varies it in any place. Along the line of woodland in some part on the south side of the mansion there is a fringe of coniferous plants and ornamental shrubs, and these vary in a pleasant and effective manner the arboreal features of the place. The eastern and western sides of the mansion are wings of considerable extent, one forming the stables, the other the servants' offices, and these end abruptly in a thick growth of tall trees.

The glory of Earlstoke is its magnificent timber. On the brow and sides of the slopes are magnificent Oak, Elm, Beech, Chestnut, and Limes; and in the lower grounds skirting the lake these stand out singly in splendid proportions or in noble groups; and on the thickly wooded slopes falling away to the water on the south, south-east, and west sides. From the point where the spring which supplies the lake rises till it broadens out into the fine stretch of water which forms the lake proper, there is a marvellous growth of timber of all kinds. Larch of unusual altitude and breadth rear their heads to the sky, and there are specimens with trunks nearly or quite 4 feet in diameter. The Silver and Black Spruce, Scotch Fir, Beech, Elm, Oak, &c., are all in rare form, and their roots must strike deep down into the soft sandstone rock and layers of sand of which these magnificent undulations are composed. The woods would be greatly improved by judicious thinning, but it appears as if the present proprietor was loth to raise his hand against a single tree. The undergrowth of Laurel and other shrubs is truly astonishing. In spring Primroses, Snowdrops and wild Hyacinths carpet the slopes and woods with vernal tints of great sweetness. There are miles of winding walks about the slopes, all deliciously cool and pleasant because so nicely overshadowed with tall trees.

The Lime trees on the estate deserve a special word of mention. These trees grow with great freedom into immense size, feathering their branches to the ground. It is said that at Coulston there are two trees of enormous dimensions, and they are regarded in local circles with almost as much wonder as Stonehenge.

The kitchen gardens occupy a good position on the opposite side of the highway to that where the mansion stands, and near to the foot of the village. There is a spacious walled-in garden in two divisions, with excellent walls, also vineries, Pine stoves, &c., but not kept up with that outlay of labour commensurate with the fine character and extent of the domain. May agriculture soon flourish! Many a stately English home has to feel its effects. Let us hope the better time is near at hand. *R. D.*

FLOWERS IN SEASON.

Lobelia sessilifolia.—Messrs. Rodger, McClelland & Co., of Newry, send us flowers of this handsome perennial, which is a hardy bog plant, with stems nearly 4 feet in height, with sessile, glabrous, lanceolate, finely serrate leaves, in the axils of each of the uppermost of which is a stalked flower, about 1 inch in length, and of a deep violet-blue colour.

Digitalis Lindleyana.—A very distinct and handsome Foxglove, with the foliage covered with viscid, downy hairs, and dense spikes of pendulous flowers, each about 1 inch long, the lower lip oblong, white, the upper lip very short, and, like the tube, prettily veined with purplish-brown.

Apera arundinacea is a very elegant ornamental grass, with elongated branching panicles, the drooping branches of which are very slender, and covered with myriads of minute spikelets.

Calceolaria amplexicaulis var. albescens is a very pale-flowered variety of this very distinct species, the branching habit and free-flowering qualities of which render it very desirable.

Gilia Brandegeii has done famously planted out in full sun on a slightly raised portion of the rockwork, having grown into a specimen fully a foot wide, produced six spikes of flowers, the tallest of which was quite 12 inches high. More, I see, are now coming up. It is a distinct plant from everything else round about it, though the colour is neither yellow nor white. *T. Smith, Newry.*

Hypericum reptans.—Under this name we have received from Messrs. Rodger, McClelland & Co., a small trailing Hypericum, with slender stems, small oblong sparsely dotted leaves, and numerous yellow flowers, 2 inches across. A noteworthy peculiarity is, that the five leafy sepals are completely deflexed, even in the bud.

Spiræa Nobleana.—A nearly glabrous shrub, with oblong-obovate, shortly-stalked leaves, coarsely toothed towards the lip, and dense, much-branched, pyramidal panicles of pale pink flowers. One of the most ornamental of the genus.

THE LONDON PARKS.

Battersea Park.—During the past two or three weeks the bedding in this favourite Park has improved rapidly, the fine-foliaged plants especially having taken on their wonted gloss and brightness. The long period of cold dull weather which succeeded the planting-out time was anything but favourable to the progress of tender foliage and subtropical plants, especially in those portions of the Park where the shade from the trees is most dense, but thanks to the change of weather, the thousands of visitors who flock to the Park may now enjoy all those beauties of shade and leafage for which Battersea is so widely known, as well as those brighter tints which contrast agreeably with the green foliage and the more sombre hues afforded by a variety of other trees and shrubs. The entrance to the subtropical garden from the Battersea side, and which is partly overhung by trees, is beautified with groups of foliage plants laid out upon the green slopes, together with those charming nooks and corners which give Battersea a grace and beauty exclusively its own. Facing the entrance walk there is a bed on the slope opposite laid out in the mixed style, in which tuberous-rooted Begonias, Centaureas, Lobelias, and a few subtropicals of a feathery character are the chief objects of beauty. Turning to the right we find the irregular outlines of the shrubbery, the green mounds and little valleys as attractive as ever with Palms, Dracænas, and Agaves dotted about between beds of rare subtropicals and other beds about equally mixed of foliage and flowers. Nothing seems to have a finer effect at present than the tall groups of Polygonum cuspidatum standing at the summit of each mound, and covered with their white inflorescence from the base to the extremity of every drooping shoot. What a perfect natural wreath one of these shoots would make.

The plants in the subtropical beds which appear to be the most striking consist of Polymnia grandis, Amicia zygomeris, American Tuberose, Anthurium cordifolium var., Tigridia grandiflora, Eurya latifolia, Phormium tenax, and P. tenax var., Dracænas, and others. The flat upon the left, which is laid out partly in the carpet and partly in the subtropical style, is different this season from what it has been in any former year. The foliage plants are more intermixed with flowers, and the carpeting is more natural in design, and more free and flowing in outline. In a word, there is more of the gardener and less of the architect in the designs generally. The large three-winged Eucalyptus bed planted with Chrysanthemum frutescens pinnatifidum, Japanese Maize, tall blue Ageratums, Ricinus Gibsoni, Cannas, and others, and edged with a band of Gazania splendens, is majestic-looking, as well as being pleasing and effective. A raised circle, planted with tall Aralias, from 5 to 6 feet high, with their stems entwined with Convolvulus, and set in a groundwork of single pink Zinnias and Veronicas, intermixed with Gladiolus, and finished off with a broad band of Salvia argentea, is a noble and striking bed; so also is the corner bed as you turn in the direction of the "coffin" beds, which are beautifully carpeted as usual. This bed is planted with Wigandia caracasana and Gladiolus Bowiensis in a groundwork of Petunias and Lantanas, and edged with golden-leaved Pelargoniums. Opposite the lake the subtropical beds are also very good, and judiciously varied as to character and material. At the fountain entrance the bank under the trees is dotted with plants of Monstera deliciosa (trained against the stem of a tree), San-

seviera zeylanica, Palms, and other plants remarkable for the colour and form of their foliage. Here are pretty carpet designs in a groundwork of Sedum acre elegans, or rather a mixture of the choice foliage element sparingly introduced among dots of succulents and the carpet of grey Sedum. Upon the opposite side are striking beds of Henri Jacoby Pelargoniums, large Palms dotted about upon the grass, and subtropical beds composed of the fine Abutilon braziliense, mixed with single Petunias and Heliotropes, and bronze-leaved Cannas, intermixed with Gladioli, beds of single Dahlias, and white Phlox, Queen Victoria. Here, too, are groups of Brugmansias, skirting the shrubbery, and (close to the point from which we started) very prettily mixed with single Dahlias and Pentstemons; and carpet beds and other mixed foliage beds are so handsomely laid out, and so good in effect, that the subtropical garden of 1882, notwithstanding the very unfavourable weather in the early part of the year, will compare favourably with any of its predecessors, and in some respects exceed them. The subtropicals in the peninsula garden will be found as numerous and as interesting as usual—flowering creepers of the most exquisite shades of blue, light and dark purple, pink, white, and yellow, and Ferns and rock plants in their old quarters; all of which, as well as the condition of the Park generally, reflect great credit upon Mr. Rogers' powers of organisation and good management.

HYDE PARK.

Should the present favourable weather continue a little longer the London Parks will certainly look as well as they have done in any previous year. At the beginning of the season the weather was so cold and dull that tender plants made little or no growth, and people were beginning to lose hope of enjoying the pleasure of richly coloured carpet beds and masses of flowers for the season. But all reason for entertaining any such doubts having now disappeared we are pleased to be able to report the bedding out up to its usual excellence, and to speak approvingly of the manner in which the plants are disposed. The reasons which may have formerly existed for adverse criticisms upon carpet bedding can no longer be so fully sustained upon any practical grounds, because the Superintendents of the various Parks, without exception, have this year introduced a more free flowing and natural style of arranging their plants, and their designs generally are less cramped and formal. Mr. Browne, the newly appointed Superintendent of this Park, has especially distinguished himself in foliage and carpet-bedding, the latter of which will be found in a series of beds between Stanhope Gate and the Marble Arch. But our entrance was made from the Serpentine Road, and we will first of all notice the dell, which affords to the Londoner an example of a natural ravine, poorly wrought out in some of its details and feeble in plan. The feature that is most striking here is the introduction of noble foliaged plants, among the shrubs of which the bold richly ribbed leaves of Musa ensete are conspicuous above all the rest. The tall Australian Dracænas, the Tree Ferns, Palms, and other foliage plants are best seen from the Serpentine bridge, and as you look down into the green valley below, the rocks, the stream of water, margined by tall-growing grasses and foliage plants dropped in at intervals, and the large Palms dotted about upon the green carpet (for one effect of the season is that the grass is still green!) have a pretty effect. The border of shrubs by the side of the Ladies' Walk is strikingly intermixed with flowering plants and an irregular margin of sweet-scented flowers, composed of Sweet Alyssum, Mignonette, &c., the fragrance of which is so delightful towards evening. At the Albert Gate entrance the principal attraction is the show of pink and scarlet Pelargoniums, Lobelias, and groups of foliage plants and Ferns; and between Albert Gate and Hyde Park Corner the variety of all kinds is still greater of Cycadaceous plants, Palms, Ferns, and other dwarf-growing foliage plants, groups of subtropicals, and mixed beds of foliage plants and flowers. The mixed beds upon the north side of the Ladies' Drive are very effectively planted with Ricinus Gibsoni and R. sanguineus, Japanese Maize, beds of single Dahlias, Abutilons, Aralia papyrifera, Musas, Eucalyptus globulus, Polymnia grandis, Solanums of sorts, and edged with handsome-leaved Funkias or other suitable plants. The great display of flowers, foliage plants, and carpet-bedding is, however, in the long border between the Stanhope and Grosvenor Gate entrances. The beds are chiefly edged with broad bands of Lobelia Blue King, which is at present highly effective; and the beds of Pelargoniums are at their brightest. The best of these are Rosamond Wright, Trovatore (new, a fine scarlet with a shade of maroon in it), Rev. F. Atkinson, Dr. Rawson, Sibylla, Verona, and many others, from pink and white to rose, salmon, maroon, crimson, and all shades of scarlet. Nor can it be said that flowers predominate, for Mr. Browne has managed to hit upon that happy line which leaves no element unrepresented. The beds of fine-foliaged plants intervene between the more showy ones, which are mainly composed of flowering plants, and there is just sufficient of the carpet style introduced to give variety. One of the best examples of the carpet style will be found near the Stanhope Gate, in what the public have christened the "harp bed," from the fact of its containing two figures which closely resemble a harp in shape. The centre is a six-sided figure, planted with Pachyphytum bracteosum in a groundwork of Sedum glaucum. The harp figures have centres of P. bracteosum, a band of Alternanthera paronychioides major, and a broad margin of A. paronychioides aurea of a beautiful golden colour, and smaller figures of A. amœna, also highly coloured; banded by Herniaria glabra. These are the plants of which the bed is mainly composed, and which is a perfect example of the style it represents, and taken together with the rich combinations of so many foliage plants and flowers, the variety of arrangement which meets the eye at every few yards distance, and the fact that not a blank is visible anywhere, the bedding of 1882 may be fairly pronounced a great success.

VICTORIA PARK.

It is not now a matter of surprise to find in Victoria Park such a show of foliage plants and flowers as at one time would have been thought impossible in the atmosphere of the East-end of London. Mr. McIntyre, always calculating to a nicety the right position of plants of doubtful hardiness and tender subjects of all kinds has again succeeded in securing a floral treat, which cannot fail to evoke the approval of all visitors who are interested in flower gardening. At the Shore Road entrance the large circle of Hollies is surrounded with some striking panels of scarlet and pink Pelargoniums, with dark centres of Coleus Verschaffeltii, the outer lines being composed of silver-leaved Pelargoniums and Iresine Lindeni. The latter, indeed, separate the panels from each other, and the spaces between where the panels are looped to each other are filled in with 3-lobed carpet figures edged with Echeverias, laid out in a groundwork of Mentha Pulegium gibraltaricum. The border upon the opposite side is dressed somewhat similarly, but in different figures. The centres are quadrants, filled with white Centaureas, and banded with dark Coleus and Pelargonium Crystal Palace Gem. The front of the border is carpeted with small raised circles of succulents set in a groundwork of Herniaria glabra. The long border

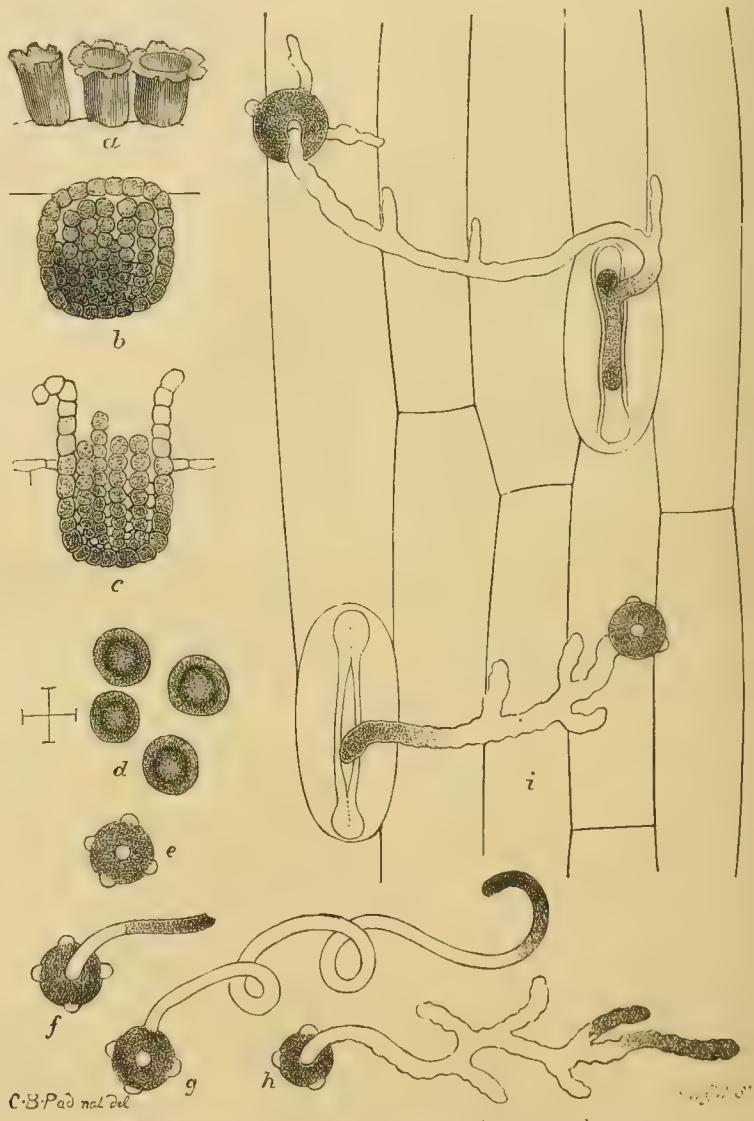


FIG. 41.—ÆCIDIUM BERBERIDIS. (SEE P. 233.)

a, Three cups; *b*, An immature cup before its upper wall has ruptured; *c*, Mature cup; *d* Æcidium-spores; *e* Æcidium-spore just beginning to germinate in water; *f*, *g*, Germination more advanced (in water), *h*. Æcidium-spore which has germinated upon the cuticle of a Wheat-plant; *i*, Cuticle of Wheat, with two spores of Æcidium upon it, the germ-tubes of which are entering the stomate. (8 hrs.)

extending from the Shore Place entrance to the opposite side of the Park is well clothed with shrubs and hardy flowers, and a variety of mixed beds, dressed upon the bedding system, are laid out in the green border upon the right, among which the beds of mixed Verbenas are exceedingly chaste and beautiful, and the most admired. Long before the flower garden is reached, it can be seen that the display is no ordinary one: nor is it. Each and all of the London parks have their own peculiar feature of interest, and the masses are naturally attracted to where there is the greatest show of flowers, and the brightest carpet designs; therefore it is nothing new to find clusters of visitors of all grades examining minutely the Prince of Wales' Feather, or the Butterfly-bed as it is locally called. The head of the butterfly is adorned with dark foliage plants, and banded with silver-leaved and pink Pelargoniums, a line of Iresine Lindeni, and a band of Pelargonium Robert Fish. The tail or central figure is dressed with silver Pelargonium Queen of Queens, a band of Pelargonium Vesuvius, then a band of pink, a double row of Iresine Lindeni, margined with Pelargonium Robert Fish. The two wings are planted with Crystal Palace Gem, Vesuvius, and pink Pelargoniums, all, of course, being edged alike. The beds of pink, salmon and scarlet Pelargoniums, the edgings of Brighton Blue Lobelia, the beds of Centaurea and Purple King Verbena, and the beds of silver and golden-leaved Pelargoniums, all vie with each other as to which is the most striking and beautiful. The carpet beds are, as usual with Mr. McIntyre, of the highest order, the designs are new, and the material the best that can be found that will stand the climate. The scroll beds leading to the Crown Gate are laid out in small carpet designs, and are both chaste and remarkably pretty, the material well suited to the situation, and the variety of flowering plants, Palms, &c., which are dotted about upon the grass, and the excellent background of evergreen shrubs probably tends to enhance in some measure the outline and character of the miniature designs. The subtropical beds by the side of the lake are planted with the choicest and most popular of plants, all of which have already filled their allotted places, so that beds of all kinds are as handsomely furnished as it is possible to have them. Nor, in conclusion, must we forget to mention the rockery—always an interesting feature at Victoria, nor the isolated beds of foliaged plants, which are as well filled and as beautiful, taken either individually or collectively, as the most prominent plot of bedding in the whole Park.

Regent's Park.

In this Park the bedding is very satisfactory considering the season and the adverse nature of the situation. The soil is of a retentive character, and the shade from the trees is rather prejudicial to flower-gardening. A little want of colour in the plants is, however, all that is noticeable, for in other respects Mr. Gibson has provided a capital display. In another week or so, should the present warmth and sunshine continue, the foliage plants will have assumed their natural brightness, and what is now a disadvantage in the shape of shade may be of benefit to the plants in case of protracted dryness. Entering the Park from the Chester Terrace, and turning to the left or east side, the visitor will find a large bed of subtropicals composed of Castor-oil plants of different shades and two carpet-beds, each having a vase in its centre and prettily carpeted with flowing lines of Alternantheras, Kleinia repens and Herniaria glabra, the base of the pedestal being surrounded with Iresine Lindeni. The bedding is laid out in two long borders enclosed by low Privet hedges and broken up with circles of subtropical or other choice flowering subjects. The plants are, however, apparently selected for gracefulness of habit in order to break the formality of the straight lines. They consist of Dracænas, Pandanus Veitchii, Curculigo recurvata, and others, including in some cases a mixture of tuberous-rooted Begonias. The long panels, a name given to a group of flower-beds about midway between the two extremities of the walk, are effectively planted with a variety of foliage and flowering plants. The first figure—a large one—is filled with Eucalyptus globulus, Helianthus major, Abutilons, and other foliage plants, edged with Festuca glauca. The north end of the panel is planted alternately with silver and golden-leaved Pelargoniums, intermixed with Coleus Verschaffeltii, and a large carpet-bed is laid out, somewhat out of the common way, with wavy lines of green, and the bright tints of different coloured Alternantheras. At the south side of the panels there is another carpet-bed laid out to match the one already mentioned. Continuing southwards, there are tall Dracænas plunged in the borders upon either side, and oval beds with raised centres very prettily carpeted and edged with Sedum acre elegans—the ovals breaking the straight lines in the borders instead of circles as mentioned in describing the first half of the borders. A very striking feature is introduced about the centre of the lower half of the borders in the shape of three beds of Palms arranged opposite to each other, and which has a considerable tendency to attract the eye from following the long straight lines of the walk and borders. Then, again, there are ovals carpeted with Antennaria tomentosa, gracefully lined with dark Alternantheras, which has a peculiarly sombre effect. Perhaps it would be well to introduce a little more of this element into the carpet style as a change from those more striking colours which are very telling but rather too abundant. The style of design upon the west side of the Park being much the same as that upon the east side, and the manner of planting varying but little from what has been described, it will not be necessary to further enter into details, except to notice some fine-foliage beds and the mass of Fuchsias in the Griffin Vase; and lastly to add that under Mr. Gibson's management the Park is in excellent condition, the plants healthy and well-arranged, both as regards design and the blending of the various colours of foliage and flowers.

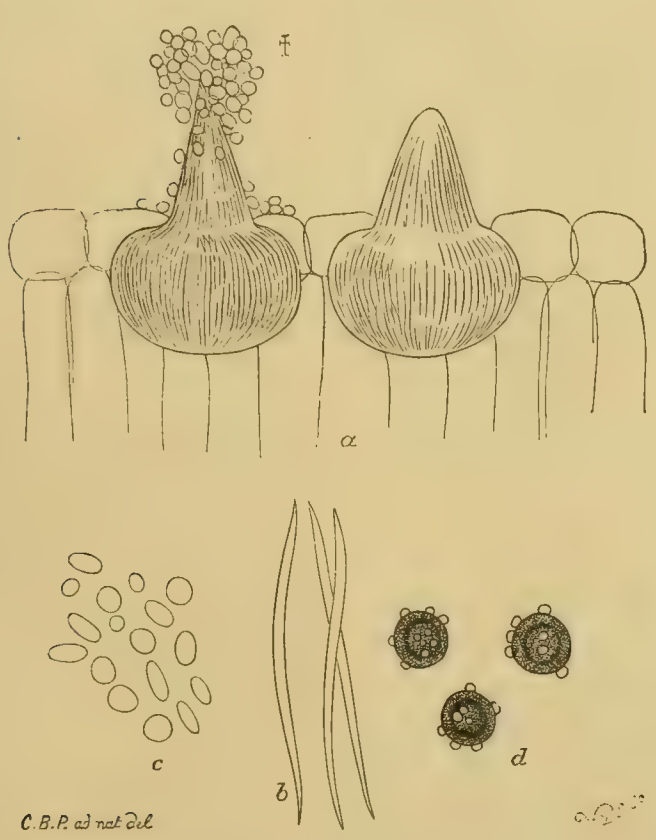


Fig. 42.—Spermogonia of Æcidium berberidis. (See p. 233.)

a, Two spermogonia upon the upper surface of a Barberry leaf; *b*, Fibres of which the mouth of the spermogonium is formed; *c*, Spermatia, very much enlarged; *d*, Two Æcidium spores with spermatia (?) adhering to them.

Hampton Court.

Visitors to Hampton Court Palace are once more provided with a display of bedding-out, the extent, variety and character of which embrace every style of the day. Mr. Graham, always ready to add new and interesting features to the garden, has this year introduced a long herbaceous border, which will enable the public to form their own judgment upon the merits of hardy plants and their relative worth as compared with plants that are more popularly employed for flower garden decoration. The border is upon the Thames side of the Palace, and runs parallel with the line of beds bordering the long promenade, so that upon the same plot of grass may be seen carpet-beds, foliage beds, and mixed beds of all kinds, as well as the collection of hardy herbaceous plants referred to. This is a very practical method of testing the popular fancy, as well as extending and cultivating a taste for such hardy plants as are worth cultivating for border decoration. Beginning with the line of beds by the side of the long promenade the visitor will find new designs in carpet-beds, always a striking feature at Hampton Court, and mixed beds of an especially pleasing character, the most attractive of which is planted with Verbena Hampton Court Crimson and Veronica Andersoni variegata, and edged with Pelargonium Harry Hieover. There are also good beds of Abutilon nævium maculatum, Iresine Lindeni, and Verbena venosa, and beds of tricolor Pelargoniums carpeted with blue Violas and edged with dark Coleus. Of Pelargoniums nothing comes up to Henri Jacoby, which is undoubtedly the finest bedding Pelargonium in cultivation.

Mr. Graham has attempted a new kind of bed, which is not exactly perfect this season, but which promises to make a very effective one another year. It is planted with small plants of Acer Negundo variegatum, pegged down intermixed with dark Iresine and Verbena Hampton Court Crimson, and edged with Iresine Wallisi. In the carpet style of bedding the centre of attraction is the beds having raised centres of Echeveria Peacocki, a succulent of a beautiful mauve shade, and quite a unique thing among carpet-bedding plants, the distinct shade of colour being visible as far as the eye can reach. Towards the Thames side of the Long Walk the beds are beautifully varied of Roses and Petunias and mixed Verbenas, in addition to a good show of various kinds of Pelargoniums, which have never been brighter than they are at present at Hampton Court. The long beds by the canal side are literally aglow with pink, salmon, scarlet, and crimson Pelargoniums, varied with figures of silver Pelargoniums, carpeted with

blue Violas, and edged with Iresine Lindeni and Stellaria graminea aurea. Of mixed beds of all kinds, monthly Roses, and foliage plants, there is no end of variation, so that any one having a taste for flower gardening can hardly fail to pick up new ideas from a garden of such extent, where all is so thoroughly well done, and where there is so much diversity of arrangement.

The Arboretum.

PINUS BOLANDERI.—Young trees of this Californian Pine at Messrs. Paul & Son's Nursery at High Beech, are very attractive from their compact habit and bright bluish-green colour. Moreover, with Messrs. Paul the tree is "as hard as iron." What the experience of others may be we do not know, but we observe that Messrs. Veitch recommend that it should not be planted in exposed situations, while on the other hand they recommend it for shrubberies and thick screens. The tree never attains any great height.

PINUS SILVESTRIS AUREA.—This is one of the best of the golden Conifers, and is the more valuable as its golden colour is more particularly developed in the winter months. This is also the case with the bronzy Elvaston Yew.

CUPRESSUS LAWSONIANA AUREA.—Mr. Barron, of Borrowash Nurseries, informs us that seedlings of this very ornamental species transmit the rich colour of their parents.

THE GOLDEN ELVASTON YEW.—This variety, which is of a rich bronze colour, originated, we are informed, from a cross between the pollen of the ordinary Golden Yew and the Dovaston Yew.

TAXUS BACCATA VAR. BARRONI.—This is a very brightly coloured Golden Yew, raised at the Elvaston Nurseries, and noteworthy not only on account of its beauty, but for the fact that it bears female flowers, while, as we are assured by Mr. Barron all the other Golden Yews are males.

THUYA OCCIDENTALIS LUTEA.—The variety of this sometimes called "George Peabody" is to be commended for the richness and brilliancy of its golden-bronze hue. We saw it in fine condition at Messrs. Paul's Cheshunt Nursery recently.

RETINOSPORA TETRAGONA AUREA.—This is a brilliantly coloured variety which originated in the nursery of Messrs. Barron at Borrowash, where, contrary to expressed opinion, it grows rapidly. Its close four-sided branches and small neat foliage are very attractive. For rockeries or for bedding purposes it is excellent.

THUYA OCCIDENTALIS PENDULA.—This is a form of the American Arbor-vitæ, with pendulous branches. It is well suited for a rock plant, and as we learn from Mr. Barron, of Borrowash Nurseries, it comes true from seed.

PHILLYREA DECORA, OR VILMOREANA.—Under this name Messrs. Paul & Son, of Cheshunt, send a spray of a very handsome hardy evergreen. The bark of the young shoots is olive coloured; the leaves shortly stalked, 5—6 inches long, 1¾ inch wide, coriaceous glabrous lanceolate, slightly tapering to the base, entire, and with a slightly recurved margin. We do not find the name in any book, and as the specimen is not in flower, we cannot identify it, but in any case there can be no doubt of the beauty of the shrub.

LABURNUM ALSCHINGERI.—It is rather a comfort to find that in the standard *Genera Plantarum* Laburnum is kept up as a distinct genus from Cytisus, owing to the absence of a little wart on the seed in the case of Laburnum. For garden purposes the arboreal habit alone suffices, as all the species of Cytisus are mere shrubs. More to the purpose, from a garden point of view, is the very long racemed form of Laburnum known in the nurseries as L. Alschingeri. The plant, as we see it in the nurseries and about London, seems like a long-racemed form of L. alpinum, the so-called Scotch Laburnum. Whether it is the same as the Laburnum Alschingeri of Visiani as described in Karl Koch's *Dendrologie* (1869), vol. 1, p. 18, is open to doubt; at any rate it does not agree with the characters therein given. Be this as it may, there is no doubt as to the preference which will be bestowed on the long clustered form, once it becomes generally known.

EPPING FOREST.—Subject to certain regulations, the Messrs. Paul have been allowed to retain their nurseries at Loughton, and at High Beech respectively — the regulations providing that the public shall have access to them on the same or similar conditions to those in force in the London parks. It is satisfactory to learn that although some two thousand people entered the nursery last Bank Holiday, no wilful injury was done beyond the breaking off of a branch of one Rhododendron.

THE PURPLE PEACH.—"This is going to be a better thing than we expected," said a well known nurserymen to us, and as he led the way to some good sized trees of it we fully concurred in his verdict. There is a richness of colouring about the leaves to which we remember no precise parallel among purple Sycamores, Nuts, Beeches, or Maples.

Foreign Correspondence.

THE ALPS OF TRANSYLVANIA.—It may be interesting to record a botanical excursion that I made to the Korongyis Alps for the purpose of collecting living plants, and forwarding them in the autumn to the Botanic Garden at Kolosvár, and in the course of which I collected and described many Transylvanian rarities. I forward a specimen of Edelweiss (Gnaphalium Leontopodium), which is not uncommon on the Siebenburg Alps, and is very freely represented on the Korongyis Alps, as well as on the peak of the steep Kalkwänden, where the plants are not easily collected. Dombhat is a watering place not far from the slopes of the Korongyis. By rising at 4 o'clock one may in an hour reach the Vimluj Valley, from whence on horseback the ridge is reached by 8 o'clock. Thence one must proceed on foot for an hour to the habitat of the Edelweiss. The way back is very difficult for horses, so I should advise travellers to return on foot. Dombhat has good hotel-like houses, where the food is excellent, and it is the special starting point for those Rodnaer Alps (Korongyis, Inen, Mihaiassa, &c.), where such rich stores of Transylvanian plants are found. This place may be reached from Kolosvár by carriage in a day and a half, but the quickest way is to come from Dees, the nearest railway station. I would advise those who are pressed for time to make Kolosvár their headquarters, and I will willingly give any useful and practical information that may be desired. *Professor Dr. August Kanitz, Director of the Royal Botanic Garden, Kolosvár.*

Orchid Notes and Gleanings.

ORCHIDS AT MESSRS. VEITCH'S.—Those who have studied the Orchid family, or happen to be acquainted with collections of them, know, that even in large collections, there are few species or varieties in flower at this season; but here at Chelsea there are numerous distinct species and hybrids, either in flower or showing. The magnificent Cattleya gigas was still in beauty, although the largest proportion of them were past. C. Eldorado was in flower, and is a distinct and very beautiful Orchid: the most striking feature in this species is the lip, which is orange-coloured at the base, with a margin of reddish-purple; the sepals and petals are rose-coloured of various tints. These will be followed by C. exoniensis and the autumn form of C. labiata, and later still by the various forms of C. Trianæ; and intermediate between these are numerous fine hybrids, so that in this nursery Cattleyas are in bloom all the year round. C. fausta × is very valuable, because it blooms in mid-winter, and there are no less than seven distinct forms of this Cattleya grown at Chelsea, and all of them raised from one cross, viz., C. Loddigesii crossed with C. exoniensis. The Cypripediums have become a very important genus of Orchids, and one never visits the Chelsea nurseries without finding several of them in flower. At present C. Morganiæ × is in flower, and it is certainly one of the most beautiful of the Lady's Slippers, and is much more attractive than the celebrated C. Stonei platytænium, to which it has some resemblance in its long, slightly twisted, maroon-spotted petals. The dorsal sepal is delicately rose tinted. It is a cross between C. Veitchii and C. Stonei. C. æanthum × is also in flower, and a very pretty variety it is—a cross between C. Harrisianum and C. insigne Maulei. The dorsal sepal is very pretty, the upper portion white, the lower part being marked with maroon spots in lines. C. calanthum ×, a cross between C. biflorum and C. Lowii, is a really distinct variety. It is richer in colour than the best forms of Lowii, and the dorsal sepal is white, with reddish-purple at the base. About a year ago I drew attention to the great beauty and distinct character of Phalænopsis violacea, as seen at this nursery. It is again flowering very freely, and much stronger this year; except that the flowers are larger on some plants than they are on others, they do not vary much in colour, or, at least, have not done so hitherto, until Baron Shröder flowered—a distinct form, which was alluded to last week, and which well deserved the recognition of a First-class Certificate. This beautiful Orchid should be in every collection.

There are also a goodly number of plants of Zygopetalum Sedeni × in flower. This fine hybrid does not seem to be plentiful enough to allow of its being introduced to the public, but when it is sent out it will be eagerly purchased by Orchid fanciers. The rich dark brown sepals and petals, with the labellum blue and irregularly marked with white, are very pleasing. The whole stock of plants has been propagated from one seedling, so there cannot be any poor forms of Z. Sedeni.

What splendid masses there are, too, of Dendrobium formosum: there must be several hundreds of plants loaded with flowers. No garden should be without this fine Orchid, now that it is as cheap as a scarlet Pelargonium. Its large white flowers will remain in beauty on the plants for two months. Some growers complain that it does not live or thrive for many years, but we have no trouble with it at Loxford. The plants are put into teak baskets, with a very small portion of peat and sphagnum, but with a large proportion of pot sherds and charcoal. Give plenty of water when growth is being made, but keep rather dry when they are at rest in the winter. *J. Douglas.*

SUMMER FLOWERING ORCHIDS.—There is usually a paucity of flowers in the Orchid-houses at this season, but many of the recent introductions will help to fill the void which was more apparent ten years ago than it is now. Cattleya gigas seems to flower in July, and continues into August; this splendid Cattleya should be in every collection of Orchids. It is of very free growth and most robust habit, and flowers as freely as any Cattleya when it gets the right treatment. If the plants are put on the side stages with other Orchids they will grow freely enough, though seldom form flowering sheaths; but remove them from there, place the pots in baskets, and suspend them from the roof in such a position that the leaves almost touch the glass, and every plant will flower. This species also does well if fastened on blocks, but they want water very often, and if neglected the leaves get yellow, and the plants soon suffer. C. crispa is a good old species, which is almost neglected because it is old; it flowers very freely, and is one of the easiest to grow; ours are now in flower, as they always are in August. C. superba also flowers during this month; it is one of the most brilliant in colour, but like C. gigas does not succeed unless it is suspended near the roof, and does best fastened to a bit of a trunk of a Tree Fern. Like C. gigas it will make two growths in a year, but when it does this it will not flower so well. Cypripedium Dominianum × is perhaps the best of the hybrid varieties, and it usually flowers late; it is also well in flower now, but seems to do best in the warmest house, and is liable to be attacked by thrips. The recent introductions of Orchids from South America have added many species to our collections that are in flower nearly all the year round. In our small collection we have Masdevallias and Odontoglossums in flower all the year round. The brilliant colours of the Masdevallias contrast well with the more quiet tints of the Odontoglossums. Masdevallia Veitchii generally flowers in the spring, and again in the autumn: it is now showing flower, while some flowers are open. M. Chelsoni × will prove itself to be a variety of the very highest merit. It is even more rich in colour than M. Veitchii, and grows quite as freely. It is also coming into flower. Some of the varieties of M. Harryana are still in flower, and we have not been without flowers of them since May. M. Wageneriana is a species that should be in every collection; it is also in flower, and succeeds best potted in pans and suspended near the roof. Very interesting too at this season are some of the Restrepias; they succeed well during summer in the cool house, and the quaint flowers are also extremely pretty. What a noble species of Oncidium too is O.

macranthum ; its usual time for flowering is July and August, and its large golden flowers last nearly a month in full beauty ; it seems to succeed best grown in the coolest house, and treated exactly like the Odontoglossums. Amongst the plants imported three or four years ago were many fine varieties, both in the size of the flowers and in the contrast of colour between the sepals and petals. *J. Douglas.*

Odontoglossum vexillarium. — It may be interesting to some young growers and possibly to old ones also, to know that a plant in my collection has carried two batches of bloom this summer. I exhibited it at Farningham Show on June 29, with four spikes, carrying six, six, five, and four blooms. I shall exhibit it at Sevenoaks Show on 24th prox., with seven, five, four, and three blooms, on four spikes. These later blooms are larger and finer in texture than the former, and the plant is doing all without the least detriment, as it had a rest from carrying bloom of four weeks. Had it carried the three spikes at once, it might have strained it, as it has but nine bulbs. *D. B. C.*

The Kitchen Garden.

Onions.—In many places the Onion crop, owing to the long spell of wet weather and almost total absence of sunshine for weeks together has been badly affected with mildew this season, and in not a few places it appeared before the bulbs had even attained a medium size, thus rendering absolutely necessary the only practical alternative—the bending of the tops and the pulling up of the bulbs, weather permitting, a few days later. Crops which have completed their growth without being checked by disease, will now, by the bending and colour of the tops, as well as by the general appearance of the bulbs, indicate plainly enough that the time for harvesting has arrived ; therefore the first opportunity of dry weather —of which we have had a nice spell lately—should be taken to pull them up, but this should not be done after heavy rains. A few fine days should first be allowed to elapse, in order to give the bulbs time to evaporate the water they may have imbibed, otherwise they cannot be expected to keep so well as when their tissues are filled with the properly elaborated and thicker juices of the stem. In any case the bulbs should be pulled up before a second growth commences, and be laid on the ground with their roots to the south, so that the sun's rays may assist in withering them. They should be spread out in widths of about 5 feet, with a space of a couple of feet between, in order that they may be turned more readily ; and this should be done every fine day until the roots and tops are completely withered, when the greater part of the latter can be cut off and the bulbs stored away in a dry loft, where they can be spread out or strung together by the remaining portion of the top, and suspended from nails driven into the joists or rafters of a dry shed from which frost can be excluded.

In the event of the weather being showery at the time it is necessary to have the Onions taken up, it will, as recommended on a former occasion, be advisable to spread them on hurdles or shutters to dry, which, owing to being free from exhalation, and having a current of air passing underneath and amongst the bulbs, they will do quicker and more effectually than if placed on the ground or gravel walks, which are sometimes had recourse to for that purpose. When storing the bulbs, put all the small ones by themselves for pickling or culinary purposes, for which they are frequently asked in preference to larger ones. The ground cleared of the Onion crop should be got ready for the reception of Cabbage plants next month. For this crop we manure heavily and trench deeply.

Ordinary Work.—If not already done lose no time in getting the planting of Broccolis, Savoys, and Winter Greens completed. Late plantings, when the plants have previously had plenty of room in the nursery-beds to develope themselves, and are let down to the collar when being planted, I find withstand the effects of severe winters better than those planted much earlier. See to the earthing-up of Celery when the plants are thoroughly dry, and take care that no earth is allowed to get into the heart of them while the work is being done. Draw some soil to the ranks of Broccolis, Cauliflowers, Savoys, and Borecoles as they require it ; also Leeks will require attention in the same direction. As crops of Peas and Beans become exhausted clear them off, and set the ground apart for other crops, such, for instance, as Lettuce and Endive plants, which will come off in time this autumn to allow of the ground being trenched for early crops of Cauliflowers, Peas, &c.; and for this purpose it will be necessary, now that the exhausted crops are being removed from the ground, to determine upon the space or spaces to be reserved, and in such positions as are best calculated to bring forward the respective kinds of early vegetables. If Cauliflowers and Lettuce seeds have not yet been sown—as advised to be done in my last Calendar—no time should now be lost in doing so. Another sowing of Radishes, Mustard and Cress, can be made out-of-doors, after which it will be necessary to have recourse to a cold pit, where the sashes can be placed over the seed and seedlings when necessary. This will be a good time to cut a few bunches of the respective kinds of herbs when dry, and hang them up in a dry airy shed or loft for future use. A constant warfare must now, as always, be kept up against weeds, with a view to their speedy destruction, and to attain this end during showery weather, hand-weeding, together with a vigorous use of the Dutch-hoe, when the nature of the weather admits of it being used, must be persisted in. See that gravel walks in this department are kept free of weeds by hand-weeding them ; this is best done during showery weather, when the weeds will come up easier, and the roller, which should always be brought into use immediately after the weeds have been pulled up, will make a better impression on the walks. In order to preserve these in a clean and good condition there should be a sufficient number of garden scrapers, which are easily made and can be got in readiness during bad weather, distributed over the gardens, especially in the alleys leading from fruit walls and borders on to the walks, as also at short distances from each other at the sides and ends of the various plots, &c. *H. W. Ward, Longford Castle, Wilts.*

Peaches and Nectarines.

Keep the trees thoroughly clean in early and succession houses from which the fruit has been gathered, by syringing them very freely on bright sunny days. Examine inside borders, and if at all approaching dryness give them a copious supply of clean water, for if the borders are all right as regards drainage, and we get a continuance of hot weather, they will require liberal and continual supplies. It is astonishing the amount of water they will take and enjoy. Look over the trees frequently, and stop any laterals on terminal or strong shoots. Tie-in young shoots and expose the fruit in late houses, and also give them liberal supplies of manure-water at the roots. If the latest house has been kept as cool as possible by leaving the ventilators open night and day, it may be made to succeed those on the open walls. We have not many trees here outside, and very little fruit this season, but what little we have will be ripe before our latest house. *J. Wallis, Keele Gardens, Aug.* 15.

Plants and their Culture.

Stoves.—Plants of Crotons that have made a clean healthy growth during the summer should now have shoots on them with well coloured foliage. Single growths of these, if struck now, will make excellent decorative stock in 60 and 48-sized pots for the ensuing winter. These will strike as freely as Willows, if bottom-heat can be secured. Sponge the foliage of any cuttings previous to insertion if there is any symptom of red-spider or thrips upon them. The stock of Pandanus Veitchii for use in a small state should also be looked to. The very least of the suckers will be far the best, most of these develope well defined variegation in an early stage. We take some off so small that three of them can be easily struck in a 60-pot. This kind of growth can be secured from the base of the plant where the small leaves have previously been. Each sucker I find corresponds in growth to a great extent with the leaf from the base of which it emanates. If, for instance, some of the leaves should be nearly green, the suckers from these will partake of the same character. Some what poor soil will produce the best results with this plant, no liquid manure or other stimulant being necessary. Those possessing a well variegated stock of Cyperus alternifolius variegatus will do well to look after this and propagate only from nicely coloured examples. This plant is very apt to revert to the type if not closely looked to. Any of the stove Dracænas that have grown too tall should have their tops taken off, and struck in small pots, or else be rooted, first into a little moss, and then treated like a cutting for a short time. These tops, if now in good colour, will give useful dwarf table plants for the winter. Among the multiplicity of new kinds do not forget the two old favourites—D. terminalis and D. Cooperi—to which also might be added D. regina. These three are yet hard to beat in their respective forms. Of the newer sorts, D. jucunda and D. superba, both with narrow, highly-coloured foliage, are excellent, and also distinct. D. Thomsoni, with the foliage beautifully variegated, is among the best of the larger forms, making pendulous, broad, and massive growth. Of the green-leaved section, the best for general use are D. gracilis and congesta. The former kind is best struck from the side-shoots made after the top of the plant is taken off. By this means much narrower foliage, and that also more drooping in habit, will be secured. D. congesta is one of the best for indoor decoration, being as hardy as a Ficus elastica. Any of the Alocasias, such as A. metallica and A. Lowii, that have grown too large for their quarters, may be pulled to pieces, and made up into smaller pots. In doing this do not overlook the weaker bulbs, which, when nicely established in small pots, with dwarf, stocky growth, make excellent decorative plants for the dinner-table or drawing-room. Cyanophyllum magnificum is a plant that is not often seen grown for decorative purposes, yet when nice dwarf stuff is secured from cuttings taken in a small state it makes an excellent subject quite distinct from the general run of table plants. The stock of Epiphyllum truncatum should now be kept in a cooler and more airy house, with a drier course of treatment ; by this means a better crop of flowers will be secured. With scarcely any fire-heat applied in this structure, watch closely for the inroad of "damp." The handsome leaves of many of our fine-foliaged plants will be quickly disfigured if this is allowed to prevail. The better plan will be to keep a notch of top air on all night, to carry off any superabundant moisture, and to modify the temperature to the requirements of the plants in general. A temperature of 70° is quite sufficient at night, even in the height of summer.

Greenhouse Plants.—The stock of hard-wooded Cape and New Holland plants, Azaleas, &c., should now have the full benefit of the sunshine. A good open position out-of-doors will suit them well in the majority of cases, always bearing in mind to guard against the inroad of worms. A good bed of coal-ashes to stand them on, or for the choicer kinds in large pots a few bricks will be the better ; these preventatives will save much annoyance in future. Do not crowd the plants together, but rather leave sufficient room to get easily between them. Should any pots of large specimens be fully exposed to the sun's rays, it will be as well to hang a piece of old sacking on that side of the pot, or the tender rootlets will suffer. The potting of any greenhouse Rhododendrons may, as a rule, be safely performed along now. The growth of this year being now made, and the flower-buds swelling up, there will not be so much danger of the plants making a too robust growth, resulting frequently in their not being so floriferous another season. These plants should not at any time be grown in large pots, *i.e.*, in proportion to the size of the plant. That fine kind R. Nuttalli will flower best if kept almost on the point of starvation. Those beautiful sorts raised from R. javanicum, Lobbi, and jasminiflorum, are well worthy of having a house devoted entirely to their cultivation. In this manner their acquirements can the more readily be attended to. Grown in a slight heat, one or the other of these splendid hybrids may be had in flower nearly the year round. They are somewhat liable to attacks of thrips ; this pest should be quickly checked, or the foliage, which is of such a lasting character, will soon be disfigured. Plants of Azalea mollis that were forced in pots last year have this season (with us) set an abundant crop of flower-buds. With a stock of plants for each year, these excellent forcing subjects may be flowered each alternate season, just the same as with A. sinensis and its white variety. *James Hudson, Gunnersbury, Aug.* 15.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, Aug. 22 { Royal Horticultural Society: Meeting of Fruit and Floral Committees, at 11 A.M.
WEDNESDAY, Aug. 23 — Burton-upon-Trent Flower Show.
THURSDAY, Aug. 24 — Reading Horticultural Society's Show.

THOUGH some people eat MELONS with soup, or employ sugar, pepper, salt, or even mustard, as condiments, such habits and customs have never made much headway in England. In this country Melons that are not sweet are not cared for; hence, much of the time and talent of Melon growers is devoted to the development of the saccharine properties of this fine fruit. So much is this the case, that only two difficult stages are recognised in the cultivation of Melons — the setting of a full crop, and the finishing of the same. The set is complicated by the fact, that so soon as, say, one Melon sets and swells, this precocious fruit usurps the power of starving off all other fruit that venture to follow it at any considerable distance. Hence it seems impossible to grow a crop of Melons in the order that horses or boats occupy on a course or river. The whole crop must run abreast, or only one or so will consent to run at all. Some, and we believe among them, the late CHARLES DARWIN, believed this was largely owing to the mere weight or mechanical drawing force of the fruit. Doubtless this might add to the monopolising power of the advanced Melon; but that it is not the chief cause of the early fruits starving out the late ones, is abundantly obvious from the fact that when the early set fruit is entirely suspended they still succeed in starving off the successional Melons. As there is possibly more in this curious fact than appears on the surface, it may be a sort of side illustration of the survival of the fittest. The first set Melon on a plant endowed with such monopolising power, must needs prove the strongest and the biggest, and hence the most proper to perpetuate and improve the species or variety; this curious fact may also have an indirect relation to bitterness in Melons—so much being tolerably certain, that over-cropping not seldom leads to bitterness. In such cases it almost seems that the chief power of the plant was expended in producing Melons and growing them up to a certain point. Thus, when the demand comes from the fruits in their ripening stage for the conversion of their crude and semi-acid juices into sugar or lusciousness, the plant lacks the force needed to complete the work of maturity.

The swelling of Melons is so far a mechanical operation. It matters, indeed, little to their future quality where or how they pass through these preliminary stages of growth—on the damp ground, under it, under a heap, freely exposed to sunshine or suspended in the atmosphere of a hot pit or house. With sufficient heat and moisture and abundance of healthy foliage and rapid growing strong roots, the Melons seem to swell equally well and rapidly under the most diverse conditions. No sooner do they reach full size and begin to ripen than the plants, as well as the fruits, require special treatment to secure the highest quality without either hardness of flesh or bitterness. To this end one of the most important points is to keep the plants in good health to the last. This is, however, rather difficult. Melon plants towards the end of their growth get gouty, or cankered at the collar: the latter has, in fact, a sort of natural tendency to give way prematurely. No sooner does this happen than the Melons are thrown upon their own resources. If sufficiently advanced, they may ripen tolerably well without further aid from the roots and leaves. If not, they must ripen, if at all, of inferior flavour. This is all so obvious as to need no argument to enforce it. But it so happens that the inside of the collar or stem sometimes gives way before making much sign outside. In such cases bitterness may result from short supplies of food, without the reason being apparent.

To avoid this danger of canker at the collar, Melon plants are also often kept too dry. Suddenly the supplies are cut off, and the health of the plants is so much deranged that bitterness or other evils result to the fruit in consequence. Injury to the leaves is a still more frequent cause of bitterness in Melons. When the transition from a moist to an arid *régime* is too sudden or severe, the leaves not seldom shrivel up more or less, or become the victims of red-spider. Either way their elaborating and transforming powers are seriously impaired or completely destroyed. Under such conditions it is almost a physical impossibility for the fruit to be finished of good flavour, the very organs concerned in converting the natural juices of forced Melons into the rich sweet lusciousness of ripe ones being paralysed or destroyed. Excessive shade or exposure to the sun also induce bitterness. It seems almost absurd to write of two such opposite causes of producing identical effects, but such apparent anomalies are common enough in plant life and products. Quality may be shaded as well as burned out of many other fruits besides Melons. Grapes, for example, often afford striking examples of this. Dense shade seems to prevent the manufacture of sugar in sweets; intense sun-heat destroys it after it is made. Melon juice and flesh are peculiarly sensitive to derangement from any excess of direct sun-heat. We have lately had a striking example of this in a fine Melon sent to our office. It had received a sunstroke on the furthest point from the stem. All beyond seemed sound and healthy, and we are assured that in a house of about 100 Melons not one but this had turned out bitter. This was one of the largest and the most exposed to the direct rays of the sun. The result was sunstroke or a sunburn, and the whole Melon proved bitter, though there was no trace of fermentation, and but slight traces of a change of structure around the burned portion.

There are, however, cases of isolated fruits of bitter Melons and Cucumbers also, the cause of which it is difficult to explain. It seems possible also to overfeed Melons into becoming bitter ones, as well as to starve them into the same worthless condition, and we should be glad to chronicle any facts our Melon growing readers can furnish us with on this most interesting and practically important subject.

— VEGETABLE PATHOLOGY.—We observe that a prize is offered for competition among the students of the University of Glasgow for the best series of specimens illustrative of plant pathology accompanied by a descriptive and explanatory essay. This is a step in the right direction, and we trust that the competitors will endeavour to trace out, as far as possible, the very earliest stages of the malady. We speak from experience when we say that people send specimens in the last stage of decay, when it is often impossible to do more than guess at the source of the malady, just as many people fail to send for the doctor till the case has arrived at such a point that there is nothing to be done but watch and register the symptoms—a matter of interest to the doctor, but not very satisfactory to the patient or to the doctor either, who can no longer trace the course of the malady, but knows that his powers for good are gone.

— EALING PARK.—Many will learn with regret, but none more so than the inhabitants of Ealing, that a large part of this once-famous estate is to be occupied at once by the builders. Some time since the estate was sold, and now the mansion and something like 7 acres of ground have been secured by Cardinal MANNING for the purpose of a Roman Catholic seminary. The remainder of the estate is being laid out for building purposes. It is proposed to erect 930 houses on the remaining portion, and new roads are being cut through it in several directions. It is hoped that a good portion at least of the fine avenue of Cedrus Deodara may be saved, and some of the fine and rare trees in the pleasure grounds; but the modern builder has but little regard for arboreal features. The creation of this new estate of houses will form an important connecting link between Ealing and Brentford, and notwithstanding that the county town of Middlesex is, with the exception of that part known as New Brentford, included in the parish of Ealing, Brentford, as far as means of ready access is concerned, is nearly as far off from Ealing as Reading. But both places are now being brought very near together with amazing rapidity.

— BRICK KILNS AND PLANTS.—We desire to call the attention of those interested to the abbreviated report of a trial in which Mr. FOSTER, of Stroud, has ultimately been successful. The evidence and arguments are worth reading, and it is matter for congratulation that, in spite of the very ingenious defence, the damage was not only admitted, but damages were assessed for the injury done in one year only, while an injunction was obtained preventing the nuisance in future. The damages seem to us very small under the circumstances, but this is of the less importance considering the value of the legal principles laid down. The lawyers made merry over the so-called scientific evidence, but their own proceedings seem, from the report in question, to have been eminently unscientific. At any rate the attempt to prove that the injury accrued from frost was, all things considered, not scientific, or, what comes to the same thing, not sensible. To attempt to confound under the circumstances narrated, the effects of frost and those of acrid vapours, was only to attempt to throw dust in the eyes of the jury. We are glad to see it did not succeed. Even in frosty weather it is not difficult for one who has had experience of both to discriminate between the effects of frost and of corrosive fluids or vapours.

— PRUNUS SEROTINA PENDULA.—Mr. C. W. MIETZSCH, nurseryman, of Dresden, sends us a coloured plate of this weeping Plum, which originated in a nursery near Dresden among thousands of seedlings of Prunus serotina. The shape of this weeping tree is beautiful, and surpasses even the highly prized Prunus chamæcerasus pendula. With its bright green foliage it resembles a weeping Laurel, and is very attractive during the flowering season.

— THE VENETIAN SUMACH, OR WIG PLANT.—A striking object on the lawn at Shoreham Place, Sevenoaks, the residence of H. B. MILDMAY, Esq., is a clump formed of six plants of Rhus Cotinus, oblong in form, 86 feet in circumference, and from 11 to 12 feet high. The circumference of the stems on the ground line vary from 18 inches to 2 feet, and 16 inches at 3 feet from the ground. At the present time it is mass of feathery plumes, and so distinct that it can be seen from the top of Shoreham Hill a mile away. "It is a general favourite with the Squire and his friends," writes a correspondent—and no wonder.

— NEW IVY-LEAVED PELARGONIUMS.—Mr. GEORGE, of Putney Heath, sends us another batch of blooms of seedling Ivy-leaved Pelargoniums, and which surpass all his previous achievements. Masterpiece is large in the truss, and in the individual flowers, which are crimson shading off into magenta. Of unnamed sorts, No. 2 has the lower petals scarlet shaded with maroon, and on the upper petals are two dark veins towards the base. No. 3 is light magenta shading to purple, and the two upper petals striped with maroon. No. 4 is scarlet, shading to crimson at the edge of the petals, and the upper petals striped with maroon. No. 5, if constant, will be very pretty, the upper petals being crimson coloured, with dark veins and spots, and the lower one purple. Mr. GEORGE states that they are all strong growers, and of trailing habit, and that the seed-bearing plant was Mrs. J. George, also a hybrid of his own raising.

— BORDER CARNATIONS.—One of the finest of the recent additions to this charming class of plants is the lovely rose-pink seedling named Mary Morris, and raised by Mr. H. G. SMYTH, the horticultural sundriesman, 17A., The Coal Yard, Drury Lane. Some blooms before us, grown in the open air and not dressed, are most pleasing in form and colour, and sweet with the perfume of the Clove. It grows and flowers with the utmost freedom.

—— The Hollyhock Disease.—In consequence probably of the moist character of the summer, up to within the past three weeks, the Hollyhock disease has spread with amazing rapidity, and many a promising batch of plants presents a sorry picture just now. At their Portland Road Nurseries, at Reading, Messrs. Sutton & Sons have a piece of about 500 plants in full bloom, and quite healthy and vigorous up to the present time. It was a fine and unusual sight to see so many plants in full bloom, and generally of a fine double character. The plants were growing in good soil, and were well cared for. Perhaps the fact that they were growing in the heart of the town, and quite away from any hedgerows where the common Mallow is growing might have something to do with the freedom of the plants from disease.

—— Celery for Exhibition.—Nothing can be more in keeping with well grown Celery than to see it clean, well blanched, and without blemish when placed on the exhibition table. The method adopted to secure these characteristics by Mr. James Lye, of Clyffe Hall Gardens, Market Lavington, appears well adapted to attain to such results. One line of Celery is grown specially for exhibition, and a drain-pipe, a foot or so in length and about 5 inches in width, is placed over each plant as soon as the latter are tall enough. The earth is drawn up against the pipes, and as the plants increase in length the pipe is lifted a little so that the leaves are always just out of the top. In this way Mr. Lye keeps his Celery clean, well blanched, plump and sound, the wet is thrown off the head of the sticks by the leaves gathered at the top of the pipe; and insects do not injure it in any way. Some might be disposed to regard this as a clumsy method, but it is an efficacious one, as Mr. Lye's success as an exhibitor of vegetables testifies.

—— Chasselas Musqué Grape.—Two very fine bunches of this Grape were shown by Mr. Thomas King, gr. to R. Valentine Leach, Esq., Devizes Castle, at the recent exhibition of the Devizes Hor-



Fig. 43.—Fruiting specimen of Podophyllum emodi, with structural details. (see p. 243.)

ticultural Society, the bunches large, handsome, well shouldered, and thickly set with finely finished berries. It had in a remarkable degree that high Muscat flavour which is characteristic of this fine Grape. Mr. KING's success is by no means owing to any special cultivation; and the Grape does not show any disposition to crack, to do which it is said to be very liable. Perhaps the fact that the vineries are on the slope of the mound on which the Castle rests, has something to do with the good condition in which Mr. KING every year produces this fine variety.

—— LAVENDER HEDGES.—On the terrace garden at Pusey Park, Faringdon, are two remarkable hedges of Lavender, that are now in full bloom and literally sheeted with spikes of blossom. The hedges are some 4 feet or so in width, and they make a very free growth every summer; but they are cut back hard every year during September, and their dimensions narrowed to 20 inches or so, only to break out into a profuse growth again in spring. They are a conspicuous and very fine feature amid the old-fashioned gardening which is carried out here so successfully, and among which sweet-scented flowers play an important part.

—— PSORALEA GLANDULOSA.—This plant is the "Culen" of the Chilians, and has from time immemorial in Chili been regarded as a valuable medicinal as well as food-plant. It has been in cultivation in this country for a long time, but seems to have almost disappeared. At Kew it is now flowering freely against a wall, and its stalked pinnately-trifoliate light green leaves and numerous long-stalked compact racemes of pale blue and white flowers render it a highly ornamental shrub. With comparatively little shelter it will withstand any but our very severe winters, and will flower freely and ripen seeds yearly. In the Mauritius the Culen has acquired a considerable reputation as a medicinal plant, and it is also used as a substitute for tea. It has also been imported to this country as a food product, and on a ticket written by TWEEDIE in the Kew Herbarium that collector, after stating that the plant was "good for disorders of the stomach," says "large quantities were carried to England and sold as Radical Tea in the Radical Times."

—— THYSANOTUS JUNCEUS was originally discovered by ROBERT BROWN in the vicinity of Port Jackson, Australia. In the *Botanical Register*, where a figure of the plant was given, it states that "nothing can exceed the brilliancy and beauty of the purple of the interior of the corolla of the blossom, which, though of short duration in regard to individual flowers, continues to display itself abundantly for near two months together, upon a succession of flower-stems, forming a constantly increasing tuft from the same root." The outer perianth segments are narrow and greenish in colour, but the inner ones are not only of brilliant colour but are especially striking by reason of the deep fringe of laciniæ which borders them, and which puts one in mind of the similar fringe bordering the lip in some of the beautiful Indian Dendrobiums. Thysanotus junceus is now in flower at Kew. It is not hardy except perhaps under favourable conditions in the extreme South and West of Britain; in pots however, it is by no means difficult to grow, and no bulb collection should be without it.

—— SAGITTARIA SAGITTIFOLIA FLORE-PLENO.—Either on the margin of ornamental water, or grown in tubs or pots plunged in the garden border, the ordinary form of the Arrow-head is well worth growing, both for the sake of its foliage and its pretty flowers. The blossoms of the species, however, do not last long, whilst in the double form—in which, at the expense of anthers, &c., petals are produced in such numbers as to form a compact globular mass—their duration is not nearly so limited. The tubers are composed almost entirely of starch; the Calmucks, Chinese, and Japanese use them as an article of food, indeed the species is cultivated by the latter people for the sake of the tubercles.

—— PHALÆNOPSIS VIOLACEA SCHRŒDERI.—The beautiful variety exhibited under this name last week at South Kensington, and to which the Floral Committee gave a First-class Certificate, is the property of Baron SCHRÖDER, The Dell, Staines, and not of Messrs. VEITCH & SONS, as stated in our last number. The Messrs. VEITCH exhibited an ordinary form of P. violacea only for the purpose of comparison.

—— CLOVE CARNATION, SUSAN ASKEY.—Mr. CULVERWELL, who raised ths fine white border Clove, sends us some beautiful blooms of it, and asks if it holds its own as a border flower with recent introductions. Yes—Susan Askey is a variety of rare merit, and still keeps well to the front. Its scent and substance are things to be admired, and every cut-flower-man should have it.

—— VRIESIA TESSELLATA.—We learn that this fine plant is now in bloom (for the first time in Europe, it is believed) in the nurseries of MM. JACOB MAKOY & Co., at Liège, Belgium. The flower-stalk is about 6 feet high, with eighteen branches regularly arranged in a pyramidal form, and bears more than 200 flowers, five of which are now open, being of a straw-yellow colour.

—— DAHLIAS.—At the first summer exhibition of the Feltham Horticultural Society, held on Wednesday last, Mr. CHARLES TURNER, of the Royal Nursery, Slough, exhibited, for so early in the season, a superb collection of Dahlias, that, it is needless to say, evoked much admiration. There were six dozens of the show and fancy kinds, all splendid flowers; also bunches in great variety of the admirable pompon and single varieties, now so popular, and so suitable for decorative purposes. Of pompon kinds Mr. TURNER exhibited several seedlings, three of which were flowers of great beauty and excellence. Isabel, in the sunlight almost a fiery red, and very striking; Gem, rich crimson-scarlet; and Favourite, rosy-maroon, are certainly three of the most perfect selfs in this section we have seen. Nymphe, straw tinted with rose, is another charming flower. Of older kinds, Fireball, carmine; Adonis, tipped with magenta; Comtesse de Sternberg, yellow, tipped with white; Rosetta, plain; and White Aster, edged by white, are but a few of the charming kinds shown. Of single sorts, the Duke of Teck, lilac; Paragon, Firefly, scarlets; Foxhall, crimson-scarlet; White Queen, and Lutea, were very effective and rich in colour. Amongst the most striking of the show flowers in form and colour were James Vick, Drake Lewis, John Standish, Goldfinder, Ovid, Cremorne, Constancy, and Charles Leicester; whilst of the singularly marked fancies, the Rev. J. B. M. Camm, Grand Sultan, and Professor Fawcett, were very striking flowers, whilst all were remarkably good. Such exhibits as was this one ought to stimulate largely Dahlia culture in the locality.

—— AGRICULTURAL STATISTICS.—From a summary of agricultural returns for the present year, issued by the Commercial Department of the Board of Trade, on Thursday, we learn that the extent of land in Great Britain under Wheat is 3,003,915 acres; Barley, 2,255,139 acres; Oats, 2,833,815 acres; Potatos, 541,064; and Hops, 65,676 acres. These figures show an increase in the acreage of Wheat to the extent of 198,106 acres over last year; and of Hops to the extent of 763 acres; and a decrease in the acreage of Barley of 187,195 acres; Oats, 67,460 acres; and Potatos, 38,270 acres.

—— GERANIUM ANEMONIFOLIUM.—It is noteworthy that the vascular bundles in the cylindrical leaf-stalk of this plant, and also in the flower-stalk, are dispersed irregularly throughout the cellular tissue as in an endogenous stem, the bundles themselves being, however, exogenous. This also adds another to the somewhat numerous cases where the anatomy of the leaf-stalk and that of the stem are identical.

—— GAME AND POULTRY FARMING.—Under the title of the East Anglian Rabbit Warren, Game and Poultry Farm Company, a limited liability concern has been started for the purpose of acquiring an estate of about 630 acres in Suffolk with a view to its conversion into an establishment for the breeding and sale of rabbits, poultry, game, &c. The estate is situated near Woodbridge and Melton stations on the main line of the Great Eastern Railway, and within three miles of the sea, and is stated to be peculiarly adapted for the purposes of the company, the soil being light and sandy, with plenty of good natural cover, and possessing some excellent springs of pure water. About 100 acres have recently been enclosed with wire fencing, on which rabbit breeding has been experimentally established with encouraging results. It is now intended to enclose the whole property, and thus augment the productive powers of the land to the fullest extent.

—— CRYPTOGAMIC SOCIETY OF SCOTLAND.—At a meeting of Council held in Aberdeen on July 26 it was unanimously agreed that, in consequence of the lamented death of the President, Dr. DICKIE, F.R.S., one of the founders of the Society, the meeting and public show arranged to take place in Aberdeen should be postponed till another year, and that instead a meeting should be held at Kenmore, Perthshire, on September 4. Kenmore may be reached from Aberfeldy, on the Highland Railway, or from Killin Station, on the Callander and Oban Railway. It is situated at the east end of Loch Tay (on which a steamer has now been placed). The immediate neighbourhood has been favourably reported on as presenting a presumably rich fungus flora, while Ben Lawers and other mountains are distant only a few miles, as is the celebrated Fortingal Yew, supposed to be the oldest living tree in Europe.

—— MICHAUXIA CAMPANULOIDES.—Those of our friends who are in search of novelty among hardy plants, and who have the ambition to have something different from their neighbours, will find in the above plant something that is likely to satisfy them. It is curious, pretty, and interesting. It bears small Lily-like flowers upon branching spikes with recurved petals, which are prettily marked; and altogether a distinct subject for the rockery, where it appears to be most at home, situated in connection with plants which supply abundant and spreading leafage from their base, above which the curiously-formed flowers of the Michauxia have an effect which will please lovers of plants.

—— THE WEATHER.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending Aug. 14, issued by the Meteorological Office, London:—The weather during the greater part of this period has been dry, fine, and bright; but towards its close it became dull and unsettled with some heavy thunderstorms. The temperature has been slightly below the mean in "England, E.," but above it in all other districts; in "Scotland, E.," the excess has been as much as 5°. The maxima, which were again rather high, were registered on the 10th and 11th in the northern and western parts of the kingdom, and on the 12 that our central and southern stations they varied from 75° in "Scotland, W.," and "England, N.W." to 82° in "Scotland, E." and "England, S.," and 84° in "Ireland, N." The minima ranged from 41° in "England, E," and 42° in the "Midland Counties," to 48° in "England, W." The rainfall has been about equal to the mean in "England, S.W.," but less in all other places. In all the "Wheat-producing districts" the fall has been very slight. Bright sunshine shows a considerable increase in "Ireland, Scotland, and the north-west of England," but elsewhere a slight decrease is reported. Depressions observed:—During the first part of this period a well defined anticyclone existed over our islands, while comparatively low pressure was reported from Scandinavia. The wind was consequently light or moderate from the westward in the north, from the northward in the east, from the eastward in the south, and from south-east and south in the west. By the 12th, however, the high pressure lay over Denmark, and from that date to the close of the period several small depressions appeared over our islands, travelling in a north-easterly direction with southerly or south-westerly winds.

—— GARDENING APPOINTMENTS.—Mr. J. CLARKE, late Gardener to the Earl of PORTSMOUTH, Hurstbourne Park, Hants, has been engaged as Gardener to W. EDMONDS, Esq., Wiscombe Park, Honiton, Devon.—Mr. JAMES BEST, Foreman to Mr. BELL, at Strathfieldsaye, is engaged as Gardener to the Duke of HAMILTON, Easton Park, Wickham Market.—Mr. E. BUTTS, for the past two years Foreman of the ornamental department in the Royal Gardens, Kew, has been engaged as Gardener to Mrs. TREADWELL, Leigham Court, Streatham Hill.

PODOPHYLLUM EMODI.

Hooker and Thomson, in their *Flora Indica*—a work, the non-continuance of which, however unavoidable, is deplored by all botanists and morphologists *—speak of this as "a very remarkable plant—one of the earliest spring flowers in the Himalaya. The leaflets, or segments of the leaf, are plicate, and folded downwards on to the petiole in bud, and the whole plant has much the aspect of Eranthis hiemalis (the Winter Aconite)." No one who has seen the plant—no one, indeed, who sees so much of it as is indicated in our illustration (fig. 43, p. 241)—will be disposed to dissent from the opinion above given. The stem is herbaceous, about a foot in height, the leaves two only, alternate on long stalks, orbicular, palmately 3—5-lobed, purple-spotted and glabrous. The flower is solitary, axillary or raised above the axil, nodding, 1—1½ inch long, cup-shaped, white or pale rose coloured. The number of segments is variable, generally about nine altogether, with six stamens, and a flask-shaped ovary, which latter ripens into an oblong or elliptic berry, 1—2 inches long, of a deep red colour, and though described as tasteless is, it is said, sometimes eaten, we suppose, *faute de mieux*.

We do not suppose any of the uninitiated would ever guess that this plant belonged to the Berberis family, nevertheless all botanists now-a-days are agreed that that is its rightful position. However different it may be in "habit from ordinary Berberids, its floral construction is much the same; and while the floral construction is an hereditary endowment passed on more or less modified from predecessor to successor, the 'habit' is a much more variable quality, assumed, developed, evolved gradually in response to particular conditions of growth, and so enabling the plant to sustain itself in the general competition that is going on in Nature." Granting this to be true, then we must assume that Podophyllum and Berberis, now so different, had at one time a common ancestor. But when this imaginary being lived, and what circumstances induced some of his descendants to go off as Berberies, others as Podophyllum, is more than can be told at present—more, perhaps, than can ever be learnt from direct evidence. Indirect evidence may be forthcoming, and we may look for it in the study of the mode of development of such plants as Leontice, Epimedium, Bongardia.

That Podophyllum is a very, very old inhabitant of this globe may be surmised from the fact that there are but two species known—one, the North Atlantic American species, P. peltatum; the other the Himalayan species, to which we are now referring. It may be that Japan has still to reveal another species, at any rate it would not be surprising if it were so; meanwhile, to pass from the speculative to the actual, we have in P. Emodi not only a remarkable, but, at least when in fruit, a handsome plant for the lover of hardy plants. Our specimen came from Mr. Ware's nursery at Tottenham. *M. T. M.*

REMARKS ON THE FRUIT CROPS.†

A mild winter and genial spring gave promise of an abundant crop of fruit; blossoms were abundant, there was little or no frost, the set of Plums was extraordinary, Pears fairly good, and Apple blossoms just expanding, when, on April 29, we were visited by the severest gale of wind from the south-west ever experienced. Vegetation being so tender, the foliage was almost stripped from the trees, and the crop of fruit wherever exposed destroyed. In this garden, in situations sheltered, and on dwarf trees, Apples are a fair crop. One quarter of small trees on the Paradise and Doucin stocks, about 100 in number, are quite laden with fine fruit. In Mr. Dancer's grounds, in a sheltered situation, there is a great crop of Apples, Small's Admirable and Lord Suffield; and in other gardens where sheltered I have noted some fine crops of Keswick and Mank's Codlin. Pears are a fairly good crop, although small, on pyramid trees here, where not exposed too much—Louise Bonne of Jersey being specially good almost everywhere. Plums are an entire failure, excepting one tree of Denyers' Victoria on a sheltered wall, which is a full crop. The trees are very much infested with aphis. Currants were a great crop, but greatly damaged by aphis; one-half of crop lost. Several varieties, viz., Houghton Castle and Mallow-leaved, were not affected.

Apples on Dwarf Trees bearing Heavy Crops.

Small's Admirable	Stirling Castle
New Hawthornden	Braddick's Nonpareil
Lord Suffield	Cox's Orange Pippin
Cellini	Baumann's Red Winter Reinette
Duchess of Oldenburgh	

Apples—General Crop.

Lord Suffield	Harvey's Wiltshire Defiance
Cellini	Hambledon Deux Ans
Stirling Castle	Duchess of Oldenburgh
Braddick's Nonpareil	French Codlin
Cox's Orange Pippin	Gay's Harvest Reinette
Yellow Ingestre	Franklin's Golden Pippin
Baumann's Red Winter Reinette	Flat Nonpareil
Autumn Pearmain	Irish Peach
Christie's Pippin	Early Crofter
Cumberland Favourite	Kerry Pippin
Downton Pippin	Nonsuch
Calville Rouge Précoce	Lucombe's Pine
Burr Knott	Ronald's Royal Pearmain
Hawthornden	White Astrachan
Devonshire Buckland	Yellow Ingestre
Hawthornden, new	Transparent Codlin
Eldon Pippin	Thomson's Seedling
Gravenstein	Dumelow's Seedling
Kent's New Green Newton Pippin	King of the Pippins
	Barchard's Seedling
	Cox's Pomona

Pears, Pyramid, bearing Fairly Good Crops.

Charlotte de Brouwer	Bergamotte Hambourg
Beurré d'Aremberg	Beurré Clairgeau
Nouveau Poiteau	,, Giffarde
Louise Bonne of Jersey	Pitmaston Duchess
Bowood	Vicar of Winkfield
Beurré Sterckmanns	Colmar d'Eté
Franc Real d'Eté	Maréchal Dillen
Williams' Bon Chrétien	Marie Louise d'Uccle
Beurré Beaumont	Louise Bonne of Jersey panachée
Columbia	
Marie Louise	Souvenir du Congrès
Beurré de Capiaumont	Belle Julie
Hacon's Incomparable	Comte de Lamy
Beurré Hardy	Beurré d'Amanlis
Amiral Cecille	Easter Beurré
Beurré Bachelier	Triomphe de Louvain
Bezi Quessoi d'Eté	Oken d'Hiver
Beurré Leon le Clerc	

Espaliers.

Glou Morceau	Comte de Lamy
Beurré d'Amanlis	Knight's Monarch
Passe Colmar	

A. F. Barron, Chiswick.

—— Of Apricots a very fair sprinkling. With me they are exceptionally good and plentiful, but this after a thorough renovation of old trees. Apples are very few, and singularly partial throughout the district. A few years ago I planted a little orchard of a hundred trees in about twenty-five varieties; of these I can only speak of eight as having a few fruit on. These are Golden Pippin, Stamford ditto, King of Pippins, White Astrachan, New Hawthornden, Dutch Codlin, Keswick ditto. Of Lord Suffield there is a nice lot. Pears, with the exception of a few on walls (they are as standards), notwithstanding much pains, are a mortifying failure; of those on walls of which favourable mention may be made are Brown Beurré, B. Clairgeau, B. d'Amanlis, B. Diel, Louise Bonne of Jersey, Marie Louise; and deserving of special mention is Marie Louise d'Uccle, which seems to be a Pear likely to make elbow-room for itself on walls and as standards; Glou Morceau, Thomson's rather poor, Williams' Bon Chrétien, and Knight's Monarch. Pears which offered well here during hot summers and seem now to be quite out of it, are Beurré Superfin, B. Sterckmanns, Joséphine de Malines, and Huyshe's Victoria. Plums and Cherries are scarcely worthy of mention. These, including black and red Currants and Gooseberries, were sorely afflicted with the plague of aphis, which came after the several devastating waves of frost had passed over, giving the *coup de grâce*, which adds another barren year to the long list of fruitless years already recorded for this now unfortunate country. In these days of advanced science is there anything, may I ask, so advanced as might be applied by practical horticulturists to the arrest and total destruction of these homopterous insects? We read of coleopterous insects which prey upon and keep in check these aphides, and which are termed aphidiphagi and aphidivora—is there no authority on this subject who would kindly step out of his study and teach us how we might make war against and rid ourselves of these pests? For any man who would organise and lead on a successful campaign against these aphides there is greater renown than ever fell to the lot of either Wellington, Nelson, or Robinson Crusoe! Indoor fruits of all descriptions are satisfactory, and although often threatened with raids of aphides, bug, and spider the intelligent gardener upon whose resources there are always many draws, and heavy draws, can always bring up forces and appliances sufficient to effectually rid himself from attacks of these marauders; and here allow me to add, his practice has always been in the van of modern science. *W. Miller, Combe Abbey Gardens, Coventry.*

—— Our Pears blossomed unusually early this year; Brockworth Park was full out at the end of January, and all other sorts were much too early in bloom, as was seen too plainly by the results of the storm of frost, hail, snow, &c., during the last ten days of April, which was most disastrous in its effects upon fruit trees generally. Small fruits have been much damaged by the weather during the ripening period. *F. Harrison, Knowsley, Lancashire.*

—— The crops in this neighbourhood have quite falsified the promise in spring, nearly all kinds being very scarce. Apricots, which are very good, are about the best crop. Plums, which were one mass of bloom, are in most cases very thin; of two trees, one of Angelina Burdet, the other Belgian Purple, standing side by side, and being equal as regards health and bloom, the former has a very heavy crop, while the latter has not a dozen. The only other sorts with good crops are Denniston's Superb and Rivers' Early Prolific. Peaches and Nectarines are very thin, the trees much cut up. The only sorts of Apples carrying crops are the Keswick Codlin, Red Quarrenden, and Lord Suffield. Small fruits are both plentiful and good; strawberries a good average crop. *H. Batchelor, Catton, Norfolk.*

—— Fruit crops in this neighbourhood are generally below an average, except some kinds of small fruit, such as Gooseberries, red, white, and black Currants, which are very plentiful and fine, as also were Strawberries, but deficient in flavour, owing, I suppose, to the cold sunless weather we have had. Plums and Cherries set abundantly, but many fell during the stoning period, which makes them a light crop except Morellos, which are good, as also are Plums in orchard-house, showing it to be the ungenial season that is the cause of light crops on unprotected trees. The same applies to Peaches and Nectarines on outside walls. Apricots are an average crop. *G. Bethell, Sudbourn Hall, Suffolk.*

—— Taken as a whole, 1882 is one of the worst years I ever remember for fruits; Apples are very scarce, Pears are worse, Plums nearly a blank, while Strawberries and Raspberries, although a plentiful crop, were of poor flavour. Altogether the prospects are anything but encouraging. *J. Louden, The Quinta, Chirk.*

—— Apricots flowered profusely, and set well, and are a very good crop, but the trees are all protected with glass. Apples look better, and have more fruit than they have had for the last three years. Pears had very little flower, and are almost a total failure. The same remarks apply to Plums, which have suffered much from insects, as have Gooseberries and Currants; the fruit of the former is much injured. Peach and Nectarine trees are and have been very healthy. *Richard Carr, Welbeck, Notts.*

—— The Apple crops in this district are a failure, but we have a good crop on trees grafted on the Paradise stock; they were in bloom earlier than those on the Crab. Pears are very good on a west wall and cordons, but on the east wall, espaliers, and pyramids there are none. I never saw Apple trees more eaten by grubs. The Herefordshire orchards are in a sorry plight this season. *A. Young, Holme Lacy, Hereford.*

—— This has been a disastrous spring for the Apple, Pear, Plum, and Duke kinds of Cherries, but I am glad to bring to notice the continued good cropping qualities of the following Apples:—New Northern Greening, Tower of Glamis, Ecklinville, Small's Admirable, Stirling Castle, Lord Clyde, Warner's King, Late Hawthornden, Red Hawthornden, Yorkshire Beauty, Lamb Abbey Pearmain, Cellini, and Stirling Castle. The true Seek no Further is doing well in cottage gardens about here, and let me bring the claims of Potts' Seedling under the favourable notice of every one possessing a garden, and also Plum Rivers' Early Prolific—it never fails. A tree or so of each of the above is doing well here, and always does. Of pears a few sorts are bearing pretty well—Beurré Bachelier, B. Hardy, Souvenir du Congrès, Doyenné du Comice, and Beurré d'Amanlis. *W. Ward, Stoke Edith Park, Hereford.*

—— The unusually mild winter and early spring gave promise of an abundant crop, as most kinds

* It may be desirable, for the sake of a younger generation, to say that the above remark does not apply to the *Flora of British India*, now in an advanced state of publication, and carried out on a plan which, if less complete than that of its forerunner, at least offers the prospect of completion within a reasonable period.

† For a complete tabular statement see our previous issue.

blossomed freely, but at the end of April, when the prolonged continuation of fierce blustering winds with cold frosty nights so weakened vegetation and fostered such legions of insects as to entirely cover the leaves, which were perfectly crumpled up, and many trees in orchards are to be seen with barely a leaf. Plums in particular have suffered severely, and in many instances it is to be feared irreparable injury will result. In this neighbourhood the crops of Apples, Pears, and Plums are particularly light and very variable, whereas bush fruit is abundant and good in quality. The Apples that are cropping best are Ecklinville Seedling, Kerry Pippin, Keswick Codlin, Yorkshire Greening, Worcester Pearmain, Stirling Castle, Tower of Glamis, Scarlet Pearmain, Ribston Pippin, and Rosemary Russet. *G. Westland, Witley Court.*

—— The principal failures in this locality are Apples and Plums; where anything approaching a crop of the former is to be seen it is in upland districts or on hill-slopes—in low situations and along the river they are quite a blank. Plums are a good half crop on walls; standards are *nil*, the trees suffering greatly from aphis. Apricots, Peaches, Nectarines, and Pears are all a fair average crop. Small fruits, Gooseberries especially, were very good, the caterpillar doing very little damage. *W. Kennedy, Kimbolton Castle, Hunts.*

—— In this district the fruit crops vary considerably both in quantity and quality; at some places the trees are carrying really good crops of certain kinds, whilst the rest have comparatively scarcely any fruit on them: this is particularly noticeable amongst Apples and Plums. Pears are generally thin excepting Williams' Bon Chrétien and Beurré de Capiaumont. Apricots, Peaches, and Nectarines are remarkably good, and the trees in good condition likewise. The early section have been wonderfully fine. Morellos are likewise good, and the absence of the Gooseberry caterpillar this season has naturally contributed to the quality and quantity of Gooseberries, these are first-rate, so also are Black Currants. Red Currants, although plentiful, are much damaged by blight. Strawberries were wonderful both in size and quantity. Walnuts are very scarce, but nuts very abundant. *Geo. T. Miles, Wycombe Abbey.*

—— Apples are much below the average, and not a single variety has a crop. Pears are also below the average, but Jargonelle and Louise Bonne of Jersey have good crops. Plums and Cherries have large crops, but both are affected by blight; the former the worst. All the small fruits have good crops, and the quality is excellent. Red Currants suffered from blight, and Strawberries a good deal from wet. *Jas. Douglas, Loxford.*

—— Apples are nearly a total failure all through this district. The trees suffered much from blight, and the severe gale in April did an immense amount of damage to all fruit trees. Cherries in this district have been good; Morellos on walls are very good indeed. *Sydney Ford, Leonardslee, Horsham.*

—— Excepting Apples and Pears, and Plums in general, the fruit crop of 1882 may be pronounced a good one. Apples, excepting trees of Keswick Codlin, Quarrenden, Christie's Pippin, and Lord Suffield, are nearly a failure; Pears, and excepting certain well-known and sure-bearing varieties, are little better; Peaches, Nectarines, and Apricots (protected trees), fine crops. Morellos very plentiful and good; and the same may be said of all bush fruits. *H. W. Ward, Longford Castle, Salisbury.*

—— The Apple crop is a complete failure, only a few small pyramids bearing fruit, those varieties being Keswick Codlin and Irish Peach. Pears are good on walls; those full crop and good are Williams' Bon Chrétien, Marie Louise, Louise Bonne of Jersey, Moorfowl's Egg, and Beurré Rance. Bush and standards are very few indeed. The foliage of Peaches and Nectarines was seriously damaged in early spring by the cold easterly winds, consequently the crops are thereby also seriously affected. Apricots are abundant and good—Moorpark, Royal, Kaisha, and Ambroise, all varieties alike. Plums are greatly infested with aphides and a poor crop of fruit. Cherries, both early and late varieties, excellent; Figs good; black, red, and white Currants very good. Gooseberries very full crop and very fine fruit. Raspberries considerably under the average. Mulberries and Medlars a fair crop. Strawberries have done well, except the earliest variety, whose bloom was destroyed by the late spring frosts. *D. C. Powell, Powderham Castle, Devon.*

—— For this district 1882 will go down as a poor season for fruit in a general way, Apples and Pears being a complete failure; in some localities the flowers opened weak before the foliage appeared, which is considered here as a sure sign for a thin crop. This, coupled with stormy weather, decided the matter. We should have been in a bad position if Strawberries and bush fruit had not been plentiful; this being the case much preserving has been done. It is rather surprising that Figs are a full average crop, and looking well in sheltered situations. *Charles Lee, Boconnoc, Cornwall.*

—— I do not remember the fruit crops generally being so unsatisfactory here as they are this season. The Apples in many orchards are almost a complete failure, while in others the following kinds carry fair crops:—Lord Suffield, King of the Pippins, Court of Wick, Irish Peach, and Cellini. Of Pears that carry average crops the following may be mentioned as being the best:—Brown Beurré, Louise Bonne of Jersey, Winter Nelis, Williams' Bon Chrétien, Flemish Beauty, Beurré Diel, and that highly esteemed variety which never fails here—Beurré d'Amanlis. Owing to the cold weather and excessive rainfall many of the fruits crack. Plums are thin and of poor quality; the trees have been infested with aphis. Apricots that were protected with glass coping during the blossoming season have heavy crops of fruit of excellent quality; the sorts grown here are D'Alsace, Hemskerk, an excellent variety; Peach, and Shipley's. *T. Coomber, Hendre Gardens, Monmouth.*

—— In the spring no better show of blossom could have been desired; but it was to be observed that much of the blossom was weak and in too great profusion to set well. At the critical time of ripening the wood last autumn and the fruit setting period of spring, the cold wet was the cause, and the almost continual cloud this year, for out of 213 days rain fell on 137—January, 3.03 in. on eighteen days; February, 1.79 in. on sixteen days; March, 2.13 in. on eighteen days; April, 3.70 in. on nineteen days; May, 2.10 in. on fourteen days; June, 3.16 in. on twenty-two days; July, 4.39 in. on thirty days. The summer months have been very inclement, the cold continual drip on the fruit has stunted and crippled them beyond remedy. *P. Middleton, Wynnstay, Denbigh.*

—— The fruit crop in this district is a very partial one. In some gardens there are moderate crops of all kinds of hardy fruit—Peaches and Nectarines excepted, while on others there is scarcely a fruit to be seen. Generally speaking, Apples, Pears, Plums, Cherries, Peaches, and Nectarines, are much below an average; Apricots are about an average, and Strawberries, Currants of all kinds, Gooseberries, and Raspberries, are considerably above an average, but much of the small fruit has been wasted by the heavy rains, which have fallen almost daily for the past six weeks. A general feature is the total failure, in many places, of the wall fruit. As a matter of course, after such a season as 1881, Peaches and Nectarines on open walls have failed, although in cool-houses they are both plentiful and fine. Pears, Plums, and Cherries, on walls are also a failure. Apricots and Morello Cherries are the only wall trees bearing good crops, and their fruit is generally clean and fine. Standard Apples, Pears, and Plums, flowered profusely, but neither Pears nor Plums set their fruit, although we had no frost to injure them. Apples set a fair crop, but much of it has dropped off since, especially during the recent rains. The Apples that are left are fine, clean fruit, and promise to be large and good if drier weather sets in. The sorts that are bearing best are Warner's King, Eclinville, Stirling Castle, Keswick Codlin, Lord Suffield, King of the Pippins, Cellini, Dutch Mignonne, Hawthornden, Duchess of Oldenburgh, Golden Pippin, Tower of Glamis, and Northern Greening, in about the order named. Among a number of sorts of Strawberries, the only kinds which have borne heavy crops on our light soil are James Veitch and Viscomtesse Héricart de Thury (locally known as "Garibaldi"), Keens' Seedling bearing moderately. On cooler and stiffer soils in the district Moffatt's Duke of Edinburgh and Elton Pine bear abundantly, and the latter keeps bearing till well on in September. Among Currants, the best are Black Prince and Lee's Prolific Black; Victoria, or Raby Castle, La Versaillaise, Mammoth, and Cherry, reds; and cut-leaved Dutch, white. The best Raspberries are Northumberland Fillbasket, Carter's Prolific, Fastolf, and Yellow Antwerp. *M. Dunn, Dalkeith.*

—— Wall fruit, with the exception of Apricots, are all light here; so are nearly all kinds of fruit trees on standards and espaliers deficient in the northern district. The cause is obviously due in a large measure to the extra crop on nearly all kinds of fruit last year, and also owing to the dull sunless summer and autumn, which left wood and buds in a weak imperfectly-ripened state. The blossom, although in great profusion, was weak, and failed to set well. Plums, especially standards, were exceptionally full, and set their fruit in abundance, but failed to swell larger than plumlets. Gisborne's Seedling on standards has a full crop, having had none on it last year. Jefferson, Mitchelson, and Coe's Golden Drop, are the next best fruited kinds. Apples, with the exception of some trees that failed to fruit last year, and some free bearing kinds, are all very deficient. *J. Webster, Gordon Castle, Banff.*

—— A wet autumn last year for ripening the wood, and a wet June and July for maturing and gathering what crop there is, will make 1882 a memorable year for the failure of fruit crops in the West of Scotland. The rainfall for June was 5½ inches, and for July 7 inches; we have had nothing like it since 1872, when we had 8 inches in June, and 6½ inches in July. *Alex. Scott, Auchendenan, Dumbarton.*

—— The outdoor crops are almost an entire failure. The trees looked well and were full of bloom, but the gale on April 29 destroyed it all, except in any very sheltered corner. Even the Strawberries were beaten black, and all the upper part of the Raspberry canes were stripped bare. *W. Stanbury, Appley Towers, Isle of Wight.*

—— The cold east winds when the fruit trees were in bloom this spring did serious injury to the crops. With abundant bloom, the general average is low. Pears seem to have suffered more than other fruit trees. Currants and Gooseberries suffered in exposed situations. Strawberries were abundant where properly cared for. Raspberries have been abundant. Apples will be a short crop and are falling from the trees, owing to the fine dry weather after continuous rain. *C. B. Saunders, Jersey.*

—— The severe storm of April 29 quite destroyed the Apple and Pear crop here, and so much injured the trees that it was some weeks before they made any effort to grow again, and some trees I fear will never fully recover its effects. There is but little stone fruit grown in the islands. The spring, and, indeed, winter also being very dry, our Strawberry crop was very light. *G. D. Vallance, Tresco Abbey, Isles of Scilly.*

—— During an experience of seventeen years on the west coast here, this is the worst season I remember. It opened very promisingly, but the weather changed from a rather too mild February to a constant succession of Atlantic gales, accompanied by heavy hailstorms and much rain, till the great storm of April 28 and 29 literally blew leaves, flowers, and young fruit away, so that, with the exception of a sprinkling of Pears and Plums, I have no fruit. *James Garnier, Kylemore Castle, Galway.*

Home Correspondence.

Salpiglossis.—It is almost impossible to overrate the value of these annuals, which are quite unrivalled for the beauty of their flowers, embracing as they do almost every shade of colour, with the size and form of a Lily. Not only are the blooms remarkable for their great variety of shades, but they are exceedingly rich in the variation of the petals, which have a peculiarly soft taking appearance and finish. So sportive is the Salpiglossis that a packet of seed yields numerous varieties, and if a hundred or more plants be raised scarcely two among the number will be found alike, and the contrast of some will be great. This great diversity of colour adds much to their charms, and renders them very effective when grown in masses in beds—a purpose for which they are specialy adapted, and where, if planted in warm, sheltered positions, they make a fine show. Being tender, they must not be sown early, and to grow them well they require rich light soil, when, in anything like ordinary summers, they flourish and flower with the greatest freedom. Besides being so fine for beds and borders, the Salpiglossis are equally serviceable for pots for the embellishment of greenhouses, where, if got up strong and done well, they make a magnificent show. When required for indoor decoration, seed should be sown in heat in March or April, and the plants nursed on in frames till June, when they will be all the better for having the lights off by day, as the exposure keeps the plants sturdy. For growing in beds and borders, May is quite time enough to sow seed, which should be done under

glass, and the seedlings pricked out in light soil, from which they lift with good roots. *J. S.*

Scutellaria Mocciniana.—Seeing your note upon the above in your issue of August 5, it many not be out of place to mention that it succeeds remarkably well planted out-of-doors during the summer months. With assiduous attention to watering during dry weather it will escape the ravages of insects, to which it is so subject under glass, and will grow with great freedom. It withstands lifting in the autumn with impunity. Old plants cut back and so treated will give an abundant supply of scarlet flowers during the winter months. Centropogon Lucyanus is another old favourite that succeeds admirably under the same treatment. *E. C. H.*

Berberidopsis corallina.—I observe that in the *Gardeners' Chronicle* of Saturday last (p. 172) Berberidopsis corallina is said to be of "doubtful hardiness." I have had it on the south wall of this house, about 400 feet above the sea, for the last ten years, and it has never suffered materially, if at all, from the severe winters which we have had. The largest specimen covers a space of wall about 25 feet in length by 12 feet in height, and intrudes vigorously into its neighbours on each side. The flowers are half an inch in diameter when they are expanded, and contain a remarkable quantity of honey; the bees, however, do not seem to frequent them. The honey seems to me to have a slightly bitter taste, which perhaps accounts for the bees letting the flowers alone. The colour of the flower I should call a rich rose-pink rather than scarlet. *A. Nesbitt, Uckfield.*

Germination of Seeds.—I have lately read in the *Gardeners' Chronicle* some papers on the germination of seeds; may I be allowed to note my experience in this matter? I do not find Gentiana seeds take long to grow, nor do I find that plants with whorled flowers differ from others in their period of germination. What I do find is this:—Old seeds take longer to germinate than fresh ones; that soft or rain water is far superior to hard water, indeed hard water always impedes germination, and often stops it altogether; that lime to be beneficial must be in the soil, and not in the water. There are some seeds which, as everybody knows, take longer than others. I find, as a rule, that the seeds whose embryos are more highly developed germinate faster, some even germinate on the mother plant, and the less developed the embryo the longer is the time required to germinate. There are many seeds whose embryos are quite indistinguishable from the albumen, these are the slowest to germinate; witness some Palms, which take so long to grow, whilst others, as Phœnix dactylifera, whose embryo is visible, germinate in a few days. Then there is the case of ripeness. All seeds when fully ripened take longer than when sown when just formed; for example, if you gather Schotia pods when just turning colour the seeds germinate much sooner than when the pod is allowed to turn black or fully matured. But then there are peculiarities; some seeds will germinate with more vigour and make finer plants when allowed to germinate in the fruit. Take, for example, the Orange tribe, whose seeds grow with other facility when allowed to germinate in the rotting pulp. Elais guineensis is another example; these seeds germinate better if allowed to remain in the oily fruit. Other seeds taken from the same receptacle, some will germinate at once, others take months; for example, Poinciana regia, a beautiful African plant—most of the seeds from one pod will germinate in a few days, others take months, even a twelvemonth. Other seeds, sow them how you like, and at whatever time of the year, will all germinate together at their proper season even to a day. There is also a circumstance to be noticed: a pan of seeds will grow at the same time, yet there are one, two, or more seedlings outstripping the others in their development; this is the case with most seed, and I always retain these for seeding from, as they are evidently of stronger constitution. Improper conditions of soil, &c., will also impede germination. I find that when a current of electricity is caused to run through the soil, germination is impeded and not accelerated as I supposed it might be; but if you dip the two ends in an aquarium, the plants seem to find a relish, and show better colour. The rare section of Demersa which throw down a stolon will often remain twelve months before the plumule is developed; this is the case with some plants from the marshes of Mozambique. I have only found this in another seed sent to me from the Brazils without any designation of its habitat. *Chev. D. G. de Nautet Monteiro, Almada, Portugal.*

Callirrhœ involucrata?—Mr. W. Thompson sold me seed under this name, which came up freely in the spring of last year, and some plants survived the winter and are now flowering very freely on trailing branches 2 feet long. I find different opinions about the hardiness of the plant; in warm open soils and sheltered situations it seems herbaceous in habit and hardy, as Mr. Tyerman told me that it lived several years in the Botanic Gardens at Liverpool, breaking fresh from the ground each spring; but my plants, which did not flower last year, retained their branches. The flowers are large and magenta coloured, resembling in colour those of Calandrinia umbellata. As for the name I can give no opinion, but I find what seems to be the same plant described as Malva, and Nuttalia, and saw it flowering on the rockwork at Kew last week labelled Callirhœ digitata. May not plant-names be cited as an instance of perpetual motion? *C. Wolley Dod, Edge Hall, Aug.* 12.

Proliferous Hyacinth.—Mr. J. H. Krelage, of Haarlem, sends us a bulb of a Hyacinth in which, so far as we can make out, what should have been the flower-spike has produced, instead of flowers, a number of bulblets arranged in clusters along the stem. The case seems analogous to the Potato or Welsh Onion, in which the flowers at the top of the stem are replaced by bulbs. It is possible that some injury at a very early stage of growth may, in the case of this Hyacinth, have produced the unusual appearance. Mr. Krelage suggests that the storm of April 29 may have been the exciting cause by having broken off the flower-stem, but we should suppose the injury, whatever it may have been, was done at a much earlier period. It is interesting, however, to learn that the Hyacinths in Holland suffered greatly from the gale which was so injurious here. The variety affected in the present case was Lamartine, a single blue, with dark stripes.



Fig. 44.—Proliferous hyacinth.

Everlasting Peas.—Among the most showy plants now in bloom are the perennial Peas, which are not only very striking when seen in masses as they grow, but the flowers are of great value for cutting. The most highly prized for this purpose is the white, which is very pure and beautiful; but it seems to have an unfortunate tendency of reverting or changing to the red form, from which it would appear to have originated. Had I not heard of the same change taking place elsewhere, I should have thought some had got mixed in the dividing and planting, as none of them are from seed; but a nurseryman near here tells me his are just the same, and the only way therefore is to pull up the sports as they show. This we are now doing while they are in bloom, but so fast has the coloured sort grown and spread as to nearly smother the other. The situation where these everlasting Peas look best is at the extreme back of herbaceous borders in the foreground of shrubs, where clumps here and there at wide distances apart are a great ornament, as they are bold looking, and give character to that particular part of a garden. A good plan of growing them is to have light iron tree-guards, which form capital supports, and which the Peas furnish in so complete a manner as to quite hide up the bars. Pea sticks answer the same purpose fairly well, but in exposed positions the plants are apt to be blown over by the wind, which gets very strong hold of them. To have this perennial Pea last well in flower, and afford a long succession, they must have deep soil, so as to be able to root well down, as otherwise they soon suffer from drought and cease blooming. In hot seasons they do remarkably well behind north walls or other similar shady positions, where they often last in full beauty long after others are past. The proper time to divide and replant is in spring, just as the shoots are starting, when they will bear the disturbance without any risk, as they soon strike root afresh and start off to grow. *J. S.*

Yucca quadricolor.—We have a plant of Yucca quadricolor about twelve years old which has produced a flower-spike 2 feet long—colour of flowers ivory-white. Is it usual for the above variety to flower? *L. J.*

Barren Fig Trees.—My friend, the late Mr. March Philipps, of Torquay, a great gardener, told me that the fertility of Fig trees was much increased by the presence among them of a male Fig tree. His forefathers, a hundred years or so ago, had been members of the English factory at Smyrna, where, as Mr. Philipps told me, they learnt this practice. *A. Nesbitt.*

Euryngium Sumbul.—Observing this plant in a nurseryman's catalogue of hardy perennials I sought information in the pages of your journal, and found (vol. iv., p. 16) an account of its being then (July 3, 1875) flowering for the first time in this country in the herbaceous ground of the Royal Gardens, Kew, I would gladly learn if later experience has confirmed the hope which your notice affords, that the plant has been found hardy in general cultivation. *Diss.*

Special Societies.—Now that your columns are open to a discussion of the above subject, it is sincerely to be hoped that the matter will receive the attention which it justly deserves, and that, after the *pros* and *cons* have had their day, we shall be favoured by a leader from the Editor's pen, summing up the whole case, and giving us the benefit of an unbiassed verdict. The time has now arrived, when those who have any opinions on the matter worth listening to ought to speak out; but above all things, let them keep out extraneous matter, and avoid anything and everything pertaining to sarcasm, otherwise Messrs. Cucumis Melo and Cucurbita Pepo might (to use figurative language) lose one of their characteristics, and get a little too warm in the "upper storey." That special societies are capable of doing a vast amount of good (*i.e.*, in their own particular line) is the firm opinion of many; and that the best way of attaining the highest standard of excellency with any given subject is, by making a speciality of it, no one it may be presumed will attempt to deny. Such being the case, and presuming that few of your readers will dissent from this view of the matter, let us examine the question a little more closely, and notice briefly the weak and strong points of the case. In the first place, is a special society of any advantage to the special cause with which it is identified? and does it improve, or rather is it the means of bringing about improvement in the particular flower, fruit, or vegetable, which has its parental care? The answer must undoubtedly be in the affirmative; but, on the other hand, do such societies, when they have to fight their own way single-handed, prove a financial success? With the majority of special societies the answer to this last query must, I fear, be a negative one; and this I contend is their only drawback. If a society or anything else is unable to support itself in these high-pressure-going days, it is doomed to an early extinction, it becomes therefore to the specialist a question of vital importance, as to whether it would not be better for a dozen or two dozen, as the case may be, of these special societies to amalgamate, each section having its own representatives, these being persons who take more than an ordinary interest in, and who are well qualified to adjudicate on the merits and demerits of, the particular flower, fruit, or vegetable with which they have to deal. That such a society would tend to the advancement of horticulture, floriculture, and pomology, I myself have not the slightest doubt, and if a society of this kind were affiliated to the Royal Hor-

ticultural Society, or, for the matter of that, if the latter Society would adopt some such system itself, I honestly believe that progress in the future would be proportionately greater than it has been in the past. For my own part, I should certainly like to see in existence a special society for the advancement of pomology although we are far ahead of other countries in the production of high-class Pines, Grapes, and one or two other different kinds of fruits, we have yet much to do. If ever such a society were started, let the executive or the ruling powers be practical men, who have distinguished themselves in this particular branch of their profession; then we may expect genuine and substantial progress. The honour of a certificate or prize from such a source would be worth infinitely more to the recipient than one from any ordinary horticultural society. *J. Horsefield, Heytesbury.*

Cereus chiloensis.—This has flowered in my collection during this summer. I had never seen it before. The plant is about fifty years old and 8 to 9 feet high. I do not think it is of frequent occurrence. I remember hearing of one at Palermo about eighteen years ago or more. Agave Ouselghemiana also flowered with me. I do not know if it has flowered in England before, as I have not heard of its doing so. I thought it might not. *J. S. C.*

Young Vines Losing their Leaves.—I thought it was pretty evident that my recent note on this subject applied to "young," because newly planted Vines. I certainly endeavoured to be "practical" in pointing out how by adopting certain methods in planting the assumed temporary stagnation which "W. H." says does occur in young newly planted Vines, causing loss of lower leaves, might be avoided. Very much depends upon the way in which one's observations are read. It struck me that everything depends upon time and system in planting, and that these things constitute the real gist of the matter. The reference to the Vines at Chiswick, grown as they are under unusual conditions, which are vertical growths of about 9 feet high, was a case in point to illustrate the fact that vertical growth did not necessarily lead to the defoliation of the lower part of the stems. Of course these Vines are now several years old, but the fact that they are still well clothed with leafage to the base shows that they have not suffered from loss of leafage in the past. The matter is but a very trivial one at the best. *A. D.*

The Golden Black Currant.—I was rather interested in reading your note of the above, but the variety is not new, though very interesting, and, I believe, uncommon, as I have never seen but one bush of it myself, that was one that I had about twenty-five or thirty years ago from an old jobbing gardener with some other bushes of the black Currant; but this one was marked out by him as a white black Currant, and as a curiosity I had it with the others. It was just the same in every respect but the colour of the fruit to the black variety, and there it was in my garden for many years, but was never propagated, and finally it was dug up to make room for other trees to be planted. I have never seen or heard of one till this time, and doubtless it is the same in colour of fruit. This was, as nearly as I can now remember, about the colour of the white variety of the red Currant, which is brighter in some than others. I consider it quite equal to the other variety in every way, and being of that colour is sure to attract notice. *J. S. C.*

—— I have grown this variety for the last twenty-two years, and have known others to possess it. At one time I grew it largely, but not finding it much appreciated by the cook, I destroyed a dozen large bushes of it, but still keep the variety as a novelty, and have exhibited it at the Royal Horticultural Society's Gardens, South Kensington, three or four times in my collections. *Sydney Ford, Leonardslee, Horsham.*

The Influence of the Previous Summer on the Fruit Crops.—Your editorial in the last number of the *Gardeners' Chronicle* leads me again to refer to the question of the influence of the previous summer on the fruit crops of the present year. And I may say at once that I venture to disagree with you in your opinion that "to spring frost more than to any other single cause must be attributed our deficient crops." [Not, of course, in this present year. ED.] In April, 1881, you were good enough to print a paper of mine headed "The Climate of Chester," in which I endeavoured to show that the production of Apples and Pears was determined by the amount of summer-heat at any given locality (vol. xv., p. 531). I now venture to think that the present deficiencies in the crop of these fruits goes far to prove my case. The first question is whether the temperature of July and August, 1881, was above or below the average. On looking up the registers of several localities I find that though July was somewhat above, yet that August (which I consider by far the most important month, as by that time trees have completed their growth) was very much below the average temperature even of the three preceding years, which include the disastrous remarkable summer of 1879, and the extreme rainfall of that month (August, 1881) will no doubt still be fresh in the memory of most of your readers. It is therefore clear that, according to my view, the conditions were such as might be expected to produce a poor crop in 1882. The next question is, was there any frost during the period of blossom sufficient to injuriously affect the crop? We may consider this period to be from the middle of April to the middle of May. And here I can only give the facts that have come under my own notice, but at Chester the lowest temperature between April 16 or May 15 was 34°, and at Colwyn Bay the lowest in all April was 36°, and in all May 34°. The observations were taken with verified thermometers in a Stevenson case. It is, therefore, evident that there was no frost in either of these localities sufficient to injure the crops; yet at both localities we are just as badly off, to say the least, as in other localities. At Colwyn Bay, it is scarcely an exaggeration to say that I have no Apples or Pears on bush or standard trees. On espaliers, on the other hand, the case is different. Apple trees on these have borne very fairly well, as indeed some kinds, such as Mannington's Pearmain, Sturmer Pippin, Ribston Pippin, and (of course) Lord Suffield, rarely fail to do; yet trees on espaliers are even more exposed to frost and wind than on trees or, at all events, bushes. I should mention that the gale of April 29 was nothing of any consequence here, and did no damage of any kind. What conclusion can we draw from the above facts but that the crop of Apples and Pears in any one year may be predicted from the mean maximum temperature of the August of the preceding year, and that good crops can only be insured by planting on espaliers, and attending carefully to summer pinching of the shoots. I forgot to say that there was a splendid show of blossom both at Chester and Colwyn Bay; but, as I have already stated (*loc. cit.*), this is not uncommon when the wood of the previous year has been imperfectly ripened. *Alfred O. Walker.*

—— I note your editorial remarks in last week's *Gardeners' Chronicle*, and ask your permission to say a few words on the subject. Theoretically your remarks appear unanswerable, and the matter is knocked on the head; but practically viewed they are disposed of by a few facts which I venture to put before your readers. Farms in Kent are notoriously high rented, because of their being partly planted with Hops and fruit (giving them a value beyond what they would possess if strictly agricultural); now for several years there has been a general concurrence of opinion among farmers that fruit has paid their rent, or has greatly assisted to do so. In fact, many Hop farms have been kept going by the fruit returns, and thus the owners have tided over bad times. Land agents assure me that there is no difficulty in letting a fruit farm. It is only where they are strictly agricultural holdings with Hops that they have them on hand. This would seem to prove that fruit growing pays. You appear also to overlook the important fact that a short crop often pays the grower the best, and so it has been for the past few years—prices have ruled high, and expenses have been low, a full crop meaning a difficulty in picking in good condition (as the pickers frequently strike), and a low market value. If fruit growing is such a poor speculation how comes it that many of the market salesmen (men of keen business habits) have purchased and rented fruit farms themselves, which they are extending right and left, and planting not only with bush fruits, which produce a quick return, but with Pears, Apples, and Plums, and doing this in many cases on a fourteen years' lease? Again, I know of too many unfortunate Hop and corn farmers who have been unable to withstand the presence of successive bad seasons; but I cannot call to mind any fruit growers who have failed. [We could mention some. ED.] I do not consider the speculative fruit buyers at auctions to be fruit growers. It was common talk last Michaelmas that the fruit enabled many to pay their rents who could not otherwise have done so, and, as a small fruit grower, I can see that it would be so. For example, in 1881 one neighbour grew 6000 bushels of Apples, which he sold (well) at 3*s.* 6*d.* per bushel delivered on the rail 1 mile distant, and this included all the drops as well: and other similar cases could be cited; this year he has few Apples, but the other fruit, Cherries, &c., will return about the same sum. And this brings me to a fact which cannot be too strongly insisted on, that a variety of fruit should always be planted, as some kinds are sure to crop. Now as to this season's fruit, Cherries were plentiful; but prices were low, and why? because, in the first place, we had none of that scorching hot weather that begets a fruit appetite; and by the time that the baskets reached market (assisted by the frequent shunting at country stations), the fruit, in consequence of its watery and soft condition, had to be cleared off the boards, and the heavy demand which generally comes from the North and the manufacturing districts could not be entertained on this account, as the double journey would have completed the disaster; but still prices were fairly good, and I might say varied from day to day with the weather. The same remark applies to all soft fruits: there was such a general want of condition that the trade was localised—always a bad thing for growers of perishable articles; and the same factors have made a fine thing of it. It is to be hoped that such a concurrence of cold damp weather, and a general flatness of trade, may not occur again. The only fair way of looking at fruit growing is to strike an average over, say, five or six years, and I venture to say that such an average would be found satisfactory. To conclude, the fruit returns as given in the *Gardeners' Chronicle* are admirable, and full of interest to the private gardener; but I maintain they have no place in the practical question of does fruit pay? The experience of many hundreds in this district is that it does, and they show their faith by their works in extending their plantations, in improving their culture, and in selecting their sorts; and I might say that they have done so persistently for the last twenty years: and in making these remarks I must be distinctly understood to refer to fruit growing in quantity for the market as distinct from garden culture, and from that pseudo-trade of selling produce from private gardens which has, in the opinion of many, taken the bread out of the mouths of a hard-working class of growers, and turned many a "place" into a gigantic market garden. *The Author of "Fruit Farming for Profit," Maidstone, Aug. 9, 1882.*

Grapes Injured by the Larva of a Moth.—The specimen of berries of Grapes sent have been injured by the insect also enclosed. The black Grape is Alnwick Seedling, all the berries I send (eighteen in number) were cut from one bunch. As many as eight insects similar to the one sent were caught in the one bunch, which is now quite disfigured, having been fit for any exhibition previously. The specimens of Muscats were cut out of two or three bunches a-day or two previous, but from the same house. In another house in which Hamburghs are chiefly grown it has also been very troublesome — a dozen, and sometimes more of berries, having been cut out of one bunch. Luckily not many bunches are attacked with it, or the results would be serious. We are now going over the bunches very closely and carefully with a soft feather, and removing any symptoms of this troublesome customer. I have previously had attacks from the same insect, but not so bad as this year. It appears to me to be the same thing as is frequently seen on quick-set hedges at this season of the year. Some of your correspondents may have been troubled in like manner. Any that have not, will do well to look closely for it, the indications of which are a small but tough web closely uniting two or three berries together. It then commences to feed upon the berries so drawn, eating away the skin and a little of the pulp, then removing apparently to other quarters. As soon as it is disturbed it will drop from the bunch in the manner of a spider by a slight web, and can then be easily caught. *J. H.* [Publication delayed. [The small caterpillar sent by "J. H." as gnawing the skin of ripe Grapes of different kinds, fastening two or three berries together by a web, eating the skin and a little of the pulp, appears to be the larva of the little moth known in this country under the name of Lobesia reliquana of Hubner, Stainton, &c. (Endemis botrana of some German authors; Eupœcilia permixtana, Stephen's *Illustr.*, Wood, fig. 1137). The account, however, given of the habits of this species by Kollar, Boisduval, &c., speaks of it as attacking unripe Grapes; whilst the account given in an article in the *American Agriculturist* for August, 1882, relating to a similar insect, seems hardly to apply to this species, the caterpillar cutting out bits of the leaves to form a kind of cocoon, whilst the figure of the moth can scarcely be intended for our English insect. *I. O. W.*]

Telegraph and Telephone Peas.—We had thought that the question of identity of Telegraph and Telephone Peas had been thoroughly disposed of some time since, but we now find that Mr. Culverwell has discovered that all our new Peas date their origin from him. If this is the case we think we should have a very grave charge to make against Mr. Culverwell, inasmuch that while he was professedly selling us a stock of Peas that he called Telegraph, he was by his own showing selling us a perfect medley, not only differing in the colour and form of the dry seed, but also showing a difference of several feet in the relative heights of the haulms. We have always admitted that Telephone was selected from Telegraph, and we should have expected that Mr. Culverwell would have thanked us for our efforts not only in fixing the true character of Telegraph, but also for the same care we exercised in fixing the true character of Telephone, and which has been admitted by numbers of unprejudiced cultivators as praiseworthy. Mr. Sheppard might well apologise for the Ne Plus Ultra being placed before Telephone and Stratagem, and it would be interesting

to know the basis of the judges' decision. There is no doubt however, from our own observation, that the enormous size of Telephone and Stratagem Peas startle many country cultivators who have looked upon the Ne Plus Ultra type as the height of perfection, but where Ne Plus Ultra is awarded one prize fifty may be credited to the new varieties. When Telephone was first sent out by us, Mr. Culverwell positively affirmed, through the public press, that it must have been Telegraph, giving, as his reason, that he commenced the stock with one pea only; there could not therefore, he said, be more than one variety. He also published to the world that he had the entire stock in his own hands for eight years, during which time he saw no variation. Now, however, after the lapse of six more years, he has found that Telegraph is mixed! We do not dispute that, nor are we responsible for it. We only know it is, and ever will be our special care to have all our varieties of Peas as true and as distinct as possible. It is by such care that we have been able to send out first-class Peas. In the greatest number of good qualities Stratagem will stand first for many years to come. In conclusion, we would add that Carter's Stratagem and Carter's Pride of the Market Peas have no common origin with Mr. Culverwell's Peas, and it would be as reasonable for him to claim all or any other new Peas that may have been introduced as to do so in this case. Besides, if Stratagem and Pride of the Market Peas had been found in Mr. Culverwell's original stock of Telegraph, many careful cultivators would have immediately detected the fact and have made the selection themselves. Stratagem is admitted on all sides to be probably the best all-round Pea in the world, and we believe we are correct in stating that Stratagem is the first and only Pea that has received the honour of two First-class Certificates at two distinct periods from the Royal Horticultural Society. *James Carter & Co.*

Potatos.—These are grievous to see, as the foliage became destroyed so very early, Magnum Bonum and Champion even having to succumb as I never saw them do before. All the early Ashleafs have got their disease innings this year, and the Early Rose tribe must, I think, be fought shy of in future by even their faithful friends, the cottagers, the "Roses" being so terribly stricken. I have taken a radius of some 30 miles lately, and it is quite disheartening to see how the finest of the tubers are rotting. I never praise my own seedling Potatos, but as you ask me about this especial crop, I must in justice say that members of my last crops are behaving sturdily and well through this terrible ordeal. If they can withstand this season's infliction, I need not fear for their public reception in the future. Generally, if the neighbourhoods that I have been visiting are to be taken as a guide to go by, I calculate half a crop of Potatos to be our average. *Robert Fenn.*

Reports of Societies.

Scottish Horticultural Association. — The ordinary monthly meeting of this Association was held in 5, St. Andrew Square, Edinburgh, on Tuesday, August 1, Mr. M. Dunn, Dalkeith Park Gardens, in the chair. Mr. J. Mitchell, Coltness Gardens, Wishaw, read a paper on the "Passiflora," giving its history, method of cultivation, and naming the different varieties. Mr. John Wilson, Royal Botanic Garden, then read a paper on "Selaginellas, their Structure and Cultivation." Selaginellas, he said, were associated with Horsetails, Ferns, and Lycopods. They differed from these in having two kinds of spores—the micro, representing the male, and the macro the female elements. The one British species, S. selaginoides, is a diminutive plant, abundant in upland marshes. The greater part of coal was formed from plants clearly related to the Selaginella. The Lepidostrobus exhibited was the fossil cone of a coal plant, and in it the same bi-sexual arrangement of spores might be traced. Those spore-bearing plants belonging to the carboniferous period were of huge proportions, and if the chain of organic existence were to be considered as unbroken the complemental theory of degradation must be resorted to in support of evolution. The plants under notice had a wide geographical distribution, being found in the East Indies, Japan, Europe, America, and elsewhere. Mr. Wilson, following the classification adopted by Mr. John Smith, Ex-Curator of Kew Gardens, enumerated and described over thirty kinds, and gave a detailed exposition of the method of cultivation.

Mr. Dunn, Dalkeith Gardens, exhibited several unusually large stalks of Stott's Monarch Rhubarb, and received a Cultural Certificate for a collection of fifty-six varieties of Gooseberries and fourteen of Currants. The sorts were: Gooseberries—Reds: Industry, Keens' Seedling, Forester, Warrington, Speedwell, Crown Bob, Moll Row, Ironmonger, Black Prince, Red Champagne, Wellington, Rifleman, and Wonderful. Yellows: Leveller, Mount Pleasant, Peru, Goldfinder, Leader, Pilot, Drill, Catherina, Gipsy Queen, Yellow Champagne, Early Sulphur, Rockwood, and Railway. Greens: Hebburn Prolific, Overall, Glenton Green, Souter Johnny, Heart of Oak, Thumper, Gascoigne, Pitmaston Green Gage, Laurel, Lofty, Stockwell, and Telegraph. Whites: Snowdrop, Whitesmith, Hedgehog, Bright Venus, Queen of Trumps, Eagle, Lady Leicester, Hero of the Nile, Crystal, White Champagne, Antagonist, and Snowball. Currants—Blacks: Black Prince, Lee's Prolific, and Black Naples. Reds: La Versaillaise, La Fertile, Victoria, Cherry, Red Dutch, and Warner's Grape. Whites: Cut-leaved White Dutch, White Champagne, and White Dutch. Raspberries: Northumberland Fillbasket, Carter's Prolific, Fastolf, Baumforth Seedling, Red Antwerp, and Yellow Antwerp. The sorts are named in the order of general merit. He also received a Cultural Certificate for a plant of Anthurium Andreanum with eight spathes. Messrs. Methven & Sons were awarded a Cultural Certificate for twelve varieties of Pelargoniums, and another for a new seedling Petunia named Mrs. John Methven. Mr. Duncan, Bo'ness, exhibited fruit of the Bountiful Strawberry, which the judges Highly Commended. Mr. Laurence Dow, Newbyth Gardens, received a First-class Certificate for a new seedling Melon, named Lady Baird (it was a cross between Queen Emma and Golden Gem), and a Cultural Certificate for flat Italian Tripoli Onions, some of which measured 15 inches in circumference. Messrs. Dicksons & Co. were awarded certificates for two new seedling Pentstemons, and for a yellow Carnation. Mr. James Gildowie, Jock's Lodge, exhibited a new Fuchsia; Messrs. James Dickson & Sons, Inverleith Nursery, a new seedling Begonia; Mr. George Fraser, Parsons Green, a plant of Nicotiana longiflora; and Miss E. Legat, Musselburgh, a Convolvulus and early Chrysanthemums. For a new seedling Carnation, Mr. Robertson Munro, Abercorn Nursery, received a Certificate; it was named Abercorn Beauty.

Taunton Deane Horticultural: *Aug.* 10.—The fine exhibitions which this Society has now for a number of years been the means of bringing together in the pretty Vivary Park, thoroughly representative as they are of the different branches of gardening, including plants quite equal to the best forthcoming at any exhibition in the kingdom, along with fruits, cut flowers, and vegetables, in quantity, of equal excellence, places the Taunton Show in the front rank of provincial horticultural gatherings. On the present occasion the leading classes for large stove and greenhouse plants were somewhat less full than usual, but the deficiency in numbers was quite made up for by the excellence of the competing groups. In the open class for twelve stove and greenhouse plants in flower, for which the handsome prizes of £20, £12 10s., and £7 10s., are offered, and this for a single day's show, five groups were staged, and Mr. G. Cole, gr. to J. Lawless, Esq., Exeter, Mr. Cypher, Cheltenham, and Mr. J. F. Mould, took the prizes in the order named. Mr. Cole's dozen contained an unequalled example of the finest of autumn Heaths, E. Marnockiana, quite 4 feet in diameter, completely clothed with its bright, highly coloured flowers, E. Jacksoni, E. æmula, also in fine order. The white and red varieties of Lapageria, Ixora Prince of Orange, and I. Fraseri; Allamanda Hendersoni, A, grandiflora, Dipladenia Brearleyana, Clerodendron Balfourianum, and Stephanotis floribunda; altogether a well grown and beautifully flowered collection, all quite fresh. In a fine lot, Mr. Cypher had the distinct and new Ixora Duffi, bearing ten enormons heads of its deep red flowers, several of which were 10 inches through; I. Pilgrimi, one of the best hybrids; Erica æmula, large, full of flower, and unusually highly coloured; E. Irbyana, and Allamanda nobilis. Mr. Mould had a creditable group, in which was a good specimen of the deep blue Statice Butcheri, and the brilliant scarlet Erica cerinthoides, well grown and nicely flowered. Six stove and greenhouse plants.—Of these Mr. Cypher was the only exhibitor, taking 1st with a pretty half-dozen, amongst which was the bright scarlet Hæmanthus magnifica, bearing thirteen of its conspicuous globular heads of bloom, and a couple of well flowered Heaths, E. æmula, and E. Marnockiana. With new plant in flower Mr. Appleby took the lead staging a nice example of Anthurium Andreanum; 2d, Mr. Cypher with Disa species, a distinct light coloured kind. New foliage plant.—1st, Mr. Selway, gr. to Sir J. H. Amory, who had a nice example of Dracæna Lindeni, a distinct-looking plant, with a graceful drooping habit; 2d, Mr. Cypher, for a nice plant of Croton Baron Frank Selliere, a distinct, large-leaved sort, with bright green and creamy-white variegation. The competition in the class for eight fine-foliage plants was very close, Mr. Cypher taking 1st, with a large fresh collection, including several Palms, Cycas circinalis, a fine example of Cordyline indivisa, a big specimen of Croton angustifolius, dense in foliage, and highly coloured; and C. Sunset, one of the most brilliant coloured of this now numerous family. Mr. Cole, who was 2d, in an excellent lot had Croton undulatus and C. Disraeli, large and well grown, several good Palms, and an unusually fine specimen of Alocasia intermedia; 3d, Mr. T. W. Appleby, gr. to T. Bide, Esq. Eight exotic Ferns.—1st, Mr. Cole, with a fine collection, in which was the ever-beautiful Davallia Mooreana, 9 feet in diameter; Nephrolepis davallioides furcans, large and well-managed; with Gleichenia Mendelii and G. dichotoma. Mr. Appleby, who took 2d, also had well-managed plants.

Fuchsias were well represented. In the open class for six Mr. G. Garraway and Mr. H. Godding each had groups so evenly balanced that equal 1st prizes were awarded them.

Mr. Cypher was the only exhibitor of six Orchids, staging a nice half dozen, the best of which were Disa grandiflora, Dendrobium superbiens, and Cypripedium niveum.

Zonal Pelargoniums, as usual here, were well shown, the flat, over-trained style being avoided, Mr. Godding taking 1st for eight, with a well-flowered bright collection, containing Ferdinand de Lesseps, one of the brightest scarlets and most profuse flowering varieties; Xanthea and White Vesuvius. The 1st prize for eight gold and silver tricolors went to Mr. J. Wills, who staged a faultless set of plants; Mr. Godding being 2d. For four double-flowered zonals, which likewise were well done, Mr. Godding had 1st.

Tuberous Begonias were nicely shown. With eight Mr. Wills took the lead, having, amongst others, Reine Blanche, a fine white kind, which carries its flowers more erect than most varieties, and consequently is more effective; 2d, Mr. Godding.

In the amateurs' division Mr. Selway took 1st honours for twelve stove and greenhouse plants, putting up a nice dozen, in which Erica kingstonensis, Allamanda grandiflora, A. nobilis, Bougainvillea glabra, and Clerodendron Balfourianum were well flowered. Mr. Selway was likewise 1st with six stove and greenhouse plants, his best examples here being Erica retorta major and the large-flowered Allamanda Schottii. Four stove and greenhouse plants.—1st, Mr. F. Woodland. Six fine-foliaged plants.—Here again Mr. Selway was to the front, with a nice group, the most noticeable of which were Alocasia Thibautiana, Encephalartos villosus ampliatus, and Croton Warreni; Mr. G. Hayman, gr. to J. Paine, Esq., 2d. Lycopodiums were well done, Mr. Cole coming in 1st with four, staging beautiful plants of L. Wallichii, L. Warscewiczii, L. cuspidata (circinalis), and L. africana; 2d, Mr. Appleby. Four Fuchsias.—These were well flowered and nicely grown. 1st, Mr. F. Woodland; 2d, Mr. G. Garraway. Six tuberous Begonias.—With these also Mr. Woodland was to the fore, Mr. H. F. Manley taking 2d. Mr. Woodland likewise took 1st with six zonal or nosegay Pelargoniums, Mr. S. Tottle 2d. Achimenes were nicely shown, the Rev. A. Elton taking 1st and Mr. Selway 2d.

Cut flowers, in the shape of Roses, Dahlias, Gladioli, Asters, Phloxes, and stove and greenhouse varieties, were collectively present in large numbers, and made an effective display. With forty-eight Roses, Messrs. Cooling & Son, of Bath, were 1st, showing for the advanced season a creditable lot of flowers, the best of which were Xavier Olibo, Alfred Colomb, Louis Corbie, and La France; 2d, Mr. H. Smith. Twenty-four, in threes.—Here again Messrs. Cooling were 1st, their most noteworthy blooms being Maurice Bernardin, Reynolds Hole, Star of Waltham, Baroness Rothschild, and Baronne Hausmann; 2d, Mr. Smith. It is yet too early to see Dahlias in their best condition, but those shown were good for the time. With twenty-four, Mr. J. Nation, Taunton, had 1st, the most meritorious being Lord Chelmsford, Ovid, Constancy, and the Rev. J. Goodday; 2d, Messrs. Harkness & Son. In the class for twelve varieties, Messrs. Harkness reversed the order of matters, taking 1st, and Mr. Nation 2d. Twelve single Dahlias.—1st, Messrs. Cooling; 2d, Mr. A. Walters. Hollyhocks, as usual now, were indifferent, Mr. W. Smith having the best twenty-four, Mr. A. Smith being 2d. Gladiolus were well shown by Mr. S. Dobree, who had 1st, for twenty-four, with, amongst others, good spikes of Bonomy Hankey, Cymbal, Horace Vernet, Flag of Plymouth, and Jane Mary Dobree, Messrs. Harkness & Son, who came in 2d, had a good but less even collection. Twelve bunches cut flowers.—These were well done, Mr. Cole occupying the leading place with large handsome bunches of good kinds, but wanting in Fern or other green foliage to set them off; equal 2ds were awarded to Mr. Selway and Mr. G. Howe. In the amateurs' class for twenty-four Roses, Mr. T. Hobbs took 1st, showing a very nice stand of blooms; 2d, Mr. D. C. Powell, gr. to the Earl of Devon. With twelve Tea Roses, six varieties (amateurs), Mr. D. Shillard had a well-merited 1st, with beautiful flowers, in which Jean Ducher, Madame Willermoz, Madame Lambard, and Niphetos, were very fine; 2d, Mr. Selway. Dinner-table decorations, stands of flowers, and bouquets, are here confined to lady competitors. For a table arranged for ten persons Miss Cypher was 1st, with a neat arrangement, that had the merit of being light, elegant, and not over-done; Miss Coker, who was 2d, also had a nice table. With a stand of flowers, in a close competition, Miss Bland came in 1st, Miss Cypher 2d. Bouquet.—1st, Miss Cypher, with a beautiful example; 2d, Miss Bland.

Fruit.—Of this there was a large display, mostly of good quality. With ten dishes, Mr. Austen, gr. to Sir Greville Smyth, Ashton Court, was easily 1st, showing a nice collection, consisting of good dishes of Black Hamburgh and Muscat of Alexandria Grapes, a Smooth Cayenne Pine, Noblesse Peaches, Negro Largo Figs, Pine-apple Nectarines, Green Gage Plums, Morello Cherries, a Beechwood Melon, and Moorpark Apricots; 2d, Mr. Carter, gr. to H. P. Gore Langton, Esq.; 3d, Mr. W. J. Crossman, gr. to T. O. Bennett, Esq. Eight dishes.—Here likewise Mr. Austen had 1st, his best examples again being Black Hamburgh and Muscat of Alexandria Grapes, Hero of Lockinge Melon, and Brown Turkey Figs; 2d, Mr. W. J. Crossman. Four dishes.—1st, Mr. G. Howe; 2d, Mr. Brutton. Three bunches of Black Hamburgh Grapes.—With these Mr. Austen had 1st, having well-finished examples, fine in bunch and berry; 2d, Mr. W. J. Crossman. Three bunches of Black Grapes, not Hamburgh.—Here Mr. Brutton had 1st honours, with Black Alicante; 2d, Mr. Loosemore, gr. to W. Cooper, Esq., who staged Trentham Black. Three bunches of Muscats.—1st, Mr. Selway, with Muscat of Alexandria, very well coloured; 2d, Mr. Austen. Three bunches of white Grapes, not Muscats.—Here Mr. Crossman was a good 1st, with Buckland Sweetwater, well up to the mark. Two Pine-apples.—1st, Mr. Carter, who had a pair of Queens. Six Peaches.—1st, Mr. Brutton, with handsome highly

coloured fruit; 2d, Mr. Powell, who had a good dish of Barrington. Six Nectarines.—In these Mr. Hayman, gr. to J. Paine, Esq., was 1st, with Violette Hâtive, splendidly coloured; 1d, Mr. Austen. In the class for six Apricots Mr. Huxtable, gr. to F. W. Newton, Esq., stood 1st, with a grand dish of Moor Park; 2d, Mr. Powell, who also staged very fine fruit. With a Melon (any colour) Mr. H. Ward took 1st; Mr. H. F. Manley 2d. Hardy fruits were remarkably well shown by a number of exhibitors, whose productions were such as might have led to the supposition that in this division of the kingdom there was not the scarcity that in reality does exist. Vegetables also were plentiful, all the leading kinds being well represented.

Messrs. Kelway, of Langport, had a fine display of Gladiolus, not for competition, comprising some four dozen varieties, consisting of the best early named sorts, and several distinct seedlings of sterling merit. From Messrs. R. Veitch & Son, Exeter, came an interesting exhibit—double and single Dahlias, with a number of other kinds of cut flowers. Messrs. Lucombe, Pince & Co., Exeter, contributed a large and well selected group of stove and greenhouse plants, as well as cut flowers of various kinds. Messrs. Cross & Steer, of Salisbury, had a quantity of flowers in fine condition, of their new Clove-scented Carnation, the Governor, a white variety, slightly suffused with pale pink, which, so far as can be judged by the flowers without seeing the plants that produced them, seems a desirable kind, having plenty of substance in the petals. The flowers are full enough, but not too full, and big enough for general purposes.



Law Notes.

GLOUCESTERSHIRE SUMMER ASSIZES.—*Foster* v. *Harper*.—Before Lord Justice Bowen.—The plaintiff complained of injury done to his property at Rodborough by reason of a nuisance caused by brick kilns belonging to the defendant. The defendant denied that the burning of his bricks caused any nuisance; and upon this they joined issue.

Mr. Matthews, in opening the case to the jury, said Mr. Foster, the plaintiff, brought this action to recover damages for injuries done to his nursery grounds situated near Stroud, by the burning of bricks in the defendant's brick kilns in the year 1881. Although the assessment of claims was confined to this year, yet the loss he had suffered was by no means confined to this year. He would only touch upon anterior matters in such a way as to render the case intelligible. The plaintiff purchased the property called Spillman's Court some few years ago, and established a nursery on the greater part of the property, using the house as his residence. He soon after experienced a nuisance from these brick kilns, but that was passed over for a time, as the plaintiff was not a person anxious to rush into litigation. It was in the summer months that the complaints arose, because it was then the kilns were in operation, and the plaintiff suffered considerable loss during 1880. In 1881 he wrote to the present defendant again, referring to his letter of 1880, reminding him that he had received no answer, and that he was sustaining damage. On September 21 defendant wrote to the plaintiff for the first time: "I am sorry you should think my works are in any way a nuisance to you. I have tried and will try my best to reduce any nuisance, but these works have been established twenty years, and if there is any discomfort you have come to it with your eyes open." The jury would see the spirit of forbearance manifested by the plaintiff, and how reluctant he was to commence proceedings, and the answer defendant set up was that the nuisance existed longer than the nursery grounds, and the plaintiff had come to it, and not it to him, which was no answer or defence at all. The plaintiff's premises were situated to the north-east of the kilns, and between the two properties the ground formed a sort of valley. The prevailing wind there was from the south-west, and the position of the valley assisted that habitual and usual wind, and whenever it was anything like south-west the fumes were carried across the valley and impinged upon plaintiff's nursery, a distance of about 150 yards. On repeated occasions in 1881 the smoke did come over the nursery ground, and its effect was to cause choking sensations when breathed, and it had a sulphurous smell. That state of things went on from April to September of last year. Where there was some intervening shelter the effects were averted. Where some cottages protected a corner of the nursery the shrubs were green and flourishing, but immediately beyond the line of shelter the shrubs were burnt and shrivelled up by the fumes. The common experience of mankind was almost enough to satisfy them that a brick kiln was not a pleasant neighbour, that to breathe it was not favourable to human lungs, and that it must be prejudicial to plant lungs. Both the clay and the coal when burnt gave off sulphur, and the effect of the burning was to cause the sulphur to combine with the oxygen of the air, and then it formed two very virulent acid gases, one called sulphuric acid and the other sulphurous acid, the difference being that the sulphuric acid had one more atom of oxygen than the other. Sulphuric acid was commonly known as oil of vitriol, and was highly corrosive. When the wind carried this gas, particularly in damp weather, it became deposited on the plants, which were burnt into holes, just as oil of vitriol would burn a coat sleeve. Repeated doses of these fumes coming from the brick kilns injured the plants so as ultimately to kill them. Of course some trees are more susceptible than others, and some would die while others would not. The Coniferæ, he believed, were the most susceptible, and the Laurels suffered very severely. There were very large quantities of plants in a nursery ground, and in 1881 there were 130,000 bedded Larch, of which number no less than than 40,000 were so damaged as to be unsaleable. Red Currants, Laurel, Limes, Austrian Pines, Cherries, Roses, and so on, were injured in large numbers, and the damage amounted to no less than £200 in that one year. Well, the defence pleaded was, not that fumes did not issue from the kilns, but that they did no harm to the plaintiff's shrubs. They would be told that the severe frosts of the previous winter did it, but they were claiming damages for the injury done to the leaves and buds of plants during the summer, and long after the frost had departed—for the plants burnt by these fumes in the spring and summer months. Some part of the nursery was out of reach of these fumes; some of the plants were sheltered by intervening ground; some were hardier than others; and they could understand how the action of these fumes would be somewhat capricious in their character. In some states of the air they might be carried away, but when the day was close and muggy they would be carried down by the moisture and deposited on the plants. The irregularity of the effects was therefore easily accounted for. Any one who had ever got to leeward of a brick kiln must know something of the choking sensation it caused in the throat, and that was exactly what the plants experienced. In conclusion, he remarked that the jury would have to assess the damages to be paid by the defendant for the injuries inflicted on plaintiff's stock in the year 1881.

Mr. W. Foster, the plaintiff, was then called, and examined by Mr. Greene said:—In 1873 I purchased the Spillman's property. It contains 6 acres—about 3½ acres nursery, the remainder field, kitchen garden, and dwelling-house. It was not used as nursery when I purchased it, but as an orchard. My premises are on the side of a hill. Defendant's premises are on a lower level than my ground. In 1873 kilns were there, but they were not worked the first two years. There are 120 yards between my premises and the defendant's. There are cottages between the premises and the kilns, but spaces between the cottages. In 1873 the firm of Miles, Harper & Co. was in occupation of defendant's premises. Fumes came from the kilns to a modified extent. In 1879 fumes came from the defendant's land; I believe that was the year when they took possession. In that year and 1880 fumes came constantly. The prevailing direction of the wind on my land is anything with a point of west in it. Whenever a west wind was blowing, especially if a wet one, I could see the plants were very much injured. Some plants are more susceptible than others. In nearly all the leaf is injured when it becomes dry. Bricks were usually burnt during the summer months—from April to September or October. During the year 1881 the burning of bricks continued. Between April and September, 1881, in particular I suffered, and it is in respect of damage done then that I bring this action. It was not true the works had been in existence for twenty years. I have made out a list of particulars of damage done during 1881. The amended particulars put in represent all the trees I had at that time, the numbers injured, and the damage sustained. This shows the description of each sort of plant, how many were rendered unsaleable, and the selling price. One part of particulars shows damage to some trees of which I had not many, and which were reduced in value, though not totally unsaleable. I have claimed about half the selling price. Of 550 red Currants 250 were rendered quite unsaleable. The remainder were not saleable, but were not damaged so much, and in two or three years might be saleable again. The price was 5*s.* per dozen, and I have charged 2*s.* 6*d.* per dozen. The ornamental trees round the house and the kitchen garden crops are charged £16—much too moderate. One item of damage is on account of plants returned by purchasers. At my house I experienced the smell of fumes in a slight degree—outside the house very much. The enjoyment of the house has been diminished thereby. As to the fumes coming from defendant's land, the blue coloured smoke is offensive to smell; it has a strong scent, and sometimes flavour of sulphur. It depends on the variety of tree how long the injury takes to manifest itself. Austrian Pines show it in about three days, Larch in twelve hours, and that depends on the state of the plant and the condition of the atmosphere. The plants present a burnt appearance. I produce an Austrian Pine of the growth of this year, which is injured; another specimen shows the injury of last year. This piece of Larch shows two injuries—one done on June 9, and the other the night after the jury were viewing. (Several other specimens were produced.) This specimen of Pear shows the injury to the burnt leaves. This burning was about two days after the smoke was on them. It is perfectly ridiculous to say frost had anything to do with this. I have also specimens of Limes and Laurels injured this year. The injury is always partial. A small corner is sheltered by a cottage. Last year that corner was planted with Austrian Pine, and the whole of these were comparatively free of injury. Outside the angle they were very much injured. The injuries last year were similar to the injuries this year. Defendant has been burning his kilns constantly this year. Since March I have been taking constant observations, and have kept a diary and memorandum book since the last trial in February. I have been making certain tests of litmus paper to see if the injuries were really to be attributed to defendant's kilns. I placed litmus paper in the evening in various parts of the nursery, right across, so that it should receive fumes when they came. On one occasion I placed some turmeric paper. Smoke was coming constantly at the time. The litmus paper was blue at first, and after exposure red. The turmeric paper turned from yellow to white after twelve hours' exposure. During this summer the standard Roses have been very much affected.

Cross-examined: When I made my nursery it was a field planted with fruit trees. The soil of the nursery is not a cold clay. The soil of the greater part of the nursery is not clay. There is some stiff clay land in it and some clay less stiff. The subsoil is not clay throughout. Near the middle part the subsoil is sandy loam, or liassic sand. The top one-third is oolite; the lower portion is clay. When I first went there were brick kilns closer to the nursery than now; they were immediately below the nursery. Those kilns were in work till 1875. They were 100 yards from the nursery. There were also kilns where the present ones are, so that there were then kilns on both sides of me. Lodgemore Mill is about the same distance as defendant's brick kilns, or 50 yards farther. There are mills and stacks around, at a distance of 500 yards. Stroud is about half a mile off. There are a good many houses around the nursery. The ground between the nursery and the kilns has a slight mound raised. I kept no record of the burning of the kilns from 1873 to 1876. The years 1874 and 1875 were the most successful years of my nursery. My plants flourished during those years. My theory of the injury is that sulphuric acid fumes descend on the plants, caused by the smoke. I have experimentally watered some plants with sulphuric acid, and have the specimens here. The first was on July 25, again on the 28th, and again on Saturday last. I did not give the defendant notice of this experiment. The acid was sprinkled over with a fine rosed waterpot. The specimen of lime [shown] was [had] one part acid to 100 parts of water applied; the other specimen was one to 150 parts of water. The withered condition is the direct cause of the application of the acid. These were cut on Saturday. The residue of the plants was partly affected and partly unaffected. I produce some specimens of Portugal Laurel, very much burnt. My first application was too strong, and killed the plant altogether; that dose was one to forty. The appearance of this Portugal Laurel is similar to that of natural decay; it is inconsistent with frost. Frost will affect leaves in portions only sometimes. I cannot explain in words, but I can see the difference in a moment between this appearance and death by frost.

His Lordship said he had an intimation from the jury that they had seen the spot, and that all this evidence of appearance was unnecessary.

Mr. Lawrence said he was aware there had been a view, and he felt embarrassed by it, but the difficulty was, that the jury could not form a fair opinion without considering the locality and the circumstances of the case. A man, for instance, could not make a garden in the Black Country, and say all the industries of the place must stop for the benefit of his garden. Only coal was burnt in these kilns, and if this kiln was stopped that a market garden might be carried on, Lodgemore Mill must be closed, and every other chimney that consumed smoke. If plaintiff's contention was correct, bricks could not be made unless a man had an estate and made his kilns in the middle of it. There were questions of law of a very serious nature which, he submitted, ought to be in the minds of any tribunal before it formed a judgment on the facts. For instance, he submitted whether the works of the defendant constituted a nuisance having regard to the locality in which they were placed, whether they caused damage to the plaintiff, and what damage was caused by them. All these were questions which depended upon the ingredients which the defendant burnt, and the ingredients which other persons burnt; and it did not follow that, because the nursery garden was suffering from some appearance of blight, that therefore it was an effect which proceeded from one rather than other of the causes which surrounded it. The difficulty they were in was, that the jury had unfortunately formed an opinion upon the case without knowing what the law of the case was.

His Lordship said the law was very simple. He had no doubt that if you destroyed plants in another man's garden that was a nuisance.

Mr. Lawrence: In our gardens in London we are unable to grow Roses or flowers..

His Lordship: If you could fix that upon any particular person he would be liable. I have not seen the place, but on the point whether this nuisance is caused by the noxious fumes from defendant's kiln the jury appear to be convinced by their view that it is so. I will hear you upon any point of law that can arise, but I should think none did.

Mr. Lawrence said there had been a previous trial, and they consequently knew more of the plaintiff's case than was in his lordship's mind, and unless it had very much changed it depended on the sulphur given off by the burning coal.

The Judge: The jury, on that particular point, are against you. It must be a nuisance to kill these trees.

Mr. Lawrence: Of course if it is caused by us in a neighbourhood which would not otherwise be affected that may be so; but in a neighbourhood where the effects are produced by other persons——

The Judge: That means you did not do it but somebody else did. If you think you can convince the jury of that, go on.

Mr. Lawrence: I must have your lordship's ruling on the question of law. I submit it is not sufficient to show that damage is done. You must show, having regard to the locality and the nature of the soil, that it is a nuisance.

The Judge: In this case property is destroyed.

Mr. Lawrence: The only property injured is a particular business which the plaintiff chooses to carry on. Suppose he chose to carry on the business of bleaching in these fields, he could not say the defendant caused the injuries.

The Judge: You can produce any authority on that, but my feeling would be strongly the other way. If you can show that the nuisance is not caused by the defendant that would be a plea of Not Guilty, but if these kilns do destroy vegetable life it is idle to say it is a question of law.

Mr. Reid, invited by the Judge, also argued the case. He said there were two questions in this matter. First, had some amount of damage been sustained? That was a physical fact, and they considered there was no prospect of altering the jury's mind on that. They would take that against them, but then the question arose, Is the plaintiff upon that entitled to a judgment? His lordship intimated that if a person injured the vegetables growing in a nursery garden he would be liable to damages. Might he ask his lordship what would be the effect of that?

The Judge: There being no prescriptive right.

Mr. Reid said there could not be a prescriptive right to commit a nuisance. But he was approaching it from this point of view: If they had a lawful trade properly carried on—and negligence was not alleged—and that lawful trade caused injury, what was the result of such a ruling as this? That wherever there was a lawful trade carried on which caused injury——

The Judge: What do you call a lawful trade? There may be some ambiguity in the term.

Mr. Reid: I mean a trade carried on without negligence. I will take the case of a blast furnace, or the case of collieries, for example, in Lord Dudley's country. I will take it that smoke coming from coal is the cause of damage. Lord Dudley might erect a blast furnace and go on for twenty years, and then a market gardener might come and put up a nursery close to it and say, "You must close, because my vegetables are destroyed."

His Lordship: That is a *reductio ad absurdum*. Let me put this:—Suppose fire comes from the chimney of the blast furnace and sets fire to a crop near. What is the difference between the sparks of fire falling and burning it, and the fumes of acid gas coming and burning it? Should you not say there was a cause of action there?

Mr. Reid said it was a difficult question to answer on the spur of the moment, but he ventured to think the result of the ruling was much more important than appeared at first sight. He might possess an acre of land in the heart of London, and, assuming that smoke damaged it, there were thousands of tons of coal burnt all around it, and if he set up a market garden could he say to any individual "You shall not make smoke?"

The Judge: The answer would be "It is not I, but the rest of the world."

Mr. Reid: Would that be an answer if fifty men do it and others not?

The Judge: The question is whether you are suing the one or suing the fifty. Can you show me any authority for the proposition, not that a person must not be too nice about personal inconvenience who plants himself in the midst of a trade, but that it is not a nuisance under any circumstances to destroy another person's property? If you can show me any such authority, I will be bound by it.

Mr. Reid mentioned the St. Helen's case, and the Judge asked if it decided that point. Mr. Reid believed it was a case of reference, and the conclusions he had drawn were the conclusions drawn from that case.

Mr. Matthews said the St. Helen's case came to this—that when the atmosphere was foul and loaded, and was reeking with "black Jemmy," as it was called, one chimney the more did not add perceptibly to the cause of action. Stroud was a sweet and healthy place, and had no resemblance to St. Helen's. In the St. Helen's case the action was held to be maintainable.

Mr. Lawrence: Perhaps the best way would be to take it on your lordship's ruling—to admit that some damage was caused by the smoke.

Mr. Matthews: Substantial damages. I shall ask the jury to assess the damages. Do I understand that Mr. Lawrence admits that the plaintiff has sustained substantial damage by the defendant's brick kilns?

The Judge: Yes.

Cross-examination of the plaintiff resumed: The outward appearance of frost would be the same as those burnt, but not on careful examination, as an educated gardener would do. The two winters preceding this damage were two of the severest winters for many years. I had a bed of 900 Laurels injured by frost. It is not the fact that a late frost developes the injury later on in the year.

Re-examined: There is nothing in the atmosphere of my neighbourhood except those brick kilns that should prevent the plants prospering. The 130,000 Larch plants spoken of were very small and planted close together, so that it was practically impossible to count them. On the amended particulars I find I did not claim enough for loss on the original estimate. This estimate is a long way under the mark.

Charles Gould: I am in the employ of the plaintiff, and have been for nearly forty years in the nursery business. I have noticed the smoke from these brick kilns. I counted the injured plants with my master. I counted 200 into each bundle. I helped to count most of them. The numbers in the particulars are correct. There was decidedly nothing else but the smoke from the kilns that killed the trees. The smoke from the mills never came across the nursery at all. The smoke from the kilns had a sulphury smell.

Cross-examined: The wind generally blew in the summer from the direction of these kilns. I believe the damage is all due to the kilns. I considered the claim of damages a reasonable one.

This concluded the plaintiff's case.

Mr. Reid said a nuisance, as he understood it, was something more than a thing which caused annoyance—something which also caused injury. It was necessary to show that the plaintiff had been damaged by that which was a nuisance to him, and in saying whether it was a nuisance or not it was not out of question to consider the nature of the locality.

His Lordship: I should say if you kill a man's plants you show by that that you have been guilty of injury to his property. The locality is, of course, important. If you bring an action against a man in London because your Roses don't flourish, he can say, "Look at the smoke of all London—is it reasonable to sue me?" That goes to the proof of whether a man's neighbour has caused the injury.

George White said he was stoker of the Lodgemore Mill, which was near to Mr. Foster's nursery. They burnt about 30 tons of coal per week, or rather over.

Cross-examined: The mill was a clothing factory. They had a smoke-consuming apparatus. No complaints were ever made to him about killing Currant trees, &c.

Edward Stockwell, stoker, Fromehall Mills, said they burnt 63½ tons of coal per fortnight.

Cross-examined: That mill was north-west from Mr. Foster. He took his situation in December last, and did not know what was burnt last year. His stack was over 100 feet high.

Mr. George Embrey said: I am master of the Gloucester School of Science. I visited the defendant's brick kilns in May last, and have made analyses of the gases given off when the clay is heated.

Mr. Matthews objected to this. He had evidence of analyses to show that noxious gases were given off, but his friend admitted that substantial damage had been caused, and was now calling evidence to show the defendant's smoke did no damage.

Witness continued: The clay does not give off any gas injurious to vegetable life. I have made a subsequent experiment as to the fumes given off by the kilns themselves. I found that at a distance of 80 yards there was a very slight trace of sulphuric acid collected on a sheet of paper moistened with ammonia. It was certainly not sufficient to do injury to vegetable life. At the last trial I examined specimens then produced by the plaintiff. I was not able to find any trace of sulphuric acid upon those specimens. If the injury was caused by sulphuric acid I should expect to find a trace upon the plant. In coal smoke sulphurous acid is given off. That is the case with all coal, some more and some less. It is that which injures vegetable life where there is a great deal burnt, it in sufficiently large quantity. It is a question of degree. If the combustion be perfect the whole of the sulphur would be converted into sulphurous acid. The combustion of coal in an ordinary furnace is more perfect than that in a brick-kiln. There is, therefore, a larger proportion of sulphurous acid passing into the air from an ordinary chimney than from a kiln. The existence of a smoke-consuming apparatus renders it certain the sulphur would pass into the air as vapour. There is nothing in the combination of the fumes of the coal and of the clay to cause special nuisance. In this special case the alkaline vapours of the clay would neutralise those from the coal.

This closed the defendant's case, and Mr. Lawrence then addressed the jury for the defence. This was a place at which, by the plaintiff's own admission, the work of burning bricks had been carried on for many years before he came to the premises, and he went and planted his nursery in between two brick fields. For seven years he carried on that nursery ground with these brick fields around him, and never discovered any damage at all from them. The same causes were in existence, but the plaintiff did not pretend that there was any damage to his garden, and the very years which he said were his best years were those which produced the largest quantity of bricks. If those fumes were the cause of the injury from which he suffered, then it was almost impossible he should not be injured in the years 1874 and 1875. The onus lay upon the plaintiff to trace the damage to the defendant. The damage, he alleged, followed two of the severest winters in modern memory, and yet he attributed nothing of the damage to the frost, but all to the defendant. He debited the defendant with every single tree which was in any way affected during the year 1881, except those trees which were actually destroyed by the frost. Then it was found that the wind was always blowing in one direction, that it was persistently blowing the fumes from the kilns across to plaintiff's garden, and it was always the defendant who caused every species of injury. They had it in evidence that there was a factory closer than this kiln, which burnt far more coal. He asked them also to consider that this claim for damages was strictly limited to the months of April to September in 1881. They had nothing to do with any damage caused since or at any other time, because the plaintiff could bring another action (and with greater effect after this verdict) for the subsequent time; therefore, he asked them to be careful in estimating the damage to limit it strictly to the months claimed. Now the coal burnt by the defendant during the period of the claim was five months—that was twenty weeks, and it was proved that only one kiln per week was burnt. As one kiln burnt 18 and the other 16 tons of coal each that made about 340 tons of coal burnt during the period of the claim. Let them consider that there were about a hundred houses surrounding, also burning coal, besides the mills. The Lodgemore Mill burnt 30 tons per week, and it was stated that it was the coal alone which did the damage. The whole question was how much damage sustained by the plaintiff was attributable to this defendant. It would be ridiculous to suppose that any large amount could be sustained by the burning of 340 tons of coal. At the distance of the garden from the kilns the fumes became very much diffused, and the amount of any particular element given off was very small, and it was only for that small amount that defendant was responsible.

The learned Judge, in summing up said: When the notification of the jury was made, that some injury was done, it became certain there would be a verdict for the plaintiff, and the damages were the only matter in dispute. What remained to be considered was this: Assuming, as they must all assume now that some tangible perceptible injury had been caused to this nursery ground by the burning of brick-kilns in the year 1881, what sum of money represented the damage suffered by the plaintiff during that year? They were not to consider the past behind 1881 nor the future in front of it. The future would take care of itself, and if in the future the kilns continued to do damage the defendant would have to compensate in some other way. All that the jury were entrusted with by law was the function of saying what was the money figure which represented the damage caused to that nursery ground by that brick-kiln. One thing more was clear, and that was that they were going to deal out damages out of the money of somebody else. They were trustees of the defendant's money in that sense, and to see that the plaintiff did not get more of that money than he was entitled to. Although the plaintiff had spoken to the best of his ability, and as an honest man, of his losses, it was for the jury to remember that he was the plaintiff. The plaintiff had given general evidence, and not that specific enumeration of damage which would have been perhaps more easily obtained before a tribunal which could give a week to it; but he could only succeed in such damages as he made out to their satisfaction. The first question was, how much actual damage had been caused altogether during this year. There was no other suggested cause at all but the burning of coal, except frost possibly. He referred to Mr. Darby's evidence of damage as exceedingly vague, but possibly the subject-matter did not admit of being very exact. On the other side there was no evidence at all, but the defendant of course expected them to tax the bill severely for him. Mr. Lawrence also contended that a great deal of this damage was not caused by the defendant's works at all, and he pointed out that in 1874 and 1875, when plaintiff's business was the best, the largest number of bricks was burnt. The answer to that was that one of the principal kilns then used was the other side of the hill, which sheltered the nursery. Then they heard Mr. Lawrence's argument that only about 340 tons of coal were burnt by defendant during the twenty weeks over which this claim extended, while Lodgemore Mill consumed double that quantity. It was for the jury to tax the bill. He was thankful that it was they and not he who had to assess the damage. They were to give the plaintiff such damages as were adequate, and to give no more. He regretted that the damages could not have been settled by some one out of court, but they saw the reason; they would be settled more scientifically, but it would take more than a week to settle them exactly.

The jury consulted for a very few moments, and then returned a verdict of £50 damages for the plaintiff, for which his Lordship at once gave judgment.

Mr. Greene: I ask you to grant an injunction.

His Lordship: Does an injunction do you any good?

Mr. Greene: It is to prevent a repetition of the nuisance. The terms are to restrain the defendant from carrying on these works so as to be a nuisance.

The Judge granted an injunction, and said the defendant would not be restrained from burning bricks, but from burning them so as to cause damage.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,

For the Week ending Wednesday, August 16, 1882.

Month and Day.	Barometer: Mean Reading Reduced to 32° Fahr.	Barometer: Departure from Average of 18 years	Temperature of the Air: Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years	Dew Point.	Hygrometrical Deductions from Glaisher's Tables 6th Edition: Degree of Humidity, Sat. = 100	Wind: Average Direction.	Rainfall.
Aug	In.	In.	°	°	°	°	°	°			In.
10	30.08	+0.33	63.0	55.5	7.5	57.8	— 4.3	51.6	83	E.: E.N.E.	0.00
11	29.98	+0.22	71.0	56.0	15.0	61.2	— 1.0	55.0	81	E.: E.S.E.	0.00
12	29.75	—0.02	81.0	53.0	28.0	65.4	+ 3.2	59.2	61	E.	0.00
13	29.66	—0.10	69.3	60.0	9.3	63.0	+ 0.8	56.9	81	S.W.	0.01
14	29.69	—0.08	76.0	58.0	18.0	65.2	+ 3.2	57.9	78	S.W.: S.S.W.	0.01
15	29.54	—0.24	71.0	53.0	18.0	59.1	— 2.6	51.9	77	S.W.: W.S.W.	0.05
16	29.50	—0.28	65.0	51.0	15.0	59.2	— 2.2	52.7	77	N.W.: N.N.W.	0.17
Mean	29.74	+0.02	71.0	55.2	15.8	61.6	— 0.4	55.0	76	E.: SW	0.24

Aug. 10.—A dull, overcast day and night.
— 11.—A dull morn; fine bright afternoon, but still cloudy. Fine night. The maximum temperature of this day took place at midnight.
— 12.—A very fine hot day. Lightning from 9 P.M. in E. and N.E., and slight rain began to fall about midnight.
— 13.—A dull, overcast day. Fine clear night.

Aug. 14.—Fine day; occasional slight showers of rain. Fine night.
— 15.—Fine morning; blue sky between clouds. Dull afternoon, bright at intervals. Fine cold night.
— 16.—A dull day; overcast, with bright intervals. Fine night: overcast.

LONDON: *Atmospheric Pressure.*—During the week ending August 12, the reading of the barometer at the level of the sea decreased from 30.23 inches at the beginning of the week to 30.13 inches by 3 P.M. on the 6th, increased to 30.28 inches by 9 A.M. on the 10th, and was 29.86 inches by the end of the week.

The mean reading for the week at the level of the sea was 30.17 inches, being 0.02 inch lower than last week, and 0.28 inch above the average of the week.

Temperature.—The highest temperature in the shade in the week was 81°, on the 12th. On the 10th the highest temperature was 63°. The mean of the seven high day temperatures was 72°.8.

The lowest temperature in the shade in the week was 50°.5 on the 9th; on the 7th the lowest temperature was 58°. The mean of the seven lowest temperatures was 54°.1.

The greatest range in one day was 28°, on the 12th; the smallest was 7°.5, on the 10th. The mean of the seven daily ranges was 18°.7.

The mean temperatures were—on the 6th, 63°.8; on the 7th, 63°; on the 8th, 59°.8; on the 9th, 58°.7; on the 10th, 57°.8; on the 11th, 61°.2; and on the 12th, 65°.4; of these the 6th, 7th, and 12th were above their averages by 1°.7, 1°, and 3°.2 respectively; the rest were 2°.3, 3°.4, 4°.3, and 1° respectively below their averages.

The mean temperature of the air for the week was 61°.4, being 0°.8 lower than last week, and 0°.7 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo, placed in the full rays of the sun, was 158°.5 on the 12th; the highest on the 10th was 77°.8. The mean of the seven readings was 124°.8.

The lowest reading of a minimum thermometer with its bulb placed on grass and fully exposed to the sky was 46° on the 9th. The mean of the seven readings was 48°.3.

Rain.—No rain fell during the week, till near midnight on the last day.

ENGLAND: *Temperature.*—During the week ending August 12, the highest temperatures were 86° at Cambridge and Sunderland, and 81° at Blackheath. The highest temperature at Bolton was 73°.7, at Leeds 74°, and at Liverpool 74°.1. The general mean was 77°.4.

The lowest temperatures in the week were 42° at Leicester, 43° at Nottingham. The lowest temperature at Leeds was 52°, at Liverpool 51°.6, and at Bradford 51°.2. The general mean was 48°.3.

The greatest ranges of temperature in the week were 42°.4 at Cambridge, 37° at Sunderland, and 33°.5 at Leicester. The least ranges were 22° at Leeds, 22°.5 at Liverpool, and 24°.3 at Bolton. The general mean was 29°.1.

The mean of the seven high day temperatures was highest at Sunderland, 80°.1, at Cambridge 76°.9, and at Truro, 74°.2; and was lowest at Liverpool, 67°.54, at Wolverhampton 69°.7, and at Brighton and Bolton, 69°.9. The general mean was 72°.5.

The mean of the seven lowest night temperatures was highest at Liverpool, 55°.2, at Bradford 54°.3, and at Blackheath was 54°.1; and was lowest at Cambridge, 48°.9, at Nottingham 49°, and at Leicester 50°.2. The general mean was 52°.3.

The mean daily range was greatest at Cambridge, 28°, at Sunderland 26°.1, and at Nottingham 24°.4; and was least at Liverpool, 12°.3, at Brighton 16°.5, and at Bolton 17°.7. The general mean was 20°.2.

The mean temperature was highest at Sunderland, 65°.2, at Bradford 62°.1, and at Truro and Hull 61°.5; and was lowest at Wolverhampton 58°.7, and at Leicester and Bolton 59°.2. The general mean was 60°.6.

Rain.—The largest falls were 0.04 inch at Liverpool, 0.03 inch at Brighton, and 0.02 inch at Hull. No rain fell at Truro, Plymouth, Bristol, Blackheath, Leicester, Sheffield, Bolton, Leeds, or Sunderland, and only 0.01 inch at Cambridge, Wolverhampton, Nottingham, and Bradford. The general mean was 0.01 inch.

SCOTLAND: *Temperature.*—During the week ending August 12 the highest temperature was 82°.6, at Aberden; at Greenock the highest temperature was 75°.5. The general mean was 79°.3.

The lowest temperature in the week was 44°.6, at Edinburgh; at Greenock the lowest temperature was 49°. The general mean was 46°.5.

The mean temperature for the week was 61°.4, being 2°.8 above that of the week immediately preceding, and 5°.1 above that of the corresponding week of 1881; it was highest at Glasgow, 64°, and lowest at Edinburgh, 59°.

Rain.—No rain fell during the week.

JAMES GLAISHER, F.R.S.

Obituary.

DR. LUCAS.—We greatly regret to hear of the death, on the 24th ult., of this celebrated German pomologist, in the sixty-sixth year of his age, at Reutlingen, where he had for many years acted as Director of the Pomological Institute. Dr. Lucas was a man of large knowledge and great natural ability. His publications are numerous; perhaps the best known is the *Illustrirtes Handbuch der Obst-kunde*.

Enquiries.

He that questioneth much shall learn much.—BACON.

TOMATOS.—Can any one tell me a way of keeping these into the winter, in the same way as Vegetable Marrows, so as to have them fried? *D. B. C.*

Answers to Correspondents.

AGERATUM DUKE OF ALBANY: *W. McLeod.* Please send us a few blooms packed in damp moss.

CARNATIONS: *Royston.* It is not at all an unusual occurrence for Carnations to sport; they frequently do it.

CUCUMBERS AND MELONS: *W. D.* Yes. The mischief is caused when the pipes are heated. You must get a chemical solution to clear the pipes, or burn the paint off if you cannot find a better remedy.

ERRATA.—In the report of the last meeting of the Fruit Committee it was stated that Messrs. Veitch & Sons exhibited a collection of Tomatos, whereas it was from Messrs. James Carter & Co. that the said collection came. In the report of the Liverpool show Mr. Gore is credited with a 1st prize for Ferns instead of Mr. Faulkner, of Woolton Hall Gardens, who took the award in question.—In the note at p. 206, col. *a* (Mr. Crawshay's Cattleyas), for "Mr. Denning," read "Mr. Dominy."

FIGS: *Robert Andrews.* You do not say whether you are going to make the border for Figs out-of-doors or under glass. In any case, give them a narrow border to grow in—say not wider than 3 feet. Drainage is actually of more importance than the nature of the soil, which should be light and fibrous, and containing no manurial element. Add a good sprinkling of broken bricks and lime rubble in preparing the soil.—*H. Clerk.* There is nothing unusual or uncommon in young Fig trees dropping a portion of their second crop—over-luxuriance will cause it, but in your case the tree in question may have received some slight check. Possibly the flow of sap may have been diverted by some means or other from the discoloured shoot.

FUNGUS: *A. Nesbitt.* The name of the small brown cup-shaped fungus is Cyathus striatus; the little egg-like bodies inside are cases (sporangia) containing the spores. Country people sometimes call these fungi Birds'-nests, or Pixie's Purses. They are not uncommon in fields and gardens.

HERBACEOUS PERENNIALS: *W. J. B.* 1, Acanthus mollis, Achillea ptarmica fl-pl., Achillea tomentosa, Astilbe decandra, Aster amellus, A. amellus major, A. novæ-angliæ, A. novæ-belgii, Bocconia cordata, Helenium autumnale, Lobelia cardinalis, Matricaria inodora fl-pl., Rudbeckia Newmanni, Tritoma uvaria, and Solidaga reflexa. 2, Not that we remember.

JUDGING: *M. J. T.* Platycerium alcicorne is not a greenhouse plant, and was rightfully disqualified as such, but not because it was a Fern. A greenhouse Fern would be admissible in the class, but however good would count for little against good flowering plants. As regards the hardy shrubs, the exhibitor was quite within his right in including them in his group, if not debarred from so doing by any words in the schedule.

NAMES OF PLANTS: *C. R.* Clitoria ternatea.—*Rosina.* A Funkia, not recognised from a single leaf.—*G. W. Cummings.* The annual is Salpiglossis sinuata; the Orchid next week.—*H. T. B.* 1, Senecio sarracenicus; 2, Solidago rigida; 3, not recognised; 4, Linaria purpurea.—*A. Reid, jun.* If evergreen, Dendrobium Gibsoni.—*James Gregge.* Francoa ramosa.—*C. W.* An Hypericum, which we will, if possible, name next week.—*E. Orpet.* 1, Pellæa hastata; 2, Adiantum diaphanum; 3, Asparagus decumbens; 4, Pteris heterophylla; 5, Adiantum hispidulum; 6, Begonia imperialis; 7, a Caladium, which we do not recognise; send again when it flowers; 8, Coccoloba platyclada; 9, Cestrum aurantiacum. Please do not send more than six another time.—*Subscriber.* 1, Melliotus alba; 2, M. officinalis; 3, Anthyllis vulneraria.—*C. W. D.* 1, Helianthus doronicoides, var. (H. decapetalus); 2, Nothoscordum striatum; 3, we do not recognise—send it again with ripe fruit; 4, Inula salicina; 5, Œnothera linearis.—*Jno. Smith* 1, Geranium pusillum; 2, Lotus corniculatus.—*G. Watson.* 1, Festuca gigantea; 2, Carex sylvatica; 3, Phalaris arundinacea; 4, Glyceria fluitans.

PLUM: *Saltmarsh & Son.* Not recognised. Please send a few fruits not quite so ripe, and a shoot or two of the tree.

ROSE DE MARIE: *H. A. B.* The Rose you send is R. carolina, a native of the North-eastern United States. An allied form is called Rose de Mai or Rosa maialis. Don't spell it with a J, for reasons that will be apparent on consulting a Latin dictionary.

SEEDLING PELARGONIUMS: *R. W. Beedell.* Your seedling double-flowered zonal Pelargonium appears to be a very good thing, being nicely doubled, bright rosy scarlet in colour, and large in the truss. Whether it is distinct or not we cannot say. You should bring it before the Floral Committee or the Pelargonium Society.

SELAGINELLAS: *D. E.* These are not Ferns, but Club Mosses, and cannot therefore be shown as Ferns without risk of disqualification, if the judges do their duty.

VINES: *G. M.* We suspect the disease is not in the leaves of the Vines, but at their roots. The shrivelling of the leaf-stalk, and the dried and scorched appearance of the leaves themselves, point directly to enfeebled root-action. We have seen Vine-rods affected in the way you state, from extreme cold temporarily arresting the flow of sap, but, as the past winter was so mild, this cannot be the case with your Vines. Some varieties of Vines are much hardier in constitution than others. Upon the whole, we think you will be able to trace the source of the mischief, upon examination of the Vines roots.

COMMUNICATIONS RECEIVED.—I. O. W.—E. B.—J. C.—J. MOTTS.—J. G.—H. M. L.—D. J. M.—L. L. D.—B. M.—H. E.—J. M.—A Constant Reader.—R. J. L.—W. M.—J. S.—W. F.—J. G. B.—W. S.—W. M., Ely.

Markets.

COVENT GARDEN, August 17.

Trade still continues quiet, and we have no alteration to report. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	3 0	4 6	Lemons, per 100	5 0	7 0
Currants, Black, per ½-sieve	4 6	5 6	Melons, each	2 0	4 0
— Red, per ½-sieve	2 3	3 3	Peaches, per dozen	6 0	12 0
Figs, per dozen	2 0	3 0	Pine-apples, Eng., lb.	3 0	4 0
Filberts, per lb.	0 6	0 7	Plums, ½-sieve	5 0	8 6
Grapes, per lb.	1 0	3 0	Raspberries, per lb.	0 3	0 6
			Strawberries, per lb.	0 6	1 0

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, per doz.	3 0	6 0	Herbs, per bunch	0 2	0 4
Asparagus, English, natural, per bun.	7 0	..	Horse Radish, bund.	4 0	..
— Sprue, per bund.	1 0	..	Lettuces, Cabbage, per score	1 6	..
Beans, French, English grown, p. lb.	0 4	..	Mint, green, bunch	0 4	..
Beet, per doz.	1 0	..	Mushrooms, p. baskt.	1 6	3 0
Cabbages, per doz.	1 0	2 0	Onions, per bushel	4 0	..
Carrots, per bunch	0 4	0 6	— Spring, per bun.	0 6	..
Cauliflowers, English, dozen	2 0	4 0	Parsley, per bunch	0 4	..
Celery, per bundle	1 6	..	Peas, per qt.	1 6	..
Cucumbers, each	0 6	1 0	Radishes, per doz.	1 6	..
Endive, per doz.	2 6	..	Small salading, pun.	0 4	..
Garlic, per lb.	1 0	..	Spinach, per bushel	3 0	..
			Tomatos, per doz.	2 0	..
			Vegt. Marrows, doz.	3 0	..

POTATOS:—Foreign Potatos finished. Regents, 80s. to 100 Myatt's, 100s. to 120s.; Magnums, 100s. to 110s. per ton.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldii, doz.	12 0	24 0	Foliage Plants, various, each	2 0	10 6
Arbor-vitæ (golden), per dozen	6 0	18 0	Fuchsias, per dozen	4 0	9 0
— (common), dozen	6 0	12 0	Genista, per doz.	8 0	12 0
Balsams, per dozen	3 0	6 0	Gloxinea, per dozen	12 0	18 0
Begonias, per doz.	6 0	12 0	Heliotrope, per doz.	3 0	6 0
Calceolaria, doz.	4 0	9 0	Hydrangea, doz.	9 0	12 0
Cockscombs, dozen	4 0	6 0	— paniculata, doz.	12 0	30 0
Cyperus, per dozen	6 0	12 0	Lilium, in var., doz.	18 0	42 0
Dracæna terminalis	30 0	60 0	Marguerite Daisy, per dozen	9 0	18 0
— viridis, per doz.	12 0	24 0	Myrtles, per doz.	6 0	12 0
Euonymus, various, per dozen	6 0	18 0	Palms in variety, each	2 6	21 0
Evergreens, in var., per dozen	6 0	24 0	Pelargoniums, doz.	6 0	12 0
Ferns, in variety, per dozen	4 0	18 0	— scarlet, per doz.	2 6	6 0
Ficus elastica, each	1 6	7 0	Rhodanthes, doz.	6 0	12 0
			Solanum per doz.	9 0	12 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 blooms	0 2	0 4	Pelargoniums, 12 sprays	0 9	1 0
Arum Lilies, per doz.	4 0	6 0	— zonal, 12 sprays	0 3	0 6
Bouvardias, per bun.	0 9	1 6	Pinks, 12 bunches	2 0	6 0
Calceolaria, 12 bun.	6 0	12 0	Primula, double, per bunch	1 0	1 6
Carnations, 12 bun.	2 0	6 0	Pyrethrum, 12 bun.	3 0	9 0
Cornflower, 12 bun.	2 0	4 0	Rhodanthe, 12 bun.	6 0	9 0
Eucharis, per doz.	3 0	6 0	Roses (indoor), doz.	1 0	3 0
Fuchsias, 12 bunches	6 0	8 0	— (outdoor), doz.	0 4	0 9
Gardenias, 12 blms.	3 0	8 0	— Coloured, doz.	1 0	2 0
Gladioli, 12 bun.	6 0	12 0	Stephanotis, 12 spr.	3 0	6 0
— brenchleyensis, 12 sprays	1 6	3 0	Stocks, 12 bunches	4 0	9 0
Heliotropes, 12 sp.	0 6	1 0	Sunflower, 12 blooms	0 6	2 0
Lapageria, white, 12 blooms	3 0	6 0	Sweet Peas, 12 bun.	2 0	6 0
— red, 12 blooms	1 0	3 0	Sweet Sultan, 12 bun.	4 0	6 0
Lilium various, 12 bl.	3 0	6 0	Tropæolum, 12 bun.	1 0	2 0
Marguerites, 12 bun.	4 0	6 0	White Jasmine, 12 bunches	4 0	0 0
Mignonette, 12 bun.	1 6	4 0			
Pansies, 12 bunches	1 0	3 0			

POTATOS.

The reports from the Borough and Spitalfields Markets state that supplies are short, farmers being engaged harvesting. A good demand exists. Quotations:—Kent Regents, 90s. to 110s.; ditto, kidneys, 120s. to 130s.; Victoria, 130s.; Essex Regents, 90s. to 100s.; ditto, kidneys, 100s. to 110s.; Lincoln kidneys, 100s.; ditto Magnum Bonums, 100s. per ton.

WEDNESDAY NEXT.

PHALÆNOPSIS VIOLACEA VAR. SCHRŒDERI,
PHALÆNOPSIS VIOLACEA, CATTLEYA VELUTINA,
LÆLIA PURPURATA.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, August 23, at half-past 12 o'Clock precisely, by order of Messrs. HUGH LOW & CO., fine imported plants in splendid condition, of PHALÆNOPSIS VIOLACEA, from an entirely different locality to that whence supplies have usually been derived; LÆLIA PURPURATA, grand masses just received by R.M.S. *Tagus*; ZYGOPETALUM GAUTIERI, ODONTOGLOSSUM GRANDE, LYCASTE SKINNERI, ODONTOGLOSSUM ALEXANDRÆ, very fine pieces. At the same time will be offered a good plant, in flower, of the new and lovely PHALÆNOPSIS VIOLACEA var. SCHRŒDERI, the rare CATTLEYA VELUTINA, and other choice Orchids.

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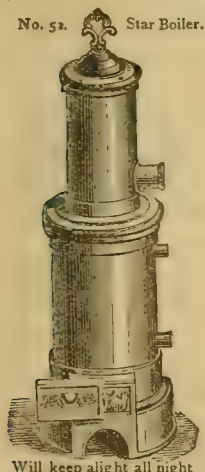
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Will keep alight all night without attention.

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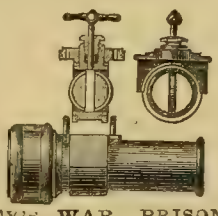
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We shall be glad to forward Illustrated Price Lists, on application, or to quote Special Prices for Quantities, if required.

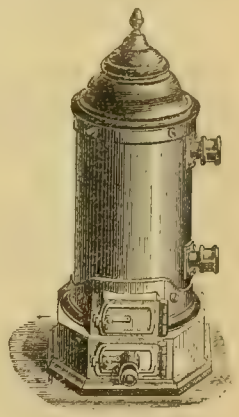
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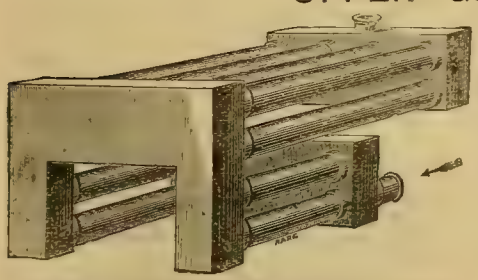


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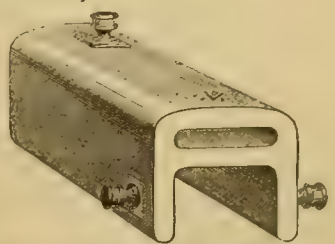
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It destroys all insect pests on plants and fruit trees, whether at the roots or on the foliage. It destroys all parasites and fungoids which infest animals and human beings.
It is free from poison, very clean and pleasant in the using.
It is the cheapest insecticide ever produced.

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"Mr. HUGHES.—Sir,—Please send me at once 1 gallon Fir Tree Oil. I have again tried the above, and believe it to be what has been said of it. My previous disappointment with it was on account of its not being stirred sufficiently.—Yours, &c.,
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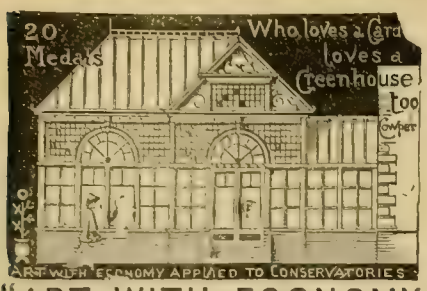




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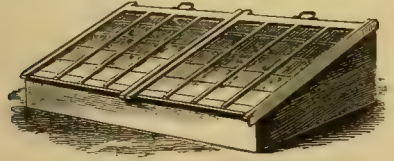
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These Frames are 13 inches deep in front, and 24 inches deep at the back; the lights are 2 inches thick, with a strong iron strengthening rod, and one handle to each light. These Frames are made of the best hard red deal, shipped from the best districts for durable wood, all painted four coats of best oil colour, the lights are glazed with best 21-oz. English glass. For Testimonials, see our Catalogue, free on application. Carriage paid to any Railway Station in England and Wales: also to Edinburgh and Dublin.
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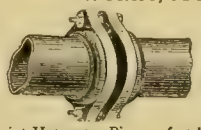
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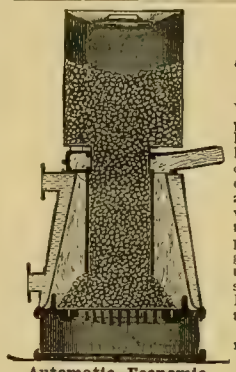
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The Best and Quickest Made.

4-in. Expans on Joint Hot-water Pipes, 9 feet long, 4*s.* 3*d.* each.
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Automatic, Economic, and Efficient.

Hocking's New Patent
AUTOMATIC COKE AND GAS BOILERS.

Will maintain a uniform temperature for from 12 to 15 hours, and often from 15 to 20 hours, with one small charge of common Gas Coke of the cheapest kind. For economy and efficiency in combination with cleanliness and comfort these Boilers are, beyond the possibility of a doubt, the greatest boon ever offered for the purpose of Heating Conservatories, Halls, and other Buildings, where little attention is required
Every particular with testimonials given on application to FRANKLIN HOCKING AND CO. (Limited), 37, Hanover Street, Liverpool.

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PATENT RED-RUBBER GARDEN HOSE.

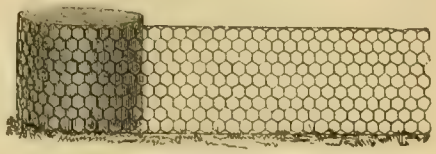
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This Machine, constantly employed, will pay itself in two days. Dr. Hogg in the *Journal of Horticulture* says:—"This Edge Clipper we have tried, and know not which to admire most—its simplicity or efficiency." Mr. Moore writes in equally flattering terms in the *Florist.*
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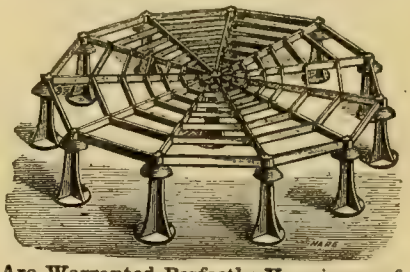
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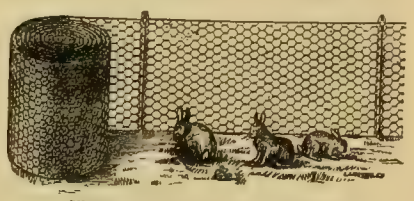
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To Nurserymen.

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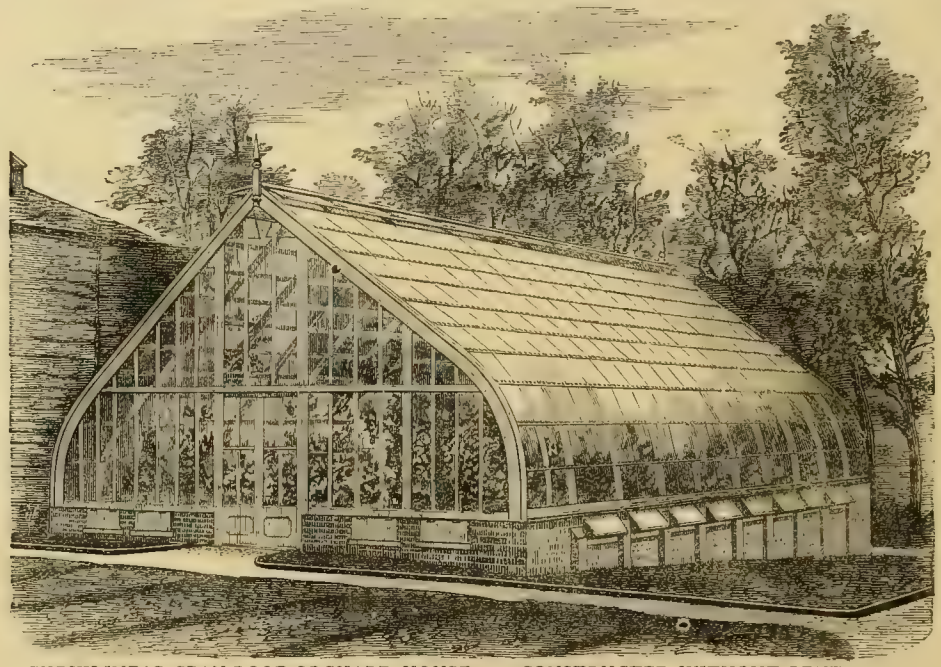


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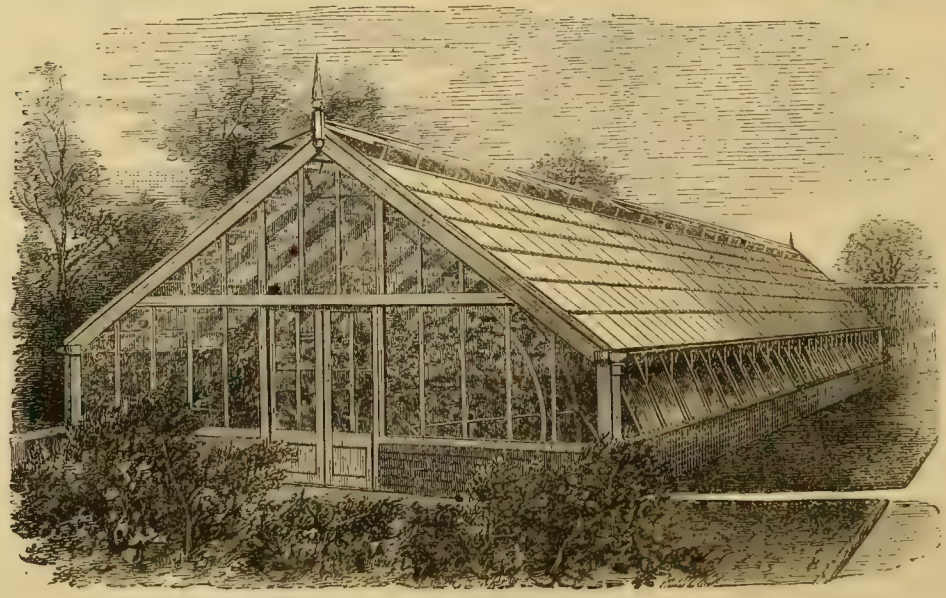
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NOTICE to SUBSCRIBERS and OTHERS.

The King Street, Covent Garden, Post Office being closed, Post-office Orders and Postal Orders should now be made payable at DRURY LANE.

CRYSTAL PALACE.—GREAT FRUIT SHOW, SEPT. 8 and 9. Entries close Sept. 1. Schedules and Entry Forms now ready. Apply to W. G. HEAD, Crystal Palace.

ST. PETER'S, THANET.—The ISLE of THANET FLORAL and HORTICULTURAL ASSOCIATION and COTTAGERS GARDENING SOCIETY beg to announce their NEXT SHOW will take place at Dane Court, St. Peter's, on WEDNESDAY, August 30 next.

GRAND NATIONAL DAHLIA SHOW.—The Growers and Exhibitors of Dahlias are hereby reminded that arrangements have been made to hold a Grand National Show of these Flowers, at the CRYSTAL PALACE, on SEPTEMBER 8 and 9. Entries must be made not later than September 4, and should be addressed to the Honorary Secretary, of whom Schedules may be obtained.

THOMAS MOORE, Hon. Sec. and Treasurer.
Botanic Garden, Chelsea, S.W.

GRAND HORTICULTURAL EXHIBITION in connection with the Warwickshire Agricultural Society, will be held at Warwick on TUESDAY and WEDNESDAY, September 19 and 20. President, the Earl of Warwick. Upwards of ONE HUNDRED POUNDS in PRIZES, nearly all open, including handsome prizes for Plants, Cut Flowers, Fruit, and special for Dinner-table Decoration. Amateur and Professional Classes. Entries close Monday, September 4. Schedules free on application to

Mr. LLOYD EVANS, Hon. Sec.
Advertiser Office, Warwick.

THE INTERNATIONAL POTATO EXHIBITION will be held at the CRYSTAL PALACE, SYDENHAM, on SEPTEMBER 20 and 21, when Prizes amounting to ONE HUNDRED and FIFTY POUNDS will be awarded. Entries close on September 12. For Schedules and particulars apply to
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EIGHTY THOUSAND CLEMATIS, in Pots, of all the finest double and single varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 10s. to 24s. per dozen, strong plants. Descriptive LIST on application.
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G. T. ALBERTS, NURSERYMAN, Boskoop, Holland, WANTS to BUY young plants raised from seedlings, graftings, or cuttings of Fruit and Ornamental Trees, Evergreens, Roses, American Plants, Climbing Plants, &c. Also Azalea, Rhododendron ponticum and Coniferæ Stocks, for grafting now and afterwards.

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The MANAGER, The Nurseries, New Beckenham, Kent.

WANTED, on August 31, 50 dozen Cut Blooms of the OLD CLOVE CARNATION. Any one able to supply all or part of the above may apply to
J. STANDISH and CO., 52, St. George's Places, Knightsbridge, S.W., stating price.

WANTED, LAVENDER PLANTS.
Apply, stating prices per 100 and size, to
G. D. VALLANCE, Tresco Gardens, Scilly, Cornwall.

WANTED, Queen PINES, find PEACHES, MELONS, and APRICOTS. Also choice CUT FLOWERS.
WISE and RIDES, Fruit and Flower Salesmen, Covent Garden.

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EARLY BLUE ROMAN HYACINTHS, 12s. 6d. per 100, 1s. 9d. per dozen, 3d. each.
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DOUBLE SNOWDROPS, large, 21s. per 1000, 2s. 6d. per 100, 5d. per dozen.
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TWO HUNDRED THOUSAND HERBACEOUS and ALPINE PLANTS for Borders, Rockwork, &c. See Descriptive LIST, giving colour, height, time of flowering, &c., free by post for 1d. stamp.
Selection of 100 good showy varieties for 25s.
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LILIES OF THE VALLEY.—Very best quality, prepared for early forcing, true large flowering variety, 37s. per 1000 for cash with order. Stock, half a million. These crowns can be relied upon, as no inferior quality is kept. All orders strictly executed in rotation.
T. JANNOCH, Lily of the Valley Grower, Dersingham, Norfolk.

EXHIBITION of SINGLE DAHLIAS.—5000 of these are now in flower at the Hale Farm Nurseries, Tottenham. The collection embraces all the finest sorts in cultivation — the New Large-flowered Strain being particularly attractive. An inspection is cordially invited.—
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AMPELOPSIS VEITCHII.—Upwards of 100,000 of the above, extra fine Plants; also fine stock of AMPELOPSIS SEMPERVIRENS. Are now receiving orders for STANDARD and DWARF ROSES, which are unusually fine this season. Prices on application to
W. B. ROWE (Limited), Barbourne Nurseries, Worcester.

SALES BY AUCTION.

Tuesday Next.

PHALÆNOPSIS STUARTIANA, PHALÆNOPSIS INTERMEDIA PORTEI, and P. VIOLACEA.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY, August 29, at half-past 12 o'Clock precisely, by order of Messrs. Hugh Low & Co., fine imported plants, in quantity, in the best possible condition, of PHALÆNOPSIS STUARTIANA, PHALÆNOPSIS VIOLACEA, a splendid DENDROBE from the Philippine Islands, with flowers resembling as near as possible in size and colour those of D. infundibulum, 17 on a spike, and upwards of 300 on a plant; a CYPRIPEDIUM believed to be new and fine; SACCOLABIUM HARRISONIANUM, pure white, deliciously fragrant; LÆLIA PURPURATA, grand masses; and ODONTOGLOSSUM ALEXANDRÆ. At the same time will be offered fine plants of PHALÆNOPSIS SCHILLERIANA, P. AMABILIS, VANDA LOWII, one plant of PHALÆNOPSIS INTERMEDIA PORTEI, and other choice ORCHIDS.

On view morning of Sale, and Catalogues had.

Dutch Bulbs.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, August 30, at half-past 12 o'Clock precisely, an importation of choice-named Double and Single HYACINTHS, TULIPS, CROCUSES, NARCISSUS, SCILLAS, SNOWDROPS, and other BULBS, just arrived from well-known farms in Holland, in lots to suit all buyers. Also RUSTIC, WOOD, and WIRE FLOWER STANDS, WINDOW BOXES, AQUARIUMS, GARDEN ENGINES, LAWN MOWING MACHINES, and various other GARDEN IMPLEMENTS, &c.

On view morning of Sale, and Catalogues had.

Wednesday Next.

IMPORTED ORCHIDS.

MESSRS. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, August 30, at half-past 12 o'Clock precisely, by order of Messrs Shuttleworth, Carder, & Co., a grand lot of imported plants, of BARKERIA SKINNERI, BARKERIA SPECTABILIS, CATTLEYA SKINNERI, ODONTOGLOSSUM GRANDE, ODONTOGLOSSUM CRISPUM (Alexandræ), ODONTOGLOSSUM PULCHELLUM, EPIDENDRUM MACROCHILUM, LYCASTE SKINNERI, splendid masses, and extraordinary fine bulbs; ONCIDIUM WENTWORTHIANUM, ONCIDIUM ORNITHORRHYNCUM, &c., all in the best possible condition.

On view morning of Sale, and Catalogues had.

Dutch Bulbs.—Trade Sales.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, August 28, WEDNESDAY, August 30, and SATURDAY, September 2, at half-past 12 o'Clock precisely each day, DUTCH BULBS, comprising Double and Single Hyacinths, Tulips, Crocuses, Narcissus, Scillas, Snowdrops, and other BULBS, just arrived from well-known farms in Holland, and lotted to suit the Trade and private buyers.

On view mornings of Sale, and Catalogues had.

Thursday Next.

CATTLEYA DOWIANA, ONCIDIUM MARSHALLIANUM, CATTLEYA HOLFORDII, BURLINGTONIA FRAGRANS.

MR. J. C. STEVENS has been instructed by Mr. F. Sander to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, August 31, at half-past 12 o'Clock precisely, imported plants, just received in very fine condition, of CATTLEYA DOWIANA, including many masses of extraordinary size and good form; also ONCIDIUM MARSHALLIANUM, exceedingly fine plants; CATTLEYA HOLFORDII, CYPRIPEDIUM SCHLIMII, BURLINGTONIA FRAGRANS, TRICHOCENTRUM ALBO-PURPUREUM, ONCIDIUM LANCEANUM, ODONTOGLOSSUM ALEXANDRÆ (St. Alban's varieties), CATTLEYA PUMILA and its varieties, ONCIDIUM SPECIES, probably quite new; and other choice importations.

On view morning of Sale, and Catalogues had.

Established Orchids.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, September 6, at half-past 12 o'Clock precisely, without reserve, a fine COLLECTION of EAST INDIAN ORCHIDS, the Property of a Gentleman at Wood Green, amongst which will be found some fine specimens of—

Saccolabium Turneri, from Mr. Turner's original plant	Saccolabium Holfordii, from the original plant
Phalænopsis leucorrhoda	Angræcum Kotschyi
Lælia anceps Dawsoni	Lælia elegans alba
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Aërides Schröderii, three leads	Vanda cœrulea, fine plant
	Aërides affine superbum

And many other rare and valuable plants.

On view morning of Sale, and Catalogues had.

F. & A. Smith's Nursery, Thurlow Park, West DULWICH.

By order of the Mortgagee. Without Reserve.

IMPORTANT to the TRADE and OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, as above, on WEDNESDAY and THURSDAY, September 13 and 14, at 12 o'Clock precisely each day, the whole of the Stock in Trade, comprising 60,000 STOVE and GREENHOUSE PLANTS, a splendid lot of 3000 AZALEAS and CAMELLIAS, embracing several fine specimens of the choicest varieties; 10,000 Soft and Hard-wooded HEATHS, in 48's and larger pots; 10,000 small succession HEATHS, 10,000 well-berried SOLANUMS, 3000 Zonal and Tricolor GERANIUMS, 15,000 PELARGONIUMS, a fine stock of ASPARAGUS PLUMOSUS, 600 PALMS, &c. Also Utensils in Trade, including Covered SPRING VAN, OPEN DITTO, Heavy and Light Spring CARTS, POTS, BARROWS, and other effects.

May be viewed. Catalogues had on the Premises, of W. H. BENNETT, Esq., Solicitor, 14, Red Lion Square, W.C.; and of the Auctioneers and Valuers, 8, New Broad Street, E.C.

N.B. The well-known NURSERY to be DISPOSED OF, by order of the Mortgagee, at a great sacrifice. Full particulars of the Auctioneers.

Lea Bridge Nurseries.—Leyton.

MESSRS. PROTHEROE AND MORRIS beg to announce that they are instructed by Mr. John Fraser to hold his ANNUAL SALE of HEATHS and other WINTER BLOOMING PLANTS, on WEDNESDAY, SEPTEMBER 20.

Further particulars will appear.

Lee, Kent.

PRELIMINARY NOTICE.

MESSRS. PROTHEROE AND MORRIS are instructed by

Mr. BENJAMIN MALLER

to conduct his ANNUAL SALE of ERICAS, &c., on the Premises as above, on TUESDAY, September 19, 1882.

8, New Broad Street, E.C.

Tottenham, N.—Annual Sale.

MESSRS. PROTHEROE AND MORRIS beg to announce that they have received instructions from Mr. John Maller to hold his ANNUAL SALE of WINTER BLOOMING HEATHS and other PLANTS on THURSDAY, September 21.

The Stock is in remarkably fine condition, and an inspection is solicited.

Preliminary Notice.

By order of the Executors of Mr. R. N. Osborn, deceased.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from the Executors to SELL by AUCTION, at the Mart, Tokenhouse Yard, City, E.C., on THURSDAY, October 5, the following properties:—

FULHAM.—An attractive FREEHOLD BUILDING ESTATE, situate in Munster Road, Fulham, frontages of 3274 ft. to proposed new roads, and containing a total area of 4 a. 0 r. 11 p.; also the detached brick-built Residence and Conservatory attached.

SUNBURY.—The productive FREEHOLD ESTATE known as Osborn's Old Nursery, containing 17 a. 0 r. 11 p., together with the Goodwill of the Nursery and Seed Business, established for so many years, and enjoying a world-wide reputation. There is also a detached eight-roomed House, thirteen newly-erected Greenhouses, heated upon the most improved principles, Pits, Sheds, Stabling, and other Out-buildings. The property could be profitably utilised for building purposes, without interfering with the remainder of the land for carrying on the present business.

HAMPTON (ten minutes' walk from Fulwell Station).—A compact FREEHOLD ESTATE known as Osborn's Nursery, Broad Lane, Hampton, containing an area of 5 acres. It is now cultivated and cropped with Fruit Trees and other nursery stock, but is also adapted for building purposes.

Particulars and plans of the several estates are in course of preparation, and may be had on application of Messrs WALKER, BELWARD, AND WHITFIELD, Solicitors, 5, Southampton Street, Bloomsbury, W.C., or of the Auctioneers and Surveyors, 8, New Broad Street, E.C., and Leytonstone.

N.B. Messrs. P. & M. would urge the Trade and others to make an early inspection of the thriving young Nursery Stock growing at Sunbury and Hampton. The Evergreens and Fruit Trees, as well as the Roses (which are now in bloom), for careful selection of sorts, and luxuriance of growth, cannot be surpassed. The whole will be sold by Auction, unless the purchasers of the Freehold Estate agree to take the Stock at a valuation.

TO BE SOLD, a SMALL NURSERY, North of London. Nearly 1 acre, two large Greenhouses, one small, all heated by hot water. Several Pit Lights, well stocked. Good chance for jobbing. Sold for domestic reason.

PROTHEROE AND MORRIS, 8, New Broad Street, E.C.

NURSERY, SEED, and FRUIT BUSINESS for IMMEDIATE DISPOSAL, at Great Marlow. No opposition. Splendid opportunity for a Practical Man with small capital. Goodwill, Valuable Lease of Premises (recently rebuilt), Stock, Furniture, and Book Debts about £300. Apply to

H., *Gardeners' Chronicle* Office, W.C.

To Market Gardeners and others.

THE CORPORATION OF READING are prepared TO LET, from Michaelmas next (for a term if desired), a substantial HOUSE and OUTBUILDINGS, together with 10 acres or more of Sewage-Irrigated LAND for Market Garden Purposes.

Cards to view and particulars can be obtained of Mr. W. W. CHAMPION, Manor Farm, Whitley, near Reading.

Reading, Aug. 16, 1882.

Basingstoke Urban Sanitary Authority.

THIS AUTHORITY is PREPARED to RECEIVE TENDERS for the RENTING, for a term of three years, about TWENTY ACRES of LAND, to be used for the disposal of the Sewage of their district; also the Cottage on the Land.

SEALED TENDERS, marked "Tender for Renting Land at Sewage Outfall Works," to be sent to me on or before the 4th of September, 1882.

TERMS of LETTING to be seen at my Office in New Street.

By order, W. H. BAYLEY, Clerk to the Authority.

Basingstoke.—August 17, 1882.

DESIGNS Made and Works EXECUTED

In the Arrangement of TERRACES, CONSERVATORIES, FLORAL CORRIDORS, ROOF GARDENS on uninteresting Lead Flats, &c., formed with substantial PULHAMITE KERB for the FLOWER BORDERS, JARDINIERE, &c., in TERRA-COTTA or ARTIFICIAL STONE of various colours.

BALUSTRADES, VASES, PEDESTALS, FIGURES, FOUNTAINS, CONSERVATORY and WINDOW BOXES in great variety, suitable for any style of House.

Various Specimens of KERB or EDGING, PULHAMITE PERMANENT GRAVEL PATHING for GARDEN, TERRACE and other WALKS and FLOORS, to be seen at the Horticultural Company's, Regent Street, W.; at The Orchard, Philip Lane, Tottenham; and at our Brixton Depot there is the greatest variety of the above to be seen. DURABILITY GUARANTEED.

A Photographic Book of over 200 Illustrations, with Sizes and Prices, sent for Inspection on receipt of twelve stamps.

Address—

PULHAM & SON, The Works, Broxbourne.

(Established in 1837.)

VALOTA PURPUREA, Cheap, 10s., 6s., and 3s. per dozen. LACHENALIA PURPUREA, 1s. per dozen.

Mr. G. FLETCHER, High Bank, Halliwell, Bolton.

Robert Arthur Osborn, deceased.

NOTICE IS HEREBY GIVEN, that all Creditors and other persons having any CLAIMS or DEMANDS against or upon the estate of ROBERT ARTHUR OSBORN, late of Fulham, Hampton, and Sunbury, in the County of Middlesex, but lately residing at Hastings, in the County of Sussex, and at Tunbridge Wells, in the County of Kent, Nurseryman and Seedsman, trading under the style of Osborn and Sons (who died on the 25th day of June, 1882, and whose Will was proved by Thomas William Shoosmith, of the Lime Works, Camberwell, in the County of Surrey, Manager of Lime Works, and John Edward Ewing, of Eaton, near Norwich, Nurseryman, in the Principal Registry of the Probate Division of Her Majesty's High Court of Justice, on the 2d day of August, 1882), are hereby REQUIRED TO SEND in writing the particulars of their CLAIMS or DEMANDS to us, the undersigned, the Solicitors for the said Executors, on or before the 6th day of OCTOBER NEXT, after which day the said Thomas William Shoosmith and John Edward Ewing will proceed to distribute the assets of the said Robert Arthur Osborn among the parties entitled thereto, having regard to the debts and claims only of which they shall then have had notice, and they will not be liable for the assets of the said deceased or any part thereof so distributed to any person, of whose debt, claim, or demand they shall not then have had notice.—Dated this 9th day of August, 1882.

WALKER, BELWARD AND WHITFIELD, 5, Southampton Street, Bloomsbury, Solicitors for the said Executors.

DANIELS' CHOICE SEEDS,

FOR PRESENT SOWING.

Post or Carriage Free at Prices Quoted.

	Per oz.
DANIELS' DEFIANCE CABBAGE.—The most magnificent variety ever sent out, weight 12 lb. to 15 lb., remarkably early, short-legged, and compact, and of the most delicious Marrow flavour. Should be in every garden. .. .. Per packet 1s 6d.	s. d. 3 6

From Rev. E. P. CAMBRIDGE, *Warmwell Rectory, July 21.*—"Daniels' Defiance Cabbage has turned out the finest and most delicate flavoured I have ever eaten."

ONION—Daniels' Golden Rocca, magnificent variety, equal to the finest imported onions, per pkt. 1s. 6d. ..	
,, Daniels' Giant Rocca (true), splendid variety, frequently weighing 2 to 3 lb. each	1 0
,, Large Red Tripoli	1 0
,, ,, White	0 8
,, White Lisbon	0 6
,, ,, Spanish	0 6
,, New Queen	1 4
LETTUCE—Black-seed Bath Cos	1 0
,, Wheeler's Tom Thumb	1 6
,, Hardy Hammersmith	1 0
PARSLEY—Daniels' Queen .. .. Per packet, 1s. ..	
TURNIP—Daniels' Improved Snowball	0 6

Special quotations for larger quantities on application.

DANIELS BROS.,

Royal Norfolk Seed Establishment, Norwich.

B. S. WILLIAMS

BEGS TO ANNOUNCE THAT HIS

GENERAL BULB CATALOGUE for 1882

Is now ready, post-free to all applicants.

VICTORIA and PARADISE NURSERIES, Upper Holloway, London, N.

SPECIAL OFFER OF FERNS.

Having a splendid stock, we offer 100 Stove and Greenhouse Ferns and Selaginellas, nice healthy plants, in 50 species and varieties, for 42s.; 50 in 50 varieties, 25s.; 50 in 25 varieties, 21s.; 25 for 10s. 6d.; 12 for 4s. or 6s.

Special TRADE LIST on application.

W. AND J. BIRKENHEAD, Fern Nursery, Sale, near Manchester.

Ferns a Speciality.

The largest stock in the greatest number of varieties of

EXOTIC AND BRITISH FERNS

In the Trade, suitable for STOVE and GREENHOUSE cultivation, for Outdoor Ferneries, and other purposes. Special LIST free on application. Illustrated CATALOGUE 6d.

W. AND J. BIRKENHEAD, Fern Nursery, Sale, near Manchester.

The Nurseries, Berkhamsted, Herts.

INTENDING PLANTERS SHOULD VISIT

MESSRS. LANE AND SON'S extensive nurseries (over 130 acres) to see the various Foliage and Habit of Growth of ORNAMENTAL TREES, also FRUIT TREES, especially the PRINCE ALBERT APPLE, in bearing.

DAHLIAS.—These have been a speciality at the Slough Nurseries for the last 50 years, and are now in fine bloom. An inspection is invited All the classes will be represented at the Great Show at the Crystal Palace, September 8 and 9.

CHARLES TURNER, The Royal Nurseries, Slough.

CAMELLIAS.—Twenty-four, of colour, good sorts, 3 to 8 feet, well set with buds. Would move well. Must be sold. House wanted. Good market sorts. No reasonable offer refused. Apply, price,

W. DROVER, Fareham, Hants.

DUTCH FLOWER ROOTS.

We have much pleasure in stating that our large consignments of choice DUTCH and other FLOWER ROOTS are to hand in splendid condition, and that we are now prepared to execute Orders for the same. For the best and cheapest List of the season, see our beautifully

ILLUSTRATED CATALOGUE

OF

HYACINTHS,	RANUNCULI,
NARCISSI,	CLEMATISES,
ANEMONES,	CROCUS,
FRUIT TREES,	IRISES,
TULIPS,	ROSES,
LILIES,	&c., &c.

Gratis and Post-free to all Customers, or intending Purchasers.

DANIELS BROS.,
ROYAL NORFOLK SEED ESTABLISHMENT,
NORWICH.

New Seeds for Autumn Sowing.

TRIFOLIUM INCARNATUM, Winter RAPE, RYE, Field MUSTARD, Winter TARES, Italian RYE-GRASS, Permanent PASTURE GRASSES, &c. Samples and quotations on application.
THE LAWSON SEED AND NURSERY COMPANY (Limited), 106, Southwark Street, London, S.E.

BULBS.

Illustrative Descriptive List free on application.

SPECIMEN TESTIMONIAL (UNSOLICITED):—

"*March* 10, 1882.—Crocus, &c, in borders, purchased and planted last autumn, are making a fine show, and giving every satisfaction. Hyacinths in pots have been very fine and much praised, having spikes of bloom 9 *inches in length and so close that they appeared to be solid!* Tulips have been very fine and highly praised. Hyacinths in border now showing very strong bloom."

RICHARD SMITH & CO.,
SEED MERCHANTS and NURSERYMEN,
WORCESTER.

Lily of the Valley.

ELSTER AND KOLLMANN, Lubeck, near Hamburgh, Germany, beg to offer the above. Single Crowns, 3-yr. old, for forcing, extra fine roots, 32*s.* per 1000, cash; or 34*s.* per 1000, terms three months.

SPIRÆA JAPONICA.—Very strong Tufts for Forcing, at 15*s.* per 100. Immediate orders are solicited by
ED. PARRÉ, Nurseryman, Ledeberg, Ghent, Belgium.

LILIES OF THE VALLEY, direct from the Grower in Germany, superior quality. Price and particulars from agent.
C. FROLICH, 9, Wilson Street, Finsbury, E.C.

Dutch Bulbs.

OUR CATALOGUE of the above has been posted to all Customers, any not having received the same will oblige by informing us and a duplicate shall be sent. Our importations have arrived, and we are prepared to execute orders at once. We take this opportunity of informing our Customers that notwithstanding our fears to the contrary, the Hyacinths are very fine in size, clean, handsome and heavy.
HURST AND SON, 152, Houndsditch, London, E.

NOTICE.

SELLING OFF OF NURSERY STOCK.

EWING & CO.,

EATON, near NORWICH.

Great Reduction in Price for Cash Payments, viz.,

15 per Cent. for Cash before delivery.
10 per Cent. for Cash within One Month of date of invoice.
5 per Cent. for Cash within Three Months of date of invoice.
After Three Months no discount can be allowed.

In addition to their immense Outdoor Stock of ROSES; FRUIT TREES, Bushes and Roots; ORNAMENTAL TREES and SHRUBS, they have ready for immediate Sale a very extensive Stock of New and Scarce ROSES in Pots; Tea and Noisette ROSES in Pots; CLEMATISES of best Old and New Varieties, in Pots; Variegated and Choice Green-leaved IVIES, in Pots; AMPELOPSIS VEITCHII, and many other Hardy CLIMBING and CREEPING PLANTS, in Pots, &c.

N.B. Cut Roses, &c., can be supplied at cheap rates, carefully packed for travelling long distances.

A slight extra charge must in most cases be made for packing. Where cash in payment of goods is sent *with the order*, the amount for *package* may be forwarded in stamps *after* despatch of goods.

N.B. Post-office Orders should be made payable to EWING AND CO., at Eaton, near Norwich. Cheques crossed GURNEY AND CO., Norwich.

Trade Terms on application.

To the Trade.

W. M. CROWE begs to offer the following at clearance prices:—

ZONAL GERANIUMS, for pot culture, strong stuff in small 60-pots, in about 50 best double and single varieties, true to name. The plants are in fine condition to pot on for winter flowering. My selection, 17*s.* 6*d.* and 25*s.* per 100.
FUCHSIAS, in about 25 to 30 best double and single varieties, strong stuff in small 60's, my selection, 12*s.* and 15*s.* per 100.
GLOXINIAS, erect and drooping varieties, of the finest quality. Strong plants, now full of flower, 7*s.* per dozen, 45*s.* per 100: smaller, in 60's, 20*s.* per 100.
TUBEROUS BEGONIAS, good plants, now full of flower, in 60-pots, 4*s.* 6*d.* per dozen, 30*s.* per 100.
CYCLAMEN PERSICUM, of the best procurable quality, good stuff, from boxes, 16*s.* per 100; larger, from single pots, 20*s.* and 30*s.* per 100. CATALOGUE free.
W. M. CROWE, Boleyn Nursery, Upton, Essex.

NEW ROSES of 1882, in pots.—Vendors' Selection, 30*s.* per dozen; Purchaser's, 36*s.* per dozen. The above comprise all the best English and French-raised Hybrid Perpetuals, Perpetual Polyantha, Teas, Hybrid Teas, and Perpetual Moss.

ROSES of 1881, of above-named classes, 18*s.* to 24*s.* per dozen, in pots.

CHOICE ROSES. — Tea-scented, Hybrid Tea, Noisette, China, and Bourbon, 18*s.* to 24*s.* per dozen, strong plants in pots.
Descriptive LIST on application.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

B. MALLER begs to offer a large stock of the following:—ERICA HYEMALIS and other varieties; EPACRIS, GENISTAS, AZALEAS, CYCLAMEN, BOUVARDIAS, SOLANUMS, ADIANTUM CUNEATUM and other FERNS, FICUS ELASTICA, GREVILLEAS, VINES in pots, &c., all in splendid condition. A finer lot of plants were never offered in the trade. An inspection is invited.
Trade CATALOGUE forwarded on application.
The ANNUAL SALE by AUCTION will be held in September.
Burnt Ash Lane Nurseries, Lee, S.E.

UNSURPASSED SEEDS for present sowing of the choicest kinds of CABBAGES, ONIONS, CAULIFLOWERS, &c., at moderate prices.
See Descriptive LIST free on application.
RICHARD SMITH AND CO., Seed Merchants and Nurserymen, Worcester.

Tuberous Begonias.

JOHN LAING AND CO.'S Gold Medal Collection is unrivalled. They have now in cultivation 100,000 Begonias, which present to the public an unprecedented floral display of single and double flowers. A visit is solicited (Catford Bridge Station, South-Eastern Railway).
Prices, 12*s.* to 60*s.* per dozen.
CATALOGUES on application. Address
JOHN LAING AND CO., Forest Hill, S.E.

Novelty.

GRAND NEW BEDDING PLANT.
First-class Certificate Leeds Horticultural Society.
LOBELIA "ANDREW HOLMES."
By far the best dark blue. See Advertisements in June numbers of *Gardeners' Chronicle*. Price, 1*s.* each, 9*s.* per doz., 60*s.* per 100. The usual discount to the Trade.
GEORGE HOLMES, Florist, York.

A Cheap Offer of

MISCELLANEOUS HARDY BULBS will be found on page 23 of my A B C BULB GUIDE. Free on application.
THOMAS S. WARE, Hale Farm Nursery, Tottenham, London.

The New Zonals and Fuchsias of 1881-2.

RICHARD PANNETT, NURSERYMAN, Crawley, Sussex, will send 1 doz. of each, in good plants, for 12*s.*; ditto of 1880 for 7*s.*
Cuttings, to include new sorts of 1880 and older, 10*s.* per 100 varieties.
Descriptive CATALOGUES of the best in cultivation post-free on application.

DUTCH FLOWER ROOTS.

B. S. WILLIAMS

BEGS TO ANNOUNCE THAT HE HAS RECEIVED HIS ANNUAL IMPORTATION OF

HYACINTHS, TULIPS, CROCUS, NARCISSUS,

and other Bulbous Roots, in fine condition.

EARLY ORDERS RESPECTFULLY SOLICITED.

VICTORIA AND PARADISE NURSERIES, UPPER HOLLOWAY, LONDON, N.

DUTCH FLOWER ROOTS.

THOS. METHVEN & SONS

Beg to intimate that their importations of the above have arrived, in fine condition.

Priced CATALOGUES forwarded, post-free, on application.

15, PRINCES STREET, and LEITH WALK, EDINBURGH.

DUTCH FLOWER ROOTS.

JAMES VEITCH & SONS

BEG TO ANNOUNCE THAT THEY HAVE RECEIVED THEIR ANNUAL SUPPLY OF

HYACINTHS, NARCISSUS, TULIPS, and other BULBOUS ROOTS;

and are pleased to say that they are in fine condition.

BULB CATALOGUE FOR 1882

Has now been posted to all our Customers; any one not having received the same, a duplicate copy will immediately be forwarded post-free on application.

ROYAL EXOTIC NURSERY, KING'S ROAD, CHELSEA, LONDON, S.W.

SPECIAL NOTICE.

THE

GARDENERS' CHRONICLE

FOR

SATURDAY, SEPTEMBER 9,

WILL CONTAIN A BEAUTIFULLY-EXECUTED

DOUBLE-PAGE COLOURED PLATE

(18 inches by 13 inches),

From a Painting by FITCH, representing

A GROUP OF GLADIOLI,

TOGETHER WITH

Articles on the Botany of the Genus, and on the Best Methods of Cultivation of the Species.

PRICE, FIVEPENCE; POST-FREE, FIVEPENCE-HALFPENNY,

OR WITH PLATE ENCLOSED IN CASE, SEVENPENCE-HALFPENNY.

*** PURCHASERS ARE SPECIALLY RECOMMENDED TO ORDER THE PLATE IN A CASE
to prevent injury from folding.

The cost of the Number, with the Plate so protected, will be 6d., if obtained through a Newsagent.

NOTICE TO ADVERTISERS.

As a large Extra Sale of this Number is guaranteed, it will be a very valuable medium for Advertisements.

APPLICATIONS FOR SPACE MUST BE SENT IN NOT LATER THAN SEPTEMBER 6.

The Number for the following week, September 16th, will contain a full Special Report of the

GREAT INTERNATIONAL FRUIT SHOW AT EDINBURGH.

W. RICHARDS, 41, WELLINGTON STREET, STRAND, W.C.

May be Ordered of all Newsagents, and at the Railway Bookstalls.

FLOWER ROOTS.

Carriage Pre-paid.

DICKSON & ROBINSON,

SEED MERCHANTS and BULB IMPORTERS,

12, OLD MILLGATE, MANCHESTER,

Have the pleasure to announce to their numerous Patrons and the Public generally, that their

Annual Descriptive and Illustrated CATALOGUE,

Containing very SELECT LISTS of HYACINTHS, POLYANTHUS NARCISSUS, BORDER NARCISSUS, TULIPS, CROCUSES, SNOWDROPS, LILIUMS, and other FLOWERING BULBS and ROOTS, is now published, and will be forwarded, Post-free.

NAMED HYACINTHS FOR POTS OR GLASSES.

"Dickson & Robinson's Selection."

100 choicest selected bulbs	in 100 varieties	..	80s. and	100s.	od.
100 choice	,, ,, in 100	,,	.. 60s. and	75s.	od.
50 choicest	,, ,, in 50	,,	.. 40s. and	50s.	od.
50 choice	,, ,, in 50	,,	.. 30s. and	37s.	6d
25 choicest	,, ,, in 25	,,	.. 20s. and	25s.	od.
25 choice	,, ,, in 25	,,	12s. 6d. and	18s.	od.
12 choice	,, ,, in 12	,,	6s, 9s., 12s. and	15s.	od.

EARLY SINGLE WHITE ROMAN HYACINTHS FOR FORCING.

Selected Strong Flowering Bulbs, per 100, 24s.; per dozen, 3s. 6d.

POLYANTHUS NARCISSUS.

"Dickson & Robinson's Selection."

		s.	d.
100 in 12 choice named varieties	.. ..	25	0
50 in 12 ,, ,, ,,	.. ..	12	6
25 in 8 ,, ,, ,,	.. ..	6	6
12 in 4 ,, ,, ,,	.. .. 2s. 6d. and	3	6

EARLY SINGLE TULIPS.

"Dickson & Robinson's Selection."

		s.	d
100 in 20 choice named varieties	.. ..	18	0
100 in 10 ,, ,, ,,	.. ..	12	6
25 in 5 ,, ,, ,,	.. ..	8	0
12 in 4 ,, ,, ,,	.. .. 2s. and	3	6

EARLY DOUBLE TULIPS.

"Dickson & Robinson's Selection."

		s.	d
100 in 15 choice named varieties	.. ..	15	0
50 in 10 ,, ,, ,,	.. ..	7	6
25 in 5 ,, ,, ,,	.. ..	4	0
12 in 12 ,, ,, ,,	.. .. 2s. and	3	0

CHOICE NAMED SEEDLING CROCUSES.

"Dickson & Robinson's Selection."

		s.	d.
1000 in 20 choice named varieties	.. ..	30	0
500 in 10 ,, ,, ,,	.. ..	15	0
250 in 10 ,, ,, ,,	.. ..	8	0
100 in 10 ,, ,, ,,	.. ..	3	6

SNOWDROPS.

Double or Single, selected, large bulbs, Per 1000, 21s.; per 100, 2s. 6d.

For other Flowering Bulbs and Roots see our AUTUMN CATALOGUE.

DICKSON & ROBINSON,

SEED MERCHANTS and BULB IMPORTERS,

12, OLD MILLGATE, MANCHESTER.

BEAUTIFUL FLOWERS

AT CHRISTMAS

May be secured by planting

SUTTONS'

FORCING BULBS

SPECIAL COLLECTIONS OF BULBS

Most suited for Late Summer and Early Autumn Potting,

INCLUDING

EARLY ROMAN HYACINTHS, DOUBLE ROMAN NARCISSUS, PAPER WHITE NARCISSUS, SNOWDROPS, CROCUS, JONQUILS, DUC VAN THOL TULIPS, SCILLAS, &c., &c., at

42s., 31s. 6d., 21s. and 10s. 6d. each.

ROMAN HYACINTHS

(*FOR FORCING*).

		s.	d
Single White	per dozen	3	6
,, ,, ...	per 100	25	0

EARLY NARCISSUS

(*FOR FORCING*).

		s.	d.
Double Roman ..	per dozen 2s. 6d.; per 100	17	6
Paper White ..	,, 2s. 0d.; ,,	14	0

SUTTONS' HYACINTHS

(*FOR FORCING*).

		s.	d.
50 Hyacinths, in 25 named varieties	.. ..	42	0
25 ,, 25 ,, ,,	.. ..	22	6
12 ,, 12 ,, ,,	.. ..	12	0

EARLY TULIPS, Single & Double

(*FOR FORCING*).

		s.	d.
100 Tulips, in 10 varieties	.. ..	15	0
50 ,, 10 ,,	.. ..	8	0
25 ,, 5 ,,	.. ..	4	0
12 ,, 4 ,,	.. ..	2	0

For full particulars of

SUTTONS' Choice FLOWER ROOTS

SEE

SUTTONS' AUTUMN CATALOGUE,

Gratis and post-free on application,

Suttons Sons

THE QUEEN'S SEEDSMEN,

and by Special Warrant to

H.R.H. THE PRINCE OF WALES,

READING, BERKS.



THE

Gardeners' Chronicle.

SATURDAY, AUGUST 26, 1882.

TUBEROUS BEGONIAS.

As an element in the question of the necessity or otherwise of establishing special societies for the promotion of the cultivation of each floral type, we might instance the case of the Clematis and the tuberous Begonias. Few flowers have been "improved" so remarkably of late years, few have been better cultivated, few have been more appreciated by the general public, but up to this time no one has complained that the Royal Horticultural or any other of the general societies has neglected the Clematis or the Begonia. Indeed, so far as the Horticultural Society is concerned it has entered into the field itself, and produced at Chiswick a race of Begonias which may hold their own with any others; while as to Pelargoniums, it has not only grown all that have been sent for trial, but it has collected and cultivated a series of the specific Cape forms which are so interesting and so beautiful in themselves, and which would furnish material for some most interesting crosses. But there is a Pelargonium Society, and in this case, at any rate, the parent society has not neglected its duty to its offspring. It is, however, not our intention at present to further advert to this subject; our object is to call attention to the rapid progress which has been made in the "improvement" of the tuberous Begonia of late years. A dozen years ago the parent forms of these flowers were few in number, and but recently introduced. Now their descendants cannot be numbered; they have been crossed and re-crossed till they may be said to be a very mixed lot indeed. Still, for the most part, the changes have been rung on three species only—B. boliviensis, with orange-pink pendulous flowers, and stamens arranged in a long column, as in the Mallows; B. Veitchii, with tufted leaves, and relatively large bright red flowers borne on a leafless scape; and B. Pearcei, with mottled leaves and yellow flowers. Both of these species have the stamens in tufts. The Begonias, with few exceptions, bear male and female flowers on the same plant. Usually the male flowers have a perianth of two to four coloured segments; the female flowers a perianth of five segments. We use the word perianth here advisedly, from the difficulty of determining in all cases which is calyx and which is corolla. In the case of the female flowers, below the perianth is the three-cornered ovary, containing numerous ovules, and generally prolonged at one or more of the corners into irregular leafy wings. The stigmas of Begonias occupy the centre of the female flowers, and in that particular group to which we are now confining our attention they are twisted corkscrew fashion.

For our present purpose this is all we need say as to the natural conformation of the flower. Starting from these beginnings we have now arrived at a very extraordinary series of changes which constitute a real triumph for the gardener, which have added a new source of pleasure to the cultivator and to the flower-loving public,

and which are of the highest interest to the philosopher who delights to trace in these manifold mutations the guiding principle of their formation—who sees in them the prospect at least of the solution of many problems connected with the development of the two sexes in plants, and the unravelling of the genealogy of the group. In fine we do not know a more attractive group for the intelligent amateur to grow, and not only to grow but to study. But he must begin at once. The origin of these splendid forms is now known, and if it were not so the flowers in their present stage very often supply indications of their origin. But progress, that is, progress from a purely æsthetic point of view, is so rapid that these indications will speedily be obliterated, and then some chance sport alone may or may not appear to give the requisite clue. The first thing to do is to study the typical forms. Already this is no easy thing, for, in cultivation at least, these primitive forms have been banished—ousted by their "improved" descendants. Without any crossing or hybridisation at all—by mere cultivation, and especially by selection of seedling variations and the rejection of inferior ones—the parent types themselves have been so improved upon that we very much doubt whether anything like a typical representative of the original species could be met with anywhere out of a botanic garden. At Kew, indeed, we have seen comparatively recently specimens of B. boliviensis, B. Pearcei, and B. Veitchii sufficiently unaltered for the purposes of study. Moreover, there are the original figures in the *Botanical Magazine* and other periodicals to refer to. The little woodcuts we give of B. Veitchii (fig. 47) and B. boliviensis (fig. 48) as they were when first introduced, may also serve to show the enormous strides that have been made.

Again, there are the dried specimens in the herbaria; but these, of course, are not very satisfactory for our present purpose, though they suffice to show the general habit of the types. Those, moreover, who wish to work out this subject—and we can promise them it is a most attractive one for those who have the requisite leisure—should refer to M. Fournier's excellent paper on seedling tuberous Begonias, treated from the botanical point of view, and contained in the *Journal de la Société Centrale d'Horticulture de France*, 1879. That paper contains a summary of what was known in France on the subject up to the date of publication. Great progress has been made since that time, but still M. Fournier's paper, whether all his conclusions are tenable or not, will remain a very important contribution to the natural history and affinities of the group.

Confining ourselves to generalities, we may say that by selection and cross-breeding the "habit" has been altered; the tufted habit of the original B. Veitchii has been almost lost, and in place we have stiff, erect, robust stems or pendulous branches, which render the plants so effective in baskets. The variations in the foliage that have been secured are too numerous and too intricate to be more than mentioned. The flowers have been made to throw themselves well up beyond the leaves—their form, substance, duration, all improved, and to such an extent that they may be used as bedding plants with great advantage. A few years ago who would have thought of utilising the soft succulent Begonias as bedding plants?—and yet such is now their robust habit, such the depth and brilliancy of their colour, that they are admirably adapted for the purpose, being destitute of the vulgar glare so painful in the case of badly grouped or injudiciously selected Pelargoniums. And as to colour, they may be had of every hue, from snow-white to deepest crimson and purest yellow. A blue Begonia is apparently as hopeless as a blue Rose, still, in the face of such astonishing changes, we shall not proclaim the impossibility of such a Begonia, though we must admit there are, to our knowledge, no indications of the production of such a tint. But, within the limits we have indicated, there is a wonderful range, and a wonderful variety of colour, as any one who has visited Messrs. John Laing & Co.'s show-house at Forest Hill must admit. To those who have not yet seen this remarkable collection, it is hardly too late even now to recommend them to do so. Even if the full magnificence of the spectacle is past, there will be enough left to show the astonishing quantities



FIG. 45.—PROLIFEROUS BEGONIA.

of plants both indoors and outdoors, and enough to illustrate the variety in form and colour, which have mainly prompted these remarks.

So far as colour and substance go we need say no more, but as to the form of the flower, now elongated and somewhat compressed from back to front, now circular and cup-shaped according to the florists' ideal, now compact like a double Rose or a double Balsam, now with a central projecting tuft like a double Hollyhock, now with three or five or more centres like a Souvenir de la Malmaison Rose, and again



FIG. 46.—MONSTROUS BEGONIA.

with all kinds of abnormal and irregular forms, such as the proliferous form shown at fig. 45, where, instead of a single flower being produced within the two sepals, a whole inflorescence of small semi-double white flowers is produced. As to all these, it is necessary, we think, to say a word or two—first, because it is interesting to know how they come about, and not only interesting but practically important, as supplying a knowledge of the best method of procedure to obtain the desired form, whatever it may be—and, in the next place, because so numerous are the types likely to become that in future some sort of classification must, for convenience sake, be adopted, and we see quite enough of the classifications adopted in the case of florists' flowers in general, not to be convinced that a classification based on first principles is far superior to any one that is merely arbitrary and expedient, though we must admit that very often no other is within the range of practicability. Because we do not think this is so at present among tuberous Begonias, we venture to call attention to the subject. The underlying principles regulating the form of the flower depend on its sex, male or female; on the way in which the stamens in the male flower are naturally arranged as before explained; on the particular way in which they become double—for there are three or four or more ways in which they become double; on the fact whether the central axis of the flower, botanically speaking the "thalamus," is simple or branched—and so on.

The normal type of the male flower is to be flattened from front to back so as to produce a flat flower; when unopened the two outer perianth segments are in contact just as the two halves of a bivalve shell, the inner-side segments are usually much smaller. The florist, of course, wants to alter this; his idea is not a flower like an oyster in shape, but a circular cup like that of a single Rose. To this end he endeavours by cross-breeding and selection to increase the tendency to a circular outline in the outer segments, with which he has comparatively little difficulty, and he strives to make the side lobes or segments equally wide and circular, in which he has more difficulty; but—and here comes in the value of a little botanical knowledge—it is only in the male flower that this difficulty exists; and the reason is obvious, as the natural symmetry of such a flower is two-sided; in the female flower—where what botanists call the radiating symmetry, naturally prevails—he has much less difficulty in procuring a flower with fine equal circular lobes.

In the case of the double flower, it is notorious that the male flowers are much more prone to this change than the female ones, and the reason again is obvious enough to a botanist, who contrasts the relatively simple conformation of the normal male flower, where the parts are mostly free and separate one from the other, with the female flower, where the base of the perianth is inseparate from the ovary—an arrangement causing the latter to be, in botanical parlance, "inferior." The change to a double condition would thus be simpler in the male than in the female, even if it were not for the predominating fact that while in the male flowers we have a crowd of stamens, all of which may became petaloid, we have in the female flower, as ordinarily constituted, only three styles, which can undergo such a change. The form of the double male flower depends, of course, on the arrangement of the stamens before alluded to, and on the extent, partial or complete, to which the stamens are rendered petaloid. Thus in the Camellia-like flowers of some varieties, such as the small double white, figured at p. 137, the stamens are arranged in tufts, and each one is completely petaloid, the segments therefore overlapping in the regular fashion so dear to the florist. In other cases, where the boliviensis type intervenes, the stamens are in prolonged spires, and more or less completely replaced by petals. In the thalamus or centre of the flower branch, then, we have a long column beset with tufts of petaloid stamens, just as in a double Hollyhock or Hibiscus. Carry this a degree or two further and we get within the perianth of the primary flower, not a mere tuft of petaloid stamens, but a whole inflorescence, consisting of six or eight or more secondary flowers within the primary one, as at fig. 46. So far as we have yet seen, these secondary flowers are all males.

Of very great interest are those plants in which male and female organs exist in the

same flower, as in the famous Begonia frigida, which occasioned such discussion when it was first mentioned in our columns many years ago, and many examples of which have since been met with. In other cases the males assume more or less of the guise of the females, or *vice versâ*. We have only space to mention some of these cases, one in which a flower, male by position and outward conformation, had its stamens replaced by open superior carpels with numerous ovules. This was a mere case of the replacement of the organs of one sex by those of the other. The other was of a similar kind, but so remarkable, that we called our artist's services into requisition to depict it. This again was a male flower, in which the stamens were replaced by petal-like open carpels, on whose upper face were developed a crowd of ovules at the base, intermingled with, or rather gradually passing into a series of small petal-like straps, forming a fringe to the petal. On examination it is clear that these straps are only the funicles of the ovules developed in the form of small petals, the ovules themselves being more or less completely suppressed. But this is not all: these petaloid funicles may often be seen terminating in a stigmatic appendage, so that we have a petal of a male flower bearing ovules, and these ovules showing a tendency to masquerade as ovaries. It must not be thought that this is a solitary exception. On the contrary, we saw several at Messrs. Laing's, evidently destined to form a race of great beauty, but for which it will be difficult to find a name sufficiently distinctive and appropriate.

A more complete upset of morphological proprieties can hardly be imagined, and yet in the midst of this wild confusion, a confusion far from being incompatible with beauty and symmetry, the botanist sees first principles only the more firmly vindicated—the exception does not vitiate, it confirms the ideas of original unity of type and sex, community of origin, and adaptive variations.

Hypericum reptans.—This is one of the most chaste and the prettiest of Hypericums. It is a miniature plant in earnest, and its diminutive appearance and sweet little flowers almost appeal to the cultivator to take compassion upon it and give it a little extra care. It is now flowering at Chiswick for the first time.

New Garden Plants.

FUCHSIA TRIPHYLLA, *Linneus*.

Since the discovery of the true Fuchsia coccinea in the Oxford Botanic Garden by Sir Joseph Hooker, nothing so interesting in the genus, either botanically or horticulturally, as the present plant has come to light. It is remarkable at this late date in the history of Fuchsias that this species, above all others, should appear as a new garden plant, yet we believe that it has never before been in cultivation. It is remarkable because this species was the first of the genus discovered, and the one upon which the genus Fuchsia was founded, though from an early period its identity has been lost, through another species being associated with it, or, rather, accepted for it. Another noteworthy fact is that Fuchsia triphylla, Linn., syn. F. racemosa, Lam., is the only species known to be indigenous in the West Indies, where, so far as we know, it is confined to the island of St. Domingo or Hayti and Cuba. There is, however, no specimen of this species in the Kew Herbarium, and until living specimens of it were received from Messrs. E. G. Henderson & Son (who obtained it from America), we suspected some mistake in the locality attributed to it. It came under the name F. racemosa, with the information that it was collected by Thomas Hogg in St. Domingo, where "it grows not over 18 inches high, forming a round bush, every shoot being terminated with a raceme of orange-scarlet wax-like flowers."

Before entering upon a description of this beautiful Fuchsia, we will briefly sketch its history, in order to establish its identity. Father Plumier, in whose honour the genus Plumieria was founded, travelled in the French West Indies, chiefly in St. Domingo, towards the end of the seventeenth century, where he collected objects of natural history, and made drawings of numerous plants, &c., the bulk of which were unpublished at his death, though afterwards rudely engraved and published by Burmann. But in 1703, three years previous to his death, Plumier published his *Nova Plantarum Americanarum Genera*. In this work he describes about 100 new genera, illustrated by fair dissections of the flowers and seed vessels. Nearly all of these genera are named after botanists or naturalists of note, as Turnera, Gerardia, Parkinsonia, Fuchsia, and so on. The genus Fuchsia is briefly described at p. 14, with the observation that only one species had been recognised, and figured on plate 14. Although the figures are rude and inexact as to the number of the stamens, only four being represented, and as to the shape of the petals, yet there can be no doubt that Plumier's plant was of the same species as the one before us. He designates it Fuchsia triphylla flore coccineo, which Linneus, in the first edition of his *Species Plantarum* (1753), p. 1191, reduced to Fuchsia triphylla, in accordance with his rule of binominal nomenclature. In the sixth fascicle of Burmann's publication of Plumier's drawings, which appeared in 1758, there is a representation of a flowering branch (pl. 133, fig. 1). This is taken up in the second edition of Linneus' *Species Plantarum* (1762), p. 159. La Marck, in his *Tableau Encyclopédique*, &c. (1793), p. 423, gives a modification of Linneus' description of Fuchsia triphylla, and without comment changes the name to Fuchsia racemosa. By this time several other species of the genus were known, notably F. macrostema, the parent of our hardy Fuchsias, and La Marck was probably influenced in changing the name by the fact that this species also sometimes has the leaves in threes, sometimes in pairs, and that, therefore, the name triphylla was inappropriate. This probability seems almost a certainty when we turn to the same author's *Illustration des Genres*, t. 282, for there, side by side, he figures F. triphylla (F. racemosa) and F. macrostema, both having the leaves in threes. But it is now a fixed rule with botanists that no name can be superseded on account of its inappropriateness, so the first, triphylla, is the one we have to adopt. The next notice of our plant is in Descourtilz's *Flore Médicale des Antilles* (1822), vol. ii., p. 161, pl. 109. Descourtilz states, on what authority does not appear, that Plumier found this Fuchsia in St. Domingo, in uncultivated places, when going from the South to the place called the Grand Cul-de-Sac; and, further, that he himself had several times found it at Santiago de Cuba. The latter place is, we presume, in the island of Cuba itself, as there is such a place at the eastern extremity near St. Domingo; but Grisebach does not include any Fuchsia in his enumeration of the plants of Cuba, nor Richard in his *Flora Cubana*. Descourtilz's figure is a coloured one, though not a very good one. Now begins the confusion of this West Indian plant with a South American species. Humboldt, Bonpland, and Kunth, in their *Nova Genera et Species Plantarum*, vol. vi. (1823), p. 106, following Willdenow's *Species Plantarum*, vol. ii., p. 339, regard Linneus' F. triphylla as a South American species, and doubtfully associate with it a plant from New Grenada. In De Candolle's



Fig. 47.—Begonia Veitchii. (see p. 262.)



Fig. 48.—Begonia boliviensis. (see p. 262.)

Prodromus, vol. iii. (1828), pp. 38 and 39, F. triphylla, H.B.K., is made to include F. triphylla, Linn., excluding Plumier's synonym, and F. racemosa, Lam., is kept up as a distinct species; but as Linneus expressly quotes Plumier, and as there is no specimen in the Linnean Herbarium to prove that Linneus had a different species in view, we are bound to believe that he merely took up Plumier's description and figure. So the synonomy would be Fuchsia triphylla, Linn., not of H.B.K., syn. F. racemosa, Lam.

Turning to the plant itself we think, judging from a small flowering branch, that it may turn out a valuable ornamental plant. It is neat in habit, and has small leaves (1½—3 inches long), purplish beneath, and traversed by numerous lateral veins that curve round and run into each other near the margin; and glowing cinnabar-red flowers about 1½ inch long in terminal, nodding racemes. Cinnabar is the nearest term we can find to designate the colour, which is very beautiful, and of a different hue from anything in the genus, as far as our memory goes. A striking character in the flowers is afforded by the ring-like inflation of the calyx-tube around the top of the ovary. The petals are shorter than the sepals, and the stamens do not project beyond either. *W. B. Hemsley.*

CRASSULA MONTICOLA, *N. E. Brown.*

A dwarf branched, shrubby species, growing from 6 inches to a foot or perhaps more in height, quite glabrous in all parts. Stem and branches woody, 1½—2 lines thick. Leaves opposite (the pairs 3—6 lines apart), connate, ovate acute, slightly concave above except the apical part which is flat, beneath somewhat gibbous-convex, 6—8 lines long, 4½—7 lines broad, 2½—3 lines thick in the middle, light green covered with a glaucous bloom. (When dried the leaves are rust-colour.) Flowers in terminal, shortly pedunculate, bracteate, corymbose cymes, ¾—2 inches in diameter. Pedicels 1½ line long, slender, pale pinkish. Bracteoles 1—2 lines long, lanceolate acute. Calyx ¾ line long, green, the segments ovate-oblong, obtuse. Petals pinkish-white, or pinkish, 2 lines long, 1 line broad, obovate oblong, the tips spreading, obtusely rounded, flat, without a dorsal apiculus or callosity. Stamens five; filaments rose-pink, anthers blackish, pollen yellow. Hypogynous scales subquadrate, yellow. Carpels five, rose-pink, with short recurving styles.

South Africa; summit of Mount Bothasberg, 2300 feet; MacOwan, 960!; rocky places at Loot's Kloof, province of Somerset, J. Leonard!; stony places near Graaf Reinet, at an altitude of 2500—2900 feet, flowering in August, Bolus, 486!

This species is nearly allied to C. brevifolia, Harv., having the same habit, but differing in having much broader differently shaped leaves, and apparently larger flowers. It was introduced some years ago by Mr. Bolus, but appears to be somewhat difficult to flower; it has not flowered at Kew, but under the management of Mr. Lynch, who obtained it from Kew, it flowered in the Cambridge Botanic Gardens during April last. When in flower it is an exceedingly pretty plant. *N. E. Brown.*

KÆMPFERIA VITTATA, *N. E. Br.*

Plant about 9 inches high, with 4—6 leaves to a stem. Petiole 3½—5 inches long, vaginate for nearly half its length, rounded on the back, deeply and acutely channelled down the face with acute edges, glabrous on the upper part, with a scanty appressed pubescence, the basal half brownish-red, upper part green. Lamina 3½—4½ inches long, 2½—2½ inches broad, elliptic, very slightly oblique, apex very obtusely rounded, with a short apiculus, base rounded, then shortly cuneate into the petiole; above dark green, with a velvety sheen, marked with a somewhat feathered grey stripe along the midrib, nearly ½ inch broad, glabrous to the eye, but under a lens with a few very scattered appressed hairs, especially towards the margins; under-surface greyish-green, with a rather sparse appressed silky pubescence. Primary lateral veins 10—12 on each side of the midrib, which is impressed above, prominent beneath, veins not prominent on either side. Inflorescence central, enclosed within the leaf-sheath, except the exserted corolla. Bracts, two to each flower, and closely enwrapping them, 1½ inch long; lanceolate, membranous, sparsely hairy-pubescent, whitish, speckled above with purple-red, the inner bract bifid. Calyx spathaceous, cleft on one side to about one-third the way down, ½ inch long, membranous, sparsely hairy-pubescent; apex very shortly 3-toothed. Corolla tube slender, much exserted, 1¾ inch long; petals (the three outer segments) oblong acute, 5—7 lines long, 1½—2 lines broad, white; staminodia (the three inner segments) petaloid, the two lateral ones elliptic-oblong, acute, ⅔ inch long, 2½ lines broad, the middle one (labellum) concave, oblong, subentire, or emarginate (but not bifid) at apex, 7—8 lines long, 4—4½ lines broad, white, with a central yellow band, which widens out in front so as to occupy the whole apex of the lip. Crest of the anther concave, with the apex revolute and minutely toothed.

A new and distinct species, discovered by Mr. Curtis, at Loboe, in Sumatra, and introduced by him into Messrs. Veitch & Sons' nurseries, where it is now flowering. The flowers themselves are not such as would recommend the plant to the notice of horticulturists, but the foliage is very good, and much resembles that of some species of Calathea; the rich velvety green being well relieved by the greyish central band. Botanically the species is interesting, on account of its entire lip; in this respect it resembles K. pandurata, Roxb. also a Sumatran species; almost all the other members of the genus having a more or less deeply bifid, or 2-lobed lip. The hairs on the leaves are somewhat difficult to see in the living plant, even under a lens, except in certain lights, being very fine, silky, and closely appressed. *N. E. Brown.*

ALPINE PLANTS.

M. PRÉVOST'S GARDEN AT CHAMBÉSY.—In a space of about 80 square metres M. Prévost, of Chambésy, near Geneva, has got together an almost complete collection of Swiss alpine plants. His rockery is of no great elevation, but very varied in form, and with many steep slopes. The highest are about 1 metre in height (3 feet 3 inches). Some portions are constructed of limestone, others of stone other than limestone—some parts are dry, others moist, and so on. There are several fine bushes of alpine Rhododendrons, 18 inches or 2 feet in height, doing well, and often flowering twice a year. They are placed where they get plenty of light, but where they are not fully exposed to the sun. The soil consists of peat with a little bog-earth and leaf-mould. There are some fine specimens of R. hirsutum, shaded from the mid-day sun by walls of rock, against which the young shoots seem to attach themselves. The Edelweiss forms perfect carpets—it comes up everywhere, and reproduces itself freely from seed. M. Prévost grows it in a calcareous soil. Patches of Soldanella montana and S. minima succeed well, and are completely covered with flowers. They are grown in an easterly aspect, in a light though fertile soil, with good drainage. Globularia nudicaulis, G. nana, G. cordifolia, and G. vulgaris, the Saponarias, the Gypsophilas, all do well fully exposed to the sun. Lilium bulbiferum is very robust and free-flowering. The specimens of this plant were collected on the St. Gothard some years since, and have attained an extraordinary vigour. Cypripedium Calceolus also succeeds well and produces a profusion of flowers. M. Prévost grows these plants in a light mossy soil, and keeps them a little shaded. There is here an almost complete collection of Swiss Ferns. The different alpine Primulas are also quite at home, and laden with flowers. Saxifraga oppositifolia, of which M. Prévost has large tufts, is also covered with flowers in spring. They are grown in a north aspect, but are protected from an excess of wet, which would cause them to rot. The different species of Androsace, lactea, villosa, obtusifolia, Chamæjasme, emerge from little pockets, which prevent them from spreading too far. They flower profusely, and are self sown; Androsace carnea is one of M. Prévost's triumphs. It is found all over the rockery, the plants sowing themselves. Astrantia minor is grown in very porous and boggy soil, which constantly retains moisture. I saw one tuft which bore not less than 200 flower-heads. In a cleft of the rock, in moist light soil, Viola biflora grows in abundance, and produces seeds freely. Saxifraga gemmipara, which I never saw elsewhere in a satisfactory state, succeeds perfectly here, and flowers freely in a northern cool aspect. Linaria alpina grows all over the place in the shade, in the sun—it matters not where, provided the soil is not too calcareous. Dianthus alpinus is particularly fine, and covered with flowers. It is grown in full sun, on light but rich soil. Papaver alpinum is magnificent, and so full of flower in the summer months that the foliage is scarcely visible. A number of Veronicas, Dianthus, and Campanulas, grow freely, and reproduce themselves from seed. Gentiana cruciata shows here and there its fine heads of blue flowers; Sempervivums, Sedums, Anemones, grow vigorously on all sides. Tufts of Silene acaulis, S. alpestris, Lychnis alpina, Erinus alpestris, E. albus; Anthyllis montana, Dryas octopetala, Geum montanum, &c., all do well. Ranunculus rutæfolius reproduces itself from seed. Tufts of various species of Eryngium and of Adenostylis grow in the pockets at the base of the rockwork, to which they form a fine background. A patch of Ranunculus parnassifolius covered with flowers attracted my attention. The plants have been in the same situation for the last four years, flower every season, and reproduce themselves freely from seed, so that the patches increase in size every year. They are grown in a moist boggy soil. One of the greatest rarities of this garden is a white-flowered Martagon Lily. It was found by M Prévost near Morcles four years ago, and was planted in his garden under the shadow of a tree. Ever year this Lily throws up three or four stems, each with twelve to fifteen pure white flowers. Achillea nana, a plant rare in cultivation, does well here, grown in a shady position in a dry soil. Opuntia vulgaris and Arbutus Uva-ursi succeed well freely exposed to the sun. There are about twenty tufts of Androsace helvetica, as large and fine as any met with in the Alps. They are grown in limestone soil in the perpendicular chinks of the rocks, and it is proposed to treat Eritrichium nanum, which does not succeed well here, in the same manner.

But in addition to what has been mentioned, M. Prévost has a small space specially devoted to the culture of bog plants. The soil consists of peat and bog earth, and can be saturated with water when needed. Under such conditions Vaccinium uliginosum, V. myrtillus, V. oxycoccos, Saxifraga aizoides, S. hirculus, S. oppositifolia, flourish and produce flowers abundantly. Swertia perennis, Anemones, Primula farinosa, Ranunculus alpestris, Achillea atrata, Soldanella alpina, Parnassia palustris, Betula nana, Lepidium alpinum, Chrysanthemum alpinum, Artemisia spicata, Viola biflora, V. pinnata, Orchis palustris, Andromeda polifolia, all do well here. M. Prévost attempted to sow seeds of two or three species of Pedicularis, which are usually considered parasitic, in this bog, where they are doing well, and it is hoped will flower in a year or two. On a small mound placed under the shade of some Firs, and formed of pieces of dead sphagnum, M. Prévost cultivates very successfully certain plants usually found very difficult to grow. Linnæa borealis flowers there abundantly, Saxifraga cuneifolia is superb, Vaccinium oxycoccos flowers and fruits freely, and Pyrola rotundifolia does well also. But what will specially charm all cultivators of alpine plants is the success with which M. Prévost manages to cultivate Pyrola uniflora. It flowers and reproduces itself from seed every year. Near this little mound there is another bog, more shady and somewhat drier, in which Androsace carnea, Nigritella angustifolia, Orchis sambucina, Anemone vernalis, Thlaspi rotundifolium grow freely, and where a fine tuft of Ranunculus glacialis reproduces itself from seed. Lastly, in a somewhat deeper spot, occur large patches of Pinguicula vulgaris, P. grandiflora, P. alpina. The plants are so finely developed that it is impossible to see finer even under natural conditions. They are growing in sphagnum mixed with light peat.

On a small grassy mound M. Prévost has sown seeds of Anemone sulfurea and A. alpina, Gentiana purpurea, G. lutea, and Eryngium alpinum also succeed well. Another grass mound is devoted to Orchids, and a rivulet which meanders throughout the garden contains a collection of aquatic plants, while its borders are enamelled with Gentiana asclepiadea and G. pneumonanthe, Ranunculus Lingua, and Menyanthes trifoliata.

On every side and in every corner of this garden indeed alpine and native plants are found, and all for the most part in admirable condition. *Henry Correvon, Inspector of the Botanic Garden, Geneva.*

STATICE GMELINI. — A dwarf-growing variety, perfectly hardy, and best adapted for planting in rockwork. The trusses of blue or violet-coloured flowers are speckled with white spots, which gives the plant a striking appearance, and therefore renders it a fit subject for planting in isolated corners of the rockery.

CANADIAN NOTES.

We have had a cool spring and summer, with frequent showers of rain, and only occasionally a hot spell, and with the exception of a little rust on the Wheat, all the crops are looking remarkably well. The winter Wheat is now being harvested, and is very abundant. Potatos have been higher in price than usual—say over 7*s*. English currency for the bag of 90 lb., but as the prices in the United States have gone down, it is not expected that this year's produce will realise above an average, and in all probability much under, as the acreage planted is large, and the promise of a good yield very encouraging.

A great many of us are making an experiment by growing Early Amber Sugar-cane, which was obtained from China a few years ago, and is grown very largely for making molasses in the United States; but it seems rather a shy plant, and we are doubtful at present as to our success. Indian Corn is doing well, and every garden has a patch of the sweet early sort for use in its green state as a vegetable. Other varieties are cultivated—some of the "horse-tooth" for fodder and others for the grain, which is much esteemed for pig fattening, and some feed their horses with it. Our Grapes transplanted last spring are doing well, and some which we thought dead last year have made their appearance from fifteen to seventeen months after they were planted. They are rather delicate sorts, one of them a hybrid of Rogers, the Salem, the other the Catawba, but both of them are of delicious quality.

The excitement about the land in the "great North-West" has been for some weeks past slackening down and the countenances of most of the returned speculators, somewhat mournful at having found occasionally that the "Edens" they have purchased instead of being high and dry were some feet under water and as dismal as the swamp of that name described by Charles Dickens in *Martin Chuzzlewit*. Where the land is good and at all convenient the price has advanced to 10 and 20 dollars per acre. *Minesing, Ontario, Canada, Aug.* 3.

THE GENUS FRANCOA.

The nomenclature of this ornamental genus appears to be in some confusion in gardens, no doubt mainly owing to the great similarity in general appearance of the three forms, which are cultivated under at least four different names. In the following paper, I hope to give such characters as will enable any one possessing the plants to determine them, and also to give references to some published figures and descriptions, as an additional aid to the identification of the different forms.

The genus Francoa was dedicated by Cavanilles in 1802* to the memory of Francisco Franco, a Spanish botanist of the sixteenth century, upon materials collected near the Port of San Carlos de Chiloe, by Don Louis Nee, naturalist to the Spanish expedition to South America, under the ill-fated Malaspina. The specific name adopted, appendiculata, refers to the eight short, erect, filiform, pale yellow glands, alternating with the stamens. In the following year, or at least immediately afterwards, Cavanilles, in the sixth volume of his *Icones*, published a figure of the plant, with description, and in a note founded a second species, F. sonchifolia, upon an old figure, "Llaupanke amplissimo Sonchifolio" (Feuill, *Journ des Observ.*, vol. ii., p. 742, t. 31), saying, "If both plants are of the same genus, as Nee suspects, it forms a different species, and must be called F. sonchifolia." This old figure represents a plant with a well-developed stem about 4 inches long.

In 1828 D. Don made a third species, F. ramosa, from a plant collected at Santiago, which he saw in Lambert's Herbarium; this he afterwards figured in Sweet's *British Flower Garden*, vol. vi., t. 223; it is characterised by the much-branched glabrous inflorescence, glabrous sepals, and white petals.

A fourth species, named in MSS., by Poeppig, F. rupestris, was published by Kunze in 1831. The plant came from Valparaiso, but the characters given, "suffruticosa," &c., prove conclusively that it is only F. sonchifolia, between which species and F. ramosa Kunze places it. A plant about in gardens under the name F. rupestris, is not the plant of Poeppig, but simply F. appendiculata.

Finally, De Candolle, in 1838, in the seventh volume of his *Prodromus*, p. 778, overlooked F. rupestris, Poepp., but added a fifth species, F. glabrata, characterised by the leaves being glabrous on the upper surface, and the petals white, scarcely longer than the calyx. He doubtfully refers it to F. ramosa, and probably rightly so. It was collected by Claude Gay in the Cordilleras. Gay, however, in his *Flora Chilena*, makes no mention of the plant, but simply gives the three species here kept up. Two names in MSS., as new species in the Kew Herbarium—possibly born to blush unseen, as I have been unable to find them published anywhere—will not be taken into account. Philippi in his recently published *Catalogus Plantarum Vascularium Chilensium* makes no mention of them; and the other five he simply enumerates (p. 98), without note as to their specific distinctness.

I have used the word "form," as preferable to that of "species," as authors have given different opinions as to the number of species which should be kept up; although the greater number agree as to the distinctness of three. Lindley in the *Bot. Reg.*, t. 1645, says:—"We have no hesitation in uniting the two supposed species, F. sonchifolia and F. appendiculata; for after an attentive examination of specimens, we can discover no distinction of importance; indeed, even the white-flowered kind, F. ramosa, would have but slender claims to being preserved if it were not for the absence of pubescence from its inflorescence." Sir W. J. Hooker, in the *Bot. Mag.*, t. 3824, says:—"It appears to us very doubtful if it would not be more correct to consider them as varieties of the original 'Llaupanke amplissimo sonchifolio."

I do not quite agree with Lindley respecting F. ramosa, but consider F. appendiculata the most distinct of the three, and for these reasons:—Before the flowering period every plant can be readily separated by its leaves, with long, almost naked bases below the auricles, and all growing close to the ground without a stem; while the other two are like miniature shrubs, with well-developed stems and leaves, not almost naked at the base, but strongly decurrent; they are also barely, if at all, distinguishable from each other in this stage. F. appendiculata also flowers three weeks earlier under the same treatment. Plants here in the open air, one of which has been out three years to my knowledge, are now (August 7) as fully open as those grown inside; while under glass it is completely over, and the old flower-stalks have been removed. F. sonchifolia and F. ramosa flower together, but the former has pubescent flower-stalks, and sepals with pink petals, while the latter has glabrous more branched racemes, and glabrous sepals with white petals. The limits of these two, however, are not always so strictly defined, for F. ramosa often becomes pinkish with age, and some forms of F. sonchifolia have very pale flowers, and sepals very little pubescent. When in flower, F. appendiculata is extremely like F. sonchifolia—they agree in the pubescent flower-stalks, and in the pink petals; even the crimson blotch is present in both, though some plants have it much more developed than others; but in some it is absent altogether. I have not seen any specimens with the slightest tendency to couple the habit of F. appendiculata with the glabrous branched raceme and white petals of F. ramosa, in the numerous series examined, both in the dried and living state; this would complete the cycle of variation between the different forms, and while its absence confirms the theory that a certain degree of permanence has been attained in the characters of the three respectively, still, in the presence of intermediates, which break down all our hard and fast lines generally considered necessary for specific rank, I would agree with those botanists who have considered them as all one species; and, retaining F. appendiculata, Cav., as the oldest specific name, would call the others var. sonchifolia and var. ramosa respectively. For horticultural purposes the three forms are sufficiently distinct, and will probably retain their specific titles as at present.

The following characters will readily separate them: full descriptions will be found in some of the works cited below:—

F. appendiculata, Cav., in *Ann. Scienc. Nat.*, vol. iv., p. 237; Cav., *Icones*, vol. vi., p. 77, t. 596; *Bot. Mag.*, t. 3178; Lindl. *Bot. Reg.*, t. 1645; Sweet, *Brit. Fl. Gard.*, vol. v., t. 151; DC., *Prod.*, vol. vii., p. 777; Cl. Gay, *Fl. Chil.* vol. iii., p. 147; Loddiges, *Bot. Cabinet*, t. 1864 (misnamed F. sonchifolia).—Stem very short, rarely an inch long. Leaves longer than in the two following, with smaller auricles, and 2—3 inches at the base of the petiole, almost naked. Inflorescence usually compact, and very little branched; rachis and sepals pubescent; petals pink, often with a darker blotch near the base

F. sonchifolia, Cav., *Icones*, vol. vi., p. 77 (in note); *Bot. Mag.*, t. 3309; Sweet, *Brit. Fl. Gard.*, vol. v., t. 169; DC., *Prod.*, vol. vii., p. 777; Cl. Gay, *Fl. Chil.*, vol. iii., p. 148; *F. rupestris*, Poepp. ex Kunze, in *Flora*, 1831, p. 374; *Walp. Rep.*, vol. ii., p. 264.—Stems 3—4 inches long, leaves with short petioles, usually decurrent below the auricles to the extreme base. Inflorescence more branched than the last; flowers more loosely arranged; rachis and sepals pubescent; petals pink, often with a darker blotch near the base. Some forms approach the next in having semi-glabrous sepals, and very pale petals, but the rachis is pubescent.

I have not cited Jussiæu's figure (*Ann. des Sc. Nat.*, series 1, vol. iii., p. 197, t. 12), which I have not seen (the plate being missing from our volume, as it has been doubtfully referred to the former species. The figure in Loddiges' *Bot. Cab.*, t. 1864, is clearly F. appendiculata, from the absence of stem, and semi-nude leaf bases.

F. ramosa, D. Don, in *Edin. New Phil. Journ.*, 1828, p. 52; Don, in Sweet, *Brit. Fl. Gard.*, vol. vi. 223; *Bot. Mag.*, t. 3824; DC., *Prod.*, vol. vii., p. 778; Cl. Gay, *Fl. Chil.*, vol. iii., p. 148; *F. glabrata*, DC., *Prod.*, vol. vii., p. 778.—Stem, 3—4 inches long. Leaves, with short petioles, usually decurrent below the auricles to the extreme base. Inflorescence much branched, flowers loosely arranged; rachis and sepals glabrous, petals white.

The conflicting opinions expressed respecting the affinities of this genus and its position in the natural system, renders it additionally interesting. A. Jussiæu places it near Crassulaceæ, in which order some have included it. Bertero considers it near Oxalideæ, De Candolle near Rosaceæ, and Lindley near Dionea. Don included it with Galax and Tetilla in a distinct order—Galacineæ, near Saxifrageæ. De Candolle, in his *Prodromus*, expunged Galax to Pyrolaceæ, placing Francoaceæ with Francoa and Tetilla next following. Claude Gay places the last-named order between Umbelliferæ and Araliaceæ, where its affinities are by no means apparent. In the *Genera Plantarum* Francoeæ is placed as a tribe of Saxifrageaceæ, between the herbaceous Saxifrageæ and shrubby Hydrangeæ; though a mistake has accidentally crept in respecting the stamens, which in the tribe are given as four or eight, and in the genera Francoa and Tetilla four and eight respectively; the stamens, however, are eight in each genus.

The affinity with Saxifrageaceæ had been pointed out previously, and there is little doubt it is the correct one. The two tribes agree in being scapigerous herbs with a diplostemonous andræcium; and differ in Saxifrageæ, having pentamerous flowers and a 1-celled ovary; while Francoeæ has tetramerous flowers and a 4-celled ovary. *R. A. Rolfe, Herbarium, Kew,*

* There seems some doubt about the dates, although apparently in 1802 Pfeiffer, *Nomenclator Botanicus*, vol. i. p. 1371, says 1800. The titlepage of the sixth volume of Cavanilles' *Icones* gives 1801 as the date of publication; but in the text, p. 77, he quotes, "*Ann. des Cienc. Nat., tome* iv., p. 237," which, if the titlepage is correct, did not appear until the following year. Possibly Cavanilles' *Icones* are dated a little too early.

ILSINGTON HOUSE,

The seat of W. E. Brymer, Esq., M.P., is five miles from Dorchester, and within a short distance of the village of Puddletown—a good type of the clean, old-fashioned English village. Horticulturally speaking, the garden is a representative one, as regards the cultivation of choice fruits, plants, and flowers. Mr. Brymer's well-known collection of Orchids is, of course, the chief attraction in the plant department. But let us notice the most interesting features of the place in consecutive order. The walled-in garden is upon the left or west side of the drive, between which and the north front (the carriage front) there is a long sweep of pleasure-ground in excellent order, and well furnished with specimens of Lime, Beech, and other trees. The drive is broken up about its centre by a large Beech standing in the middle of a green mound, which has a pleasing and natural effect. Opposite the front door there is another green circle with a specimen tree in its centre, and from here there are good views into the park, the soil of which, judging from the appearance of the vegetation, must be of the best quality, and therefore a good locality for carrying on garden operations.

The grounds upon the east front are similar in many respects to those already mentioned, but are furnished with a different class of trees, and bounded by a long irregular border of flowering shrubs and hardy flowers. Of the latter there was, at the time of our visit, a good display of Lilies among the Rhododendrons, which had a charming effect. Rhododendrons seldom look better than when they are intermixed with Lilies, Campanulas, Foxgloves, or Dahlias, as from their natural habit, which is formal, they are improved by the addition of plants which break the formal surface. Indeed the beauty of Lilies, Gladioli, and such like, is never more conspicuous than when they are intermixed with the healthy green and glossy leaves of the Rhododendrons, so that what is absent in the case of one is present in the case of the other, and *vice versâ*. The dwarf hardy flowers at the front of the border are also of a choice description, and the Conifers upon the lawn consist of Abies Pinsapo, and others remarkable for symmetry, health, and vigour.

The conservatory and flower garden are upon the south side of the mansion. The former is rather an elaborate building—an oblong structure with a kind of curvilinear top above a span roof. The paths are laid of ornamental tiles of quiet colours, so that there is no clashing of shades between the material that forms the path and the colours of the flowers, as is often the case in ornamental structures. If you want to neutralise the effect of flowers, or kill them altogether as regards appearance, lay down a good breadth of small blue and white tiles in the centre of a conservatory, and the object will be accomplished most effectually. But here it is different. There are wide paths of a quiet tone of colour and large specimen Ferns and Palms in proportion to the height and width of the building. This is a matter that should be more studied in conservatory furnishing. Things ought to bear a relative proportion to one another—the conservatory to the mansion, the plants to the conservatory and the flower garden (when it is immediately in front of them) to both. What is called a good show of flowers is never so soft, so sweet to the eye, or so pleasing generally as the plant collection which consists of a fair proportion of drooping Fern fronds or Palm leaves, or leaves of other plants of a feathery graceful habit. In fine, the mass of a collection of plants should be composed of such as are of a naturally free and flowering character, as may be seen in this conservatory. The centre group consists of a tall specimen of Dicksonia antarctica, surrounded with a base of Woodwardia radicans, the wings upon either side having centres of Tree Ferns, Palms, and Camellias. The upright columns supporting the building are clothed with Heliotropes and other scented plants, and from the roof above hang long shoots of Tacsonias and other free-growing creepers. The back wall is covered with the white and rose-coloured Lapagerias, both of which are planted out and are growing freely; as are also other creepers, including that useful old plant, Habrothamnus elegans.

The flower garden is a square or parallelogram in grass, with a low terrace or flange all round it. It is simply but prettily laid out—worked from a circle in the centre, with oblong beds running parallel with the four sides of the garden. The luxuriance of the herbage at this place is remarkable; the velvet lawns, the abundant and changing foliage, the variety of the trees and shrubs, and the choice and healthy character of the flowers, the Clematis trained upon arches, the rich green Yew hedges, and the walks smooth and orderly kept, are all in harmony with each other.

Beyond the flower garden there is a rosery, a rock garden, a hardy fernery, and a collection of herbaceous plants, all of which are well selected and cultivated, and are interesting as well as showy, affording that variety which is so necessary and pleasing in a large garden. From here we will proceed to the north side of the walled-in garden, and notice the valuable collection of Orchids and other plants filling several ranges of houses, and among which will be found many examples reflecting high cultural skill and unwearied diligence and attention. The first house is filled for the most part with Odontoglossum crispum and O. vexillarium, including a specimen of the latter that won the Silver Cup at the Bath and West of England Show, held at Worcester in 1880. There are also specimens of Odontoglossum rubescens, Epidendrum vitellinum, and E. vitellinum majus, and Masdevallia triangularis and M. bella. The next house of the range is an Azalea-house, but now filled with Fuchsias, Begonias, and other summer flowering plants. And the third division is used as a cool Orchid-house, in which there are many good and costly specimens of Odontoglossum crispum (Alexandræ), with from three to four leading growths, O. grande, O. Pescatorei, and O. Rossi majus, with about fifteen leading growths; Oncidium macranthum, with six branches, bearing about twenty-four of its bright yellow flowers, having the lower petals bronze, and looking well trained horizontally among the leaves of other non-flowering species. Lycaste Skinneri is represented by a large specimen, with fifteen leading growths; while Mesospinidium vulcanicum makes a good basket-plant, having from four to six spikes of its lovely rose-coloured flowers thickly set upon the stem, forming a very pretty wreath of flowers. A specimen of Sophronites grandiflora is said to be the finest in the country, its bright scarlet flowers are too familiar to require description. It usually flowers in November. Nanodes Medusæ is in flower, but the blossoms can only be said to be curious or botanically interesting. Then follows a good stock of Masdevallias, consisting of M. Harryana, Davisii, peristeria, a rare variety with a curious throat; Shuttleworthii, and tovarensis, which is white, and flowers in winter.

Two span-roofed houses running east and west are filled with East Indian species, of which there is a good collection including Phalænopsis Schilleriana, amabilis, grandiflora, Lüddemanniana, and Brymeriana, Grammatophyllum speciosum, which is rare, and Vanda insignis and tricolor. These are planted in cylinder-shaped baskets, and are growing vigorously. A good specimen of Aërides quinquevulnerum from the Philippine Islands is in flower, and the pick of a great number of other remarkable plants consists of Saccolabium Blumei, Aërides Dayanum, A. crispum, Vanda Dennisoniana, Dendrobium heterocarpum, Phalænopsis violacea, large pieces of Dendrobium formosum giganteum, Aërides Fieldingii (the Fox-brush Aërides), Peristeria elata (the dove-plant), Dendrobium Falconeri, Oncidium Lanceanum, Dendrobium Wardianum, Epidendrum bicornutum, Cymbidium Lawrenceanum, C. Mastersii, C. Parishii and C. Stoneii, Dendrobium thyrsiflorum, Angræcum Ellisii, Dendrobium macrophyllum, D. Brymerianum, a very rare variety, and a large batch of well-grown Calanthes. The plant stove is a commodious, and like the rest, a substantial structure with a pit in the centre, and a front stage. The roof is covered with a remarkably free flowering specimen of Stephanotis floribunda, which produced over 300 trusses of bloom during the past season. The pot specimens consist of Ixoras, Crotons, Alocasia metallica, Pandanus Veitchii, Anthurium Scherzerianum, and a batch of Adiantums, comprising A. cardiochlæna, concinnum, and concinnum latum, Veitchii, tenerum, gracillimum, and others.

The Mexican house contains large and healthy specimens of Cattleya Dowiana, with petals of nankeen-yellow and striped labellum; Oncidium cheirophorum, Cymbidium Lowianum, Cœlogyne cristata, Pleione humilis and maculata, Odontoglossum citrosmum, and good blocks of Lælia autumnalis, and alba. Lælia grandis was producing its deep yellow flowers, with white labellum and dark stripes, and beside it there is a specimen of L. harpophylla and Cypripedium caudatum. In the Dendrobium-house the varieties are select, and there are also a few Cattleyas: the Dendrobes are D. Dalhousianum, thyrsiflorum, densiflorum Findlayanum, moschatum, speciosum, Jenkinsii; and the Cattleyas are represented by C. dolosa, Sanderiana and Thunia Marshalli with very strong healthy growths. The Cattleya-house contains the best Orchid specimens on the place, the bulk of the plants being in 12-inch pots. Cattleya Mossiæ has ten leading growths. Lælia purpurata and L. superbiens are healthy in leaf, and are among the finest specimens in the house, good as a great many others are. So many of the specimens are, however, so nearly equal in size, and so equally balanced in point of merit, that a few names will suffice to illustrate the variety and quality of the collection. These are Cymbidium eburneum, Cattleya Skinneri, C. gigas, C. Sanderiana, C. labiata, C. Warneri (very fine), C. Trianæ, Vanda tricolor, V. suavis; Epidendrum prismatocarpum, in rude health; Vanda cœrulea, a large plant; and Oncidium Marshallianum. The end of July is rather a dull time to make notes upon Orchids, as so few of the species flower at that season, but the general health of the collection is proof enough that in the flowering season a visit to Ilsington would be doubly interesting. The greenhouse is stocked with healthy plants of Pelargoniums, Carnations, Fuchsias, and pot Roses, and the pits are crammed with Ixoras, Allamandas, and Gardenias, coming on for succession, as well as with hundreds of winter flowering plants; all of which, as well as the Orchids, are under the care of Mr. Powell, a very successful plant grower.

But fruits and vegetables are indispensable products in a private garden, and these also are grown in first-rate style within the walled-in garden along with hardy fruits and vegetables. The range of fruit-houses is over 450 feet long, and covers the south wall of the garden. The range is in eight compartments or divisions. The first is a late Peach-house, 72 feet long, with transverse trellising at every 4 feet, covered with healthy fruitful trees; as also the back wall where the trees are if anything more fruitful and rather more luxuriant as regards leafage. The second division is a late vinery, 36 feet long, in which Black Alicante, Lady Downe's, Gros Colmar, and Mrs. Pince's Black Muscat Grapes are grown. The Vines are bearing very good crops. No. 3 is a Muscat-house; the crop in this house is a heavy one. Standing at one end the sight is very pretty, the clusters of Grapes being so even as regards size, and so regularly disposed, as to elicit exclamations of praise from all fruit cultivators who have seen the crop. The fourth division is a second early vinery in which Black Hamburgh and Buckland Sweetwater Grapes are grown. The bunches of the latter are from 3—5 lb. in weight, and the berries are large for the size of the bunches, well coloured and flavoured. These Vines are partly grown upon the extension system, as many as five rods being taken from each cane. The Vines in this house are seventeen years old. The fifth compartment is the early Hamburgh-house, in which there are three Vines planted, and there are six rods taken from each Vine. The Grapes have been cut from this house some time ago, but the health and cleanliness of the foliage, and the plump fruit-buds are excellent symptoms of their satisfactory condition and a promising sign of continued success.

The sixth division is planted with Peaches and Plums—the Peach trees upon the back trellis and the Plums at the front. The Plums are Coe's Golden Drop, Green Gage, Washington and Kirk's Seedling, and the trees are fruiting as freely as any of the dwarf or small fruited Tomatos, and exactly in the same fashion in clusters. The Peaches upon the back wall are Stump the World—an American variety; Lord Palmerston, a free grower and bearer; and Dr. Hogg. The seventh division is a lower house, and also a Peach-house, in which early and late varieties are grown. Stump the World is again prominent here, the fruit comes to a point like Late Admirable, but is better coloured. The other kinds are Noblesse, Walburton Admirable, Pine-apple Nectarine, American Apricot—an American variety with Apricot flesh, but very little flavour; in a word, a good-looking but very indifferent Peach, and not to be compared with our standard varieties. Royal George and Royal Charlotte Peaches are also grown, besides several kinds of Nectarines. The last division of the fruit range is the early Peach-house, in which nothing remains but well cared-for trees, clean foliage, and triple buds, which are fast swelling up, and look in the pink of order for another season. Strawberries are of course forced in quantities in these houses during the spring, as well as many other things of minor importance. The means and facilities for fruit-growing are exceptionally good at Ilsington, and the crops are equally good throughout, without one blank or exception over the entire range. The Mushroom-house, sheds, and offices, are orderly kept, sweet and clean; and in a large fruit and kitchen-garden the crops of all kinds are abundant, as they have invariably been for very many years under the management of Mr. Saltford, to whose ripe experience and judgment the above results are mainly due year after year.

RARE TREES AND SHRUBS
NEAR EDINBURGH.

Various interesting varieties of trees and shrubs are grown in Messrs. Drummond's nursery near Edinburgh. Some kinds, grown as standards, have an excellent effect, such as the white Persian Lilac, Cytisus purpureus albus, some Genistas, miniature Box trees (especially a weeping variety), double red, pink, and white Hawthorns, and a good form of single red; also Cotoneasters on stems several feet high. This shrub naturally takes a weeping form, some branches in one or two specimens reaching the ground. The weeping forms of Larch, Turkey Oak, and cut-leaved Birch, are peculiarly graceful. The Camperdown form of the Weeping Elm is better than the ordinary

weeping form, its branches being less horizontal. Ulmus Berardi is a singular Elm, with small serrated lanceolate leaves, hardly 1½ inch long, somewhat resembling those of Dryas octopetala. Equally singular and more effective is U. campestris aurea, the leaves of which are but little larger, but still more deeply cut, and of a bright gold colour. One of the best specimens of golden foliage is the golden Oak, Quercus concordia, which is, however, of slow growth. There are also golden forms of Laburnum, Alder, and Elder, and prettily-grown pyramids of golden Yew. The white variegated form of Cornus mascula is a beautiful shrub grown as a pyramid, in foliage resembling the white variegated Weigela. A golden variegated Spanish Chestnut is worth growing, also a variegated Turkey Oak, and variegated Sycamore, Leopoldi, which is better than the common variegated form of it.

In contrast with these bright colours there are various specimens having good dark foliage, including, amongst others, the purple Birch, and Hazel (as dark as a Copper Beech), a red-leaved common Barberry, and a red-leaved Beech, the leaves of which are smaller than those of ordinary dark-leaved Beeches; and Quercus rubra, which would have an excellent effect planted near Q. concordia. Another good kind of Oak is Q. pannonica, with deeply-lobed green leaves, some 10 inches long, and a Fern-leaved form. The Fern-leaved Walnut, Alder, and the leaves of which are cut into narrow segments, and Beech with long lanceolate leaves about ¼ inch wide, are very good, differing distinctly, as they all do, from the types. The leaves of this Beech last on in winter like those of the ordinary Beech, which it is singularly unlike in appearance. The Purple Sycamore has only the under-side of the leaves tinted purple, but the effect in wind is good, as this purple shade seems to sweep over the tree. Sambucus contorta is a strange, rather ugly, form of Elder. Aralia japonica, a perfectly hardy deciduous shrub, has compound leaves so large as to be like small branches, over 2 feet wide by 2½ feet long.

The variety of bright and delicate colours, and the masses of bloom of the Ghent Azaleas in May, showed well the value of these flowering shrubs for even the colder parts of the country. A bed of Menziesia empetriformis was in blossom about the same time. The beauty of this very dwarf pink shrub is best seen when grown in a mass. The yellow-berried Mountain Ash is grown here, and a deciduous [Cypress has small Fern-like foliage spread thinly over the tree, so as to show every twig, the effect of which is very light and pretty. Another shrub with thinly scattered foliage, though by no means like this graceful Cypress, is Gingkgo biloba the leaves of which resemble those of a Maidenhair Fern. There are some well-grown specimens of this curious tree, 4 to 5 feet high, a good size for transplanting. The very reverse of these thin-foliage plants is to be found in some curiously compact dwarf Conifers. Picea excelsa elegans, with dark green foliage, nearly twenty years old, 1 foot high and 1½ foot through; and P. e. clanbrasiliana, with fine dark green foliage, about the same age, 1½ foot high and 2½ feet through, are both as dense as they can well be; P. e. pigmæa, equally dense and the same age, is about 1½ foot high and the same across; and a glaucous form of Cupressus Lawsoniana compacta, seventeen years old, is about 3 feet high and 4 feet through.

Amongst other Conifers Abies Pinsapo has very fine foliage and habit. Picea Alcoquiana has yellow-green foliage, and good spreading dwarf habit. P. Gregorii is one of the compact and very dwarf kinds. P. polita has very stiff spine-like leaves. P. Engelmanni glauca is better than the type. A kind of Picea with foliage of drooping habit is pretty, grown as a pyramid. Juniperus recurva is also very graceful. Retinospora leptoclada has foliage as like that of a Lycopod as is also that of R. lycopodioides; the latter having a prostrate habit. Thuya Elwangeri is of compact habit and free growth; T. orientalis aurea, round and compact; T. orientalis elegantissima, of upright growth; T. occidentalis compacta, Cupressus nutkaensis variegata, C. Lawsoniana aurea variegata, C. Lawsoniana erecta viridis, Retinospora obtusa variegata and the beautiful little R. plumosa aurea are all well worth growing. It is said by some that the Chinese Arbor-vitæ (Biota orientalis) thrives best on a light sandy or gravelly subsoil, and the American Arbor-vitæ (Biota occidentalis) on a heavy subsoil.
C. M. Owen.

FLOWERS IN SEASON.

At Oakwood, Wisley, the most striking plants now in flower are Hydrangea paniculata, which is one mass of bloom; Chrysanthemum maximum, a clump 12 feet by 12 feet: this plant is far more beautiful when allowed to tumble about instead of being tied; Senecio pulcher, 3 feet high, with forty-three flowers, fully out. A small hybrid Campanula named G. F. Wilson by Mr. Anderson-Henry two years ago, after my father, of which C. Pulla is one of the parents, has been much admired; Nymphæa odorata delicata, in the pond, with its pale pink flowers, shows well against the white form. *Scott B. Wilson.*

Rubus phœnicolasius. — In the winter garden at Kew this very handsome Japanese Bramble is bearing a good crop of deep bright scarlet fruits. It attains a height of about 15 feet, the short fruiting spurs being given off from the rather stout stems nearly from the ground to their summits. The rather papery leaves are large, made up of three leaflets, green above, almost snowy-white beneath, the young stems and leaf-stalks being thickly clothed with slender prickles and long red gland-tipped hairs.

Campanula turbinata Dicksoni. — One of the best of the dwarf white varieties now in flower in the rockery at Chiswick, where broad patches of it are a glowing mass of white flowers, which contrast well with C. rotundifolia, which grows about the same height, and both of which are useful and pleasing subjects for the base of a rockery.

Linum monogynum. — Those people who grow flowers out of a pure love for them can hardly give their attention to any plants that are of more chaste habit, or whose flowers are more delicate or pleasing to look at, than the Linums. The variety here noticed grows about a foot in height, bears pure white flowers, and looks well by itself or disposed alternately with one of the scarlet shades. Some of the latter make a capital groundwork for carpet-beds.

Fuchsia procumbens. — This little beauty does best in a warm situation in the rockery, and bears little yellow bells not unlike miniature shrimps, which are, however, partially hidden by the foliage. The best plant of this we have ever seen (minus the flowers) was grown in a pot as a window plant in a gardener's cottage in Hampshire.

Salpiglossis sinuata. — We lately saw a whole bed of these beautiful flowers at Chiswick, and could not help admiring the quaint markings of their blossoms. The thought occurred to us at the time that such a bed of flowers would be a welcome sight to many proprietors of large gardens in the country who must either be satisfied with a show of bedding plants or a host of flowerless shrubs during the present month. We should grow these flowers in the American or shrubbery garden, where they would be quite in character with the natural growths of the trees and shrubs.

Erica vulgaris alba minor.—This is one of the sweetest of white-flowered hardy Heaths for rockwork or edgings of any kind where hardy plants are employed. It is such a dwarf compact grower it makes a dense carpet of white between the rocks, and if planted in contiguity to a purple-flowered variety of similar habit the effect is most pleasing. There are so many hardy flowers of doubtful character for cutting purposes in hot weather that people who are in quest of flowers that will stand well in a cut state should certainly add this little gem to their collection, whether it be large or small.

Œnothera speciosa. — That few gardeners are aware of the beauty and usefulness of this lovely family of plants is proved by their absence from the great bulk of our very best gardens. The variety in question is one of the best of the family, and grows from 12—15 inches high, bears large pure white flowers, and makes a beautiful border or rock plant. If you scour the whole country over, the only two varieties that you will find here and there in anything like quantity are Œ. macrocarpa and taraxacifolium—by the way the latter variety has the curious habit of changing the colour of its flowers from white to lilac at a certain age, and at that period it looks very interesting. Œ. macrocarpa makes the best bedder of the yellows; it is a dwarf grower, and in the evening its large pale yellow or lemon-coloured blossoms are very beautiful. But for purity of colour the variety which forms the subject of this notice must be awarded the palm above all the rest.

Hypericum balearicum.—This elegant variety is attractive enough of itself to win admirers wherever there is a spark of love for plants that are chaste in habit and that bear golden-yellow blossoms of striking form, and still more striking colour. But a well-known cultivator has hit upon a happy plan of showing off this little plant different from his neighbours. It is planted out in a carpet of the yellow Creeping Jenny (Lysimachia nummularia aurea), in which position it looks all over a little regal beauty, and quite worthy of the extra homage paid to it.

Gaillardia hybrida splendens.—This charming variety is one of the prettiest of garden flowers. The petals are orange, inclining to purple at the base, with a rosy-crimson disc, which renders the flowers unusually bright and attractive.

Paronychia serpyllifolia. — A fast growing creeping plant, and one that is likely to supersede the little Herniaria glabra with carpet bedders, at least with those who are forced by circumstances to grow those plants that cover the ground quickest in the shortest space of time. It is different in character either from the well-known Mentha gibraltaricum or the Herniaria, inasmuch as its long creeping shoots and tiny leaves partake more of the nature of the common Creeping Jenny, but are not one quarter the size. Mr. Barron has it at Chiswick, and has formed a very high opinion of it for carpet bedding.

Saponaria officinale. — How beautiful this plant looks in a rockery growing among dwarf plants, having various coloured leaves and flowers. It grows about 18 inches in height, and its flowers of pink and white are of the most delicate shades. What spoils rockwork a good deal is, that the stones are often larger than the plants; but by using a fair proportion of plants of moderate height this nakedness is avoided, and the general effect is vastly enhanced.

Hypericum oblongifolium is perhaps the handsomest of all the outdoor shrubs flowering at the present time. It deserves to be called hardy, as it will withstand an ordinary English winter in the open shrubbery, and in the South, at any rate, comes freely from the ground even after such severe winters as those of 1879-80 and 1880-1881. It is an evergreen with large blossoms, the concave petals of which are of considerable substance, and of a rich, almost golden-yellow, colour. It is a native of the Himalayas and of Northern India, &c., where it is found at elevations of from 6000 to 12,000 feet. William Lobb discovered it on hills in Assam, and by him it was sent to the nursery of Messrs. Veitch.

MILTON ABBEY,

The seat of C. Hambro, Esq. (see fig. 50, p. 273), is situated eleven miles north-east of Dorchester, and seven miles south-west of the town of Blandford—the nearest railway station to Milton Abbey—whither a narrow, winding, and up-hill road for the most part leads. On the way are passed many interesting spots, amongst which may be mentioned Langton House, the seat of Squire Farquharson, bosomed among the trees, in the rear of Blandford, and on the right and left the beautiful mansions and parks of Lord Portman and Sir D. H. S. Marriot; thence along "Fair Mile," we come upon the pretty village of Stickland, with its church, and Houghton homestead ensconced in a deep T-shaped valley, which, when viewed from the heights of Houghton Down, adds not a little to the beauty of the landscape.

From Houghton Down splendid views, extending

from west to east, are commanded of the Isle of Purbeck (a place celebrated for its marble), the "Old Harry Rocks," and the "Needles," together with distant peeps of the Isle of Wight ; and the white sails of the numerous crafts flowing in the breeze as they ply hither and thither on the busy waters of the Solent, make as pretty a landscape as any artist need wish to paint.

Proceeding eastward, and leaving the Blandford entrance to the Abbey on the right, with a pair of Norman lodges—one on either side the lofty gates—we suddenly come upon Milton Abbas, probably the most picturesque village in England, and which is situated in a defile scooped out by Nature's hand, and extending nearly half a mile from base to summit. The village consists of two rows of the prettiest cottages imaginable, with thatched roofs and quaint lattices, lining each side of a well kept road. Milton Abbas, together with the fine old church and almshouse standing in the centre opposite one another, perpetuates the memory of Joseph Damer, Baron Milton, and first Earl of Dorchester, by whom it was built in 1792.

Proceeding westward from the village we come to the Abbey, which is situate in a deep shady valley, or rather where three valleys meet, surrounded by hills on every side, adorned with woods to their top. Here the woods sweep wildly round, pursuing the course of the valleys.

According to the Domesday Book, Milton Abbey was built by King Athelstan ; but the present mansion was erected by Sir William Chambers for the first Earl of Dorchester, who at the same time swept away the market town of Milton, that he might turn its site into pleasure-grounds, and planted the evicted inhabitants in his newly-erected village of Milton Abbas. It is a stately quadrangular building, with a central court, and embodies the old monastic refectory, a grand antique hall of noble proportions, whose walls are enriched with the escutcheons of the various patrons of the Abbey, and whose roof of Irish Oak is venerable with age. The piers on the south front of the mansion are covered with Ivy (Hedera helix), and on the east wall are flourishing plants of Magnolia grandiflora, Stauntonia latifolia, Honeysuckle, and Chimonanthus grandiflora. At the east end of the house, and communicating with the interior of it, is a nice conservatory, but not shown in the illustration (see p. 273), with fine specimens of Phormium tenax on either side the steps ascending thereto, and wherein, with suitable and well grown plants on either side of it, a fine marble pedestal supporting the recumbent figure of a lady in the same chaste stone occupies a central position. The roof, walls, and pillars are draped with the foliage and flowers of those very effective and freely flowering climbers, Tacsonias Van Volxemi and exoniensis, and Abutilon Boule de Neige. The Abbey church, now used as a family chapel, stands 3 or 4 yards east of the mansion, and projects about the same distance to the south out of the line of building.

At the north end of the mansion and high up among the trees, stands conspicuously the ruins of St. Catherine's Chapel, and in the opposite direction and similarly situated, is an object of another description—places whose histories antedate that of the Abbey, and are, doubtless, very interesting.

In the grounds, which extend from west to east of the mansion—first with a gentle declivity, thence at the bottom of the lawn it rises precipitately, until the tree-tops seem to reach cloudland—are a few nicely designed and prettily arranged carpet beds, together with a few circular mixed beds—one with Begonias (tuberous-rooted and of various shades of colour) and a ground-work of silver Sedums, being very effective, especially when the Sedum is covered with large drops of rain, which sparkle in the sunshine like diamonds. Not only is this arrangement ornamental but also useful, inasmuch as in the event of heavy rains the carpet of Sedum prevents the latter from washing the soil on to the leaves and flowers of the Begonias. A short distance away is the prettily executed mosaic garden, into which, with very good effect, a few succulent plants have been introduced, and in the rear of this the ground rises rather sharply, and the slope, as far as the bridge which affords direct communication between the grounds and St. Catherine's chapel, is effectively planted with evergreen and variegated-leaved shrubs. The sides and ends are planted with a band of Box, then an inner band of Aucuba japonica, and the middle—an oblong piece—with Mahonia aquifolia. This arrangement of foliage, which presents an even surface, together with the glistening spar, &c., of which the mosaic garden is made, have a telling effect when viewed from the walk at the top of the ornamental bank, on either side of which are luxuriating patches of herbaceous plants of different habits of growth and shades of colour.

From this point the park presents the finest features of extensive lawn, smooth and verdant, noble eminences, and magnificent masses of shadow. Its drives extend ten miles in length, and its park-wall five miles, and in that circumscribed space there is an almost endless succession of enchanting views. Before quitting the grounds I would remark that they contain many fine clumps and specimens of shrubs and trees ; amongst the former being Aucuba japonica and Portugal Laurels, and of the latter, Liriodendron tulipifera (the Tulip tree), the stem of which measures 14 feet in circumference at 3 feet from the ground.

The kitchen gardens, in which the forcing and plant houses, pits, &c., are situate, are in two divisions, covering an area of 4 acres, and, although lying in a valley, are said to be on a level with Bulbarrow (2½ miles north-west), the highest point in Dorset, and 927 feet above the sea. The ground, resting upon a chalky subsoil, is stiff, and slopes gently from the south to Mr. Goodall's cosy cottage in the south-east corner of the north garden. Each garden is divided and subdivided by walks, and all are well stocked with vegetables of the different kinds usually in demand in large establishments. Quantities of Violets (chiefly Marie Louise), Salvia Betheli, Richardia æthiopica, &c., are also planted out in favourable situations in this department to be potted up in September for the winter and spring embellishment of the plant-houses and mansion.

Hardy Fruits.—In addition to those grown in the kitchen gardens there is a good-sized orchard outside, and north of the latter. Apples are a light crop. Peaches, Nectarines, and Plums on the walls, average crops ; of Pears, on standards, there are fairly good crops, and the same may be said of bush fruit and Strawberries, Vicomtesse Héricart de Thury being especially good in an east border in front of the gardener's house.

Fruit and Plant Houses.—Of these there are some fourteen or fifteen, together with sundry good hot-water pits. They include five vineries, Peach and Fig houses, Melon and Cucumber houses, Rose-house, and a few good span-roofed plant and furnishing houses, and are all located in the kitchen gardens. The principal block of houses is in front of Mr. Goodall's house, and consists of two fine spans running, I think, north and south, with smaller spans and pits running east and west between them. The Grapes in the new span, one of the two above referred to, are good in berry and bunch, and promise to finish well. Owing to the sharp angle of the house, about 45°, one might expect to find the largest bunches at the top of the rods : such, however, is not the case, but the reverse, as the largest bunches are situate on the lower part of the rods. The first division (south end) is planted with Muscats ; the second with Black Hamburghs, Foster's Seedling, Buckland Sweetwater, and Madresfield Court ; and the third with Trebbiano, Lady Downe's, Gros Colmar, and Black Alicante : altogether a good example of Grape culture. Peaches, Melons, and Cucumbers are also creditably grown in these fine gardens.

Plant-houses.—In the large plant stove are a nice lot of plants ; especially noticeable being the Crotons and Dracænas (including D. Goldieana), finely coloured, a fine plant of Passiflora quadrangularis growing in a large pot and plunged to the rim in the tan bed in the centre of the house, trained to wires under the apex and carrying a fine crop of fruit ; the latter, about the size of large Cocoa-nuts, is deserving of special mention, as also are the pans of Ferns suspended from the roof, which make a nice contrasts to the flowering shoots of Allmanda Hendersoni, Jasminum Sambac flore-pleno, Gloriosa superba, &c., which, depending from the roof in graceful streamers, together with the well-flowered batch of Eucharis amazonica, Gloxinias, Orchids, Begonias, &c., on the stages underneath, make a pretty display, and, like the well-flowered plants of Stephanotis floribunda, the Gardenias, Camellias, Oranges, Pelargoniums, &c., which embellish the roof and stages of the other houses and pits, bear ample evidence of skilful treatment ; and amongst the above should be included a fine plant of Maréchal Niel Rose, which nearly covers the roof of the furnishing-house.

The Frame Ground, in which may be included sheds, &c., is situate on the park side of the gardens, but hidden from view of the former by the branches of Beech and other spreading trees as well as by a fine bank of Rhododendrons and other shrubs, which affords capital shelter to the nurslings in this department at hardening-off time.

Herbaceous Plants.—These are well represented at Milton, in wide borders on either side the principal walks in the kitchen garden, and parallel with these borders are well kept Hornbeam hedges, which not only afford shelter to the plants, but also make a capital background, and by partly obstructing the view of the vegetable quarters confines it to that of the herbaceous flowers, which are in almost every form and shade of colour imaginable, and in the arrangement of which neither colour nor habit of growth is neglected, and the whole, including a row of standard fruit trees and Roses in the background, and between which and the hedges above referred to there is an alley, when contrasted with the heightened and diversified colour of the stems and leaves of Brazilian Beet, which are planted here and there amongst the herbaceous plants, completes not the least interesting feature in these beautiful and well kept gardens, a stroll through which is enjoyable to the visitor, and affords ample evidence of able and judicious management on the part of Mr. W. Goodall, Mr. Hambro's gardener-in-chief. *Tourist.*

THE BEDFONT SEED GROUNDS.

A novel feature at this place just now is the comparatively free way in which coloured hardy Primroses are blooming. It is, indeed, an unwonted sight in August to find hundreds of strong plants of the beautiful spring flowers carrying bloom, as, indeed, they have been doing for the past two months, and this not in the cool shade but in the open, where the fierce light of the sun plays upon the plants to the fullest extent. Many of last year's seedling fancy Polyanthuses are also blooming, the flowers singularly rich in colour, though shorter in stem than is the case with spring-produced flowers.

In a frame are many hundreds of seedling plants, the produce of seed saved in June last, now nearly strong enough to transplant into the open ground. Nearly all of these will bloom freely next spring. Various bedding Tropæolums are just now in good form, notably a line of a creeping variety named Brilliant, that has large flowers of the finest form and of a fiery crimson hue, growing out of semi-black foliage. This, creeping beneath a row of fruit trees, and as seen from the entrance, furnishes most brilliant colouring. It should as thus grown make a grand plant for bedding. Of the compactum or dwarf forms the rich orange-scarlet Bedfont Rival is singularly striking and effective. Plants raised from seed in the spring and dibbled out into rows now present masses of leafage and flower from 18 to 20 inches over, and will continue so to bloom without intermission till the close of the season. Another very telling kind is Octoroon, quite a counterpart of Bedfont Rival, but the flowers are of a bright maroon hue. In another part of the ground is seen the bright yellow compactum aureum, and elsewhere the crimson-scarlet Lustrous, somewhat scarce this season.

Amongst Lobelias grown for seed the most striking is the robust compacta, Heckfield Favourite, of which a large quantity is in hand. This variety produces heads of about 9 inches in diameter, literally dense balls of flower, and is one of the very best kinds known for bedding purposes. All the stock is from propagated plants, and being got out early will doubtless give a good quantity of seed. Another striking kind is speciosa superba, a robust grower, the flowers large, and of an intense yet bright blue. From this has been obtained a very distinctive purple or claret

flowered kind, that will doubtless presently make a useful novelty. Marigolds are here grown, not in great bulk, but with special reference to high quality. The Africans are not limited to a couple of shades of yellow as of old, but include some half-dozen kinds allied to superb double flowers. Tall growing French Marigolds are quite absent, as of this section only the dwarf compact forms are grown. These are singularly floriferous and effective, the plants when in bloom rarely exceeding 12 inches in height, and carrying a mass of the most perfect double flowers of good size and varied in colours and markings, the beautiful striped forms predominating. Not a plant that produces single or inferior double flowers is allowed to remain. A large bed of Antirrhinums now fast seeding yet carry enough of bloom to show how varied and beautiful are the striped forms of which it is composed.

A bed of the beautiful Mauve Beauty Stock shows 80 per cent. of double-flowered plants, though grown from the same stock for the past fifteen years, and always in the open ground. Wallflower seed is now being harvested, of which four kinds are grown—the Blood Red, Tall Green, Bedfont Yellow, a dwarfer, and very fine selection from the Golden, and the Belvoir Yellow. From this latter a gain has this season been made—a selection of exceedingly dwarf even type. A quantity of Silham's pretty moss-like Golden Feather is being grown for seed stock. This comes very true, and should make the most popular bedding kind. From this still yet another selection is being made, just two or three plants showing a fine elegant laciniated orm that is very distinct and pleasing. A very fine and variously-coloured strain of Sweet William is just being got in, but many plants blooming late tell of its quality—the mottled or flaked flowers especially being very pleasing. Bedding Violas and Pansies are blooming unusually free this season. Potatos, too—always an important product at Bedfont—are now being got up. Of these several new kinds will be offered this season, and a fine lot of seedlings of the second year's growth have been put by for yet another and wider test next year.

CORDYLINE AUSTRALIS.

I send you a photograph of a branched specimen of Cordyline australis, which was raised from seed sent by Mr. J. D. Enys from New Zealand in the year 1861. It was killed to the ground in the winter of 1866-67, and subsequently threw up the three stems shown in the photograph. The other branches may be also due to the pinching frost or snow, which caused the heart of the shoots to rot; or is there a branching variety? This question has already been raised in your columns, I think. The height of the plant figured is 17 feet. *H. Mills, Enys, Penryn, Cornwall.*



Fig. 49.—Cordyline australis in the gardens at Enys, Penryn.

Azalea Lady Poltimore.—This is one of the earliest of white Azaleas, and with by a little care and skill may be brought into flower during the autumn. It is a singular fact that in the North of England, where early flowering kinds of Azaleas are, for obvious reasons, much sought after, one seldom hears the above variety even mentioned. To the early forcing man such a plant is as indispensable as it is useful in colour.

Notices of Books.

Sylloge Fungorum Omnium, &c. P. A. Saccardo. Pyrenomycetes: vol. i. Patavii: 1882. 8vo, pp. 766.

This is the first instalment of a work which the distinguished author is carrying on with almost incredible industry, and which ought to be in the hands of every student of mycology. It would have been impossible to get together the necessary matter without the help of the principal authorities in a science which has been so widely extended, especially in this country, and it is scarcely necessary to state that this has been accorded with the greatest cheerfulness. The great difficulty is in assigning the proper position of each species in the system, and in the case of the Hymenomycetes this was found so difficult that the task, for which extensive materials were collected, with the help of abundant authentic specimens, was abandoned by the writer of this notice in despair. Unfortunately, too, many species have been proposed, often from single specimens without any correct apprehension as to their affinities, and we therefore hail with the greatest pleasure the commencement of this work, and we shall be very greatly disappointed, in the interest of science generally, as well as the comfort of individual students, if it does not meet with the encouragement it deserves. So large a volume, of course, cannot be published without considerable expense; but we are sure that the purchasers will be amply repaid, for they will have matter collected from a thousand volumes and memoirs, to many of which they could scarcely have access even in our public libraries. A complete index of all the known Pyrenomycetes will be given at the end of the second volume, now in the press. It may be added that Signor Saccardo has most fully acknowledged the assistance of his friends. The second volume will appear before June, 1883. *M. J. B.*

Micro-Fungi: *When and Where to Find Them.* By Thomas Brittain, President of the Manchester Microscopical Society. Manchester: Abel Heywood.

While so many much better books on the same subject are in existence we cannot commend this one, the only novel feature about which is the arrangement under the months of the year. The indication of localities may also prove useful. Before he ventures into print again we would suggest that the author submit his proof sheets to some competent botanist. We might go further and suggest that he made himself more familiar with the structure and life-history of the plants he professes to enumerate. The book contains an astonishing quantity of misprints.

Annual Report of the Board of Requests of the Smithsonian Institution for 1880.

Among the principal functions of this Institution is a system of international exchanges, consisting substantially in offering to correspondents a safe and gratuitous channel of intercommunication, each being responsible to the other for the amount and character or value of the packages interchanged, the Institution assuming between them only the relation or function of carrier. The books, &c., are sent as donations or exchanges only, books for purchase or sale not being received. The scope of the Institution, however, is enormous, original researches are fostered, explorations organised, collections accumulated and distributed, while in addition it is a great publishing society, issuing original reports, memoirs, and books on various branches of knowledge. As if this were not enough, the National Museum at Washington, now approaching completion, is under its control. This Museum is not intended for the display of objects of natural history only, but is primarily intended to include illustrations of the applications of objects belonging to the animal, vegetable, and mineral kingdoms, and the requirements or luxuries of man. So far as regards the vegetable kingdom, the Department of Agriculture has the special charge of the investigations relating to it, and this may be the reason for the account of the "Progress of Botany in 1879" which we find in the volume before us—a mere enumeration of some of the more important botanical memoirs published during the year. It might not be inconsistent with the international objects of the Institution if it were to undertake the preparation of a year-book of botany exclusively confined to an epitome of the botanical papers published in Germany, France, and Italy. The number of German memoirs is now so enormous that few American or English botanists can hope to keep "touch" with the literature of their science as expounded in Germany, while for those unfamiliar with the German language the matter is an impossibility. As French is so much more widely known, the same necessity does not exist in that case, or at least not to the same degree.

Orchid Notes and Gleanings.

WORK IN THE HOUSES. — After this date there will be a regular succession of plants that will be completing their season's growth, and this will necessitate more caution in watering. Many Orchids are easily excited into fresh growth just at the time they are completing their current season's growth; and this state is most frequently brought about by keeping them too moist at the root. An over-moist atmosphere has a tendency to bring about the same results as over-watering at this particular stage; so that there should be a very gradual reduction of moisture at the root and in the atmosphere to ensure the plants going to rest. Among the terrestrial Orchids the Phaiuses will now nearly have done growing, and will bear having the temperature considerably reduced, but they must be kept moderately supplied with water at the roots for some time longer. Another interesting plant belonging to this class is Peristeria elata. It is a shy flowering plant when grown in too much heat and moisture. The warm end of the Cattleya-house, or an airy stove, will suit it well. In most cases this plant will now have finished flowering, and when it shows signs of renewed growth it should be potted. The best material to grow it in is well-rotted turfy loam two parts, to one of fibrous peat, with the addition of a little well-rotted cow-dung and sand. It likes a liberal root-run, so that there is not much danger in over-potting it, provided the pot be well drained, and the soil is open and porous. Mesospinidiums now going out of flower should be carefully cleaned, and a top-dressing of sphagnum and peat may be given them. These do not require very much root-run, and unless they have quite outgrown the pots they are in they need not be repotted. The forwardest of the plants of Odontoglossum vexillarium will by this time be about in proper condition for receiving a shift. This should be done when the young growths are from 3 to 4 inches long. Use nothing for these but the best sphagnum moss and fibry peat in about equal proportions, with the addition of a liberal allowance of charcoal and potsherds broken up moderately fine. Give the plants small shifts, and drain the pots liberally, filling them quite three parts full of crocks. Keep the plants slightly elevated above the rim of the pot, press the material moderately firm about the roots, and see that the plants do not suffer for the want of water after the operation. The cool-house will suit them after being potted better than a house that may be warmer but not so moist. The sweet-scented Oncidium ornithorhyncum will now be showing freely, and where there is a good stock of it the plants should be grouped together, as in this way they are much more effective than when stood singly through the house. Oncidium incurvum, now in flower, is a useful plant for cutting from, as the side sprays and branches on the spikes are just the thing for giving the finishing touch to small arrangements of flowers. It is a free grower, and may be potted soon after it has finished flowering. It grows freely at the cool end of the Cattleya-house. Plants of Vanda cœrulea that will now be showing for flower should be placed well up to the light to give colour to the flowers, and keep the plants well supplied with moisture while they are developing their spikes. During changeable weather, and on cold nights, the temperature must be fully maintained in the East Indian house, otherwise the plants will be liable to receive a check now they are in full growth. *J. Roberts, Gunnersbury Park Gardens.*

SEASONABLE ORCHIDS. — In Messrs. H. Low & Co.'s nurseries at Clapton a number of good forms of Cattleya Leopoldi are now in flower. The plants, though recently imported, have made strong growth, and have produced as many as a dozen flowers on a spike. Amongst some flowering plants of Cypripedium Lawrencianum is one with two flowers on a stem, the flower that was open presenting quite a novel feature. It has two dorsal sepals, one in the usual position, and another, exactly like it, which has been formed in an inverted position under the slipper, or pouch. In the nurseries of Mr. B. S. Williams, of Upper Holloway, there is still a display of flowering Orchids. The Vandas are again coming into flower, not in the form of isolated specimens, but almost as well as they flowered early in the year. Galeandra Devoniana, in the form of several neat specimens, is producing beautifully marked flowers on the top of slender stems; but the gem of the whole collection at present is Cattleya Eldorado virginalis. It is a charming form of the species; the flowers are 6 inches across, the sepals and petals pure white the labellum being yellow.

NEW POLYNESIAN ORCHIDS. — Baron Müeller describes three new Orchids in the *Southern Science Record*. They are Bulbophyllum sciadanthum, Dendrobium Johnsoniæ, and D. fililobum.

The Flower Garden.

PROPAGATING-HOUSES AND PITS. —This is a very important department just now, and will require great attention. I have before remarked on the improvement in the growth of bedding-plants generally, the regulation of which and keeping them within proper bounds will afford a good supply of cuttings, and if this is done at intervals the beds need not be disfigured. From this time forward Pelargoniums must not be trusted in the open borders. Stout boxes 18 inches square and 4 inches deep, well drained, filled mostly with sandy leaf-mould, and the cuttings not too thickly inserted, will now strike and root well, with simply a covering of glass in a pit, and being got in early will fill the boxes with roots and stand the best of all chances to wear through the winter. As soon as those inserted in the open borders are well rooted, they should be potted singly in small pots at once; but until well rooted, water must be sparingly applied to the whole of the above, or many will fog off. Remember that if the roots are kept in a dry state through the dull weather of winter they will bear more cold and rough usage than when kept too moist.

Store pots of plants which will be required to furnish a good supply of cuttings for spring work cannot now be got in too soon, such as Verbenas, Salvias, so useful for the mixed borders; Ageratums, Lobelias, required to be kept true from cuttings; Heliotropes, Coleus, Iresines, and many others, all of which when well rooted pass through the winter in a much more satisfactory manner than when inserted late; in fact, in the latter case, when put to work late artificial heat becomes imperative, and this always induces a delicacy of constitution which renders it difficult to keep them through the winter: they may be kept under glass and shaded for a time, but do not require heat at present.

Mesembryanthemum cordifolium variegatum, being usually required on a large scale, its propagation should be commenced at once; we always find that we are best able to get up a good supply in the spring when we are able to secure an abundant strike in the autumn. We use the boxes above described for this purpose and find them both effective and economical, as they save space. The same observations with regard to taking time by the forelock will apply to Alternantheras, as these will now furnish a good supply of cuttings; they should be propagated early, for, although we can take and pot up a great number of old plants which will furnish any amount of cuttings for spring work, yet we find autumn-struck cuttings have the best constitutions to stand the winter, and are more to be depended upon. Unlike most of the sorts above referred to, these, being really stove plants, must be treated in a heated structure.

As the present is the time when garden parties are most prevalent, every part of the dressed grounds must have its due share of attention as to dressing and keeping; shrubberies may be hoed over and raked, lawn-tennis grounds constantly mowed and rolled, and the lawns, verges, and walks edged and rolled—in fact,

all the accessories to a neat and trim appearance constantly followed up, so as to make the enjoyment complete. Both on the lawns and in the beds and borders, which are usually at this season very interesting, amongst other things the Hydrangea paniculata grandiflora is worthy of special notice. Hollyhocks, Sunflowers, and Dahlias, are in full growth and beauty. See that they are well supplied with liquid manure occasionally. Great care must be taken to furnish them with supports strong enough to maintain them securely in position.

Rose Garden.—This will require a considerable amount of attention at this season, as there is a fair prospect of a tolerable autumn bloom, which must be encouraged with copious supplies of water and liquid manure at intervals. Let the whole of the trees be gone over with the syringe if possible, and shorten all the young straggling shoots which show no indications of blooming. *J. Cox, Redleaf.*

Grapes and Vineries.

Still continue to give abundance of air night and day to the earliest house, and sufficient water at the roots to keep the Vines healthy. If they are young and strong and the foliage is still green, do not attempt to ripen the wood by withholding water at the roots, but use a little fire-heat in the daytime, with plenty of air and a dry atmosphere. As the leaves begin to ripen and fall off clean them up every few days, and give the corners of the house a good wash down sometimes with the garden engine to disperse the spiders. Houses in which ripe fruit is hanging must be kept cool and the atmosphere dry, only damping the borders occasionally on the brightest days, for the benefit of the foliage. Give clear water at the roots when required, sufficient to keep the berries plump and in good condition, taking care to do the watering on bright days when an abundance of air can be admitted to dry up the extra moisture. The latest houses of Hamburghs will now be colouring fast, and must have air left on the front and back ventilators night and day, with a little fire-heat used to keep the atmosphere light and buoyant. When the days are hot and fine it can be turned off until the evening. When the borders require water, clear tepid water will be best for inside borders; but for those outside water that has been exposed to the sun in tanks or ponds will be warm enough.

Now we have had a few weeks bright weather, outside borders will require attention, for if not well mulched they will soon begin to crack, and must have the cracks filled up and a good soaking of water given to them. Muscats that are ripe must be kept dry and cool. Later ones must be kept at a night temperature of 70°, with a rise of 10° by day, giving them plenty of clear water at the roots. Give a little air through the front ventilators on the brightest days, but admit it with great care, so that there is no rush of cold air on the Vines; close early in the afternoon with plenty of atmospheric moisture, and put a little air on the back ventilators a few hours afterwards, and leave it on all night, increasing it in the morning as the temperature rises. Late varieties of Grapes, such as Gros Colmar, Alicante, Lady Downe's, &c., will now be colouring fast, and must have a little fire-heat applied with plenty of air; keep the night temperature at 65° to 70°, with a rise of 10° by day; increase the air as the temperature rises until mid-day, when it must be again reduced as the sun-heat declines, leaving a little on back and front ventilators all through the night. Water the borders when dry with clear tepid water, doing it in the early part of the day, so that the surface-moisture dries up before evening. Newly planted vineries that have made strong growth will be better with a little fire-heat in the day-time and an abundance of air, but must not be allowed to get dry at the roots; the atmospheric moisture can be gradually reduced as the wood ripens. When the wood is hard and well ripened dispense with fire-heat, and keep the house as cool as possible. Those Vines that have their roots in outside borders, and consequently are later making their growth, must have plenty of heat and air until the wood is well ripened; examine the borders weekly, and give a good soaking of clear water when required. Pot Vines for early forcing must have plenty of heat and air, and not be stood too closely together, so that sun and light can play freely upon the foliage. Give plenty of water at the roots, and keep the atmosphere drier as the wood approaches maturity. *Joshua Atkins, Lockinge Gardens, Wantage.*

The Hardy Fruit Garden.

The favourable weather that has prevailed during the present month has greatly assisted the maturing of all stone fruits, and has hastened the ripening of the wood, which was a short time ago only too rampant and late. Every assistance that can be given in this direction by the timely removal of sub-laterals, and by the pinching of all points after this time, should be perseveringly attended to. Continue to remove all freshly made breast-wood as soon as formed, and admit as much light as possible to all parts of the trees. As the crop of Apricots becomes cleared off, take the earliest opportunity to thoroughly cleanse the trees by the use of the garden-engine or hosing. Stone fruits will now require to be gone over daily to remove those that are of the requisite condition for home consumption, or for packing for sending to a distance, as the case may be. Fruit that has to be packed must be taken a little under-ripe, not only to ensure its transit without bruising, but also to prevent its arriving in an over-ripe state owing to the rapid change that takes place in all soft fruits whilst closely packed. Wasps are not yet very troublesome, but where any appear and break the fruit their work is quickly finished by the large flies. Destroy all nests as soon as practicable, and thin the flies as much as possible by trapping them in bottles filled with beer and sugar. These traps should be frequently emptied or the accumulated mass of insects allows of the escape of the later comers. Perhaps no mode of taking wasp nests is better than the very old one of making pear-shaped squibs of damped powder with which to stifle the colony, after which the nest is dug out and destroyed by being pounded into mortar with the spade and a liberal supply of water.

It will be well to see to the removal of all young fruits forming on the current growths of Fig trees. By taking off those fruits which can neither ripen this autumn nor withstand the winter there is every chance of later buds being formed, which will remain safely in the embryo state until growth recommences in the spring. Remove shading leaves from the ripening fruits, and continue to pinch-in all freshly forming growths as they appear. See to the condition of all nets or other protecting materials that are being used to preserve late fruits from birds, in case it may be found that a single opening has allowed the tree or bush to be cleared and rendered the labour of covering vain. Cut away old Raspberry canes if not already done, and run the hoe through fruit quarters generally to keep down weeds.

The growths resulting from grafts put on in the spring must be kept well secured to stakes, to avoid all danger of their being broken during boisterous weather in the autumn; earlier ties may require to be removed, to prevent their cutting into quickly swelling shoots; and remove all growths and suckers from the stock. The entire growth produced by the scions had better be retained, to secure a sufficiency of root-action; and any thinning of growths or modification of shape left until the winter pruning. This department of the garden should now present a dressed and tidy appearance, entirely free from breast-wood, loosened branches, and insect pests; the principal work in it ought to be the securing of the various fruits as they ripen. *R. Crossling, St. Fagan's Castle.*

The Pine Stove.

This is the month in which growers decide upon the varieties they will cultivate for next season's succession; and it is desirable that the character of each variety should be thoroughly understood. The Smooth Cayenne is a good trustworthy Pine both for winter and summer use, its flavour is not so sweet as that of the Queen, but it is more juicy; and another very important point in its favour is that it has less core, and the fruit is not so fibrous. There are two varieties of Smooth Cayenne in cultivation, one of which is almost worthless in comparison with the other. The inferior variety has very narrow leaves without spines at their tips, and the fruit resembles that of the Queen. The best variety has broader leaves, with large, erect, conical fruits, which rise higher in the plants than do those of the poor variety; the colour of the leaves is also darker. The Charlotte Rothschild follows closely upon the above in point of merit, and it answers equally well both for winter and summer use. In its keeping qualities it stands next to the Queen, and its flavour is first-rate. There are two or three varieties of Charlotte Rothschild, and the remarks made above on the Smooth Cayenne apply also to this variety as regards their respective merits. When Queens and Charlotte Rothschilds are grown together in one compartment the latter can easily be distinguished without the trouble of labelling each plant, although both varieties are full of spines along the entire sides of the leaves. The spines of the Charlotte Rothschild are smaller and closer than those of the Queen, and the plants grow to a larger size and require more room. The Queen is a well-known variety, and four good sorts of it are worth growing. The Moscow Queen is a good sort, as also is the Lemon Queen, a variety which produces large fruit of the highest quality. This is easily recognised by its leaves, which are grooved or channelled. The Ripley Queen is extensively grown, being sometimes preferred to the others, on account of its being not so subject to throw up suckers. A good variety of the old Queen is equally desirable, especially that which has good shoulders and which does not taper too much towards the crown. All varieties of Queen produce many suckers, and unless attentively watched and twisted out they take much strength from the plant that ought to assist the fruit in swelling. The Queen is a spring and summer finishing variety, and seldom does well in very late autumn or in the winter months. For preserving in syrup the Queen is the best of all. Smooth Cayenne, Charlotte Rothschild, and the Queen, form a collection in themselves, and unless variety is required no other sort need be added. Black Jamaica is a good winter kind, unsurpassed in flavour, but the fruit usually does no attain to a large size, and one fault of this variety is that it produces large crowns which are disproportionate to the size of the fruit. Enville is a good sort for early forcing, but does not keep long after it is ripe. The base of the fruit is apt to become discoloured before the top is ripe. The flavour is good and the fruit handsome, with a neat, small crown. This variety is easily known by its leaves being of a light colour, with a white farina on the underside. Like many other sugarloaf-shaped sorts its form is majestic. Providence is one of the largest varieties, but this is its chief merit, as the flavour will not compare with that of other varieties; it also requires plenty of room. The Prickly Cayenne has a juicy, luscious flavour, but ripens capriciously even in summer. This sort was once grown extensively, but it is an uncertain kind. It has long erect leaves that are very brittle, and when large plants are moved the leaves are easily broken. Oat's Seedling is a worthless variety, as the plants run all to suckers. Hurst House Seedling is not so much grown as it was: it failed to establish itself among the standard varieties. Black Prince is a large, conical, noble-looking variety, but it will not compare in flavour with some of the best sorts. Prince Albert is a fine summer variety, being a free starter and of good flavour and form, both fruit and crown. Montserrat is still grown and liked in many places, but it is not such a desirable kind for all purpose as some other sorts. The Globe and Trinidad are now seldom seen, both being of inferior flavour. *D. Wilson, Castle Hill, Devon.*

Peaches and Nectarines.

Lord Napier Nectarine. — This Nectarine is destined to take a leading position, as without doubt it is the earliest, largest, and best. We gathered our first from an open wall on August 12, which is quite a fortnight before Elruge, growing beside them on the same aspect, were fit. Besides being so early, large, and good in flavour, the fruit of Lord Napier is highly coloured and very fine-looking. I would, therefore, strongly advise those who do not happen to have trees of it to plant one or two where they can be favoured with a suitably warm aspect, as there, if properly cared for, they are sure to bear and do well. Not only is Lord Napier one of the finest, if not the finest, of all Nectarines out-of-doors, but it is the very best for forcing, as it is strong and vigorous in constitution, bears the heat and confinement of a house, and sets its fruit freely. When I first made its acquaintance I was rather doubtful that it would do so, as the flowers, though large and bold, have very long pistils, and the stigmas being on that account far from the anthers, seem out of the way of the pollen; but somehow or other it reaches them, and the work of fertilisation is done. On a standard tree at The Chantry, near Ipswich, under Mr. Hotson's care, the branches were so laden as to be borne down with fruit, and wherever I have seen this sterling Nectarine grown it has always shown itself a good cropping kind. *J. Sheppard.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Aug. 28	Trade Sale of Dutch Bulbs, at the Auction Mart, by Protheroe & Morris Sale of Dutch Bulbs, at Stevens' Rooms.
TUESDAY,	Aug. 29	Sale of Imported Orchids, at Stevens' Rooms.
WEDNESDAY,	Aug. 30	Sale of Dutch Bulbs and Imported Orchids, at Stevens' Rooms.
THURSDAY,	Aug. 31	Royal Horticultural Society of Ireland's Autumn Show. Grand Floral Fete at Dundee (three days). Sale of Imported Orchids, at Stevens' Rooms.
SATURDAY,	Sept. 2	Sale of Dutch Bulbs, at Stevens' Rooms.

THE PREPARATION OF STRAWBERRIES FOR FORCING is a subject that seems to have been pretty well threshed out. It is doubtful, however, if the last words have yet been said or written in regard to it. We were forcibly reminded of this the other day by noticing a thousand or so very fine British Queen Strawberries in 6-inch pots. Several points arrested our attention at once, such as that of the variety grown, and the wonderful strength of the plants and fatness of the crowns. We had almost begun to think the British Queen had well nigh slipped out of cultivation. It had been seen sometimes in Covent Garden, and had been heard of as coming in immense quantities to the great preserving-houses from Scotland and elsewhere, but very seldom seen in quantity in private gardens. There is no doubt it is a somewhat tender variety, and does not like stiff, cold soils. Even on lighter, mixed soils, it has been largely superseded by Dr. Hogg—a Strawberry of very similar quality and of a more vigorous constitution. Still, where the British Queen deigns to thrive, there is no finer Strawberry, and it was pleasing to find a large garden in which this old favourite and Keens' Seedling were still the only two Strawberries forced, or, indeed, grown to any extent.

In Strawberry culture there seems to be a sort of revival of the older sorts. Hence the Elton is growing anew into popular favour, and it is doubtful whether among all the novelties a finer or more useful late Strawberry can be found than the old Elton Pine. No doubt the flavour is somewhat brisk—some would say sharp—but this quality is easily corrected with sugar, and not a few prefer their Eltons without sugar as a welcome and refreshing change from the extreme sweetness and lusciousness of British Queens. So superb is the quality of the British Queen when well done that some grow it expressly for forcing in localities where it will not thrive well in the open air. But such cultivators labour under considerable disadvantage in the matter of a good supply of strong early runners, and this last, as is well known, lies at the foundation of all successful culture alike out-of-doors and in.

We once saw the runner difficulty met and overcome in a very simple manner: thus:—The Strawberry plants were plunged to the rims in boxes filled with rotten manure, surfaced with an inch or so of nice sweet loam. As soon as the plants pushed runners they were laid in these boxes and rooted so rapidly that the clever cultivator declared they had not time to rob the fruit before they had root enough to support themselves. Assuredly the fine large fruit in this case justified, if it did not absolutely establish his view of the matter, and the earliness and strength of the runners were matters apparent to all. But in the case so recently seen the British Queen thrives well in the open air, and is used largely not merely for dessert but also for preserving; hence there is no lack of runners, and these are laid in the fruiting pots at once.

This, in fact, is our second point in regard to the fine lot of British Queens referred to. Neither is the plan of layering Strawberries at once in their fruiting pots by any means new. It is far more important to note that it is thoroughly successful in getting strong and exceptionally early plants. The latter being probably the strongest point in its favour, it is obvious that the plan avoids all risk of check either to the roots or crowns of the young runners. Hence no doubt the vigour and earliness of the British Queens and Keens' Seedlings treated in this way. We are well aware of the objections that may be urged against this plan of layering runners in their fruiting pots. It involves considerable extra labour, and the soil is more apt to become exhausted before the greatest strain upon it is made, that is, during the swelling and ripening of the fruit. But against the additional labour of twice removing so much soil and material, and the additional weight of the large pots, must be placed that of the extra watering required in dry weather to runners in smaller ones and the second potting. When these are duly allowed for there will be less force in the objection of additional labour, and, besides, labour is but secondary after all; and if it is found—and the splendid appearance of the plants seen warrants the assumption—that plants laid in their fruiting pots at once produce the most and the finest Strawberries, the additional produce disposes of the question of the additional labour by paying for it, and leaving a surplus to the good.

The exhaustion-of-the-soil objection has some force in it. By layering direct on the fruiting pots, the strength of the soil will be a good deal washed out before the end of the growing season. But it is really so very easy to feed Strawberry roots in pots with liquid or concentrated solid manure, that this objection has less force than at first sight appears. With the plants grown in the ordinary way few Strawberry growers place much dependance, through the swelling and ripening stages, on the inherent strength of the soil in the pots. Treated either way successfully, the soil in Strawberry pots is rather freely converted into a mass of roots before the autumn. Provided these are sufficiently numerous, vigorous, and healthy, few trouble much about the amount of food available within the small area of the pots, and it is certain that the roots are every whit as good and as numerous in the case of plants laid in their fruiting-pots as in others. The probability is, that they will be in most respects better, and this is in fact the contention of those that advocate, and so successfully practise, the system.

In writing thus, we are well aware that good Strawberries are grown alike by layering in small pots or in the open ground, and potting up afterwards. We have no objection to find with either method, but the once layering and have-done-with system, so successful in the thousand or so of British Queens recently seen, might probably prove the simplest and best for the growing numbers of amateurs who, year by year, are adding Strawberry forcing to their sources of interesting amusements and satisfying pleasure; while the layers which we saw—the system so successfully carried out in a private garden—show that it is found to be the best system by some of our most successful cultivators.

WHATEVER general rules anatomists and physiologists may lay down, the practical cultivator has to take his account with individual peculiarities. All those hundred and one varieties may own one common parentage; but for all that, the intertexta variety of Cupressus Lawsoniana and the variety known as erecta viridis—not to mention a score of others—are as distinct as, and, indeed, much more so than many reputed good species. This was a vexatious anomally, not to be explained in pre-Darwinian days. It seems simple enough now in these days, when the significance of variation is appreciated, and the process of evolution can often be seen in action. But it certainly does require us to attach to the word "species" a very elastic, a very arbitrary—shall we say Pickwickian sense?—or rather we are constrained to use the term as one of convenience only, and to admit that what we choose to call species and those groups which exist in Nature—that is, if they really do exist—are often widely different.

The test of a species is more difficult to find than ever. If we adopt community of origin we have often no proof of the alleged fact, and we have no means of knowing how far back we have to go to find the common parent or of tracing all the descendants and their intermarriages. If we take fertility as the test, that proves a fallible guide too, for every hybridiser knows that cross or hybrid fertilisation between some species is much more certain than self-fertilisation or the union of plants of the same species. This happens in many Passifloras. Grafting affords no better test, for the Lilac grafts on the Privet, and no one would call them conspecific any more than they would the Gooseberry and the yellow Currant, the latter of which forms a good stock for the Gooseberry, while the red Currant refuses to bear its near ally.

But if we would look to the effect of individual peculiarities within the limits of the same species, we can hardly have a better illustration than the Potato. Every one will admit that all the varieties of Potato are forms of one and the same species, and yet how different are the characteristics of the varieties—how differently, too, they are affected by the disease even when growing in proximity one to another! It is the same thing with Roses. We lately saw whole rows of Guillaume Guillemot destroyed by red rust, while aphides unnumbered hastened to get their share out of the weakened prey. Roses of other varieties were growing on either side, and not one was affected. It is fair to say, however, in this case, that energetic measures were taken to rid the Roses of insect pests by means of soft-soap and Gishurst Compound; but while the enemy was successfully combated in the one case, the use of the very same means produced no effect in the other. The relative hardihood of plants derived from the same source is also markedly different. Such instances are so familiar as to need no illustration; but they one and all point to the necessity for keen and persistent processes of selection on the part of the gardener.

—— THE ELECTRIC LIGHT.—Dr. C. W. SIEMENS, in his Presidential Address delivered at the opening of the fifty-second meeting of the British Association on Wednesday at Southampton, said as regards the effect of the electric light upon vegetation, that there was little to add to what was stated in his paper read before Section A last year, except that in experimenting upon Wheat, Barley, Oats, and other cereals sown in the open air, there was a marked difference between the growth of the plants influenced and those uninfluenced by the electric light. This was not very apparent till towards the end of February, when, with the first appearance of mild weather, the plants under the influence of an electric lamp of 4000 candle power placed about five mètres above the surface, developed with extreme rapidity, so that by the end of May they stood above 4 feet high, with the ears in full bloom, when those not under its influence were under 2 feet in height, and showed no sign of the ear.

—— PRESERVATION OF SPECIMENS OF CONIFERÆ.—A member of the Torrey Club states that after an unsuccessful trial of many expedients for the preservation of specimens of Coniferæ for the herbarium, he had found that by soaking the specimens in WICKERSHEIMER'S preservative fluid they were rendered flexible, and no longer showed a tendency to shed their leaves after being pressed and mounted.

—— A NEW BRITISH ROSE.—In the *Bulletin de la Société Botanique de Belgique* Professor CRÉPIN describes a new variety of Rosa subanda, which he names Nicholsoni, in compliment to the discoverer, Mr. G. NICHOLSON, Assistant Curator, Royal Gar-

dens, Kew. Mr. Nicholson found this Rose at St. Cyrus, Kincardineshire.

—— A Gigantic Olive Tree.—A correspondent of the Berlin *Garten Zeitung* states that there is an Olive tree at Bendinal, near Palma, in the island of Majorca, that has a trunk 13 metres in circumference. The tree is of little height, and has few branches. Its fruit is like that of the younger trees. He goes on to say that the Olive trees of Jerusalem are computed to be 2000 years old, and they are only 6 metres in circumference. How old, then, he asks, may the Majorca tree be? Perhaps not so old as those at Jerusalem, we answer. Coutance, in his admirable *History of the Olive*, mentions one tree as having a trunk 12½ metres in circumference close to the ground, and 6½ metres at 1 metre from the ground. This tree stands between Villefranche and Nice, and was a notable tree in 1515. He also quotes another writer, though he does not seem convinced of his veracity, who describes an Olive tree whose hollow trunk was so large that a score of persons could take shelter within it at once.

—— The Late Professor J. Decaisne.—We have already published a biographical sketch of our late friend and colleague, but there was one noble feature in his character that deserves all the prominence given to it in a funeral oration pronounced over his grave by M. Fremy. He says:—Decaisne's benevolence was inexhaustible. He not only gave to the poor, but he visited and helped them in their homes. If you went to his house at the break of day you were told that he was making a round of visits to those whom he called his friends. Every New Year's Day was begun by going and taking his gifts to the poor! Decaisne was particularly fond of children and old people; and when he was spoken to about employing so many in the gardens, and advised to replace them by energetic men and more skilful gardeners, he always answered, "Is it not our duty to support to their last day those labourers who have spent their strength in our work, and who have no retiring pension? And ought we not to aid poor families by giving their children an honest and profitable occupation? I know," he would say, "these poor people neglect our garden rather, and I shall be censured, perhaps; but the kind-hearted will defend me."

—— The "North" Gallery, Kew.—This admirable collection of paintings of flowers has proved so attractive that the first edition of the catalogue was sold out by the end of last month. A second, corrected edition, is now on sale, though there is no indication on the cover or elsewhere that it contains any corrections or alterations. As a matter of fact it contains a considerable number of corrections and alterations, though most of them are slight and unimportant. The description of the large map has been modified, and now agrees with the numbers on the map itself. In the description of the picture No. 2 the word Potato has been substituted for Foxglove. No. 45, formerly a picture of the flowers of Cobœa scandens, has been replaced by a picture of Utricularia montana and Stenogaster concinna. More exact information is also given respecting the home of the Redwood and Mammoth trees. In 264 and 285 the name Mesua ferrea is substituted for Sideroxylon sp., &c.

—— Ageratum Duke of Albany. — This variety was raised last season by Mr. McIntosh, gardener to Miss Magan, Kilbyon, Co. Meath, Ireland, and promises to be a worthy addition to a class of plants which are (from their colour, and the fact that they are not easily injured by rain), indispensable in the flower garden. Its habit is said to be exceedingly dwarf, not exceeding 6 inches in height, and it grows in round tufts which are covered with flowers of a bright rich blue or violet shade—certainly a very striking thing in this respect; and if its other qualities are as good as they are said to be we appear to have got a really serviceable gardeners plant. The variety is said to flower profusely in winter, and to be useful for cutting purposes when carefully grown in pots. It is a fine feature in the flower garden at Kilbyon this season.

—— On a Character of the Sweet Potato.—In the *Archives des Sciences Physiques et Naturelles* M. Alph. de Candolle calls attention to the nature of the roots of the Sweet Potato, Batatas edulis. He says, what has not been sufficiently noticed is that root-tubercles are exceptional in the Convolvulaceæ, and that the Sweet Potato is perhaps the only member of the family having them. Unlike the enlarged underground part of the Potato or of the Jerusalem Artichoke, the enlarged part of the Sweet Potato is strictly a root formation, that is, it has no buds or eyes. Potato tubers are underground resting-stems or branches, which in due season produce aërial stems, roots, and tubers. M. de Candolle regards the stocks of Jalap, Scammony, and other members of the Convolvulaceæ as stem-formations.

—— Latent Vitality of Seeds.—Messrs. Ph. van Tieghem and Gaston Bonnier have been making some preliminary experiments to ascertain the effects of different conditions on the latent vitality of seeds. On January 9, 1880, several packets of seeds supplied by Vilmorin were divided each into three equal parts. One portion was exposed to the free air, but screened from dust; another portion was put into closed air, securely corked up in a tube; whilst the third was placed in pure carbonic acid. At the end of two years the seeds were taken out and weighed, and afterwards sown. With regard to weight all the seeds exposed to free air increased in weight. Thus, for example, fifty seeds of the common Pea were found to have increased about $\frac{1}{12}$ of their



Fig. 50.—Milton Abbey, Dorset: the seat of C. Hambro, Esq. (see p. 267.)

original weight; and fifty seeds of the French Bean about $\frac{1}{50}$ of their original weight. The seeds confined in closed air increased in weight, but infinitely less than those exposed to free air, and the increase in some instances was so trifling as to be hardly measurable. Thus fifty Peas increased about $\frac{1}{790}$ of their original weight; and fifty Beans about $\frac{1}{1190}$ of their original weight. As for seeds placed in pure carbonic acid, they did not vary half a milligramme from their original weight. The following are two examples of the comparative germination of the seeds, the conditions being as near as possible exactly the same :—

Peas left in the free air, 90 per cent. germinated.
" " closed air, 45 per cent. germinated.
" " pure carbonic acid, 0 per cent. germinated
Beans left in the free air, 98 per cent. germinated.
" " closed air, 2 per cent. germinated.
" " carbonic acid, 0 per cent. germinated.

—— ZONAL PELARGONIUM WEST BRIGHTON GEM.—This is one of those plants which was not received in high favour when it was first introduced. Pelargoniums are indeed so numerous, and many of them so good, that people are puzzled as to what sorts to grow. The variety in question is now gaining ground with certain trade growers, who, no doubt, have good reasons for cultivating a large stock of it. It is a light scarlet with a white eye, and sells well in small pots during the autumn. Mr. B. MALLER is growing it very largely at Lee.

—— INTERNATIONAL POTATO EXHIBITION.—The schedule of this exhibition has been enlarged by the addition of a series of prizes in a new class for nine dishes. The total amount of prizes offered is over £132. The regulations adopted last year in the judging of seedlings have been enlarged so as to include all the points likely to arise in the determination of relative merit. In aid of the cause, a special trial collection has been grown at Chiswick by the generous consent of the Royal Horticultural Society; and these have been duly inspected by a committee of the International Potato Exhibition.

—— SENECIO SPECIOSUS.—This is a very pretty and remarkably free-flowering, half-hardy perennial, introduced a short time since from South Africa by Mr. WILLIAM BULL. It can be raised from seed, though it is said these show a tendency to vary a little, and when the plants are hardened off and summer weather has come, they can be planted in the open ground, where they will flower all the summer; or it can be grown in pots and bloomed in a cold frame or cool greenhouse. As it is a comparatively new plant, it is not as yet widely known, but it is one of those things gardeners will find very useful, and well worthy of cultivation.

—— ALONSOAS.—The Alonsoas are a section of greenhouse, and even border plants, not now commonly known, and far too little cultivated. In the earlier days of summer bedding, when it was the custom to plant masses of Fuchsias, Heliotropes, Cupheas, Verbenas, Petunias, and similar flowers—and a very pretty effect they often gave—now and then might have been seen a bed of the Alonsoas, though at that time often called Celsias. Of all the varieties, however, none seem to be more widely grown, although that is not much, than the large scarlet-flowered Warscewiczii, and which, when well done, is a very charming thing indeed. A good plant of this variety, wonderfully bloomed, was exhibited by a cottager at the recent flower show at Earley, and attracted great attention. It was about 18 inches through, and as much high, well foliaged, and covered with spikes of bloom. Were plants of this charming thing to be grown as well, but larger, and exhibited as greenhouse plants by gardeners, they would create a sensation at any show. Having regard to its simple nature and unpretentious character, we have seen no more striking plant in flower this season.

—— SINGLE DAHLIAS.—That these are rapidly multiplying there can be no doubt; but that, as in the case of the double orms, the newer ones are to be preferred to the older types is matter of opinion. Mr. BARRON has now a very good collection in the Chiswick Gardens, which in another week will be in full bloom. A few of the very best will be found in Alba, or White Queen, flowers pure white, large, and well-rounded flowers; Francis Till, magenta-purple, very bright and effective; Harlequin, like the foregoing—perhaps a trifle different in tint, but certainly with larger and more rounded petals; William Cullingford, bright yellow; Coccinea, scarlet, showy and striking, and not yet distanced by seedlings raised from it; and Paragon, velvety maroon, edged with purple—distinct and attractive. Here are half-a-dozen varieties that are undoubtedly good, and well worth growing by those interested in the single Dahlia.

—— PYRETHRUM GOLDEN GEM.—This is both a variegated-leaved and double-flowered variety, and as a summer bedding-plant is not nearly so much appreciated as it deserves to be. Mr. BARRON has used it this season as an edging to a large oval-shaped bed near the Council-chamber in the Chiswick Gardens, and it is now an object of considerable beauty; the plants are blooming freely, and have large heads of good-sized double white flowers. These remain in bloom for some time, being much more lasting than the single blossoms. Both before and after it has done blooming this variety is of service as a hardy bedding plant, by reason of the golden hue of its foliage, and while it is in flower its efficient service is trebled in value. It is a thoroughly good and serviceable plant, and it is proper that its merits should be duly recorded.

—— AGERATUM MALVERN BEAUTY.—This is an excellent dwarf bedding Ageratum that is now to be seen in good form at Chiswick. The growth is dwarf, close, and compact, and the plants produce a large quantity of flower-heads that rise just above the foliage, and display themselves in a symmetrical form. The colour is a very pleasing shade of grey-blue. It is not a new variety, but it will take some beating from the old ones. It is so compact in growth and outline when at the height of bloom as to make an excellent edging plant, and its stout rigid foliage makes it acceptable also on the ground that it is a good wet weather plant. We have no subject for bedding purposes that can take the place of the Ageratum in the flower garden. There is a soft and winsome beauty about the colour of the flowers that we do not get in any other bedding plant.

—— LILIUM AURATUM.—Mr. ELLAM has sent us from the Gardens, Bodorgan, Anglesey, two fasciated stems of Lilium auratum, the flowers on which, though small, are unusually numerous. One stem had about fifty-seven blooms, the other fifty-six. They were grown in a 12-inch pot, in which two stems remain—one of them carrying twelve, and the other ten fine flowers: a total of 135 blooms. The bulbs have not been disturbed since January, 1881, and have had no further attention since than a top-dressing and copious waterings when in growth. They are remarkable examples of their kind.

—— "ANNUAIRE GÉNÉRALE D'HORTICULTURE."—M. BRASSAC, 7, Rue Matabiau-Bonnefoy, Toulouse, publishes under this name a useful address-book for French nurserymen, but we cannot speak favourably of it as regards this country. To avoid in future such ludicrous blunders as are here committed, the Editor should get his proof sheets read by some Englishman conversant with the subject.

—— ORIGIN OF THE NAME BONPLAND.—We give the following paragraph, which is going the rounds of the American journals, with the remark that nothing of the sort is mentioned in the biographical sketch of AIMÉ BONPLAND in the *Bonplandia* :—"Mrs. MULHALL, in *Between the Amazon and Andes*, gives a curious account of the origin of the name of the celebrated botanist BONPLAND. Visiting the house of one of his friends at Corrientes, she came across a manuscript in BONPLAND'S handwriting, which begins :—'I was born at Rochelle, on August 29, 1773. My real name was AMADÉ GORYAND. My father, a physician, intended me for the same profession. It was on account of my great love for plants that he gave me the *sobriquet* of BON-PLANT, which I afterwards adopted instead of my family name.'" It is noteworthy that the date and place of his birth as well, as his father's profession, are correct.

—— FUSION OF THE TRUNKS OF DIFFERENT TREES.—It is no very uncommon thing to find natural inarching of the branches of Beech, Hornbeam, and other trees, especially in hedges, and occasionally the trunks of contiguous trees grow together and form only one tree above the point of fusion. The Editor of the *Torrey Bulletin* is responsible for the following statement :—"Those who have taken a trip by stage-coach from the steamboat landing at the foot of Lake George to Fort Ticonderoga, have perhaps had pointed out to them by the driver at a certain point on the route an instance of a singular sort of adhesion, where two trees of different genera—an Oak and an Elm—are so closely and firmly adherent for about 3 feet above the ground line as to form but a single trunk, which is apparently covered by a continuous bark."

—— MULTIPLICATION OF SPADICES IN ARISÆMA.—A writer in the *Torrey Bulletin* records having a plant of Arisæma triphyllum growing in his garden bearing one spathe, which contains two spadices; or, as he puts it, the "pulpit" is occupied by two "preachers." The two spadices were confluent only in the lower flower-bearing part. The flowers were all pistillate, and apparently normal. Of the two spadices, one was taller than the other, while the shorter one was somewhat flattened below and dilated above.

—— PEAR GROWING ON WALLS.—A practical correspondent writes :—

"I am this year making a decided alteration in the pruning of some of our wall Pear trees. They have been trained beautifully horizontal, but many of them bear only at the extreme ends of the side branches. Of course it has been the common practice at this time of year to cut off the breast-wood, which produces in turn next year another crop of shoots. My plan this year is to thin out the spurs, and lay in between the branches a quantity of young wood. Next year there will form on the base of these—I hope—quantities of fruit-buds, of which I am hopeful. We are treating them exactly as we have been managing our Peach trees, and I see no reason why Pear trees could not be managed in a similar manner, cutting off these lateral shoots when the fruit-buds become barren, and then lay in fresh ones. Time will tell if there is anything in it."

—— BOUVARDIA TRIPHYLLA.—This useful Mexican species has been somewhat neglected of late years, and, indeed, but comparatively few people are aware of its existence. It is half-hardy, a bushy grower, and bears flowers of a bright orange-scarlet during the months of July and August. We have, no doubt, a great many scarlet Pelargoniums and other flowers of similar colour, but how many of them can be compared to this Bouvardia for general usefulness to the gardener or florist? For making up button-hole bouquets, or for cutting, its rich shade of colour needs only be seen once to attract admirers, for after all the flowers that are most chaste in appearance, and that last longest in a cut state without falling to pieces, are the most prized by florists and gardeners of all classes. It is finely in flower now in Mr. B. MALLER'S nursery at Burnt Ash Lane, Lee.

—— HARDY FUCHSIAS.—Those who have caught the contagion for hardy plants and desire to have them look at their best should utilise Fuchsias to better purpose than they generally do. It might alarm some of our friends if we suggested anything like carpeting with hardy Fuchsias, so we will put it in another way therefore. Plant patches of the small-leaved Vinca minor in a border, and in the centre put medium-sized plants of Fuchsias well clothed to the ground, and by so doing you improve the appearance of the Fuchsia and the border too.

—— THE EDELWEISS.—The successful culture of this curious and distinct alpine plant appears to be reduced to simple and easy terms by Mr. BROWN, gardener to S. B. PUSEY, Esq., Pusey House, Faringdon. Mr. BROWN treats it as a biennial, and raises a batch of seedlings every year. This year the seed was sown on July 25, immediately it was ripe, ordinary seed-pans being used, and peat was the soil, with a little silver-sand on the surface. In fourteen days many seedling plants were above the surface, and they are growing away in the most satisfactory manner. The soil in the seed-pans is kept moist, and they are stood, somewhat raised, under the plant stage of a greenhouse, where the plants are shaded from the sun, and care is taken that no water drips into the pans. The young plants are kept in the pans all the winter, then pricked off singly into small pots in March, grown on into size, and planted out in the rock garden in May, and here they grow freely and bloom profusely. The sandstone appears to suit

the Edelweiss well, the roots seem to fasten themselves to it and produce good vigorous plants; indeed, it does so well at Pusey, in the open sun, that this appears to be the position best suited to its well-being. There is a very good rock garden at Pusey House, and Mr. Brown, who is a great admirer of this class of plants, is gradually forming a very interesting collection. It may be remarked that though Pusey House is a very fine country mansion, standing within extensive grounds, surrounded by a wide and well wooded park, it is not found in any horticultural Directory before us. It is situated about five miles east of the market town of Faringdon, Berks.

—— Berlin Lily of the Valley.—It is a generally received opinion that what is known as the Berlin Lily of the Valley is superior to that which is grown in Holland, having flowers and spikes double the size of the common Dutch type. The cause of this superiority is accounted for by the light heathy soil which abounds about Berlin, and which is eminently adapted to produce flowers of larger size than is generally seen. In the Berlin district flowers are in as great demand at Christmas, as in Paris and London, and it is the practice to put in the single crowns about the beginning of November, planting outside, and covering up with hay. At the end of November the crowns are brought into a forcing-house, where they are covered to the depth of 2 inches with moss. The temperature is kept to about 70° with a moist atmosphere. As soon as the flowers appear the moss is removed from around the crowns, and inverted flower-pots are placed over them, stopping up the hole in the pot for a few days. This practice is adopted to assist in drawing the flowers well up, after which they are gradually exposed to the light, when they increase in size, substance, and fragrance. Perhaps, after all, it is only a question of selection and good cultivation, and not so much of variety. At Christmas, and onwards, remarkably fine Lilies of the Valley are produced in Paris, as fine in flower and spike as can well be conceived at that season of the year; and during the spring months Messrs. Hawkins & Bennett, of Twickenham, produce in plenty, under their system of outdoor culture, remarkably fine spikes of Lily of the Valley. High culture has much to do with the production of fine flowers, given a good variety to grow. It is said that for two years past the season has been hostile to the well-being of the Lily of the Valley in the open air around Berlin; and that a scarcity of crowns and clumps is inevitable this autumn.

—— Crab Apples.—Could we but inoculate some of our tender or shy-bearing varieties of Apples with the constitution of the common Crab what a boon it would be to gardeners and fruit growers generally. There is a fine Crab tree standing in the open park at Eggesford—the Earl of Portsmouth's lovely seat in North Devon—which is bearing a heavy crop of fruit this season, and has never been known to miss bearing a crop for many years. When we saw the tree a short time ago we could not help wishing that we possessed some good sorts of Apples of the same trustworthy character. But, of late, it appears if we get a crop one season, we hardly know when we are going to get the next.

—— Trichinium Manglesii.—This very interesting and ornamental Amaranth was introduced to this country from West Australia by Mr. W. Thompson, of Ipswich, to whom British gardens are indebted for so many beautiful and strange herbaceous plants from various parts of the world. Several beautifully flowered specimens, with well developed-foliage, are to be seen in the cool compartment of the New Range at Kew. Generally speaking, this plant, pretty as it is, is not by any means seen to advantage; it refuses to grow vigorously, shows but one or two feathery ball-like inflorescences at rare intervals, and, rightly or wrongly, it has acquired the character of being difficult to grow well. The Kew plants are grown in small pots in well drained loam, with which was mixed a quantity of fresh sun-dried cow droppings. In this mixture the roots seem to revel, and numbers of inflorescences are thrown up from the crown of fine dark green healthy leaves. Miss North, who has painted the species in its native country, said, that although she had seen the ground as far as the eye could reach coloured with the flowers, she had not seen any specimens bearing leaves and flowers at the same time. In the "North" Gallery at Kew, T. Manglesii is represented (No. 577) in company with other West Australian sand-loving plants; and in the extremely interesting catalogue of that unique collection of pictures it is stated that "the soil in this district is so very sandy that, with the exception of a few big stones, the whole country might be run through an hour-glass." There are about fifty species belonging to the genus Trichinium, of which the subject of the present note is one of the most beautiful.

—— Decaying Poplars.—Travellers who use the Newbury and Hungerford line in getting from Reading to Devizes, will have noted a line of Lombardy Poplars growing on the banks of the canal at Hungerford. There is a line of some seventy trees, standing closely together, near to, and in a parallel line with, the railway station. This lot of trees has been one of the glories of that somewhat sleepy market town, but, sad to state, the whole line has entered rapidly on a season of decay. Many of the branches are dead, others are dying, and some trees appear quite dead. It is supposed that the severe winter of 1880-81 set the seal of dissolution on the trees, and there is much reason to fear that scarcely one of them will escape. In other parts of the country, Lombardy Poplars growing on the low ground, near water, are similarly scathed, while on the higher ground the trees appear to remain in rude health. It is generally held that the Lombardy Poplar is suited for ground which lies low, and some of the finest specimens to be found are by roadsides, and close to running streams of water. It is not a question of decay from old age in the case of the trees at Hungerford, for, to judge from appearance, they are not yet fully matured. But they are dying rapidly, and soon there will be nothing but naked leafless branches standing out against the sky-line. All the achievements of horticulture appear powerless to avert such a calamity.

—— Art in the Plant Stove.—There are few departments connected with the garden in which there is more room for improvement than in our plant-houses, but especially is this the case in the plant-stove. Cool houses are so often required for a variety of purposes that it is not always safe to make anything like a permanent arrangement; but in the case of a plant-stove this is not so, and there seems little if any reason why we should have to look upon so many naked walls when we have large quantities of rapid growing plants, which would render them at least cheerful if indeed they could not be made artistic. In the first place, we would set about partially covering with Maidenhair Ferns, of which there is no lack of variety, and the more of this the better. Then we would plant a Hoya carnosa against the wall, and when it had nearly reached the top we would allow the shoots to grow naturally downwards. Then we would have the creeping Lygodium scandens trailing among the Ferns, and a plant of Cissus discolor travelling over the green groundwork would have a charming effect. Next to this, have a plant or two of Selaginella cæsia arboreum, with its lovely fronds of bluish-green delicate and changing, creeping anywhere over the surface, but at some point or other coming in contact with the dark leaves of the Cissus, and you have a wall which you may take your friends to see at any time without fear of adverse criticism.

—— A Gardener on Farming.—The following remarks from the pen of a well-known practical gardener will be read with interest; the subject upon which he writes being, at the present time, one of very considerable importance:—

"I have been managing, for the last three years, a farm of nearly 350 acres, over 170 acres of which are arable. When I took to it, it was said to be exhausted to such a degree that it would produce nothing. We took possession at Lady-day, and as soon as the weather became favourable I set a steam cultivator to work, cultivating the whole twice over, and repeating this process at midsummer, and again in the autumn just before Wheat sowing time. The result was excellent crops of Wheat, Beans, Oats, and Barley. These crops astonished every one. We have this year again the best Wheat crop in the neighbourhood. A portion of the straw of last year we sold, and bought therewith a good dressing of Proctor & Ryland's Wheat manure, which has told a wonderful tale. I am, however, strongly of opinion that we owe much to the steam cultivator, which we use only when the weather is fine, that the work may be done quickly. This is an immense advantage over ordinary horse-teams—the work of which is so very slow, that often a spell of fine weather is over before they have well begun. I haven't much faith in vegetable growing generally on a farm. To do this land would have to be well adapted for that kind of thing, to be near a town, and the farmer must be a practical working man. On peaty land I believe Rhododendron growing would be a good thing, and this kind of cultivation might gradually be developed on a suitable farm, as trade connection increased. The farming interest is sadly wrong, and out-at-elbow just now. Most of our tenant farmers were never much better than from hand to mouth men at any time, and were not prepared to fight against the late farming depression. There was, 1st, the rise of wages; 2d, wet seasons; 3d, foot-and-mouth disease; 4th, foreign competition in the form of cattle and grain. The latter especially was the worst 'kick of all.' In the good old times if an English or Scotch season could not produce good corn crops the price rose proportionately, so that the farmer and his landlord were provided for, although perhaps the people might, and often did, have to starve. But now the tables are turned. A farmer produces an inferior article—no matter from what cause—his article realises in the market only what it is worth, and no more. The farmer is unprotected, and so is his landlord; but the mass of the people, thank goodness, live. It is far from my wish, but the time must come when the English preserves, domains, &c., must be broken up and cultivated to produce food for the people, as well as to provide for the maintenance of their owner."

—— Begonias as Basket Plants.—When the tuberous-rooted section of Begonias was first introduced to public notice, and for long after, few people thought that in addition to their well known qualities as decorative subjects they would also in time be largely used as basket plants. The first varieties that were experimented with were such old-fashioned but still useful varieties as Wettenhalliana and Sutherlandi, which makes a really model basket plant; but no one seemed to think that the large flowered section could ever be utilised for the same purpose. Messrs. John Laing & Co., of the Stanstead Park Nursery, are, however, gradually dispelling this illusion, and have at the present time in their nursery some excellent examples which make as perfect basket specimens as need be. The shoots require a little regulating and tying down in a young state, but beyond this little difficulty will be experienced in making them into handsome basket plants for the greenhouse or conservatory. In Messrs. Laing's show-house a great many varieties of different habits may be seen hanging from the roof; but as the object is to make a great show of one class of plants, and to illustrate by practice that they are amenable to all kinds of training, the show as a whole is not equal to what the gardener or amateur might produce with a few plants in his own conservatory. So many shades of pink, maroon, or scarlet, brought into contact with each other, do not give the same brightness as would be the case if they were associated with Maidenhair Fern, or such-like plants, against which those intensely bright colours have quite an enlivening effect. Louis Bouchet (bright orange-scarlet), and campanulæflora (creamy-white), are two of the best varieties for basket work.

—— Caladium cardinale.—When we reflect upon the variety that existed among these beautiful leaved plants a few years ago, and compare them with those in commerce at the present day, the difference is indeed remarkable. Every one possessing a heated plant-house may grow them to perfection, and those who, from one cause or other, cannot undertake the cultivation of choice Crotons and other fine-foliaged plants, will find in Caladiums subjects that are simple to cultivate, and possessed of the most exquisite markings—equal in appearance (though different in habit and character) to the most costly Croton or Dracæna for many decorative purposes. They are not so largely employed for house furnishing as they might be, owing to their being grown in a high temperature and over-shaded, which renders the leaves flimsy and the leaf-stalks drawn and weakly. The leaves, however, are never more beautiful than when they are grown rapidly in a high temperature, set upon inverted pots over a water-tank in the plant-stove; but grown in this way they are only fit to ornament the stove or fernery, where they can be kept well shaded from the sun. Among Ferns the delicate markings of the leaves have a beautiful effect. But plants that are intended for furnishing purposes should be grown differently. They should be kept

near to the glass, and only shaded from the sun during the hottest part of the day, the object being to secure that delicacy of colour in the leaf which is desirable, while at the same time the leaf-stalks shall be self-supporting. Plants intended for conservatory or greenhouse decoration should be gradually exposed after the full development of the leaves. In short, the plants are amenable to almost any treatment provided the changes are not brought about too suddenly, and they are so useful and ornamental that many of the newer sorts which are comparatively unknown would be a great boon to country gardeners who have to make a show during the present month. The variety above mentioned is a real gem for decorative purposes; it is of dwarf habit, and the leaves are beautifully marked with red, green, and white spots.

—— ANAGALLIS GRANDIFLORA.—The Anagallis is a flower that is so little grown as to come under the denomination of a neglected plant. There are several fine varieties of the large flowered Anagallis, such as Garibaldi, vermilion-scarlet; Memoria del Etna, bright red; Parksii, rose; Triomfo di Firenze, pale blue; and Philipsii, deep blue, with one or two others. All these come under the denomination of half-hardy perennials, and should be sown in a little heat in spring, then potted off singly into small pots, and put out in a warm, open position, in the month of June, in good soil. As soon as the plants become established they flower freely, and are very attractive. A. Philipsii is one of the best, and very showy in the open ground: the flowers are large, and of a rich blue colour, resembling those of a Nemophila, but such a colour! It is one of those fine things which, when once seen, are not easily forgotten.

—— PUBLICATIONS RECEIVED.—*Transactions of the Epping Forest and County of Essex Naturalists' Field Club.*—*The Story of the Preservation of Epping Forest:* a lecture by JOHN T. BEDFORD (COLLINGRIDGE).—*New Commercial Plants and Drugs:* by THOS. CHRISTY.

—— THE WEATHER.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending Aug. 21, issued by the Meteorological Office, London:—The weather during this period has been cloudy and changeable, with frequent, and in some places heavy falls of rain. The temperature has again been a little above the mean in the E. of Scotland and the N.E. of England, and about equal to it in "Scotland, W."; but in all other parts of the kingdom it has been slightly below its normal value. The thermometer was generally highest during the 18th, when the maxima varied from 68° in "England, N.W." and 69° in Ireland to 79° in "England, E." The minima, which were registered on different days in various parts of the country, were as low as 40° in "England, E.," 41° in "Ireland, N.," and between 42° and 45° in most other districts; but in "Scotland, W." and "England, N.W.," the lowest readings recorded were 46° and 47°. The rainfall has been rather less than the mean in Ireland, "Scotland, E.," and "England, S."; but a little more in nearly all other districts. Bright sunshine shows a marked decrease in Scotland, and a more or less considerable decrease in most other places. The percentages ranged from 27 in "Scotland, E." to 40 in "England, N.W." and 42 in "England, E." Depressions observed:—During the greater part of this period small depressions have been observed over our islands, travelling generally in an easterly direction, accompanied by moderate or fresh winds from between south-west and north-west. On the 20th, however, a rapid fall of the barometer in the west and north gave signs of the approach of a more serious disturbance, which at the close of the period lay off the north-east of Scotland. Under its influence the wind rose to a strong breeze or fresh gale from W. or W.N.W. on almost all our coasts.

—— GARDENING APPOINTMENTS.—Mr. WILLIAM RAMSHAW, late Foreman in the Gardens at Thorpe Perrow, Bedale, is engaged as Gardener to Mrs. CLIVE, Perrystone, Ross, Herefordshire; and Mr. THOMAS PEARSON, for some years employed in the same gardens, has been engaged as Gardener and Manager for M. W. V. MILBANK, Esq., at Barningham Park, Yorkshire.—Mr. W. WELSH, late Gardener at Park Hatch, Godalming, has been engaged as Gardener to J. E. COOK, Esq., Knowle Hill, Cobham, Surrey.

LIGUSTRUM QUIHOUI.*

THIS is a Chinese species (fig. 51, p. 277), at present little known in this country. It forms a low bush with spreading wiry purplish downy branches, and loose terminal panicles of white flowers. Its peculiar spreading habit, dark green leaves, and abundant flowers render it a desirable acquisition to the shrubbery. It is quite hardy. We have received specimens from Messrs. Rodger, McClelland & Co., of Newry, and Messrs. Paul & Son, Cheshunt.

HOME CORRESPONDENCE.

Michauxia campanuloides.—This plant, which is mentioned on p. 242, is a variety rather than a novelty. It is figured in many of the illustrated books on gardening published in the early part of this century. The *Cottage Gardeners' Dictionary* says that it was introduced in 1787, and I believe it has been in nearly continuous cultivation in Europe ever since. It is on the same authority said to be biennial, and it is certainly biennial in habit if not in nature, for it flowers the year after it is sown, and though the large fleshy root appears to retain life afterwards, and shows some signs of breaking the second spring, I have never succeeded in getting it to thrive after once flowering. I cultivate it regularly here, and in June of last year described in these columns a remarkable specimen I had with more than a thousand buds and flowers. The curious seed-pods seem to ordinary sight, when opened, to contain nothing but hardened albumen, but when rubbed between the fingers into a seed-pan in spring the plants come up in any quantity. The seedlings behave capriciously, sometimes losing their leaves unaccountably soon after planting out, and not breaking again. I believe them, however, to be quite hardy, and they are also evergreen. I have at present a pan containing several hundred seedlings more than I want, which I shall be happy to distribute amongst gardeners who will cherish them; they require some nursing in good well drained soil, and watering, and if the leaves are broken off—of which there is danger, as the stalks are brittle and soft—the plants are spoilt. It is a remarkable plant, with a tall spike of white flowers having long stigmas, and recurved petals like those of a Turk's-cap Lily, giving an air of oriental grandeur to the plant. *C. Wolley Dod, Edge Hall, Malpas.*

Hedychium Gardnerianum. — There was a short notice of this handsome hothouse plant in the *Gardeners' Chronicle* of July 8, where it is classed amongst "old-fashioned plants," and said to be much prized by ladies on account of its scent. This scent I can only liken to a compound of the odours of the Jasmine and Tuberose. The terminal spikes are set round with whorls of pale yellow flowers, three in a whorl, but so arranged that they form six rows of flowers. There is nothing peculiar about the two bracts at the base of each flower, nor about the tubular three-cleft calyx, or the tube of the corolla, 2 inches long, bearing at the top three long narrow contorted lobes; but the other parts of the flower are curious, and will well repay the trouble of examination. Three of the four stamens resemble petals, and one of them is larger than the others, bearing some similarity to the lip of an Orchid. Opposite to this projects the only fertile stamen, a conspicuous red organ 2 inches long. Observe that both the filament and the anther are deeply grooved on the inner side. But where is the pistil? At the tip of the anther a small green body beset with collecting hairs is visible, and this, strange to say, is the stigma. By slitting the tube of the corolla down to the inferior ovary we shall find the very slender style, and this we may trace up the tube into the groove of the staminal filament, where it lies completely hidden from view, and then up the groove dividing the two cells of the anther until we reach the green stigma at the apex of the anther, a distance of 4 inches from the ovary. *J. Y. J., Madeira.*

Fenn's Early White Regent Potato.—As Mr. Fenn seldom praises his own seedling Potatos, allow me to say something in favour of one of them, viz., the Early White Regent, which I have this year grown with other sorts planted at the same time, and on the same piece of ground. I find it is the only one that has turned out anything like profitable, most other sorts having been a failure. The Early Regent has proved itself almost clear of disease, and I think this year's test is sufficient to enable me to say that it is worthy of a place in every garden. As regards quality it is first-class, and the tubers are large and clean. It is very productive, and I think I can safely recommend it to all who want a really good Potato for general use. *Chas. Howe, The Gardens, Benham Park, Newbury.*

Glaucium Serpieri.—This curious and very interesting plant has been in bloom with me for the last two months, and is now just dying away. It appears to be a biennial, or rather triennial, for my seeds were sown in the summer of 1880, and the plant flowered for the first time in 1881. In habit and colour, and shape of flower, it much resembles the common Horned Poppy, G. maritimum, but it is dwarfish. At the base of each petal there is a large and very conspicuous blotch. The history of this plant is most remarkable. When the silver mines of Laurium, in Greece, were re-opened, a few years ago, after having remained unworked for I believe 2000 years, a quantity of soil was thrown out from a great depth. All over this soil there sprung up plants of G. Serpieri, a species hitherto totally unknown to botanists, but, no doubt, once common in the locality those many centuries ago, and rescued from extinction by the re-opening of the silver mines. I procured the seed from Messrs. Haage & Schmidt, of Erfurt, and my plant has never ripened any seed here. *H. Harpur-Crewe, Drayton-Beauchamp Rectory, Tring, Aug. 21.*

Barren Fig Trees.—Your correspondent, Mr. A. Nesbitt, writing on the above, appears to have lost sight of the fact that Figs are hermaphrodite, and that the fruit contains both staminate and pistillate flowers. If he will cut open a green Fig he will find the inside crowded with them, the pistillate mostly occupying the lower portion of the cavity; and as provision is thus made within the fruit for fertilisation, no male is required, if there is such a thing among Figs. Why Fig trees are barren in this country is that the strong growth they make does not become ripened, and another reason is that when it does we often get such cold springs that the fruit falls off, which has been the case this year, or the crop would have been something enormous, as with us there was a Fig at every joint, and so thick were they that the trees were quite studded with them. This was owing to the fine autumn of last year, and the mild winter we had succeeding it, there being no frost to injure the wood, and all Figs that formed stood. Near the sea coast Figs generally bear well, especially when growing in poor soil, resting on chalk, which restricts growth, and helps to consolidate and harden the wood. About Shoreham the trees are generally a sight, and to render them fruitful in ordinary seasons in any moderately favoured districts, all that is necessary is to confine and cramp the roots by bricking them in and limiting the space, and thus stopping extension. In planting, it is a good plan to use about half of fine chalk with the soil, which, when mixed, should be rammed down hard, so as to induce the plants to send out plenty of fibres. With a limited larder such as is then afforded, the shoots Figs make are short jointed and firm, in which condition they will bear a hard winter. *J. Sheppard.*

Selinum carvifolium.—Your botanical readers will be glad to hear that the above recent addition to the British Flora, described in the May number of the *Journal of Botany*, p. 129, as having been lately discovered in Lincolnshire, has now been detected in this county (Cambridgeshire) in good quantity, and undoubtedly wild. A specimen was brought to me this morning by my nephew, Mr. John Cross, a young and diligent botanist, which I had no hesitation in identifying as the above plant; but to make sure I immediately took train and visited the spot, and now write to you the gratifying result. *Wm. Marshall, Ely, Aug. 16.*

Rhus Cotinus and Colutea arborescens.—Will you allow me to confirm your editorial note anent the Venetian Sumach. In the shrubberies here, planted prominently at a sudden bend, it is a very pretty object. Its lake-coloured, feathery inflorescence, gives a welcome change to the various shades of green, and to the somewhat dejected-looking Acer Negundo variegata. The other day I saw it in a villa garden in a village hard by; anything more suitable I could not advise. Another shrub that enlivens the shrubberies now is the Colutea. It has a totally different kind of growth from the Sumach, resembling perhaps in this respect and in colour of flower the Laburnum. Its bladders, almost the colour of the flower of Rhus Cotinus, are formed in great abundance before the flowers drop off, and give the tree a curious parti-coloured appearance. I have one tree thrusting its brightly-coloured arms into a sombre, scowling Yew. In Paxton's *Botanical Dictionary* the name is derived from κωλυω, or, rather, κολουω, because "they are said to die if the branches are cut off." Could any of your readers give any further information concerning this curious statement? I hope it is not a fragment of plant lore that has lost its why and wherefore. *W. Carmichael, Newton Court, Bury St. Edmunds.*

* *Ligustrum Quihoui*, Carrière, *Revue Horticole*, 1869, p. 377; Decaisne, mon. Ligustrum, in *Nouv. Archiv. du Museum*, ser. 2, tom. 1, 1878, p. 35.

Campanula nitida.—Can any of your readers tell me of what country this plant is native? Johnson's *Cottage Gardeners' Dictionary* gives South America as its habitat, and says it was introduced into England in 1731. Robinson's *Hardy Plants* gives North America, and Loudon's *Encyclopædia* America. A botanist with a large practical knowledge of garden plants writes to me that—"He thinks it European, but that it is certainly not American." I have cultivated both the blue-flowered and the white-flowered variety on my rockeries for some years, but I find it very slow of increase, and not satisfactory about flowering, the flower-buds frequently becoming deformed, and dying off without opening. Several American plants do this with me, owing to the want of sun and heat in summer. Any information about it would be acceptable. It is not a common plant either amongst nurserymen or in gardens. *C. Wollev Dod, Edge Hall, Malpas, Cheshire.*

Tritonia aurea.—For affording a supply of cut flowers at this season, or for making a display indoors or out, this is one of the finest things that can be had, as not only are plants of it remarkably free blooming, but the blossoms are of that form and rich orange colour, that spikes of them always command admiration and make a fine show. If grown in the open it is necessary to plant close against the foot of a warm sunny wall or fence, as not being quite hardy the roots require shelter in the winter and some protection, which is best afforded by giving a good top-dressing of half-rotten leaves, as these are capital non-conductors, and keep out very sharp frosts. Although the Tritonia aurea will grow in almost any kind of soil, that most suitable is a light sandy loam, fairly enriched, in which the fast spreading rhizomes can thread their way, and send up strong heads of flower. Those who have plants and wish to get them established in borders will find this a good time to turn them out, in doing which they should be planted deeply and allowed to remain without further disturbance. Ours have been where they are for years, and this season they are stronger and finer than ever. When grown in pots under glass Tritonia aurea is much subject to red-spider, which quite spoils the appearance of the leaves and sadly weakens the plants. To prevent the attacks of this insect the best way is to plunge the pots in cold frames where the lights can be removed at the end of May, and if after that the foliage is kept syringed, it will remain healthy and clear of the pest. When coming into bloom pot plants should be assisted with weak liquid manure, and when they cease flowering, should not be dried off too quickly, as a want of moisture causes a too speedy ripening, and thus weakens the bulbs. *J. S.*



Fig. 51.—Ligustrum quihoui. (see p. 276.)

Freesia refracta alba. — A good illustration in Messrs. Sutton's bulb catalogue for this year reminds me how invaluable this bulb was to me last winter and spring. It flowers from December to April, producing an unbroken succession of pearly-white blossoms. The racemes of flowers are almost at right angles to the stalk, in occasional instances twelve in number, but the average number is from six to eight. The bulbs are most easily cultivated, and do perfectly well in loam, leaf soil and silver-sand, without any peat. It is a chaste and delicate flower, and very sweet, and cannot fail, from its almost perpetual blooming habit during three of the dullest winter months, to be most extensively cultivated in the future. *W. Carmichael.*

Telegraph, Telephone, and Ne Plus Ultra Peas.—In my report of the Ipswich show I simply stated facts, and did not intend to enter on any apology, as Mr. Culverwell seemed to infer, for the position Ne Plus Ultra took, as it is so good at all points that extra fine, well filled samples, as the 1st prize lot were, would be considered by most judges superior to either of the two mentioned, and it is a Pea which, for high quality, will long hold its own. Telephone is so much better than Telegraph that the latter might with advantage be left out of cultivation, as the two are of the same height and size, and the only difference in them is in tenderness, colour, and flavour, which may easily be detected and proved either in the raw state or cooked. What I am afraid of in them both is that they will be subject to mildew, as late sowings have been very bad with it, which is not surprising, as they are of soft sappy growth, and have large leaves and stems. Sown early Telephone does admirably and bears enormously, but for late cropping I am of opinion we shall yet have to keep to the sterling Ne Plus Ultra and the old British Queen. *J. Sheppard.*

—— It is no advantage to me to enter again into a discussion about the Telegraph and Telephone Peas. I think, as many of my friends thought at the time, that if Messrs. Carter & Co. were satisfied that they had got two varieties of Peas, the quantity being nearly equal, after separating them, they should have given me the choice of saying which should have the name of Telegraph and which Telephone, and not to have chosen, as they say, the best Pea, and have put their name to it. This is all I shall say about these varieties, as from the improvements I have made with Peas, the four varieties, after a short period, will be with me Peas of the past. Messrs. Carter say Stratagem and Pride of the Market have no common origin with my Peas. All I can say is that, having heard a selection of dwarfs had been worked up, I obtained a packet of Stratagem Pea; this packet produced the green and white Peas, and were identical with dwarf Peas selected from Telegraph. When the four varieties are well grown, the pods can hardly be separated. *William Culverwell.*

Manchester Botanic Garden. — The energy which characterises the present management of this garden has recently, in its effect, been highly interesting. The removal of old houses badly situated, and the erection of new and more suitable ranges, are prominently among recent improvements. In the new houses are many well-grown specimens of rare and choice stove and greenhouse plants. Some of the latter we noted were Protea coccinea, Oreopanax dactylifolia, Stylidium fasciculatum, Lomatia silaifolia, and striking Gleichenias, which among many other plants of similar kind, all in vigorous health, form a splendid display, and give the idea of good culture, being devoted to good plants. If we remember rightly, we saw little of the stuff, which is neither of horticultural nor botanical interest—such as sometimes does occupy much space and attention to no purpose in botanic gardens. One of the features which struck us particularly was an extremely fine lot of seedling Gloxinias, equal in culture, variety, and quality to the best we have seen. A whole shelf of such variety in form and colour, presented an imposing appearance. The new fernery under glass, artistically constructed with tufa, will soon become a centre of attraction. No plants are in pots, all being planted out with a view to secure natural conditions and natural scenery so far as possible. They have yet been planted too short a time to show any effect. Sheets of looking-glass, which cannot always be introduced with advantage, have certainly, in this instance, been placed with considerable skill, and the important result has been obtained in the setting, that from no possible point of view can one see one's own reflection. In one of the houses is found an exceptional Date Palm, remarkable on account of its branching into nine or

ten heads. The Victoria regia promised well, and we found the opinion maintained here, which we have always held, that it must of necessity be grown near the glass to produce the best development and to obtain the characteristic upturned margin to the leaves. In the Orchid-houses, at the season when flowers are scarce, we found Cymbidium eburneum in bloom, and a well-flowered plant of Masdevallia maculata, which was pretty and interesting. There was also a finely coloured Aërides Lobbii, and a variety of other species in flower, such as we find at the time of the year. One of the plants we were interested to find is the old Begonia hernandiæfolia, a pretty and interesting species, which, though now rarely grown, is worthy of a place in almost any collection. Out-of-doors a new collection of alpines has been formed, and promises to flourish where planted recently on sloping ground. Many of the kinds are rare and choice; Cornus suecica is one among others rarely met with, and Genista tinctoria var. humifusa we had not seen in cultivation before. It is a British plant, found at the Lizard, in Cornwall. *I.*

The Potato Disease.—Mr. Jenson's assertion, that the spores of the Potato disease fungus can penetrate the skin of fresh tubers, is certainly to many of us a new idea: but it is the fulcrum upon which his processes for combating the disease turns. In this country we do not take at all kindly to new ideas about the physiology of fungi, so it is not surprising that when Mr. Jenson applied to one of our leading botanists before publishing his pamphlet, he should not receive any warm encouragement to do so. Fortunately, however, he was not thereby deterred from doing it. I do not remember having seen that any one has tried this very simple experiment for himself, possibly every one interested in Potato growing has done so, but deeming the matter so trivial or self-evident he has not told his friends and neighbours of it, for we are a taciturn race and not given to talk about trifles with volubility. However that may be if it does interest any one, I may say that two tubers over which I dusted some spores became in ten days affected with the disease, while two other tubers from the same sample not so manipulated remain till now perfectly healthy. Very possibly your readers will exclaim, "What else could you expect?" Certainly I did expect it because Mr. Jenson said so, but before hearing of his method I should not have expected it. The constant and profuse occurrence of resting-spores on the seed Potato just before the appearance of the conidia upon the leaves makes it seem so natural that the disease should result from the mycelium passing up the stem, that one is rather staggered at first on being told the mycelium seldom if ever travels down the stem to the tubers. The more one studies the physiology of fungi truly the more there seems to be to learn. Only the other day my friend, Mr. A. Steven Wilson, told me that he had made some new observations upon this subject. It is to be hoped he will favour the readers of the *Gardeners' Chronicle* with them. *Charles P. Plowright, Kings Lynn, Aug.* 23.

Grapes at Heckfield.—The crops of these in the various houses are now in excellent condition. Especially noteworthy is the span-roofed vinery containing Muscat of Alexandria only, which are now putting on a splendid finish, being also fine in bunch and berry. The other span-roofed house in which Lady Downe's is grown contains a fine crop of this, the best of all Grapes for late use. Mr. Wildsmith has this season replanted a portion of this house. It will be in the recollection of many of your readers that these Vines were rooted into the soil at their extreme end from the original set of roots, each Vine thus having a double source of supply. Half of the rods on one side of this span have been cut out to make room for young Vines. The old rods being severed at the top of the roof, the remaining portions of each of these are now drawing their nourishment from the set of roots last made. The crops of fruit on these rods are equally as good as those of the other Vines that are still rooted at each end, thus showing that the Vines do not mind being deprived of their original source of supply. In a lean-to vinery there is a splendid lot of Alnwick Seedling, large bunches, fine in berry, and with that beautiful finish peculiar to this Grape when well grown—the even character of these bunches plainly showing that Mr. Wildsmith has not experienced any difficulty in getting a good "set," the failure of which has caused many growers to condemn this Grape somewhat hastily. Mrs. Pearson and Golden Queen are both well done at Heckfield, the former kind being in finer condition than we have ever before seen it. The latter sort also is finished well, and might easily be mistaken for well-coloured Muscats. The crop of Black Hamburghs on the oldest Vines in the garden are now in excellent condition, and are bidding fair to give good returns for years to come. A house of mixed kinds from eyes this spring have filled their allotted space with vigorous young rods, Mr. Wildsmith evidently being a believer in having a young lot of Vines always coming on. This is a point that ought not to be overlooked by growers who have several vineries at their command. It is a common error committed by many to rely too much on old exhausted Vines, thus not getting in many cases half the return that they might do if they adopted this plan. *J. H. G.* [Alnwick Seedling appears to be doing well in many places this season. Ed.]

The Character of the Season Tested by the Time of Ripening of its Fruits.—After the winterless winter and mild and genial spring most cultivators expected an early and fruitful season. To a large extent both expectations have been disappointed. The season has on the whole neither been fruitful nor early. With Apples and Pears well-nigh *nil*, Plums scarce, and Cherries irregular, the season cannot be said to be of average fuitfulness. True, bush fruits and Strawberries have been plentiful, and Apricots, Peaches, and Nectarines about or over an average yield. It is somewhat singular that the three most tender fruits have turned out the most plentiful. It seems as if they escaped the wave of cold air or the storm of wind that wrecked the Apple and Pear crops, and that when the latter occurred the bush fruits were too far advanced and sheltered with leaves to be much injured by them. Be that as it may, the facts are as here stated. To show that the season is also late it is hardly needful to do more than select the present condition (August 21) of the Apricot crop. As a rule this is quite over here at this date; now it is not half gathered, and, according to present appearance, a good deal of the fruit will hang till well into September. It should be added, however, that some of the trees are on north-west walls, though those on nearly west aspects are not yet gathered; but the fact is, the trees are on this aspect as in other years when they have been generally gathered by the middle of August. Peaches are also ripening slowly, and are unusually late. The fruit promises to be all the finer for swelling so slowly, however, and the flavour of those gathered has been good. This last peculiarity has been noticed before: Peaches ripened the most slowly on the open wall often seem to have the fullest flavour. No doubt other cultivators have also observed this rather unexpected result of late seasons. Another test crop—though more of a vegetable than a fruit—is that of Tomatos. Seldom have these been later or less fruitful on walls. They have grown and shown fruit freely enough, but hitherto the fruits have been few indeed, and those few have ripened with a sluggishness most provoking to those anxious to convert them into sauce or salad. *D. T. Fish.*

Cucumbers and Melons in the Same House.—Mr. Fish wisely dissuades your readers from this practice; where it is attempted it generally proves unsatisfactory. There are few things which like an atmosphere of their own more than the genial and thriving Melon, or few things more impatient of artificial heat and coddling, during the summer months, than the luxuriant Cucumber. The two are seldom happy together, as may be seen from the semi-shrivelled, weak-looking shoots of the Cucumber, which terminate in what is popularly called disease. A good plan for growing Cucumbers during the summer months on an ordinary hotbed, or a spent Potato bed, revived by an addition of stable litter, is to let the box and lights face the north instead of, as usual, having a southern aspect. This will produce a natural shade; there will be an abundance of light, without the fear of scorching, and the necessity of shading will be avoided. During September, when the sun declines, the box, &c., can be reversed, when the bed with additional light will run a good supply well into the autumn months. *J. J. B.*

Names and Words.—In a recent number of a London scientific periodical some objection was taken to the terms "algs" and "fungs," which for some time I have ventured to use instead of algæ and fungi (or funguses), as hitherto in use throughout English literature. It seems, therefore, incumbent on me to explain the reasons which have led me to adopt the above changes. As every one knows, the words "fungi" and "algæ" are nominatives plural of Latin words, but to use these wordings unaltered in the five other cases cannot possibly be correct, unless like "gummi" they were indeclinable, and even the last-mentioned word has in English language become abbreviated to "gum." In similarly changing the "Eucalypti" to "Eucalypts," an alteration now extensively adopted, we obtain an English substantive equivalent to Elms, Oaks, Ashes, &c., just as in using the terms "algs" and "fungs" verbal conformity is gained to "mosses" and "lichens" (the latter not being spelt "lichenes" in English). Etymologically there is no objection to this mode of expression, as "algs" and "fungs" are grammatically better terms than "alges" and "funges." For the former we have certainly the English appellation "seaweeds," but that term is not precise, as in its meaning it includes also the oceanic monocotyledons, and fresh as well as salt water plants. A difficulty arises (to commence at the commencement) with such nominatives as Ranunculaceæ throughout the declension; the French preferred, therefore, "Renonculacées," the Germans "Ranunculaceen," and so on elsewhere. Anglicised such word would perhaps best become "Ranunculacees." It may be as well to avail myself of this opportunity to explain why very many years ago in my works I changed the terms "lithographs" to "lithograms." Strictly speaking, the former expression (as in the case of "telegraphs") means the mechanism by which the lithographic product is obtained. Hence we say "telegrams" when referring to the product of the telegraphic operation. Explanations of some other changes initiated by me in terminology, such as adopting the words "membranous," "calyces," "fruitlets," and "stalklets," I will pass on this occasion, merely remarking that under any circumstances the junction of two substantives should be rendered clear by a hyphen, thus we should have calyx-tube, instead of tube of the calyx. In adopting such changes by comparison of the usage in several other languages I do not for a moment wish to dictate to others, but unless *primâ facie* it could be shown that such alterations were based on logical or grammatical errors the proposed changes should be viewed with respect, and the freedom of linguistic progress should neither in our branch of science become impeded. *Ferd. von Mueller, Melbourne.*

La Constante Strawberry.—A wandering horticulturist, who is not very certain of his latitude and longitude, and who is probably not particular as to either, though seldom looked upon as a benefactor to the craft, often stumbles upon things which it may be advantageous to the gardening public to know. For instance, you sometimes come across a variety of fruit which differs from something else you know only in name. Not many weeks ago an instance of this kind occurred, in which a very fine border of Strawberries, grown between Crediton and Barnstaple under the name of La Constante, turned out to be our old friend Marguerite. Will any one kindly tell us the difference between the two varieties, as grown in North Devon. *W. H.*

Florists' Flowers.

The Phlox.—In the light gravelly soil of our garden at Loxford Hall the Rose does not succeed so well as we should like, and many blanks are formed in the beds during the season. A few years ago I tried the plan of filling these blanks with Phloxes, and have had no reason to regret doing so. The cultural conditions required by the Rose are the same as the Phlox delights in—viz., a rich soil, and mulching over the surface. At present our Rose beds are quite a blaze of beauty with the gorgeous spikes of Phloxes, and the air is laden with the perfume of their flowers. The Phloxes are in flower as soon as the last Roses are over, and the spikes have to be cut before the September bloom of the Roses come on. The Phlox is also one of the very best plants in existence for making a show in the herbaceous border; and, further, they are very valuable when grown in pots to help make the greenhouse or conservatory gay at this season. They require as little attention as any flower grown in our gardens; indeed, the Phlox is too easily grown, and people will not be at the trouble to give it the small amount of attention it needs. The plants are too often put out in the borders, and left in the same place for years without any attention; the result being that they dwindle yearly until the spikes are not a fourth of the size they ought to be. To do the Phlox well young plants must be raised each or every second year from cuttings, and the best time to put them in is about the month of March. At that time the shoots on the old plants will have grown a few inches; they should be thinned out and put into small pots, one cutting in the centre of each. They form roots very readily if they can be plunged in a hotbed. When the plants are well rooted, and inured to the open air, they may either be planted out in rich deeply worked soil, or be potted into 5-inch or 6-inch pots, they will most likely produce each a good spike the first year, but they will flower strongest the second season. After three years' blooming throw them away. They may be propagated by dividing the plants, but this is a clumsy method, not to be recommended. A very satisfactory way to get a good display is by raising seedlings. Sow the seeds on a hotbed the first week in March. The young plants

will soon be up and ready to prick out, and by growing them on under glass for a week or two, and planting out when the young plants are about 6 inches long, they will flower strongly the first season. If the seeds are saved from the best varieties there will not be a bad one amongst them, but it is necessary to flower hundreds before you can be sure of any that will be an advance on existing sorts. Plant in beds a foot apart the first year, and 2 feet the second. *J. Douglas.*

Reports of Societies.

Royal Horticultural: *Aug.* 22.

Floral Committee.—G. F. Wilson, Esq., in the chair. Tuesday's meeting was of the usual autumn character, small and select both as regards the number of visitors and the number and quality of the subjects shown. The largest exhibitor was Mr. T. S. Ware, of Tottenham, who staged a very large and fine collection of cut blooms of single Dahlias which were recommended to the Council for the award of a medal. The Chairman exhibited a splendid seedling variety of Lilium speciosum named Melpomene, which was raised by Mr. C. M. Hovey, of Boston, Mass. It is a much larger flower than the typical L. speciosum, measuring quite 8 inches across the petals; and has much broader leaves. It is remarkably bright in colour, and takes the place among the varieties of speciosum that L. Parkmanni holds among auratums. Mr. Wilson also had a good pure white variety of L. speciosum. Mr. H. G. Smyth, 17A, The Coal Yard, Drury Lane, showed his lovely Seedling Carnation Mary Morris, which was awarded a First-class Certificate as a decorative plant. It is rose-pink in colour, a very strong grower, and very free blooming. Captain Patten, Alpha House, Regent's Park (Mr. G. Young, gr.), sent half a dozen well grown dwarf Cockscombs, also a small-flowering plant of Lisianthus Russellianus; and from Syon House Mr. Woodbridge brought a nice plant of Celosia compacta Crimson Superb, deep crimson in colour, and of a neat pyramidal habit. Mr. Eckford, gr. to Dr. Sankey, Boreatton Park, Shrewsbury, brought up some seedling Carnations, Pansies, and Sweet Peas; and Lobelia purpurea, a plant in the way of L. cardinalis as regards its habit of growth, but having bold purple blossoms, came from J. S. Grimshaw, Esq., Leigham Cottage, Balham. Mr. Francis Smith, Sen., Park Road, West Dulwich, contributed a well-flowered collection of small plants of Balsams, large, full double Camellia-flowered varieties, well varied as to colours. A white bedding Lobelia, named White Emperor William, came from Messrs. W. & J. Brown, Stamford; and fine African Marigolds from Messrs. Cannell & Sons. Messrs. Paul & Son, Cheshunt, showed a dozen blooms of White Baroness H.P. Rose; and from Chiswick Mr. Barron sent a small group of neatly grown Tydæas.

Mr. J. E. Ewing, of Norwich, offered two prizes for a collection of shoots or twigs of twenty-four varieties of ornamental foliaged trees and shrubs, hardy in British gardens, and three collections were shown, but one of them, a most interesting lot, numbering about sixty sorts, sent from the garden of the late Provost Russel, of Falkirk, was thrown out of court through not being in conformity with the terms of the schedule. The 1st prize was awarded to Mr. Harding, The Gardens, Orton Hall, Peterborough, for a very excellent lot, but which included more Conifers than should have been numbered in a representative collection of ornamental subjects. Most noticeable of all were his fruiting sprays of Torreya myristica, Picea bracteata, P. Nordmanniana, P. nobilis, Cedrus africanus, and Thuia gigantea; also, but not in fruit, Abies lasiocarpa, Abies grandis, and Cupressus Lawsoniana aurea variegata. Mr. Moorman, gr. to Miss Christy, Combe Bank, Kingston, was 2d, with a good representative group, including one or two Oaks, Hollies, and Conifers, Garrya elliptica, Rhus Cotinus, Sambucus nigra aurea, Comptonia asplenifolia, &c.

The awards made were:

First-class Certificates,

To Mr. C. M. Hovey, for Lilium speciosum var. Melpomene.

To Mr. H. G. Smyth, for Carnation Mary Morris.

Fruit Committee.—John Lee, Esq., in the chair. But few subjects of any importance came under the notice of this body. Mr. J. Moore, gr. to J. Haig, Esq., Bray Court, Maidenhead, sent a well grown sample of Tomatos, for which he received a Cultural Commendation. From Messrs. Thos. Rivers & Son came ripe fruits of Beurré de l'Assomption and Clapp's Favourite Pears, Rivers' Orange, Byron, Chaucer, Dryden, Lord Napier, and Newton Nectarines, &c. Messrs. J. Cheal & Sons, Crawley, showed three seedling Melons, the best of which was a small, beautifully netted, and highly flavoured fruit named Crawley Paragon, but which was considered scarcely distinct enough from the true type of Turner's Scarlet Gem. An admirably preserved dish of Winter Greening Apples came from Mr. Divers, gr., Wierton House, Maidstone.

At a meeting of the Floral Committee held at Chiswick on August 16, with G. F. Wilson, Esq., F.R.S., in the chair, the committee inspected the collections of Achimenes, Tydæas, Verbenas, Heliotropes, &c., when the following awards were made. The names of those varieties that are marked with an asterisk were granted First-class Certificates; the others, not so marked, being recommended as worthy of cultivation.

Verbenas.—Phlox* (Cannell & Sons): plant of fine vigorous growth, and very free-flowering; the trusses of medium size; the flowers large and rosy-crimson, with a mauve ring round a distinct white eye.—August Reuz* (Cannell & Sons): free in habit, and free-flowering; the trusses of medium size; the flowers rosy-scarlet, with a distinct yellowish eye. A showy variety.—Kentish Beauty* (Cannell & Sons): plant of vigorous growth, and free-flowering; trusses and flowers large, well displayed, and of a beautiful rosy-claret colour, with a pure white eye.

Ageratums.—Malvern Beauty* (Cannell & Sons): close and compact in growth, and free-flowering; the flowers well displayed, pale blue. A fine variety.

Ivy-leaved Pelargoniums.—Rossini* (Lemoine): a free-growing variety, with short-jointed stems; trusses of medium size, and very large individual flowers of a beautiful magenta-scarlet. A very fine addition to the single-flowered section.

Heliotropes. — Bouquet perfume* (Lemoine): a dwarf and compact free-flowering variety; the trusses large and well displayed, and the flowers dark bluish-lilac. A good variety for pot culture.—Madame P. Athles* (Lemoine): vigorous habit, free-flowering; the trusses large and well displayed. Dark blue.

Pentstemon.—Virginale* (Lemoine): a variety of fine free habit, with pure white flowers.

Tropæolum.—Bedfont Rival* (Dean): a fine free-blooming variety, with flowers of an intense orange-scarlet colour.

Achimenes.—The collection includes about a hundred sorts, from which the following were selected as the best in their respective classes, and received three marks of merit:—Margaritæ (Vallerand): pure white, fine, large-flowered. Good habit.—Mauve Queen (Vallerand): mauve, with orange-spotted eye; tube shaded orange.—Longiflora macrantha (Vallerand): pale blue; tube shaded with orange; large showy flowers.—Longiflora (Vallerand): blue; more compact in habit than the above; leaves reddish beneath.—Mauve Perfection (Vallerand and Van Houtte): mauve-purple, veined with crimson; fine large flowers; very free. This was received from M. van Houtte under the name of Cassiopée and Mauve Perfection.—Ambroise Verschaffelt (Vallerand): white, shaded mauve, deeply veined with purple; lemon eye. Received from M. van Houtte under the name of Diamond.—Sir Treherne Thomas (Vallerand and Van Houtte: rosy-purple, with orange-spotted eye; leaves reddish beneath.—Floribunda (Vallerand): deep violet-purple; very dwarf.—Carl Wollarth (Van Houtte and Vallerand): violet-purple, pale yellow eye, spotted with red; very free flowering. Frau Schiller (Van Houtte), Pink Perfection (Van Houtte), and Baumanni (Van Houtte), are synonymous.—Diadem (Vallerand): bright rosy-scarlet, yellow eye, with the lobes of the flower serrated.—Unique (Vallerand): bright magenta, orange spotted eye.—Firefly (Vallerand): bright scarlet, with orange eye. The following received two marks of merit:—Celestial (Vallerand): white, slightly veined with mauve, mauve eye.—Cherub (Vallerand): white, with mauve eye, dwarf habit, leaves brownish beneath.—Dentonia (Vallerand): pale mauve, with purple veins.—Longiflora picta: rosy-lilac, large flowers.—Tubiflora (Vallerand): copper-red, with orange centre, long orange tube.—Georgiana (Van Houtte): bright scarlet; orange throat; long open tube, and small lobes.—Dr. Hopft (Vallerand): white, with mauve centre. Dwarf and very free flowering.—Ami van Houtte (Vallerand and Van Houtte): deep violet-blue; throat yellow, with dark spots; leaves pale green.—Liebmanni (Van Houtte): mauve-purple, shaded with white in the centre.—Grandiflora (Vallerand): rosy-lilac, white centre.—Masterpiece (Vallerand and Van Houtte): violet-purple; white throat; large brownish leaves.—Admiration (Vallerand and Van Houtte): rosy-purple; whitish throat; rough brown leaves.—Hofgartner Neuner (Van Houtte): magenta-rose; orange-spotted eye.—Dazzle (Vallerand): bright orange-scarlet; small yellow eye. — Hofgartner Wendscanch (Vallerand and Van Houtte): violet-purple; small flowers; compact habit.

Tydæas.—Cybéle* (Vallerand): soft rosy-carmine; lobes spotted and striped with crimson.—Magicien* (Vallerand): deep orange-scarlet; lobes spotted and striped with deep crimson.—Chiron (Vallerand): bright scarlet; lobes spotted and striped with crimson.—Harlequin (Vallerand): tube purple; lobes greenish-yellow, heavily spotted with purple.—Venosa (Van Houtte): tube red; lobes soft carmine, spotted and striped with red.—The two following Gesneraceous plants were also regarded as meritorious:—Rosonowia ornata (Van Houtte): creamy white covered with rose lines on the tube and on the two superior lobes; interior striped with purple. Gesnera macrantha (Van Houtte).

Shropshire Floral and Horticultural: *Aug.* 16 *and* 17.—This flourishing Society held its annual summer show on the above days in the Quarry, Shrewsbury. A spacious and agreeable site has much to do with success in exhibitions of this kind, and in this the Society is especially favoured, for it would be difficult to point to another spot so well adapted for the purpose—plenty of room to admit of the vast crowds who assemble moving leisurely about on the grassy slopes, or promenading under the splendid lengthy avenue of Lime trees, unique in its way, and to enjoy the cheerful strains of good music and numerous other amusements that, conjointly with an excellent horticultural display, the Society provides. On this occasion there were three first-class bands on both days, which, with balloons, a cavalry tournament, and a variety of other attractions, brought together such an assemblage—30,000 persons on the second day—as even Shrewsbury has not before witnessed. In these times, when important exhibitions are continually increasing in number in various parts of the provinces, good prizes act as a powerful inducement to secure the attendance of those who have the best plants and other horticultural produce, and the Shrewsbury committee act wisely in thus holding out inducements such as few other societies offer. In the open class for twenty stove and greenhouse plants, not less than half of which to be in flower—prizes, £25, £20, and £15—Mr. Cypher, Cheltenham, took the lead with a fine fresh lot, which included good specimens of the hybrid Ixora Williamsii, I. Pilgrimii, the distinct and large-flowered I. Duffii, one of Messrs. Veitch's introductions from the South Sea Islands; the white and red varieties of Lapageria, several fine Heaths, associated with Crotons, Palms, and an immense bush of Gleichenia flabellata from 7 to 8 feet in diameter. 2d, Mr. Tudgey, gr. to J. F. G. Williams, Esq., Worcester, who also had a fine group, containing amongst others the always beautiful Dipladenia amabilis, D. hybrida, Ixora amabilis, the fine white Erica ampullacea Williamsii, Allamanda nobilis, with ornamental-leaved plants to match, including a large and highly coloured example of the dwarf-growing Sarracenia purpurea. Mr. Mould, Pusey, was 3d, with an even lot of smaller plants.

In the class for nine stove and greenhouse plants, not less than five in bloom, there were some eight or nine competitors, Mr. Roberts, gr. to E. C. Glover, Esq., being well in front with a handsome lot of plants, nicely flowered, in which were Eucharis amazonica, bearing about twenty spikes of bloom; Allamanda Hendersoni, Bougainvillea glabra, and Ixora Williamsii; 2d, Mr. Pratt, gr. to Lord Hill, Hawkstone, staging, in a nice collection, Ixora amboynensis, a couple of Heaths, and a very fine specimen of Nepenthes Rafflesiana, with some fifteen large highly coloured pitchers; 3d, Mr. Pursar, gr. to J. Watson, Esq. Six stove and greenhouse plants (amateurs).—1st, H. Owen, Esq.; 2d, Mr. Walford, gr. to Mrs. Wace; 3d, Mr. B. Jones, gr. to L. Burd, Esq. Six Cape Heaths.—These were well shown, Mr. Cypher taking 1st honours with medium sized, well flowered plants of Marnockiana, MacNabiana, Austiniana, maidstoniensis, Turnbulli, and æmula. Mr. Tudgey, who was 2d in a well managed half-dozen, had the beautiful highly coloured insignis, Hartnelli, Lindleyana, and tricolor Wilsoni; 3d, Mr. Mould.

Palms were unusually well represented, the exhibits being confined to the more elegant, smaller growing kinds, which are in many respects much preferable to the larger sorts. The 1st prize for six was taken by Mr. Cypher, with charming examples of Genoma graciis, Kentia Canterburyana, K. Fosteriana, Pritchardia pacifica, Verschaffeltia splendida, and Thrinax elegans; Mr. Tudgey, who came in 2d, had a good half dozen. 3d, Mr. Roberts, with a nice lot. Nine Ferns.—In these Mr. Cypher was again in front, having a medium-sized group; 2d, Mr. Tudgey. In the class for six Ferns the competition was very close; Mr. Farrant, gr. to Mrs. Jason, being 1st with, amongst others, a fine plant of Cyathea medullaris; 2d, Mr. Pratt. Four Ferns.—1st, H. Owen, Esq.; 2d, R. Cooper, Esq.

Coleus, when well grown and highly coloured at this advanced season, to some extent supply the place of flowering plants, which are less abundant than earlier ones. With a handsome lot of pyramids, Mr. Pursar was well ahead; Mr. Morris, gr. to Mrs. Shuker, 2d; Mr. Pearson, gr. to Lord Berwick, 3d. Six Fuchsias.—1st, Messrs. Pritchard & Sons, Frankwell Nurseries, Shrewsbury; 2d, Mr. R. J. Niven, Wellington. In the amateurs' class for three they were better shown, H. Owen, Esq., being 1st, and Mr. Walford 2d. Dracænas were forthcoming in splendid condition, Mr. Pratt taking 1st for six with well furnished, highly coloured examples; Mr. Pursar, who was 2d, having also a nice half-dozen. Six hardy Ferns.—1st, Messrs. Pritchard & Sons; 2d, Mr. W. H. Harrison.

Zonal Pelargoniums were present in condition such as is rarely met with—good kinds, distinct in colour, well grown, and profusely flowered, with no more training than is requisite to support them. With six single varieties, Messrs. J. Oldroyd & Co., Shrewsbury, took 1st, with a grand lot, containing Ellen, salmon, mottled; Pirate, scarlet; Mrs. Vickers, pink; Bride, pale peach; and Lady Sheffield, pinkish-lilac; 2d, Mr. J. R. Jones;

3d, Messrs. Pritchard. Double kinds were also well shown. With six Messrs. Oldroyd likewise took 1st honours; Messrs. Pritchard and Mr. J. R. Jones being 2d and 3d. Zonals were well done in the amateurs' division. With three singles Mr, H. H. Treasure took 1st, Mr. H. Owen 2d. Three double varieties.—1st, Mr. B. Jones; 2d, Mr. H. Owen.

Caladiums were in great force, large and well grown, the 1st prize for six going to Messrs. Pritchard, who were closely followed up by Mr. J. C. Salter, gr. to G. D. Leeds, Esq. With six Begonias the Rev. J. H. E. Charter was 1st, Mr. Lawley, gr. to Mrs. Darby, 2d. Gloxinias were nicely shown. With four Mr. Owen had 1st, staging a nicely flowered lot; 2d, Mr. Walford. Table plants.—Suitable kinds extremely well grown, and not too large for the purpose, were in great force in a very close competition, Messrs. Jones & Son, Coton Hill Nursery, Shrewsbury, was 1st with an elegant even dozen; 2d, Mr. Farrant; 3d, Mr. Pratt.

Collection of fifty miscellaneous plants in 5-inch pots, not less than thirty in bloom.—In a numerous competition Messrs. Jones & Sons were 1st, putting up a nice selection, the most noticeable amongst which were numerous examples of Odontoglossum crispum, Ixoras, Cattleya violacea, greenhouse Rhododendrons, several kinds of Ericas, and Eucharis amazonica, intermixed with Palms, Crotons, Dracænas, and others of a like description. Messrs. Pritchard, who were 2d, had also a meritorious group; 3d, Mr. Pursar. Groups arranged for effect, occupying a space of not more than 100 square feet.—Of these there were a number of exhibitors, most of them arranging their plants tastefully, the material likewise in the majority of cases being suitable for this kind of display. Mr. Pratt was well 1st, with an effective arrangement, alike commendable for the grouping and the light elegant habit of the principal plants raised above the level of the dense groundwork, composed of Adiantums, Caladium argyrites, and Coleus of different colours; the whole backed up with Palms and edged with moss, in which was plunged at intervals tufts of Nertera depressa, profusely berried. Messrs. Pritchard and Mr. J. W. Pritchard, who were 2d and 3d, had very telling groups similarly arranged.

Cut Flowers.—The quantity of these present would have made up no mean exhibition in themselves. With twenty-four Roses, single trusses, Messrs. Perkins & Sons, Coventry, took the lead with a nice stand of blooms, the best of which were Madame V. Verdier, Leopold I., Charles Lefebvre, Belle Lyonnaise, Xavier Olibo, and Marie Baumann; Messrs. J. Dickson & Sons, Chester, 2d, having, along with others, fine flowers of Mademoiselle Marie Rady, Mademoiselle Annie Wood, and Alfred Colomb; 3d, Mr. F. Perkins. Eighteen Roses, single trusses.—1st, Mr. J. W. Pritchard; 2d, Mr. Lambert, gr. to Colonel Wingfield. Six Roses (amateurs).—1st, Mr. E. J. Pritchard; 2d, C. M. Campbell, Esq. Dahlias.—In the class for thirty-six Mr. W. Shaw took 1st, with a fair stand of flowers. With twenty-four Mr. Shaw was again to the fore, Messrs. Pritchard being 2d. Nine Dahlias (amateurs).—1st, Mr. R. J. Niven; 2d, Mr. C. M. Campbell. Messrs. Kelway had a large and fine lot of Gladiolus, taking 1st in the class for thirty-six, with splendid spikes, amongst which Agrius, Mr. Derry, Countess of Pembroke, Mrs. Reynolds Hole, Queen Mary, Beauty of England, Mrs. Laxton, Lady Bridport, Cassino, Ptolemy, Lord Leigh, and Rhamnes were exceedingly fine; Mr. Shaw was 2d. Eighteen spikes of Gladiolus.—1st, Mr. Pearson; 2d, Messrs. Pritchard. Twelve bunches of stove and greenhouse flowers.—With these Mr. Pratt was 1st, Messrs. Pritchard 2d. Twelve bunches hardy herbaceous flowers (amateurs).—These made a fine display, the lead being taken by G. Townsend, Esq.; 2d, J. B. Jones, Esq. Amongst a number of good stands Mr. Cypher had 1st and Mr. Tudgey 2d. Ball bouquet.—1st, Mr. Cypher, with a beautiful example; 2d, Mr. F. Perkins, who had a very pretty arrangement composed wholly of dark crimson and yellow Rose buds. Bridal bouquet.—1st, Mr. F. Perkins; 2d, Mr. Cypher. Three button-hole bouquets.—1st, Mr. Cypher; 2d, Mr. H. Jones.

Fruit was extensively shown—much of it of good quality. For a collection consisting of twelve dishes Mr. Pratt was a good 1st, showing, amongst others, a handsome Queen Pine, Black Hamburgh, and Muscat of Alexandria Grapes, Peaches, Nectarines, Figs, and a Melon; 2d, Mr. Milner, gr. to the Rev. J. D. Corbet. Nine dishes of fruit.—1st, Mr. Pursar; his best dishes being Muscat of Alexandria and Black Hamburgh Grapes, and Webb's Wonderful Melon; 2d, Mr. Lambert, Grapes, six bunches of black, three varieties.—Here Mr. Pratt was well in front with fine examples of Black Hamburgh, Madresfield Court, and Lady Downe's; 2d, Mr. Milner; 3d, E. T. W. Wood, Esq. Three bunches of black Grapes.—1st, Mr. Lambert, with medium-sized bunches of unusually large berries, black, and well covered with bloom; 2d, Mr. Pursar; 3d, Mr. Dawes, gr. to F. St. B. Sladen, Esq. Four bunches white Grapes, two varieties.—1st, Mr. Milner, with Muscat of Alexandria and Buckland Sweetwater, the latter finely coloured; 2d, Mr. Pratt, who had Muscat of Alexandria, and Trebbiano. Two bunches of black Grapes (amateurs).—1st, E. Lea, Esq., with Black Hamburgh; 2d, G. Burr, Esq.; 3d, W. W. Humphreys, Esq. Two bunches of white Grapes (amateurs).—1st, J. Watton, Esq.; 2d, E. Lea, Esq. Dish of Peaches.—1st, Sir. C. R. Boughton; 2d, R. C. Naylor, Esq. Dish of Nectarines.—1st, Mr. Dawes; 2d, Sir C. R. Boughton. Green-flesh Melon.—1st, Mr. Farrant; 2d, Mr. H. Owen. Scarlet-flesh Melon.—1st, Mrs. R. L. Burton; 2d, Mr. Farrant.

Messrs. Oldroyd & Co. had an extensive and interesting collection of plants, not for competition, amongst which were a telling lot of the newer kinds of zonal Pelargoniums—Guinea, a very fine orange-scarlet, distinct, and a profuse bloomer; and Lizard, deep flesh-colour, with cinnamon-orange centre, a beautiful sort, being particularly noteworthy. From Messrs. J. Dickson & Sons, Chester, came a nice group of hardy trees and shrubs, as also a good collection of stove and greenhouse plants. Messrs. Jones & Sons likewise contributed stove and greenhouse plants, not for competition.

Earley Horticultural: *Aug.* 15.—The summer exhibition of this young society was this year held in the charming grounds of The Wilderness, Earley, the residence of Mrs. Marsland. As the whole of the extensive lawns and flower gardens were thrown open to visitors to the show, without reserve, the pleasure attendant on a visit to the admirable display of flowers and other products in the tents was materially increased by this privilege. Those who may hesitate to throw open their gardens to the public so unreservedly may be assured by learning that, though the visitors were numerous, not the least harm was done to shrub or flower. Mr. Lees, the gardener, had the grounds in admirable condition, the numerous fine trees and shrubs in them—many being of special interest—affording much room for study and enjoyment. Within the tents a huge collection of plants and cut flowers from the nurseries and seed grounds of the Messrs. Sutton & Sons, Reading, formed a brilliant show, for not merely was the group a large one, but it was singularly varied and admirably displayed. Of pot plants Begonias, in fine variety, figured prominently, as also did the Queen Victoria variety of the Cardinal Lobelia. Then there were lofty spikes of Hollyhocks, seedling varieties, Liliums in variety, Galtonia candicans, the brilliant Tigridia pavonia, seedling Carnations and Picotees in bunches, double and single Dianthus, white, purple, and yellow Sweet Williams, the yellow the most pleasing of all; big bunches of the herbaceous and Drummondi varieties of the Phlox, Gladioli, a large basket of Stocks and of seedling Verbenas, the beautiful scarlet-flowered Salvia Rœmeriana, the delicate blue Bella Donna Delphinium, double and single Petunias, Antirrhinums, and many other things. With the exception of a large collection of plants from Maiden Erleigh, sent by Mr. Turton to dress the tables, amongst which his beautiful strain of crimson Celosias figured effectively, the exhibits were almost exclusively from cottagers and amateurs, and were invariably of excellent quality, the classes in most cases showing great competition. It is pleasant to learn that the Society has the hearty support of the chief residents in the locality.

Feltham Horticultural: *Aug.* 16.—The first summer exhibition of this newly formed suburban Society was held in the grounds attached to the residence of E. M. Browell, Esq., J.P., President of the Society, and proved to be a complete success. Established originally as a market grower's society, it next embraced cottagers and amateurs, and this year, owing to enlarged space and a more suitable season, has included gentlemen's gardeners, who exhibited largely. The entire absence of any kind of horticultural exhibition has so far acted adversely upon the locality that gardeners' products are not nearly so good as they might be. It is hoped, however, that the stimulus now given to higher class culture will in time bear good fruit, and that both gardeners and their employers will become alive to the value of horticultural exhibitions. We mentioned last week with approbation the beautiful display of Dahlias sent by Mr. C. Turner, of Slough, and now have to record further the fine collections of decorative plants of many kinds, of hardy ornamental foliage shrubs and trees, and of handsome Coniferæ, sent by Messrs. C. Lee & Sons, Hammersmith; of remarkably interesting and well grown groups of market plants from Mr. Roberts, of Feltham, and from Messrs. Smith & Larke, Ashford; and of a good group of plants, with boxes of single Dahlias, Begonias, Pentstemons, &c., sent by Messrs. Hooper & Co., of Twickenham. A remarkably well grown collection of some fifteen kinds of Potatos was staged by Mr. Low, bailiff at the Middlesex Industrial Schools, including International, Radstock Beauty, Grampian, Vicar of Laleham Bedfont Prolific, and Mr. Bresee, exceptionally good. Mr. Shapley, of Ashford, sent as curiosities a couple of remarkably handsome fruit of the Sooley Qua, about 4 feet in length; and Mr. Dean, of the Bedfont Seed Grounds, put up a dozen of huge Trebons Onions, weighing 14½ lb. Potatos were specially good a competition for the best bushel of Potatos in the trade growers' section brought one of the handsomest lots of Bresee's Prolific we have ever seen, shown by Mr. James Powell; Mr. Dean coming 2d, with the new white kidney Cosmopolitan—a larger sample; and Mr. W. Cole was 3d with Early Rose. In the trade class for three dishes Mr. Dean was a good 1st with Lord Mayor, white round; Prime Minister, fine white kidney; and Cosmopolitan: Mr. Cole coming 2d. In the amateurs' section, where Potatos were well shown, Mr. O. Jacob, the Hon. Secretary, was 1st, with good International and Vicar of Laleham; Mr. H. Harris coming 2d, with Vicar of Laleham and Bedfont Prolific. In the cottager classes Potatos were singularly good, the best half-bushel being International, whilst really handsome lots of Vicar of Laleham were both 2d and 3d. The best two dishes here again were International and Vicar of Laleham. The prizes offered by Messrs. Sutton & Sons, Reading, for six kinds of vegetables brought a good competition, and were taken by Mr. Jones, gr. to E. M. Browell, Esq.; Mr. Brown, gr. to J. Blake, Esq., Ashford; and Mr. Franklin, gr. to Sydney Smith, Esq., Feltham. For the Silver Cup, presented by Messrs. James Carter & Co., offered in an open class for the best eight kinds of vegetables only, Mr. Low and Mr. Franklin contended. The former put up a good collection, but having taken a similar cup last year, was not entitled to receive one this year; and Mr. Franklin's collection was too indifferent to receive the award. The Rev. J. D. Peake, Vicar of Laleham, who is yet engaged in raising seedling Potatos, put up a dish of a new white second early kidney, which he has named Union, that has a very promising look. Some good fruit was shown, though none call for special comment. The ladies competed largely for some handsome special prizes for the best stand or epergne of flowers; and, though the exhibits were pleasing, they lacked that display of taste seen in the stands of more practised hands. Some baskets of flowers were pretty, and specially pleasing was an epergne sent by Miss Mary Browell, not in the competition, dressed solely with white Heather blooms, and flowers of the Ox-eye Daisy.

Cheadle Floral and Horticultural: *Aug.* 18 *and* 19.—The fifteenth annual exhibition of the above Society took place under very favourable conditions as regards the general excellence of the subjects exhibited, and the large numbers of visitors who had an opportunity of inspecting and comparing the articles staged; it is to be hoped that it was also satisfactory from a financial point of view. The whole of the exhibited productions on this occasion were of an excellent order of merit, but in one or two classes there were a few less entries than usual; the three large tents, however, were well filled, and admirably arranged. For ten stove and greenhouse plants, not less than four flowering and four ornamental, the 1st prize was taken by Mrs. E. Cole & Sons, Withington, who showed a grand Kentia with twelve fine leaves; Croton Weismanni, C. Johannis, well coloured; Ixora coccinea, and I. Williamsii with thirty good trusses; Erica ampullacea obbata and Fairrieana, both well bloomed. The 2d prize fell to Messrs. W. G. Caldwell & Sons, Knutsford, in whose collection we noticed a good Thrinax elegans, Gleichenia flabellata, Croton Weismanni, C. Queen Victoria, the latter a nice plant; Allamanda grandiflora, Bougainvillia glabra, Clerodendron Balfourianum, &c. The 3d prize went to Colonel Fernley, Heaton Mersey. In the corresponding class for amateurs the latter exhibitor was placed 1st (Mr. J. Kirk, gr.), staging some medium-sized plants, among which were certainly one or two that were scarcely up to the mark; Ixora javanica, however, was exceptionally good; a Eucharis, with about twenty-four spikes, and Francisea calycina, were also nicely bloomed. J. Watts, Esq. (Mr. R. Mackellar, gr.), was 2d, staging much larger and more imposing specimens. Cycas revoluta, Dicksonia antarctica, and Davallia Mooreana, were fine plants; so, too, was a Eucharis, with thirty spikes, well bloomed; Peristeria elata, with nine spikes of bloom, a noteworthy plant, and yet very ineffective in a group. Mrs. Tambaci was placed 3d. For six exotic Ferns, Mrs. E. Cole & Sons were 1st, their plants being rather small. J. G. Silkenstadt, Esq. (Mr. C. Humphreys, gr.), was 2d, in his collection being no less than four Adiantums. For six stove and greenhouse plants, the 1st prize fell to Mrs. Sykes, Mrs. Tambaci (Mr. J. Wilkes, gr.) being 2d. For six Caladiums D. Adamson, Esq. (Mr. J. Brierley, gr.), was 1st, showing good plants of Chantinii, Meyerbeer, Lucy, Albert Edward, bicolor splendens, &c.; Mrs. Sykes (Mr. G. Kemp, gr.) was 2d. Zonal Pelargoniums were well done, and numerous. J. G. Silkenstadt, Esq., was 1st; H. Schill, Esq. (Mr. G. Coulson, gr.) being 2d, and D. Adamson, Esq., 3d. In the second group, Jean Sisley, Sybil Holden, Mrs. G. Smith, rich salmon, and White Clipper, were much admired. Mr. G. Coulson was 1st for bronze and tricolor varieties, staging good plants, well coloured. The Fuchsias were well done, and the 1st prize went to Mr. J. Brierley, whose plants of Wave of Life, Arabella, Charmer, and Sedan, were about 6 feet high, and full of bloom. For a single Fuchsia Mr. J. Brierley was again 1st, with a fine plant of Arabella. Achimenes and Lycopods were well represented, as also were the single and double forms of Petunia. With groups of plants judged for effective arrangement there was a strong competition. The plants were arranged in circles, exhibitors finding their own staging; the space, 10 feet in diameter, being marked on the grass. Here Mr. G. Wilkes came in 1st, with a nice group, the foliage and flowers well alternating, and the whole having a light and charming effect. The lot put up by Mr. Elphinstone was very pleasing, but lacking somewhat in flower; Mrs. Sykes was 2d. Good plants of Celosia pyramidalis plumosum, Cockscombs, and Lilium speciosum were also staged. A number also of good plants of Eucharis amazonica were exhibited, several from J. Watts, Esq., also from Mr. A. Macdonald, gr. to G. W. Mould, Esq. Some good stands of cut flowers were shown, Mrs. E. Cole & Sons being 1st, Mrs. Sykes 2d, Colonel Fernley 3d. Bouquets and stands of flowers for table decoration, also collections of wild flowers, were numerous, and added much to the pleasure and interest of the long well-filled fruit table.

The fruit was of an excellent order, the 1st prize for six dishes being taken by Mr. F. Faulkner, gr. to F. R. Leyland, Esq., Liverpool. This collection was made up of good Muscat and Black Hamburgh Grapes, a good Pine, Prince of Wales Peach, Pine-apple Nectarine, and Brown Turkey Figs. Mr. M. Quirk, gr. to Major Dixon, was 2d, with a lot scarcely inferior, among which were Barrington Peaches, Elruge Nectarines, and Blenheim Orange Melon, all fine and good. For dishes of Peaches, Nectarines, and Cherries Mr. Faulkner was again 1st, and also for Muscat Grapes. In this class Mr. Mackellar was 2d, his bunches being a little looser than the winning ones; the berries, however, were larger and of a better colour. Some good black Grapes were shown, the 1st prize for two bunches falling to Mr. Quirk, whose bunches were excellently finished. For the largest bunch of Grapes Mr. H. Henshall, gr. to H. O. Hutchinson, Esq., showed a fine sample of Madresfield Court, and was placed 1st. Several varieties of seedling Potatos

were staged by Mr. Mackellar, and groups of plants were staged by several nurserymen, including Mrs. E. Cole & Sons, Mr. J. Hooley, in whose collection we noticed a fine lot of Bouvardias in bloom, including candidissima, Vreelandii, Humboldtii, and jasminiflora. Mr. Gleave, nurseryman, Stockport, also staged a useful lot of plants. A fine group of Conifers was shown by Messrs. Caldwell; cut Roses from Messrs. F. & A. Dickson, of Chester; also Messrs. Dickson & Robinson, Manchester; whilst from Messrs. Dickson, Brown & Tait, with some boxes of cut Roses, came a large number of Gladiolus spikes and Galtonia candicans. Summer-houses were exhibited by Mr. H. Inman, Stretford; whilst a number of pits, frames, and glass erections were fixed by Messrs. D. Lowe & Sons, Manchester and Edinburgh. (*From a Correspondent.*)

St. Neot's Amateur and Cottage Garden Society: *Aug.* 22.—This exhibition took place on the above date in the pretty grounds of Eynesbury Rectory, a village adjoining St. Neots, so close to it in fact that Eynesbury might be regarded as a part of St. Neots. For something like eleven years past this Society has had to struggle against the adversity of bad weather, on ten out of the elven show days the weather has been unfavourable, and on this occasion the fine open harvest weather changed on the show day to a threatening character, though not early enough to spoil the attendance. It was a very interesting exhibition, comprising birds of various kinds, dead poultry, eggs, roots, butter, &c., all of which is very appropriate to such a district, and serves to interest all parties in the festival of the year. The show is under the management of Mr. W. Ratchelous, manager of Messrs. Wood & Ingram's nursery at St. Neots, who deserves great credit for his pluck and excellent work.

In the division open to all a very good group of four flowering and four fine-foliaged plants was staged by Mr. Redman, gr. to J. H. Goodjaines, Esq., and which was a leading feature of the show. The group consisted of well grown examples of Bougainvillea glabra, Dipladenia amabilis, Allamanda Hendersoni, Vinca alba, Croton undulatum, Latania borbonica, Alocasia metallica, and a fine Caladium bicolor splendens. Mr. Redman had the best specimen flowering plant, staging a good example of Bougainvillea glabra; Mr. Smith, gr. to Miss Cheere, Papworth Hall, St, Ives, having a well-flowered example of Ixora Fraseri, but it is coloured in the foliage or it would have taken a higher place. Mr. Last, gr. to Lord Cosmo Gordon, had a nice specimen of Anthurium Scherzerianum, but a little stale. The best specimen foliage plant was a well-grown and coloured piece of Croton Andreanum, large in leaf and richly marked. Mr. Williams, gr. to Geo. Bower, Esq., came in 2d with Chamærops Fortunei. Mr. Smith received in this class a High Commendation for a finely-coloured variegated Pine-apple.

The best four Ferns came from Mr. Tillbrook, gr. to R. Brown, Esq., and consisted of Cyathea dealbata, Adiantum farleyense, A. concinnum, and A. concinnum latum, a very good lot indeed. Mr. Redman came 2d with Adiantum farleyense, A. formosum, A. cuneatum, and Cyrtomium falcatum. The best specimen Fern was a very fine piece of Platycerium alcicorne, from Mr. Tillbrook; Mr. Redman being 2d, with a good piece of Gymnogramma chrysophylla. The best four Coleus came from Mr. Last—nice bushy, well grown and coloured specimens. Some very good Fuchsias were staged, greatly in advance of what is generally seen at country shows. Mr. Last had the best four plants, large, well grown and finely bloomed; Mr. Redman coming 2d with plants nicely grown, but not so well bloomed. In the amateurs' class Mr. George Taylor staged three excellent specimens—not large, but extremely well grown and bloomed. Zonal Pelargoniums were nicely shown by Messrs. Redman and Last. In the class for six variegated varieties the latter had half-a-dozen tricolors in admirable condition.

In the classes for cut flowers there was a fairly good competition. The Rev. E. Fellows, Wimpole Rectory, a well-known cultivator, took the highest honours with Tea Roses, taking the 1st prize for twelve varieties, and staging good blooms of Gloire de Dijon, Maréchal Niel, Bouquet d'Or, Rubens, Mons. Guillot, Souvenir d'un Ami, Marie van Houtte. Catherine Mermet, and Souvenir de Madame Favart. In the amateurs' class Mr. Fellows had the best twelve Roses; but in the open division Mr. J. Barter came in 1st with a like number, staging good blooms of Devienne Lamy, Baroness Rothschild, Victor Verdier, Princess Beatrice, Sénateur Vaisse. Marie Baumann, Duke of Connaught, Mdlle Marie Finger, and Etienne Levet.

Some very good Dahlias were shown by Mr. Petfield, gr. to A. J. Thornhill, Esq. The African Marigolds from Mr. P. Mayer were surprisingly fine, and there were good Phloxes, Zinnias, &c. The boxes of cut flowers in twelve varieties were a pleasing feature, Mr. Smith being 1st, and Mr. Redman 2d, with some very good things.

The best six dishes of fruit came from Mr. R. Brown, and consisted of Alicante and Muscat of Alexandria Grapes, Peaches, Nectarines, Apricots, and Plums. 2d. G. Bower, Esq. Time did not admit of going into details of the several fruit classes, but there were good black and white Grapes, Peaches, Nectarines, Apricots, Plums, Apples, Pears, &c. The Apricots were numerous, and very fine indeed.

And the same must be said of the vegetables. Mr. Redman had the best basket of ten varieties; Mr. Geo. Bower coming in 2d. There was a class for six sorts of Potatos, in which there was a good competition. A local grower of some renown, named R. Stowe, was 1st, with good examples.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, AUGUST 23, 1882.

Month and Day.	Barometer: Mean Reading Reduced to 32° Fahr.	Barometer: Departure from Average of 18 years.	Temperature of the Air: Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 30 years.	Hygrometrical Deductions from Glaisher's Tables 6th Edition: Dew Point.	Degree of Humidity. Sat. = 100.	Wind: Average Direction.	Rainfall
Aug.	In.	In.	°	°	°	°	°	°			In.
17	29.70	—0.09	65.0	54.7	10.3	58 2	— 3.0	53.6	85	W.: N.W.	0.08
18	29.82	+0.03	71.5	53.5	18.0	61.5	+ 0.5	57.3	86	S.W.: WSW	0.00
19	29.79	—0.01	69.5	57.6	11.9	61 2	+ 0.3	58.8	92	S.W.	0.02
20	29.75	—0.05	71.6	55.0	16 6	61.2	+ 0.4	52.2	73	S.W.	0.04
21	29.61	—0.20	66.5	53.0	13.5	58.0	— 2.7	46 6	66	S.W	0.00
22	29.53	—0.29	68.0	50.2	17.8	58 4	— 2.3	48.4	70	W.: S.W.	0.11
23	29.24	—0.58	66.0	52.5	13.5	57.3	— 3.4	46.4	66	S.W.: W.	0 12
Mean	29.63	—0.17	68.3	53.8	14.5	59 4	— 1.5	51.9	77	S.W.	0 37

Aug. 17.—Rain in early morning; dull and overcast day. Fine night; cool.
— 18.—A dull, overcast day; fine night.
— 19.—A dull, overcast day; slight rain. Fine night.
— 20.—Very fine day; rather windy. Slight rain at night.
— 21.—A dull, overcast day; very windy. Stars bright and clear. Windy at night.
— 22.—A fine morning; sun shining. Fine but dull few drops of rain in afternoon. Rain at night. Strong wind.
— 23.—Rain in early morning; gale of wind. Fine bright afternoon; sun shining. Very windy. Cold windy night.

London: *Atmospheric Pressure.*—During the week ending August 19, the reading of the barometer at the level of the sea was 29.86 inches at the beginning of the week, decreased to 29.81 inches by 9 A.M. on the 13th, increased to 29.89 inches by 9 A.M. on the 14th, decreased to 29.63 inches by 9 A.M. on the 16th, increased to 30.04 inches by 9 A.M. on the 18th, and was 30.02 inches by the end of the week.

The mean reading for the week at the level of the sea was 29.85 inches, being 0.32 inch lower than last week, and 0.11 inch below the average of the week.

Temperature.—The highest temperature in the shade in the week was 76°, on the 14th. On the 17th the highest temperature was 65°. The mean of the seven high day temperatures was 69°.8.

The lowest temperature in the shade in the week was 51°, on the 16th; on the 13th the lowest temperature was 60°. The general mean was 55°.4.

The greatest range in one day was 18°, on the 14th and 15th; the smallest was 9°.3, on the 13th. The mean of the seven daily ranges was 14°.4.

The mean temperatures were—on the 13th, 63°; on the 14th, 65.°2; on the 15th, 59°.1; on the 16th, 59°.2; on the 17th, 58°.2; on the 18th, 61°.5; and on the 19th, 61°.2; of these the 13th, 14th, 18th, and 19th were above their averages by 0°.8, 3°.2, 0°.5, and 0°.3 respectively; and those of the 15th, 16th, and 17th were below their averages by 2°.6, 2°.2, and 3° respectively.

The mean temperature of the air for the week was 61°.1, being 0°.3 lower than last week, and 0°.4 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo, placed in the full rays of the sun, was 143°.5 on the 14th; the highest on the 17th was 69°. The general mean was 104°.5.

The lowest reading of a minimum thermometer with its bulb placed on grass and fully exposed to the sky was 47°.3 on the 16th. The general mean was 50°.4.

Rain.—Rain fell on six days to the amount of 0°.34 inch in the week.

England: *Temperature.*—During the week ending August 19 the highest temperatures were 81° at Cambridge, 80° at Sunderland, and 78°.6 at Wolverhampton. The highest temperature at Bristol was 71°.4, at Bolton 72°.3, and at Truro 73°. The general mean was 75°.6.

The lowest temperatures in the week were 43° at Cambridge, 43°.9 at Bolton, and 44° at Wolverhampton. The lowest temperature at Plymouth was 54°, at Brighton 51°.5, and at Blackheath and Truro 51°. The general mean was 47°.7.

The greatest ranges of temperature in the week were 38° at Cambridge, 34°.6 at Wolverhampton, and 33° at Sunderland. The least ranges were 21°.3 at Plymouth, 22° at Truro, and 22°.1 at Bristol. The general mean was 27°.9.

The mean of the seven high day temperatures was highest at Cambridge, 75°.6, at Nottingham 71°.9, and at Sunderland 71°.5; and was lowest at Bolton, 66°.2, at Liverpool 66°.4, and at Sheffield 67°.7. The general mean was 69°.6.

The mean of the seven low night temperatures was highest at Plymouth, 58°.4, at Truro 56°.0, and at Brighton 56°.2; and was lowest at Bolton, 51°.5, at Sunderland 53°.2, and at Wolverhampton 53°.4. The general mean was 55°.

The mean daily range was greatest at Cambridge, 28°.5, at Sunderland 18°.3, and at Nottingham 17°.5; and was least at Plymouth, 9°.5, at Liverpool 11°.3, and at Truro 12°. The general mean was 14°.6.

The mean temperature was highest at Cambridge, 63°.7, at Brighton 61°.6, and at Plymouth 61°.5; and was lowest at Bolton, 57°.1, and at Sheffield and Liverpool 59°.1. The general mean was 60°.6.

Rain.—The largest falls were 1.33 inch at Bristol, 1.12 inch at Bolton, and 0.89 inch at Leeds; the smallest falls were 0.34 inch at Blackheath, 0.39 inch at Brighton, and 0.47 inch at Nottingham. The general mean was 0.67 inch. It fell on every day in the week at Leeds, and on six days at many places.

Scotland: *Temperature.*—During the week ending August 19 the highest temperature was 72°, at Dundee; at Edinburgh the highest temperature was 69°. The general mean was 70°.3.

The lowest temperature in the week was 46°.5, at Paisley; at Greenock the lowest temperature was 51°. The general mean was 48°.7.

The mean temperature for the week was 59°.9, being 1°.5 below that of the week immediately preceding, but 5°.6 above that of the corresponding week of 1881; it was highest at Dundee, 60°.7, and lowest at Aberdeen, 58°.7.

Rain.—The largest fall was 1.11 inch at Greenock, the smallest was 0.26 inch at Aberdeen. The general mean was 0.67 inch.

JAMES GLAISHER, F.R.S.

Enquiries.

He that questioneth much shall learn much.—Bacon.

Grass for Cultivation on Marshes.—I want to lay down with grass some marsh land in which there is a little salt, the land having been enclosed from the sea. What sort, or sorts of grasses should I use? *R. W.*

Answers to Correspondents.

Antirrhinums: *C. & R.* Not of first-rate quality.—*S. & M.* Apparently a good strain.

Begonia Seedlings: *W. Pearson.* Not exactly poor, but of no commercial value.

Berberis stenophylla Flowering a Second Time: *X.* The appearance is due to the change of a leaf-bud into a flower-bud—or, rather, the bud at the end of the shoot, the "terminal" bud of the botanist—which should, under ordinary circumstances, lengthen into an extension shoot only, here developes into a flower-bearing shoot. The ordinary flowers are borne on short side-spurs, or "axillary" branches, very much contracted as to length. On these spurs the flowers are now forming, but they will not expand until next spring; whereas in your specimens the newly formed flowers have rushed into bloom at once. Similar instances are frequent in the Laburnum, and in some varieties of Pears, notably the Napoleon. The ordinary arrest or interruption of growth does not take place, but, on the contrary, growth is continuous. It is significant that it is the terminal shoots, not the axillary ones, which grow out in this way, and the lesson so inculcated should not be lost when the question of how and where to prune is considered.

Bunch-Grass: *R. W.* The name of Bunch-grass is applied in British Columbia to Elymus condensatus, also to Festuca scabrella. We do not know where you can get seeds of either of them.

Christmas Rose: *J. H. C.* Your plant is not properly nourished, and is probably suffering through being exposed to too much sun, and being planted in a dry situation. These plants like shade, coolness, and a considerable degree of moisture.

Exhibiting: *E. C.* It would be both illegal and unfair to lift and exhibit the plants you name.

Fungus: *H. Henderson.* We do not recognise it.

Galvanised Wire: *J. C.* It occasionally does much mischief; but, so far as we know, not after it has had one or two coats of paint.

Grapes: *Enquirer.* Your Grapes are affected by a complication of disorders. The want of colour is probably owing to over-cropping and inaction at the roots. The damping is due to a stagnant atmosphere at night. As your situation appears to be a low one, close the ventilators entirely when there are fogs about, and keep a drier atmosphere overnight. Ventilate freely through the day. Your Vines are affected with thrips, which are injurious to the leaves, and spoil the appearance of the berries.

Names of Fruits: *A Constant Reader. Pears:* 1, Beurré de Capiaumont; 2, Seckle; 3, Williams' Bon

Chrétien. *Apples:* 1, Irish Peach; 2, not in condition for recognition.—*J. M. Apple:* Dutch Codlin.—*A. B. C.* 1, Violette Hâtive Nectarine; 2, specimen too poor for recognition.

NAMES OF PLANTS: *C. W.* Hypericum patulum.—*T. Smith.* Grindelia oregana, Helichrysum rosmarinifolium, var. ericæfolius = Cassinia leptophylla, hort.—*G. W. Cummins.* Perhaps Epidendrum clavatum, but we cannot name it with certainty.—*C. W. D.* Centaurea Phrygia.—*D. Wallace, Glasgow.* Echium vulgare.—*A. G.* Aloe distans. It flowers in the summer, and its blossoms are umbellate, pinkish and green; rather handsome.—*T. Imrie & Sons.* 1, Polemonium cœruleum; 2, Veronica gentianoides (variegated); 3, Pulmonaria saccharatum.—*A. O. W.* Nothoscordum striatum.

RENT: *A. F.* For the time between September 29 and December 15 you should pay say £7 12*s.*, and for the remainder of the quarter your half share would be about 11*s.* 6*d.*

*** Correspondents are specially requested to address, post-paid, all communications intended for publication to the "*Editor,*" and not to any member of the staff personally. The Editor would also be obliged by such communications being *written on one side only of the paper* and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Letters relating to ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the Publisher, and* not *to the Editor.*

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CATALOGUES RECEIVED.

LITTLE & BALLANTYNE, Carlisle—Dutch and Other Bulbs, &c.

G. E. ELLIOTT, 97, Bradford Road, Huddersfield—Dutch Bulbous and Other Flower Roots.

B. S. WILLIAMS, Upper Holloway, London, N.—Bulbs, Fruit Trees, New Plants, &c.

DOWNIE & LAIRD, 17, Frederick Street, Edinburgh—Dutch Flowering Bulbs.

LOUIS VAN HOUTTE, Ghent, Belgium—Bulbs and Other Flower Roots, Greenhouse Plants, Hardy Shrubs, &c.

RICHARD J. WOOD, Haverstock Hill, London, N.W.—Dutch Flower Roots.

F. C. HEINEMANN, Erfurt—Plants for Room and Window Decoration.

VILMORIN-ANDRIEUX ET CIE., Paris—Dutch and Other Bulbous Roots, Flower and Vegetable Seeds.

JAMES VEITCH & SONS, King's Road, Chelsea, S.W.—Hyacinths and Other Bulbous Roots.

STRIKE & HAWKINS, High Street, Middlesborough—Dutch and Other Bulbs.

THOMAS S. WARE, Tottenham, N.—A B C Bulb Guide.

THOMAS KENNEDY & Co., Dumfries—Select Dutch Flower Roots.

DICKSON & ROBINSON, 12, Old Millgate, Manchester—Hyacinths and Other Bulbous Roots.

JOHN LAING & Co., Stanstead Park, Forest Hill, S.E.—Dutch Bulbs and Other Flower Roots, &c.

COMMUNICATIONS RECEIVED:—D. B. C.—H. C.—W. S—Camjee.—J. D.—R. D.—An Under Gardener.—J. W. C.—F. C. T.—S. & S.—H. K.—Seeds.—Albo.—G. P.—M. T. M. A. D.—Wild Rose.—J. H.—J. C.—H. W. W.—T. B.—C. J. K.—C. W. D.—Rusticus.—F. W. & H. S.

Markets.

COVENT GARDEN, August 24.

Large quantities of Grapes arriving from the Channel Islands, keeping the price of home-grown fruit down. Trade very quiet. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	3 0	4 6	Grapes, per lb.	1 0	3 0
Aubergines, per doz.	4 0	..	Lemons, per 100	6 0	10 0
Currants, Black, per ½-sieve	4 6	5 6	Melons, each	2 0	4 0
— Red, per ½-sieve	2 3	3 3	Peaches, per dozen	2 0	10 0
Figs, per dozen	2 0	3 0	Pears, per dozen	1 0	2 0
Filberts and Cobs, per lb.	0 6	0 7	Pine-apples, Eng. lb.	3 0	4 0
			Plums, ½-sieve	5 0	8 6

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, per doz.	3 0	6 0	Horse Radish, bund.	4 0	..
Beans, French, English grown, p. lb.	0 4	..	Lettuces, Cabbage, per score	1 6	..
Beet, per doz.	1 0	..	Mint, green, bunch	0 4	..
Cabbages, per doz.	1 0	2 0	Mushrooms, p. baskt.	1 6	3 0
Carrots, per bunch	0 4	0 6	Onions, per bushel	4 0	..
Cauliflowers, English, dozen	2 0	4 0	— Spring, per bun.	0 6	..
Celery, per bundle	1 6	..	Parsley, per bunch	0 4	..
Cucumbers, each	0 6	1 0	Peas, per qt.	1 6	..
Endive, per doz.	2 6	..	Radishes, per doz.	1 6	..
Garlic, per lb.	1 0	..	Small salading, pun.	0 4	..
Herbs, per bunch	0 2	0 4	Spinach, per bushel	3 0	..
			Tomatos, per doz	2 0	..
			Vegt. Marrows, doz.	3 0	..

POTATOS:—Foreign Potatos finished. Regents, 80*s.* to 100*s.*; Myatt's, 100*s.* to 120*s.*; Magnums, 100*s.* to 110*s.* per ton.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldii, doz.	12 0	24 0	Foliage Plants, various, each	2 0	10 6
Arbor-vitæ (golden), per doen	6 0	18 0	Fuchsias, per dozen	4 0	9 0
— (common), dozen	6 0	12 0	Genista, per doz	8 0	12 0
Balsams, per dozen	3 0	6 0	Gloxinea, per dozen	12 0	18 0
Begonias, per doz.	6 0	12 0	Heliotrope, per doz.	3 0	6 0
Calceolaria, doz.	4 0	9 0	Hydrangea, doz.	9 0	12 0
Cockscombs, dozen	4 0	6 0	— paniculata, doz.	12 0	30 0
Cyperus, per dozen	6 0	12 0	Lilium, in var., doz.	18 0	42 0
Dracæna terminalis	30 0	60 0	Marguerite Daisy, per dozen	9 0	18 0
— viridis, per doz.	12 0	24 0	Myrtles, per doz.	6 0	12 0
Euonymus, various, per dozen	6 0	18 0	Palms in variety, each	2 6	21 0
Evergreens, in var., per dozen	6 0	24 0	Pelargoniums, doz.	6 0	12 0
Ferns, in variety, per dozen	4 0	18 0	— scarlet, per doz.	2 6	6 0
Ficus elastica, each	1 6	7 0	Rhodanthes, doz.	6 0	12 0
			Solanum per doz	9 0	12 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 blooms	0 2	0 4	Pelargoniums, 12 sprays	0 9	1 0
Arum Lilies, per doz.	4 0	6 0	— zonal, 12 sprays	0 3	0 6
Bouvardias, per bun.	0 9	1 6	Pinks, 12 bunches	2 0	6 0
Calceolaria, 12 bun.	6 0	12 0	Primula, double, per bunch	1 0	1 6
Carnations, 12 bun.	2 0	6 0	Pyrethrum, 12 bun.	3 0	9 0
Cornflower, 12 bun.	2 0	4 0	Rhodanthe, 12 bun.	6 0	9 0
Eucharis, per doz.	3 0	6 0	Roses (indoor), doz.	1 0	3 0
Fuchsias, 12 bunches	6 0	8 0	— (outdoor), doz.	0 4	0 9
Gardenias, 12 blms.	3 0	8 0	— Coloured, doz.	1 0	2 0
Gladioli, 12 bun.	6 0	12 0	Stephanotis, 12 spr.	3 0	6 0
— brenchleyensis, 12 sprays	1 6	3 0	Stocks, 12 bunches	4 0	9 0
Heliotropes, 12 sp.	0 6	1 0	Sunflower, 12 blooms	0 6	2 0
Lapageria, white, 12 blooms	3 0	6 0	Sweet Peas, 12 bun.	2 0	6 0
— red, 12 blooms	1 0	3 0	Sweet Sultan, 12 bun.	4 0	6 0
Lilium various, 12 bl.	3 0	6 0	Tropæolum, 12 bun.	1 0	2 0
Marguerites, 12 bun.	4 0	6 0	White Jasmine, 12 bunches	4 0	9 0
Mignonette, 12 bun.	1 6	4 0			
Pansies, 12 bunches	1 0	3 0			

SEEDS.

LONDON: *Aug.* 24.—The seed market to-day was poorly attended, with but little business doing. Trifolium being in large supply, continues exceedingly cheap. For Mustard there is a fair inquiry at unchanged rates Rape seed is firm at the late advance. Winter Tares offer more freely. Rye is cheaper. Reports from the Continent speak unfavourably of the Clover crop. For Hemp and Canary seed full prices are asked. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

At Mark Lane on Monday there was a tendency to increased heaviness. The business in English Wheat showed on the week a decline of 2*s.*; on foreign the decline was 1*s.* to 2*s.*, the largest fall being for American. Flour was 6*d.* to 1*s.* per sack lower. Barley was dull; a few samples of new were shown, and sold chiefly from 34*s.* to 40*s.* Grinding sorts were rather cheaper. Maize was unchanged in value on the spot, with a slow sale. Oats, with good arrivals, were 3*d.* to 6*d.* lower since this day week for common qualities, the better grades remaining steady. Beans were quoted 1*s.* lower, and Peas without alteration.—On Wednesday English Wheat was in small supply, but arrivals of foreign were large, and purchases of both were quite of retail extent. Prices nominally unaltered. Flour met very little inquiry. Oats very quiet; Barley, Beans, and Peas quiet and unchanged; and Maize steady.—Average prices of corn for the week ending August 19:—Wheat, 50*s.* 5*d*; Barley, 26*s.* 7*d.*; Oats, 24*s.* 5*d.* For the corresponding period last year:—Wheat, 48*s.* 10*d.*; Barley, 28*s.* 5*d.*; Oats, 22*s.* 11*d.*

HAY.

Tuesday's Whitechapel Market report states that the supplies were large and trade dull, prices being as follows:—Prime old Clover, 120*s.* to 145*s.*; inferior, 75*s.* to 90*s.*; new, 90*s.* to 110*s.*; prime meadow hay, 100*s.* to 128*s.*; inferior, 55*s.* to 90*s.*; new, 70*s.* to 95*s.*; and straw, 30*s.* to 50*s.* per load.—On Thursday there was a large supply, and trade was dull for all but the best hay. Prices of straw gave way to 30*s.* to 46*s.* per load.—Cumberland Market quotations:—Superior meadow hay, 120*s.* to 132*s.*; inferior, 90*s.* to 105*s.*; new, 68*s.* to 100*s.*; superior old Clover, 135*s.* to 147*s.*; inferior, 105*s.* to 120*s.*; new, 90*s.* to 110*s.*; and straw, 45*s.* to 54*s.* per load.

POTATOS.

The Borough and Spitalfields Markets reports state that there is a fair supply and a brisk trade, at the following quotations:—Kent Regents, 90*s.* to 110*s.*; ditto, kidneys, 120*s.* to 130*s.*; ditto Victorias, 130*s.*; Essex Regents, 90*s.* to 100*s.*; ditto, kidneys, 100*s.* to 110*s.*; Lincoln kidneys, 100*s.*

COALS.

The following are the quotations current at market during the week:—East Wylam, 15*s.* 6*d.*; Walls End—Hetton, 17*s.* 6*d.*; Hetton Lyons, 15*s.*; Hawthorns, 15*s.* 3*d.*; Lambton, 17*s.*; Wear, 14*s.* 6*d.* and 15*s.*; South Hetton, 17*s.* 6*d.*; East Hartlepool, 10*s.* 3*d.*; Thornley, 15*s.* 6*d.*; Tees, 17*s.* 6*d.*

Government Stock.—Consols closed on Monday at 99⅜ to 99¾ for delivery, and 99 1/16 to 99 3/16 for the account. The same prices were recorded on Tuesday. Wednesday's final quotations were 99½ to 99⅝ for delivery, and 99⅝ to 99¾ for the account. The closing prices on Thursday were 99½ to 99⅝ for delivery, and 99 1/16 to 99 1/16 for the account.

LASTREA ARISTATA VARIEGATA.—Fine Greenhouse Fern, nice seedlings, in small pots, at 20*s.* per 100. SEAFORTHIA ELEGANS, the best Greenhouse Palm, three leaves, in small pots, 48*s.* per 100.
A. VAN GEERT, Continental Nurseries, Ghent, Belgium.

A. VAN GEERT'S English Trade CATALOGUE of Continental Plants, such as Camellias, Azaleas, &c., is now to be had free of charge, at
Messrs. R. SILBERRAD AND SON'S, 25, Savage Gardens, Crutched Friars, E.C.

Hyacinths, Tulips, &c.
BUDDENBORG BROTHERS, BULB GROWERS, House Bloemswaard, Hillegom, near Haarlem, Holland. Whole-sale CATALOGUE now ready, and will be sent, post-free, on application.

STRAWBERRY RUNNERS.—Strong, healthy, and well-rooted, from all the best market varieties. Sample and Price LIST post-free. Manual on Strawberry Culture, 6*d.*
W. LOVEL AND SON, Strawberry Growers, Driffield.

STRAWBERRIES.—Strong healthy PLANTS from Ground, also in pots, are now ready. Descriptive and Priced List of all the best kinds will be sent post-free on application.
THOMAS RIVERS AND SON, Sawbridgeworth, Herts.

Strawberry Plants.—In consequence of H. CANNELL AND SONS being located in the midst of hundreds of acres of the above (runners are this year unusually fine and early), they would be pleased to quote price for any quantity and any sorts.
Swanley, Kent.

STRAWBERRIES.—Strong roots for present planting and for fruiting next year, 4*s.* per 100. Descriptive LIST and price for plants in pots for forcing on application.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

ARAUCARIA EXCELSA.—Two splendid plants, 15 feet high, in tubs, for Sale; have outgrown their space. Apply
HEAD GARDENER, Cobham Park, Surrey.

TO THE TRADE.

Chionodoxa Lucilliæ,	Anemone fulgens,
Galanthus Elwesii,	Fritillaria armenia.

Prices on application
COLLINS AND GABRIEL, 39, Waterloo Road, London, S.E.

Bulbs—Bulbs—Bulbs.
SEGERS AND CO., BULB GROWERS, Lisse, near Haarlem, Holland, are now booking orders for Dutch Bulbs of every description. Samples may be had from yellow Crocus, Scillas, Snowdrops, Tulips, &c., free by post.
CATALOGUES may be had free on application. No Auction Sales or Retail Trade supplied, but the Wholesale only.
☞ Please observe name and address.

1882.—A B C Bulb Guide.—1882.
CONTAINING MOST COMPLETE COLLECTIONS of LILIES, NARCISSUS, HYACINTHS, CROCUS, TULIPS, &c.; a grand Selection of MISCELLANEOUS HARDY BULBS, several Lilies which were awarded First-class Certificates this season.
CATALOGUE post-free on application.
THOMAS S. WARE, Hale Farm Nurseries, Tottenham, London.

CAULIFLOWER, BRUSSELS SPROUT PLANTS.
VEITCH'S AUTUMN GIANT, 3*s.* 6*d.* per 1000.
BRUSSELS SPROUTS, 3*s.* per 1000.
Packages 3*d.* per 1000 extra. Order of
R. BATH, Crayford; or J. BATH, 34, Wellington Street, Covent Garden, W.C.

GRAPE VINES and ORCHARD HOUSE TREES in POTS.—GRAPE VINES, extra strong, short jointed and well ripened; Planting Canes, 3*s.* 6*d.* to 5*s.* each; extra strong Fruiting Canes, 7*s.* 6*d.* to 10*s.* ORCHARD-HOUSE TREES, fruiting in pots, consisting of Peaches, Nectarines, Apricots, Plums, Cherries, Pears, Apples, and Figs. Descriptive Price LIST for 1*d.* stamp.—RICHARD SMITH AND CO., Nurserymen and Seedsmen, Worcester.

STRAWBERRY PLANTS, HERBACEOUS CALCEOLARIAS, CUTTINGS of SOFT WOODED PLANTS.
STRAWBERRY PLANTS in 50 of the finest varieties, true to name. Catalogues post-free. Purchaser's selection, per 100, from ground, 3*s.* 6*d*; in 5-in pots, 25*s.*; in 2½-in. pots, 12*s.* 6*d.* Our selection, per 100, from ground, 2*s.* 6*d.*; in 5-in. pots, 20*s.*; in 2½-in pots, 10*s.*
500 plants, our selection, in 20 good varieties, for 21*s.*
100 plants, our selection, in 40 good varieties, for 5*s.*
HERBACEOUS CALCEOLARIAS, of a beautiful strain, dwarf, and in good variety of colour, strong seedlings for potting, 1*s.* 6*d.* per doz., 10*s.* per 100; also in 2½-in. pots, 3*s.* per doz., 20*s.* per 100.
CUTTINGS of FUCHSIAS, GERANIUMS, HELIOTROPES, LANTANAS, PHLOXES, PENTSTEMONS, SALVIAS, ABUTILONS, COLEUS, PANSIES, our selection, all named, 12 of any of above for 1*s.* 3*d.*, post-free: plants of any 12 sorts for 2*s.* 6*d.*
WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

STRAWBERRIES.
The best sorts for Fruiting next year.
V. H. DE THURY, SIR JOSEPH PAXTON, PRESIDENT, } Strong plants, all well rooted, in small pots, 10*s.* per 100, 90*s.* per 1000.
Also strong plants of the above, from open ground, 2*s.* 6*d.* per 100, 20*s.* per 1000. Package free. Extra plants for carriage. Cash from unknown correspondents.
H. J. HARDY, F.R.H.S., Stour Valley Seed Grounds, Bures, Suffolk.

TEN THOUSAND ROSES IN POTS.
On own roots and Seedling Briers.
TEA, NOISETTE, CHINA, and HYBRID TEAS, a select LIST of the leading varieties.
5-inch pots (1st selection), fine, bushy, 1½, 2 to 2½ feet.
5-inch pots (2d selection), fine, bushy, 1, 1½ to 2 feet.
7-inch pots, suitable for forcing.
CLIMBING ROSES, 5 to 7 inch pots, 4, 5, 6 to 8 feet.
Second to none in quality.
GEO. JACKMAN AND SON, Woking Nursery, Surrey.

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Will be ready on September 1, and will be sent, post-free, on application. This will be found the most practical priced Catalogue ever issued of **CONSERVATORIES, VINERIES, PLANT, PEACH, ORDHARD and FORCING HOUSES, STOVES, &c.,** and should be seen by all persons contemplating building in the coming season. New Blocks have been specially prepared, giving sections, plans, and views of every description of house, with all the most recent improvements and accessories. MESSENGER AND CO. invite all persons who intend building to inspect this Catalogue, and to obtain estimates from them before giving their orders for the ensuing season.

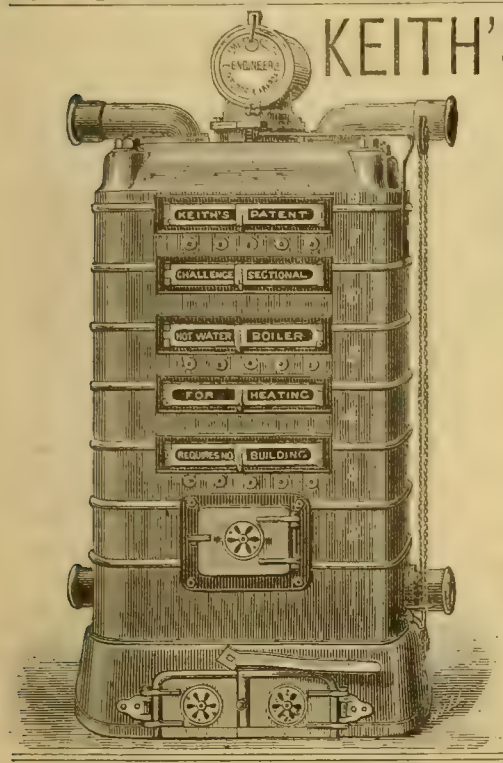
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From Q. C. CHALMERS, *Gardens of* James Mudie, Esq., *Broughty Ferry, September 15, 1880.*

"Your Boiler beats all my expectations; at present one fire serves for twelve hours, and keeps up a good, steady heat."

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"Your Boilers are the best we have tried." (Note: One of these Boilers heats nearly 8000 feet of 4-inch pipe.)

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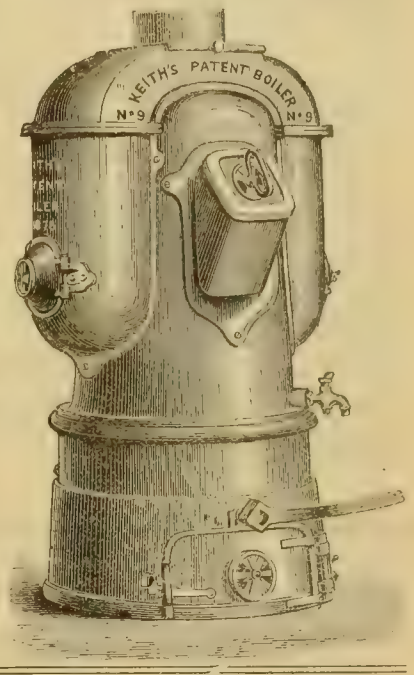
From ARTHUR BOOTY, Esq., *Rose Villa Nurseries, High Harrogate, March 22, 1882.*

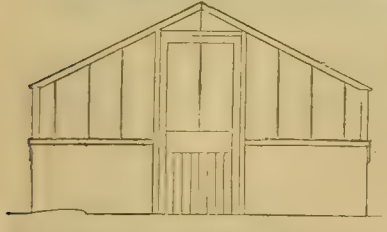
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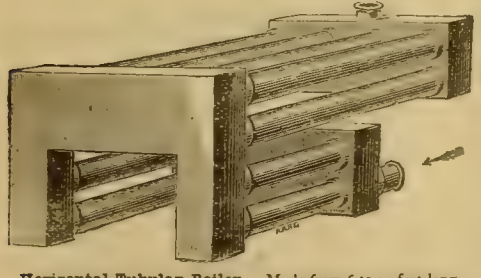
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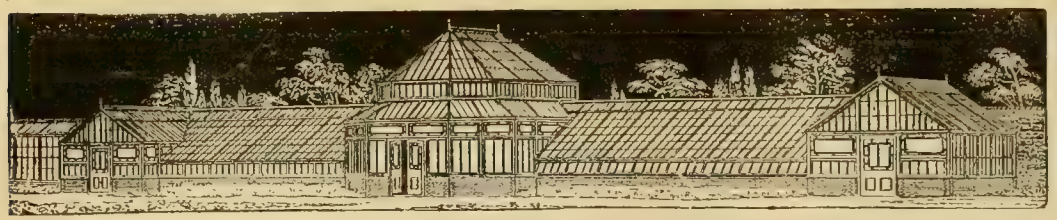


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SPECIAL OFFER TO THE TRADE.
30,000 ERICA HYEMALIS, and other sorts, in flowering pots.
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4,000 CARNATIONS (La Belle Rose), in 48's.
The above are all first-class Plants. Prices on application.
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The following plants are grown in quantity, and, they venture to think, will be found unexceptionally good of their respective kinds:—ERICA HYEMALIS, BOUVARDIAS, FICUS ELASTICA, TEA-SCENTED ROSES, GREVILLEAS, PALMS, AZALEA MOLLIS and INDICA, SOLANUMS, ARALIA SIEBOLDI, ADIANTUM CUNEATUM, GRACILLIMUM, and other FERNS; CAMELLIAS, DEUTZIA GRACILIS, GARDENIAS, of all sizes, from 48's to No. 1 pots, and many others.
They have also a fine stock of hardy plants to offer, especially RETINOSPORA PLUMOSA, and PLUMOSA AUREA, for boxing and potting; also Gold and Silver HOLLIES, CLEMATIS, IVIES, &c.
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Single Snowdrops.

DOWNIE AND LAIRD can offer above.
Sample and price on application.
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WATKINS AND SIMPSON, WHOLESALE SEEDSMEN and BULB MERCHANTS, Exeter Street, Strand, W.C. Their Wholesale BULB CATALOGUE is now ready and may be had on application. Contains prices of Lily of the Valley crowns or clumps, American Tuberoses, Double and Single Snowdrops, Winter Aconites, Spiræa, many sorts of Narciss, Tulips, Lilies, and Gladioli, &c. Special quotations for large quantities.

STRAWBERRIES A SPECIALITY.

Strong Runners from ground, and in small and large pots, of all the leading varieties.

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Tree Carnations, Tuberous Begonias, New Double and Single Zonal Geraniums for pot culture, Foliage Geraniums, New Ivy-leaved Geraniums, New Fuchsias, Ferns, Bouvardias, Salvias, Abutilons, Coleus, Chrysanthemums, Cyclamen, Gloxinias, Double Petunias, Miscellaneous Stove and Greenhouse Plants, and Bedding Plants in great variety.

CATALOGUE of the above, including all the Best Novelties, will be forwarded free to all applicants.

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FRESH GREEN ORCHID SPHAGNUM.—Clean, hand-picked, in hamper containing 2 bushels; 5s. the hamper (cash).
THOS. BEAUCHAMP, Woodfalls, Downton, near Salisbury.

ONE HUNDRED THOUSAND GLADIOLUS BRENCHLEYENSIS are to be sold, in every size and quantities. Moderate prices will be given on application.
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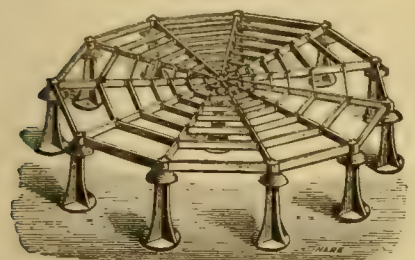
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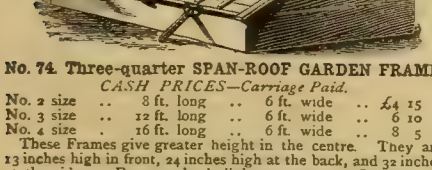
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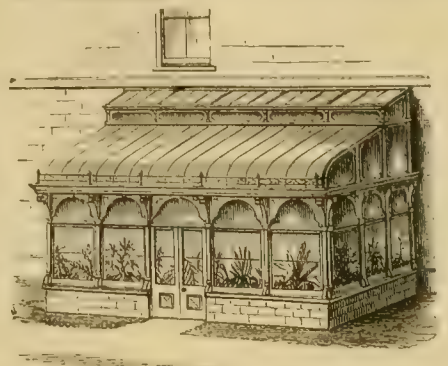
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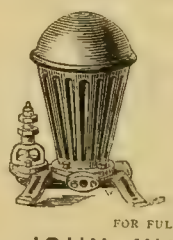


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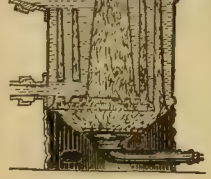


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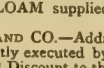




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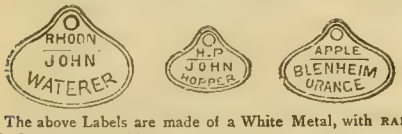
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To the Trade.

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To the Seed Trade.

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To the Seed Trade.

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THE

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For further particulars, see page 294.

NOTICE to SUBSCRIBERS and OTHERS. The King Street, Covent Garden, Post Office being closed, Post-office Orders and Postal Orders should now be made payable at DRURY LANE.

CRYSTAL PALACE.—GREAT FRUIT SHOW, SEPT. 8 and 9. Entries close Sept. 1. Schedules and Entry Forms now ready. Apply to W. G. HEAD, Crystal Palace.

GRAND NATIONAL DAHLIA SHOW.—The Growers and Exhibitors of Dahlias are hereby reminded that arrangements have been made to hold a Grand National Show of these Flowers, at the CRYSTAL PALACE, on SEPTEMBER 8 and 9. Entries must be made not later than September 4, and should be addressed to the Honorary Secretary, of whom Schedules may be obtained.
THOMAS MOORE, Hon. Sec. and Treasurer.
Botanic Garden, Chelsea, S.W.

THE INTERNATIONAL POTATO EXHIBITION will be held at the CRYSTAL PALACE, SYDENHAM, on SEPTEMBER 20 and 21, when Prizes amounting to ONE HUNDRED and FIFTY POUNDS will be awarded. Entries close on September 12. For Schedules and particulars apply to
W. PRETYMAN, 23, Upper Thames Street, E.C.

ROYAL CALEDONIAN HORTICULTURAL SOCIETY.
GREAT INTERNATIONAL FRUIT and FLOWER SHOW, to be held in the Waverley Market, Edinburgh (adjoining Waverley Station, North British Railway), on WEDNESDAY and THURSDAY, September 13 and 14. ONE THOUSAND POUNDS in Prize money offered.

THE GARDENER'S ROYAL BENEVOLENT INSTITUTION.
By the kindness and under the Patronage of Lord and Lady HENNIKER, and Patronage of the Dowager Lady HENNIKER, a FÊTE will be held in the grounds at Thornham Hall, Eye, Suffolk, on TUESDAY, September 12, in aid of the above Institution. Mellis Station, Great Eastern Railway, is about 2 miles from the grounds. Admission cards, 1s. each, may be had on application to
J. PERKINS, Hon. Sec.

8000 Winter-flowering Carnations. 8000
TWELVE well-rooted Plants in six best varieties by post, 4s. ; per 100, 28s. ; larger, in pots, 5s. per dozen, 35s. per 100. See CATALOGUE.
W. M. CROWE, Boleyn Nursery, Upton, Essex.

EARLY FORCING BULBS.—CARTERS'.

JAMES CARTER AND CO. have received their numerous consignments of the above, in splendid condition.

PLANT at once EARLY FORCING BULBS for the decoration of the Conservatory, Drawing-room, &c., at Christmas time.
CARTERS' EARLY WHITE HYACINTHS, 25s. per 100, 3s. 6d. per dozen, 4d. each.
CARTERS' EARLY WHITE HYACINTHS (Blue Skin), 17s. 6d. per 100, 2s. 6d. per dozen, 3d. each.
CARTERS' EARLY BLUE HYACINTHS, 12s. 6d. per 100, 1s. 9d. per dozen, 3d. each.
CARTERS' LIGHT BLUE NEAPOLITAN HYACINTHS, 15s. per 100, 2s. per dozen, 3d. each.
CARTERS' DARK BLUE NEAPOLITAN HYACINTHS, 15s. per 100, 2s. per dozen, 3d. each.
CARTERS' EARLY DOUBLE YELLOW NARCISSUS, 17s. 6d. per 100, 2s. 6d. per dozen, 4d. each.
CARTERS' EARLY WHITE NARCISSUS, 12s. 6d. per 100, 2s. per doz., 3d. each
CARTERS' DOUBLE SNOWDROPS, large, 30s. per 1000, 3s. 6d. per 100.
CARTERS' SINGLE SNOWDROPS, 30s. per 1000, 3s. 6d. per 100.
CARTERS' DUC VAN THOL TULIPS, Red and Yellow, single, 10s. 6d. per 100, 1s. 6d. per dozen., &c., &c., &c.
COLLECTIONS, including the above and other choice vars., price 5s., 7s. 6d., 16s., 24s., 45s., 65s., 85s., and 108s. Carriage Free.

CARTERS, THE QUEEN'S SEEDSMEN, By Royal Command to the Prince of Wales, 237 and 238, HIGH HOLBORN, LONDON, W.C.

TWO HUNDRED THOUSAND HERBACEOUS and ALPINE PLANTS for Borders, Rockwork, &c. See Descriptive LIST, giving colour, height, time of flowering, &c., free by post for 1d. stamp.
Selection of 100 good showy varieties for 25s.
R. SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

LAPAGERIA ALBA, well-rooted plants, 10s. 6d., 15s. and 21s. A few extra specimens, size and price on application.
LAPAGERIA RUBRA, superb, 7s. 6d., 10s. 6d. and 15s. A few extra-sized specimens, size and prices on application.
W. HOWARD, Southgate, N.

Christmas Roses.
BUDDENBORG BROTHERS, BULB GROWERS, Hillegom, near Haarlem, Holland, are now booking orders for the above. Prices will be given on application.

A Special Cheap Offer of
NARCISSUS will be enclosed in my new A B C BULB GUIDE for 1882. Free on application.
THOMAS S. WARE, Hale Farm Nurseries, Tottenham, London.

To the Trade Only.
TEA ROSES, on own roots, extra strong, out of 4½-inch pots, £2 per 100, for cash.
MAIRIS AND CO., Weston-in-Gordano, Bristol.

BULL'S choice PRIMULAS (alba and rosea), and choicest CINERARIAS.—150,000 of the above at 1s. 4d. per dozen, 7s. per 100 ; 60s. per 1000—all good, strong, and healthy. Terms cash with all orders.
T. FLETCHER AND SON, Florists, &c., Chesterfield.

New Currant, Black Champion.
JAMES CARTER AND CO. are now Booking Orders for this the best Black Currant in the World. It was awarded a First-class Certificate by the Royal Horticultural Society's Committee, and greatly admired by all who saw the Fruit exhibited last year. Stock limited.
Price, 5s. each, 55s. per dozen—so long as unsold.
The Queen's Seedsmen, 237 and 238, High Holborn, London.

WANTED, BITTER WILLOW Cuttings, strong, from 2 years' growth. Send sample and particulars to
JAMES DICKSON AND SONS, "Newton" Nurseries, Chester.

WANTED, Thousands of POPLARS, THUYA ORIENTALIS, EVERGREEN PRIVET, and SPRUCE FIR. Estimates to
H. MARSHALL, Nursery, Barnham, Arundel.

WANTED, 3000 ROSES, in Standards, Half-Standards, and Dwarfs, good specimens and best sorts, to make a Rosery ; also 500 APPLES, PEARS, PLUMS, PEACHES, and APRICOTS, in Standards—Peaches and Apricots to be trained. State lowest price to
A. B. D., Messrs. Smith & Son, Bookstall, Slough Station.

WANTED, 100 good trained PEACH and NECTARINE TREES. Must be in good health, well-rooted, in a bearing state. State price, name, size of trellis each will cover, and full particulars to
JOHN GOUGH, The Gardens, Hairfield Grove, Uxbridge.

WANTED, PINES, fine PEACHES, APPLES, and PEARS (good sorts), TOMATOS, CUCUMBERS, &c. Also choice CUT FLOWERS.
WISE AND RIDES, Fruit and Flower Salesmen, Covent Garden, W.C.

Early Roman Hyacinths, &c., for present Planting.
BULBOUS PLANTS of all kinds, ORCHIDS, &c.
THE NEW PLANT AND BULB COMPANY beg to announce that their AUTUMN CATALOGUE is just published, post-free on application.
Lion Walk, Colchester.

BELGIAN STOCK of FORCING PLANTS of the Ornamental Plant Nursery of Ghent.
AZALEA INDICA and MOLLIS with buds, CAMELLIAS with buds, DEUTZIA GRACILIS, HELLEBORUS NIGRA, SPIRÆA JAPONICA and PALMATA, &c. CATALOGUE free on application. Send Orders directly to
JULES DE COCK, Nurseryman, Ghent, Belgium.

Hyacinths, Tulips, Crocus, Lilies, &c.
C. G. VAN TUBERGEN, JUN., Haarlem, Holland.—Wholesale CATALOGUE now ready, and may be had free on application to
Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, London, E.C.

Tea Roses.
THE LIVERPOOL HORTICULTURAL COMPANY (JOHN COWAN), Limited, The Vineyard and Nurseries, Garston, near Liverpool, have a splendid stock of TEA ROSES in all the leading varieties.
LIST free. Price to the Trade on application.
Also a large stock of GRAPE VINES.

ROMAN HYACINTHS.—A large consignment of first quality will be ready for delivery next week Special terms on application to
HOOPER AND CO., Covent Garden, London, W.C.

6000 Grape Vines.
THE LIVERPOOL HORTICULTURAL COMPANY (JOHN COWAN), Limited, The Vineyard and Nurseries, Garston, near Liverpool, have a splendid stock of VINES, grown from eyes this year, suitable for present planting.
CATALOGUE free. The Trade supplied.
Also a large stock of TEA ROSES.

Azaleas, Camellias, Palms, Roses, &c.
C. VUYLSTEKE, NURSERYMAN, Loochristi, near Ghent, Belgium. Wholesale CATALOGUE may be had free of Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, London, E.C.
N.B. Plants grown specially for English Trade.

EXHIBITION of SINGLE DAHLIAS.—5000 of these are now in flower at the Hale Farm Nurseries, Tottenham. The collection embraces all the finest sorts in cultivation — the New Large-flowered Strain being particularly attractive. An inspection is cordially invited.
THOMAS S. WARE, Hale Farm Nurseries, Tottenham, London.

CREEPERS for WALLS, TRELLISES, &c., in great variety. See Descriptive LIST. Most of these plants being in pots, may be moved now.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

A Special Cheap Offer of
HARDY PLANTS will be found enclosed in my new A B C BULB GUIDE for 1882. Free on application.
THOMAS S. WARE, Hale Farm Nurseries, Tottenham, London.

To the Trade.
WAITE, NASH, HUGGINS AND CO.'S Wholesale CATALOGUE of Hyacinths and other bulbs has been posted to all their customers ; if not received, another copy shall be sent on application.
79, Southwark Street, London, S.E.

LILY OF THE VALLEY. — Every one flowerable ; per 1000 pieces, 33s. ; 10,000 pieces, £16, cash.
JULIUS HOFFMANN, Berlin, S. O., 131, Röpnickerstrasse.

FOR SALE, several STOVE and GREENHOUSE PLANTS ; also EXOTIC FERNS. All clean and healthy. Apply to
A. PATERSON, Pontypool Park, Pontypool.

SAXIFRAGA DIVERSIFOLIA.—New Seed of this most distinct Himalayan yellow-flowered species is now offered in 2s. 6d. and 3s. 6d. packets
RODGER, McCLELLAND AND CO., Nurserymen, &c., Newry.

Gardenia intermedia.
CLEAN HEALTHY PLANTS, in 5-inch pots, to flower this winter, 2s. each, 18s. per dozen ; nice plants in 60's, 9d. each, 6s. per dozen. A few large plants, about 4 feet, which will be full of flowers this winter ; price on application. CATALOGUE free.
W. M. CROWE, Boleyn Nursery, Upton, Essex.

CAULIFLOWER, BRUSSELS SPROUT PLANTS.
VEITCH'S AUTUMN GIANT, 3s. 6d. per 1000.
BRUSSELS SPROUTS, 3s. per 1000.
Packages 3d. per 1000 extra. Order of
R. BATH, Crayford ; or J. BATH, 34, Wellington Street, Covent Garden, W.C.

Strawberries.
PAUL AND SON can supply strong transplanted Runners, and in small pots, of above.
Priced LIST on application.
The "Old" Nurseries, Cheshunt, Herts.

SALES BY AUCTION.

Special Trade Sale of Dutch Bulbs. Monday next

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Mart, Tokenhouse Yard, City, E.C., on MONDAY NEXT, at 11 30 o'Clock precisely, over 820 lots of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, SNOWDROPS, and other ROOTS, from Holland; lotted specially to suit the Trade

Catalogues at the Mart, and 8, New Broad Street, E C.

Walthamstow—Clearance Sale

MESSRS. PROTHEROE AND MORRIS are instructed by the Proprietor, who is leaving the residence, to SELL by AUCTION, on the Premises, The Priory, Clay Street, Walthamstow, on TUESDAY, September 12, at 1 o'Clock, the whole of the STOVE and GREENHOUSE PLANTS, CAMELLIAS, and AZALEAS; a very fine collection of Show CHRYSANTHEMUMS (described in *Gardeners' Magazine* in November last), Standard and Dwarf ROSES, LAWN MOWER, IRON ROLLER, SEATS, and numerous other GARDEN REQUISITES.

Catalogues had of the Gardener, on the Premises, and of the Auctioneers, 8, New Broad Street, E C.

F. & A. Smith's Nursery, Thurlow Park, West DULWICH.

By order of the Mortgagee. Without Reserve.

IMPORTANT to the TRADE and OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, as above, on WEDNESDAY and THURSDAY, September 13 and 14, at 12 o'Clock precisely each day, the whole of the Stock in Trade, comprising 60,000 STOVE and GREENHOUSE PLANTS, a splendid lot of 3000 AZALEAS and CAMELLIAS, embracing several fine specimens of the choicest varieties; 10,000 Soft and Hard-wooded HEATHS, in 48's and larger pots; 10 000 small succession HEATHS, 10,000 well-berried SOLANUMS, 3000 Zonal and Tricolor GERANIUMS, 15 000 PELARGONIUMS, 5000 CINERARIAS, an excellent strain; a fine stock of ASPARAGUS PLUMOSUS, 600 PALMS, &c Also Utensils in Trade, including Covered SPRING VAN, OPEN DITTO, Heavy and Light Spring CARTS, POTS, BARROWS, and other effects.

May be viewed. Catalogues had on the Premises, of W. H. BENNETT, Esq., Solicitor, 14, Red Lion Square, W.C.; and of the Auctioneers and Valuers, 8, New Broad Street, E.C.

N.B. The well-kuown NURSERY to be DISPOSED OF, by order of the Mortgagee, at a great sacrifice. Full particulars of the Auctioneers.

Lee, Kent.

PRELIMINARY NOTICE

MESSRS. PROTHEROE AND MORRIS are instructed by

Mr. BENJAMIN MALLER

to conduct his ANNUAL SALE of ERICAS, &c., on the Premises as above, on TUESDAY, September 19, 1882.

8, New Broad Street, E.C.

Lea Bridge Nurseries.—Leyton.

MESSRS. PROTHEROE AND MORRIS beg to announce that they are instructed by Mr. John Fraser to hold his ANNUAL SALE of HEATHS and other WINTER BLOOMING PLANTS, on WEDNESDAY, SEPTEMBER 20

Further particulars will appear.

Tottenham, N.—Annual Sale.

MESSRS. PROTHEROE AND MORRIS beg to announce that they have received instructions from Mr John Maller to hold his ANNUAL SALE of WINTER BLOOMING HEATHS and other PLANTS on THURSDAY, September 21.

The Stock is in remarkably fine condition, and an inspection is solicited.

Preliminary Notice.

By order of the Executors of Mr R N. Osborn, deceased.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from the Executors to SELL by AUCTION, at the Mart, Tokenhouse Yard, City, E C., on THURSDAY, October 5, the following properties:—

FULHAM.—An attractive FREEHOLD BUILDING ESTATE, situate in New King's Road, having frontages of about 2000 ft. to existing roads, and containing a total area of 4 a. 0 r. 11 p.; also the detached brick-built Residence and Conservatory attached.

SUNBURY.—The productive FREEHOLD ESTATE known as Osborn's Old Nursery, containing 17 a. 0 r. 11 p., together with the Goodwill of the Nursery and Seed Business, established for so many years, and enjoying a world-wide reputation. There is also a detached eight-roomed House, nine newly-erected Greenhouses, heated upon the most improved principles, Pits, Sheds, Stabling, and other Out-buildings. The property could be profitably utilised for building purposes, without interfering with the remainder of the land for carrying on the present business.

HAMPTON (ten minutes' walk from Fulwell Station).—A compact FREEHOLD ESTATE known as Osborn's Nursery, Broad Lane, Hampton, containing an area of 5 acres. It is now cultivated and cropped with Fruit Trees and other nursery stock, but is also adapted for building purposes.

Particulars and plans of the several estates are in course of preparation, and may be had on application of Messrs. WALKER, BELWARD, AND WHITFIELD, Solicitors, 5, Southampton Street, Bloomsbury, W.C.; or of the Auctioneers and Surveyors, 8, New Broad Street, E.C, and Leytonstone.

N.B. Messrs. P. & M. would urge the Trade and others to make an early inspection of the thriving young Nursery Stock growing at Sunbury and Hampton. The Evergreens and Fruit Trees, as well as the Roses (which are now in bloom), for careful selection of sorts, and luxuriance of growth, cannot be surpassed. The whole will be sold by Auction, unless the purchasers of the Freehold Estate agree to take the Stock at a valuation.

Established Orchids.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, September 6, at half-past 12 o'Clock precisely, without reserve, a fine COLLECTION of EAST INDIAN ORCHIDS, the Property of a Gentleman at Wood Green, amongst which will be found some fine specimens of—

Saccolabium Turneri, from Mr. Turner's original plant	Saccolabium Holfordii, from the original plant
Phalænopsis leucorrhoda	Angræcum Kotschyi
Lælia anceps Dawsoni	Lælia elegans alba
Dendrobium Ainsworthii roseum	Dendrobium Brymerianum
Aërides Schröderii, three leads	Vanda cœrulea, fine plant
	Aërides affine superbum

And many other rare and valuable plants.

On view morning of Sale, and Catalogues had.

Dutch Bulbs.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, September 4, WEDNESDAY, September 6, and SATURDAY, September 9 (next), at half-past 12 o'Clock precisely, DUTCH BULBS, comprising Double and Single HYACINTHS, TULIPS, CROCUSES, SCILLAS, NARCISSUS, SNOWDROPS, and other BULBS, just arrived from well known firms in Holland, in lots to suit the trade and private buyers.

On view mornings of Sale, and Catalogues had.

Wednesday Next.

12 Cases of ODONTOGLOSSUM ALEXANDRÆ and species, from Bogota, received direct.

MR. J. C. STEVENS will include in his SALE by AUCTION, on WEDNESDAY, September 6, 12 Cases of ODONTOGLOSSUM ALEXANDRÆ and species, from Bogota, received direct in good condition, and sold in cases as imported.

On view morning of Sale, and Catalogues had.

Auction Rooms and Offices, 38, King Street, Covent Garden, W C.

Wednesday next.

PHALÆNOPSIS STUARTIANA, P. INTERMEDIA PORTEI, CYPRIPEDIUM CILIOLARE, DENDROBIUM DEAREI.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, September 6, at half-past 12 o'Clock precisely, by order of Messrs. H. Low & Co., fine imported plants, in quantity, in the best possible condition, of PHALÆNOPSIS STUARTIANA, P. VIOLACEA, DENDROBIUM DEAREI, D. MACROPHYLLUM DEAREI, CYPRIPEDIUM CILIOLARE, new species; the rare and lovely PALUMBINA CANDIDA, SACCOLABIUM HARRISONIANUM. At the same time will be offered CATTLEYA DOWIANA, CYPRIPEDIUM SPICERIANUM, PHALÆNOPSIS AMABILIS, P. SCHILLERIANA, one plant of P. INTERMEDIA PORTEI, and other CHOICE ORCHIDS.

On view morning of Sale, and Catalogues had.

Thursday Next.

CATTLEYA MAXIMA, ODONTOGLOSSUM ALEXANDRÆ, ONCIDIUM MARSHALLIANUM, CATTLEYA DOWIANA.

MR. J. C. STEVENS has received instructions from Mr. F. Sander to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, September 7, at half past 12 o'Clock precisely, extra fine importations of the above, together with others.

The Odontoglossum Alexandræ and Oncidium Marshallianum in this Sale are of unprecedented size and quality.

On view morning of Sale, and Catalogues had.

Thursday Next.

ODONTOGLOSSUM ALEXANDRÆ

MR. J. C. STEVENS will include in his SALE by AUCTION, on THURSDAY NEXT, September 7, Sixteen Cases of ODONTOGLOSSUM ALEXANDRÆ, each containing some hundreds of plants, and received in fine condition.

On view morning of Sale, and Catalogues had.

Auction Rooms and Offices, 38, King Street, Covent Garden, W.C.

Thursday Next.

IMPORTED ORCHIDS.

MR. J. C. STEVENS will include in his SALE by AUCTION, on THURSDAY NEXT, September 7, by order of Mr. James O'Brien, an importation of LÆLIA PURPURATA, collected in the locality from whence comes the varieties alba and marmorata grandiflora, and specially selected by the collector; also CATTLEYA or LÆLIA species, probably hybrid. The large and long flower-spikes and numerous flower seats give promise of a fine thing. Only six plants in one clump were found with the Lælia purpurata. CATTLEYA SPECIES, habit of C. amethystoglossa, only plant found growing with above. CYPRIPEDIUM INSIGNE AUREUM, a new and beautiful variety, very distinct.

On view morning of Sale, and Catalogues had.

Auction Rooms and Office, 38, King Street, Covent Garden, W.C.

Important Sale of Orchids and Other Stove and GREENHOUSE PLANTS.

MESSRS. LYON AND TURNBULL have received instructions from Messrs. Drummond Brothers, Nurserymen, Edinburgh, to SELL by AUCTION, on WEDNESDAY and THURSDAY, September 13 and 14, within the Calton Convening Rooms, Waterloo Place, Edinburgh, a valuable portion of their NURSERY STOCK, in fine condition, and comprising a large number of Orchids, including Lycaste Skinneri alba (true), Phalænopsis amabilis (true), Dendrobium nobile Wallichianum (true), and several varieties of Calanthe, Cattleya, Cypripedium, Dendrobium, Lycaste Skinneri, Odontoglossum, Oncidium, &c.; also a number of Camellias, Azaleas, Ferns (including Angiopteris Brongniartiana), and other Stove and Greenhouse Plants, many of them being large specimens.

The Sale will take place in the Calton Convening Rooms, Waterloo Place, Edinburgh, on WEDNESDAY, September 13, at 1 o'Clock, and on THURSDAY, September 14, at 12 o'Clock.

Catalogues will be forwarded on application to the Auctioneers, 51, George Street; or, to Messrs. DRUMMOND BROTHERS, 82, George Street, Edinburgh.

Highly Important Sale of Orchids.

MESSRS. SMITH AND DEWAR, 79, George Street, Edinburgh, beg to intimate that they have been instructed to SELL by AUCTION, on THURSDAY, September 14, at 12 o'Clock noon, a very valuable lot of SPECIMEN ORCHIDS, the property of Alex. Paterson, Esq., M.D., Bridge of Allan, whose houses are getting too crowded, and is thus compelled to sell some of his larger specimens to make room. The plants offered are in perfect health, and are worth the attention of all Orchid buyers. They consist of specimen Vandas of the best varieties of tricolor and suavis, Cattleya Warneri, with 70 bulbs, and nearly 30 inches across; Cattleya labiata, true Cattleya Trianæ Symei, Cattleya Mendelii, "" Boyd's var.:" Aërides suavissimum, original var.; A. Reichenbachii, Chysis bractescens, largest known plant; a splendid Anthurium Scherzerianum, Veitch's var., nearly 15 feet in circumference, &c.

There will also be SOLD, same day and place, a very valuable consignment of ORCHIDS, the property of Mr. Sander, St. Alban's, consisting of Cypripedium Spicerianum, Cattleya Sanderiana, a lot of very rare Masdevallias, such as M. Macrura, M. Winniana, M. Roezhi, &c.

Catalogues can be had by applying to Mr. WM. THOMSON, Jun., Clovenfords, by Galashiels, N.B., who has charge of the sale, and who will also be glad to execute commissions for any one who is unable to attend.

To the Trade.

WINTER FLOWERING PLANTS.

JOHN FRASER, of The Nurseries, Lea Bridge Road, Leyton, begs to invite attention to his large and fine stock of the best sorts of Winter-flowering HEATHS, EPACRIS, AZALEAS, GARDENIAS, LAPAGERIAS, Autumn-flowering CHRYSANTHEMUMS, SOLANUMS, GENISTAS, Double White PRIMULAS, and other useful plants, many thousands of which will be offered for SALE by AUCTION on SEPTEMBER 20 next in large lots to suit the Trade. There will also be included in the sale a large quantity of fine plants of Maréchal Niel ROSES, about 10 feet; and considerable numbers of AMPELOPSIS VEITCHII, 3 to 4 feet; CLEMATIS JACKMANNI, and other HARDY CLIMBERS; together with upwards of 3000 of Fraser's choice strain of CYCLAMEN, and many other plants.

An inspection is respectfully solicited. Catalogues are being prepared, and may be had on application.

FOR SALE, or to LET, FREEHOLD LAND, several Acres, well adapted for Florists, Nurserymen, in one or more acre plots. House, &c., would be built if desired. Plans and particulars of

Mr. J. EMBLETON, 49, York Road, Lambeth, S.E., and Suffolk House, New Hampton.

FOR SALE, or to LET, a pretty COTTAGE Residence, containing 4 Bed-rooms, 2 Parlours, Kitchen, Scullery, &c. The House contains every convenience, and has a large garden suitable for the erection of glass.

Apply to Mr. J. EMBLETON, 49, York Road, S.E. (close to Waterloo), and Suffolk House, New Hampton.

To Market Gardeners and others.

THE CORPORATION OF READING are prepared TO LET, from Michaelmas next (for a term if desired), a substantial HOUSE and OUTBUILDINGS, together with 10 acres or more of Sewage-Irrigated LAND for Market Garden Purposes.

Cards to view and particulars can be obtained of Mr. W. W. CHAMPION, Manor Farm, Whitley, near Reading.

Reading, Aug. 16, 1882.

ROYAL CALEDONIAN
HORTICULTURAL SOCIETY.

GREAT INTERNATIONAL FRUIT and FLOWER SHOW,

to be held in the Waverley Market, Edinburgh (adjoining Waverley Station, North British Railway), on WEDNESDAY and THURSDAY, September 13 and 14. ONE THOUSAND POUNDS in prize money offered. A Military Band will be in attendance each day from 2 till 5, and from 6 till 9.

Admission on Wednesday from 11 to 1, 2s. 6d. (by Ticket, or payable at door); from 1 till 10, 1s.; Thursday from 10 till 5, 1s.; from 5 till 10, 6d. Tickets at Wood & Co.'s, George Street, and the various Seed Warehouses. Members' ordinary tickets available for any of the above hours. Applications for Membership received, and tickets issued up to September 12.

The North British Railway Company have arranged to run Excursion Trains from most parts of their system at very low fares, on Wednesday or Thursday, September 13 and 14.

Judges' Headquarters in Waterloo Hotel.

DESIGNS Made and Works EXECUTED

In the Arrangement of TERRACES, CONSERVATORIES, FLORAL CORRIDORS, ROOF GARDENS on uninteresting Lead Flats, &c, formed with substantial PULHAMITE KERB for the FLOWER BORDERS, JARDINIERE, &c, in TERRA-COTTA or ARTIFICIAL STONE of various colours.

BALUSTRADES, VASES, PEDESTALS, FIGURES, FOUNTAINS, CONSERVATORY and WINDOW BOXES in great variety, suitable for any style of House.

Various Specimens of KERB or EDGING, PULHAMITE PERMANENT GRAVEL PATHING for GARDEN, TERRACE and other WALKS and FLOORS, to be seen at the Horticultural Company's, Regent Street, W.; at The Orchard, Philip Lane, Tottenham; and at our Brixton Depot there is the greatest variety of the above to be seen. DURABILITY GUARANTEED.

A Photographic Book of over 200 Illustrations, with Sizes and Prices, sent for Inspection on receipt of twelve stamps.

Address—

PULHAM & SON, The Works, Broxbourne.

(Established in 1837.)

Robert Arthur Osborn, deceased.

NOTICE IS HEREBY GIVEN, that all Creditors and other persons having any CLAIMS or DEMANDS against or upon the estate of ROBERT ARTHUR OSBORN, late of Fulham, Hampton, and Sunbury, in the County of Middlesex, but lately residing at Hastings, in the County of Sussex, and at Tunbridge Wells, in the County of Kent, Nurseryman and Seedsman, trading under the style of Osborn and Sons (who died on the 25th day of June, 1882, and whose Will was proved by Thomas William Shoosmith, of the Lime Works, Camberwell, in the County of Surrey, Manager of Lime Works, and John Edward Ewing, of Eaton, near Norwich, Nurseryman, in the Principal Registry of the Probate Division of Her Majesty's High Court of Justice, on the 2d day of August, 1882), are hereby REQUIRED TO SEND in writing the particulars of their CLAIMS or DEMANDS to us, the undersigned, the Solicitors for the said Executors, on or before the 6th day of OCTOBER NEXT, after which day the said Thomas William Shoosmith and John Edward Ewing will proceed to distribute the assets of the said Robert Arthur Osborn among the parties entitled thereto, having regard to the debts and claims only of which they shall then have had notice, and they will not be liable for the assets of the said deceased or any part thereof so distributed to any person, of whose debt, claim, or demand they shall not then have had notice.—Dated this 9th day of August, 1882.

WALKER, BELWARD AND WHITFIELD, 5, Southampton Street, Bloomsbury, Solicitors for the said Executors.

Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at 8, New Broad Street, E.C.

PROTHEROE AND MORRIS, HORTICULTURAL, MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 8, New Broad Street, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

TEN THOUSAND ROSES IN POTS.

On own roots and Seedling Briers.

TEA, NOISETTE, CHINA, and HYBRID TEAS, a select LIST of the leading varieties.

5-inch pots (1st selection), fine, bushy, 1½, 2 to 2½ feet.
5-inch pots (2d selection), fine, bushy, 1, 1½ to 2 feet.
7-inch pots, suitable for forcing.

CLIMBING ROSES, 5 to 7 inch pots, 4, 5, 6 to 8 feet.

Second to none in quality.

GEO. JACKMAN AND SON, Woking Nurseries, Surrey.

STRAWBERRIES.

The best sorts for Fruiting next year.

V. H. DE THURY, SIR JOSEPH PAXTON, PRESIDENT, } Strong plants, all well rooted, in small pots, 10s. per 100, 60s. per 1000.

Also strong plants of the above, from open ground, 2s. 6d. per 100, 20s per 1000. Package free. Extra plants for carriage. Cash from unknown correspondents.

H. J. HARDY, F.R.H.S., Stour Valley Seed Grounds, Bures, Suffolk.

STRAWBERRY PLANTS, HERBACEOUS CALCEOLARIAS, CUTTINGS of SOFT WOODED PLANTS.

STRAWBERRY PLANTS in 50 of the finest varieties, true to name. Catalogues post-free. Purchaser's selection, per 100, from ground, 3s. 6d. ; in 5-in pots, 25s. ; in 2½-in. pots, 12s. 6d. Our selection, per 100, from ground, 2s. 6d. ; in 5-in. pots, 20s. ; in 2½-in. pots, 10s.

500 plants, our selection, in 20 good varieties, for 21s.

100 plants, our selection, in 40 good varieties, for 5s.

HERBACEOUS CALCEOLARIAS, of a beautiful strain, dwarf, and in good variety of colour, strong seedlings for potting, 1s. 6d. per doz., 10s. per 100 ; also in 2½-in. pots, 3s. per doz., 20s. per 100.

CUTTINGS of FUCHSIAS, GERANIUMS, HELIOTROPES, LANTANAS, PHLOXES, PENTSTEMONS, SALVIAS, ABUTILONS, COLEUS, PANSIES, our selection, all named, 12 of any of above for 1s. 3d., post-free : plants of any 12 sorts for 2s. 6d.

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

GRAPE VINES and ORCHARD HOUSE TREES in POTS. — GRAPE VINES, extra strong, short jointed and well ripened ; Planting Canes, 3s. 6d. to 5s. each : extra strong Fruiting Canes, 7s. 6d. to 10s. ORCHARD-HOUSE TREES, fruiting in pots, consisting of Peaches, Nectarines, Apricots, Plums, Cherries, Pears, Apples, and Figs. Descriptive Price LIST for 1d. stamp.—RICHARD SMITH AND CO., Nurserymen and Seedsmen, Worcester.

CAULIFLOWER, BRUSSELS SPROUT PLANTS.

VEITCH'S AUTUMN GIANT, 3s. 6d. per 1000.
BRUSSELS SPROUTS, 3s. per 1000.

Packages 3d. per 1000 extra. Order of

R. BATH, Crayford ; or J. BATH, 34, Wellington Street, Covent Garden, W.C.

1882.—A B C Bulb Guide.—1882.

CONTAINING MOST COMPLETE COLLECTIONS of LILIES, NARCISSUS, HYACINTHS, CROCUS, TULIPS, &c. ; a grand Selection of MISCELLANEOUS HARDY BULBS, several Lilies which were awarded First-class Certificates this season.

CATALOGUE post-free on application.

THOMAS S. WARE, Hale Farm Nurseries, Tottenham, London.

Bulbs—Bulbs—Bulbs.

SEGERS AND CO., BULB GROWERS, Lisse, near Haarlem, Holland, are now booking orders for Dutch Bulbs of every description. Samples may be had from yellow Crocus, Scillas, Snowdrops, Tulips, &c., free by post.

CATALOGUES may be had free on application. No Auction Sales or Retail Trade supplied, but the Wholesale only.

☞ Please observe name and address.

STRAWBERRIES.—Strong roots for present planting and for fruiting next year, 4s. per 100. Descriptive LIST and price for plants in pots for forcing on application. — RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Strawberry Plants.—In consequence of

H. CANNELL AND SONS being located in the midst of hundreds of acres of the above (runners are this year unusually fine and early), they would be pleased to quote price for any quantity and any sorts.

Swanley, Kent.

STRAWBERRY RUNNERS. — Strong, healthy, and well-rooted, from all the best market varieties. Sample and Price LIST post-free. Manual on Strawberry Culture, 6d.

W. LOVEL AND SON, Strawberry Growers, Driffield.

Hyacinths, Tulips, &c.

BUDDENBORG BROTHERS, BULB GROWERS, House Bloemswaard, Hillegom, near Haarlem, Holland. Wholesale CATALOGUE now ready, and will be sent, post-free, on application.

A. VAN GEERT'S English Trade CATALOGUE of Continental Plants, such as Camellias, Azaleas, &c., is now to be had, free of charge, at

Messrs. R. SILBERRAD AND SON'S, 25, Savage Gardens, Crutched Friars, E.C.

LASTREA ARISTATA VARIEGATA.—Fine Greenhouse Fern, nice seedlings, in small pots, at 20s. per 100. SEAFORTHIA ELEGANS, the best Greenhouse Palm, three leaves, in small pots, 48s. per 100.

A. VAN GEERT, Continental Nurseries, Ghent, Belgium.

PINES.—To be disposed of, by a party who is discontinuing Pine-growing, about 100 strong Succession Plants and Rooted Suckers. A few Smooth Cayennes, but chiefly Queens. Apply to

F. AND A. DICKSON AND SONS, Upton Nurseries, Chester.

Wholesale Bulb Catalogue.

WATKINS AND SIMPSON, WHOLESALE SEEDSMEN AND BULB MERCHANTS, Exeter Street, Strand, W.C. Their Wholesale BULB CATALOGUE is now ready and may be had on application. Contains prices of Lily of the Valley crowns or clumps, American Tuberoses, Double and Single Snowdrops, Winter Aconites, Spiræa, many sorts of Narciss, Tulips, Lilies, and Gladioli, &c. Special quotations for large quantities.

Palm Seeds.

A. LIETZE, 47, Rua Ouvidor, Rio de Janeiro, begs to offer the following :—

	Ripening in	1000 seeds s.	1000 seeds d.	100 seeds s.	100 seeds d.
ACROCOMIA SCLEROCARPA	October	..		8	0
ASTROCARYUM AIRI	November	..		10	0
ARECA LUTESCENS	January	20	0	..	
,, MADAGASC.	June	20	0	..	
,, RUBRA	January	10	0	..	
COCOS FLEXUOSA	Variably	30	0	..	
,, PLUMOSA	Variably	25	0	..	
,, WEDDELLIANA	December	50	0	..	
COPERNICIA CERIFERA	February	..		8	0
DESMONCUS SP. RIO	August	..		10	0
EUTERPE EDULIS	May	..		6	0
GRONOMA GRACILIS	February	30	0	..	
LIVISTONA CHINENSIS	September	8	0	..	
PANDANUS UTILIS	Variably	15	0	..	
SYAGRUS SP. RIO	December	..		10	0

One Million Well Transplanted Larch.

W. JACKSON AND CO., Nurseries, Bedale, beg to inform Planters and the Trade, that their LARCH are unusually fine this season, mostly twice transplanted, of the following sizes—1½ to 2 feet, 3 feet, 3½ to 4 feet, with excellent roots.

Apply early for prices and particulars.

FOR EARLY FORCING.

WEBBS' FLOWERING BULBS.



FOR PRICES AND FULL PARTICULARS SEE

WEBBS' AUTUMN CATALOGUE,

A most reliable Guide to the

Successful Cultivation of Bulbous Flower Roots.

Gratis and Post-free.

THE QUEEN'S SEEDSMEN,

WORDSLEY, STOURBRIDGE

Auricula, Mrs. Douglas.

BEN SIMONITE is now sending out the above fine Blue Self ; pip a perfect circle, edge smooth, flower of great substance, lasting long in perfection. A First-class Show Flower. Plants 21s. each.

PICOTEE, MRS. GORTON. — Light red edge ; petal broad, fine, smooth, perfectly solid ; white pure, without the least bar. The best in its class. 10s. 6d per pair.

BEN SIMONITE, Rough Bank, Sheffield.

B. MALLER begs to offer a large stock of the following :—ERICA HYEMALIS and other varieties ; EPACRIS, GENISTAS, AZALEAS, CYCLAMEN, BOUVARDIAS, SOLANUMS, ADIANTUM CUNEATUM and other FERNS, FICUS ELASTICA, GREVILLEAS, VINES in pots, &c., all in splendid condition. A finer lot of plants were never offered in the trade. An inspection is invited.

Trade CATALOGUE forwarded on application.

The ANNUAL SALE by AUCTION will be held this month. Burnt Ash Lane Nurseries, Lee, S.E.

NOTICE.

SELLING OFF OF NURSERY STOCK.

EWING & CO.,

EATON, near NORWICH.

Great Reduction in Price for Cash Payments, viz.,

15 per Cent. for Cash before delivery.
10 per Cent. for Cash within One Month of date of invoice.
5 per Cent. for Cash within Three Months of date of invoice.
After Three Months no discount can be allowed.

In addition to their immense Outdoor Stock of ROSES ; FRUIT TREES, Bushes and Roots ; ORNAMENTAL TREES and SHRUBS, they have ready for immediate Sale a very extensive Stock of New and Scarce ROSES in Pots ; Tea and Noisette ROSES in Pots ; CLEMATISES of best Old and New Varieties, in Pots ; Variegated and Choice Green-leaved IVIES, in Pots ; AMPELOPSIS VEITCHII, and many other Hardy CLIMBING and CREEPING PLANTS, in Pots, &c.

N.B. Cut Roses, &c., can be supplied at cheap rates, carefully packed for travelling long distances.

A slight extra charge must in most cases be made for packing. Where cash in payment of goods is sent *with the order*, the amount for *package* may be forwarded in stamps *after* despatch of goods.

N.B. Post-office Orders should be made payable to EWING AND CO., at Eaton, near Norwich. Cheques crossed GURNEY AND CO., Norwich.

Trade Terms on application.

FRESH GREEN ORCHID SPHAGNUM. —Clean, hand-picked, in hamper containing 2 bushels ; 5s. the hamper (cash).

THOS. BEAUCHAMP, Woodfalls, Downton, near Salisbury.

Single Snowdrops.

DOWNIE AND LAIRD can offer above. Sample and price on application.

DOWNIE AND LAIRD, Seedsmen, 17, Frederick Street, Edinburgh.

For Sale.—A most Valuable Collection of

FERNS OF THE WORLD, in 70 volumes, arranged according to Hooker and Baker, *Species Filicum*. Inspection invited, and offers received by

JOHN LAING AND CO., Seedsmen, Forest Hill, S.E.

Ferns a Speciality.

The largest stock in the greatest number of varieties of

EXOTIC AND BRITISH FERNS

In the Trade, suitable for STOVE and GREENHOUSE cultivation, for Outdoor Ferneries, and other purposes. Special LIST free on application. Illustrated CATALOGUE 6d.

W. AND J. BIRKENHEAD, Fern Nursery, Sale, near Manchester.

A Double First-class Certificate.

Viz., a First-class Certificate as a Decorative Bedding Rose in 1881, *and a First-class Certificate as a Show Rose in* 1882.

The Royal Horticultural Society have Registered their Award, and this unprecedented success has been achieved by

An English Raised Seedling Rose.

H.P. DUCHESS OF CONNAUGHT (Noble).

CHARLES NOBLE, BAGSHOT.

STERLING NOVELTIES.

Lilium Harrisii, true.

Very early and dwarf, pure white.

Lilium tenuifolium.

Very early, bright scarlet.

Clematis coccinea.

Bright scarlet, quite hardy.

See our Wholesale Bulb Catalogue, just published; may be had on application.

WATKINS & SIMPSON,

EXETER STREET, STRAND, LONDON, W.C.

STRAWBERRIES A SPECIALITY.

Strong Runners from ground, and in small and large pots, of all the leading varieties.

Guaranteed true to name.

LIST OF SORTS AND PRICE

ON APPLICATION TO

CRANSTON'S NURSERY and SEED CO. (LIMITED),

KING'S ACRE, HEREFORD.

The New Zonals and Fuchsias of 1881-2.

RICHARD PANNETT, NURSERYMAN, Chailey, Sussex, will send 1 doz. of each, in good plants, for 12*s.*; ditto of 1880 for 7*s.* Cuttings half price.

Cuttings, to include new sorts of 1880 and older, 10*s.* per 100 varieties.

Descriptive CATALOGUES of the best in cultivation post-free on application.

A Cheap Offer of

MISCELLANEOUS HARDY BULBS will be found on page 23 of my A B C BULB GUIDE. Free on application.

THOMAS S. WARE, Hale Farm Nursery, Tottenham, London.

Tuberous Begonias.

JOHN LAING AND CO.'S Gold Medal Collection is unrivalled. They have now in cultivation 100,000 Begonias, which present to the public an unprecedented floral display of single and double flowers. A visit is solicited (Catford Bridge Station, South-Eastern Railway).

Prices, 12*s.* to 60*s.* per dozen.

CATALOGUES on application. Address

JOHN LAING AND CO., Forest Hill, S.E.

UNSURPASSED SEEDS for present sowing of the choicest kinds of CABBAGES, ONIONS, CAULIFLOWERS, &c., at moderate prices.

See Descriptive LIST, free on application.

RICHARD SMITH AND CO., Seed Merchants and Nurserymen, Worcester.

DAHLIAS.—These have been a speciality at the Slough Nurseries for the last 50 years, and are now in fine bloom. An inspection is invited. All the classes will be represented at the Great Show at the Crystal Palace, September 8 and 9.

CHARLES TURNER, The Royal Nurseries, Slough.

The Nurseries, Berkhamsted, Herts.

INTENDING PLANTERS SHOULD VISIT

MESSRS. LANE AND SON'S extensive nurseries (over 130 acres) to see the various Foliage and Habit of Growth of ORNAMENTAL TREES, also FRUIT TREES, especially the PRINCE ALBERT APPLE, in bearing.

NEW GOLDEN BEDDING PANSY, KING OF YELLOWS — the largest, freest, and brightest of all golden-yellow Pansies; strong plants, 1*s.* each, 9*s.* per dozen.

PANSY THOS. GRANGER, rich glowing Crimson, 5*s.* per dozen.

PANSY SUNBURST, fine Red, 16*s.* per 100, 3*s.* per dozen.

Fine collection of all leading sorts.

RODGER, McCLELLAND AND CO., Nurserymen, &c., Newry.

DUTCH BULBS.

DIRECT FROM THE GROWERS.

ANT. ROOZEN AND SON, NURSERYMEN, Overveen, near Haarlem, Holland.

Before ordering Dutch Bulbs, read ANT. ROOZEN AND SON'S CATALOGUE for 1882, which their Agents, Messrs. MERTENS AND CO., 5, Billiter Square, London, E.C., will forward post-free on application.

To the Trade only.

E. H. KRELAGE AND SON, NURSERYMEN, SEEDSMEN, and FLORISTS, Haarlem, Holland. The Wholesale CATALOGUE (No. 358A) of Dutch Flower Roots and Miscellaneous Bulbous and Tuberous-rooted Plants for 1882-83 is now ready, and may be had free on prepaid application, by Nurserymen, Florists and Seedsmen.

NEW ROSES of 1882, in pots.—Vendors' Selection, 30*s.* per dozen; Purchaser's, 36*s.* per dozen. The above comprise all the best English and French-raised Hybrid Perpetuals, Perpetual Polyantha, Teas, Hybrid Teas, and Perpetual Moss.

ROSES of 1881, of above-named classes, 18*s.* to 24*s.* per dozen, in pots.

CHOICE ROSES. — Tea-scented, Hybrid Tea, Noisette, China, and Bourbon, 18*s.* to 24*s.* per dozen, strong plants in pots.

Descriptive LIST on application.

RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Dutch Bulbs.

OUR CATALOGUE of the above has been posted to all Customers, any not having received the same will oblige by informing us and a duplicate shall be sent. Our importations have arrived, and we are prepared to execute orders at once. We take this opportunity of informing our Customers that notwithstanding our fears to the contrary, the Hyacinths are very fine in size, clean, handsome and heavy.

HURST AND SON, 152, Houndsditch, London, E.

To the Trade only.

GREEN EUONYMUS. — 20,000 compact plants, specially grown for pots and boxes, 9 to 15 inches, 12*s.* 6*d.* to 25*s.* per 100, or from £5 to £10 per 1000. Orders taken now to be supplied after the middle of September.

C. DIMMICK AND SONS, 146 and 147, High Street, Ryde, Isle of Wight.

SPIRÆA JAPONICA.—Very strong Tufts for Forcing, at 15*s.* per 100. Immediate orders are solicited by

ED. PARRÉ, Nurseryman, Ledeberg, Ghent, Belgium.

Lily of the Valley.

ELSTER AND KOLLMANN, Lubeck, near Hamburgh, Germany, beg to offer the above. Single Crowns, 3-yr. old, for forcing, extra fine roots, 32*s.* per 1000, cash; or 34*s.* per 1000, terms three months.

LARGE CAMELLIAS FOR SALE.—Imbricata, 14 feet by 5; Triumphans, 11 by 6, and 14 by 6; Alba plena, 14 by 6; Lowii, 10 by 4; Woodsia, 10 by 5; Conspicua, 12 by 6; Colvillei, 10 by 5; Marchioness of Exeter, 11 by 5; Chandlerii, 11 by 6; Mathotiana, 7 by 3.

JOHN BROWNING, The Gardens, Dupplin Castle, Perth.

POT ROSES.

PAUL & SON,

THE OLD NURSERIES, CHESHUNT, N.,

INVITE AN INSPECTION OF THEIR STOCK OF

CHOICE TEA and HYBRID PERPETUAL ROSES in POTS,

Now in splendid condition to be selected from.

The Stock is believed to be unique—with 1200 Conservatory Climbing Roses, such as Maréchal Niel, Cheshunt Hybrid, &c. Large Plants with flowering shoots, 7 to 10 feet long. Specimen Roses which have taken all the 1st Prizes.

PAUL & SON'S SELECTION, from 30s. to 84s. per dozen.
HALF to FULL SPECIMENS, from 15s. to Ten Guineas each.

THE FINEST STOCK of DOUBLE BOUVARDIAS in ENGLAND

JAMES CARTER AND CO. invite attention to their IMMENSE STOCKS of the following BEAUTIFUL NOVELTIES. Prices will bear most favourable comparison :—

DOUBLE WHITE BOUVARDIA,
"ALFRED NEUNER."

First-class Certificate Royal Horticultural Society. Price, established plants, 1*s.* each, 9*s.* per dozen.

DOUBLE PINK BOUVARDIA,
"PRESIDENT GARFIELD."

A handsome and beautiful variety. Good plants, price 5*s.* each; fine established ditto, 15*s.* and 21*s.* each.

LIBERAL TRADE TERMS. | Carriage Free. | LIBERAL TRADE TERMS.

237 & 238, HIGH HOLBORN, LONDON, W.C.

DUTCH AND FRENCH FLOWERING BULBS.

DICKSON, BROWN & TAIT

Have pleasure in announcing that they have received their Annual Importations of

HYACINTHS, CROCUS, TULIPS, NARCISSUS, &c.,

COMPRISING OVER A MILLION ROOTS, IN EXCELLENT CONDITION.

THE "MANCHESTER" COLLECTIONS, for Conservatory and Outdoor Decoration, are most liberal in quantity and quality, 10*s.* 6*d.*, 21*s.*, 42*s.*, 63*s.*, and 84*s.* Carriage paid.

Illustrated CATALOGUES free on application.

The Royal Bulb Establishment, 43 and 45, Corporation St., Manchester.

DUTCH and FRENCH BULBS.

PAUL & SON,

THE OLD NURSERIES, CHESHUNT, N.,

And Departure Platform, Great Eastern Railway, Liverpool Street, E.C.,

HAVE NOW RECEIVED THEIR

HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS.

ROMAN HYACINTHS and MISCELLANEOUS BULBS.

Priced Descriptive LIST with Descriptive CATALOGUE of AZALEA INDICA, CAMELLIAS, EARLY SPRING FLOWERING and Select HERBACEOUS PLANTS, Post-free on application.

NEW SEEDS FOR AUTUMN SOWING.

TRIFOLIUM INCARNATUM, WINTER RAPE,

RYE, FIELD MUSTARD, WINTER TARES,

ITALIAN RYE-GRASS, PERMANENT PASTURE GRASSES, &c.

Samples and Quotations on application.

THE LAWSON SEED & NURSERY COMPANY
(LIMITED),
106. SOUTHWARK STREET, LONDON, S.E.

HYACINTHS, TULIPS, AND OTHER BULBS.

WM. PAUL & SON

(Successors to the late A. PAUL & SON—Established 1806)

BEG TO ANNOUNCE THAT THEIR

NEW CATALOGUE OF HYACINTHS, TULIPS, AND OTHER BULBS,

CAMELLIAS, AZALEAS, &c.,

Is now ready, and will be sent, post-free, on application.

The Bulbs this year are of very fine quality.

Collections of Bulbs from 10s. 6d. to 84s.

"Hyacinths formed the most important feature of the show, the principal exhibitor being Mr. William Paul, of Waltham Cross, who was far in advance of any other in the size and beauty of the noble spikes which he placed in competition."—*Journal of Horticulture.*

"Hyacinths were again the main feature, Mr. Wm. Paul taking 1st Prize with a collection that were as near absolute perfection as in the present state of our knowledge we can imagine."—*Gardeners' Chronicle.*

CAMELLIAS.

WM. PAUL & SON beg to draw attention to their Collection of Camellias, which is the largest and finest in the country.

Good plants of all the best varieties, with bloom-buds, 30s. per dozen and upwards. Specimen Plants from 1 to 30 Guineas each.

The *Journal of Horticulture*, in alluding to the plants at Waltham Cross, says:—"Anything more thoroughly healthy, more free, and more fine, could not be imagined than the large housefuls of fine plants."

PAUL'S NURSERIES and SEED WAREHOUSE, WALTHAM CROSS, HERTS.

WEDNESDAY NEXT.

PHALÆNOPSIS STUARTIANA, P. INTERMEDIA PORTEI,

CYPRIPEDIUM CILIOLARE, DENDROBIUM DEAREI.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, Sept. 6, at half-past 12 o'Clock precisely, by order of Messrs. HUGH LOW & CO., fine imported plants, in quantity, in the best possible condition, of PHALÆNOPSIS STUARTIANA, PHALÆNOPSIS VIOLACEA, DENDROBIUM DEAREI, DENDROBIUM MACROPHYLLUM DEAREI, CYPRIPEDIUM CILIOLARE, new species; the rare and lovely PALUMBINA CANDIDA, SACCOLABIUM HARRISONIANUM.

At the same time will be offered CATTLEYA DOWIANA, CYPRIPEDIUM SPICERIANUM, PHALÆNOPSIS AMABILIS, PHALÆNOPSIS SCHILLERIANA, one plant of PHALÆNOPSIS INTERMEDIA PORTEI, and other Choice ORCHIDS.

On view morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

SPECIAL CHEAP LIST,
Free on Application.

10,000 young Palms, various. | 2,000 Aralia Sieboldi.
20,000 Ferns, in 30 varieties. | 5,000 Primula, splendid strain.

E. DENSON AND CO., Fern Nursery, Brockley, S.E.

TEA ROSE for SALE.—Specimens in 14 inch pots. Half Specimens in 10-inch and in 48's, of the following sorts:—Niphetos, Homer, Madame Falcot, Safrano, Maréchal Niel, Lamarque, Gloire de Dijon, Solfaterre, Amabilis, &c. They are in fine robust condition, and promise a profusion of bloom during the Winter and Spring months. Price per dozen, from 12s., 18s., and 24s.—Apply to JOHN McDONALD, Esq., The Hall Gardens, Bushey, Hertfordshire.

5000 Cylamen persicum. 5000

ALL from the finest procurable strains, good plants by post, 2s. 6d. per dozen; larger, in pots 3s. 6d. and 5s per dozen; extra large, 10s. per dozen. Now is the time to pot these on to make grand stuff for flowering the coming season.
W. M. CROWE, Boleyn Nursery, Upton, Essex.

JULES DE COCK, NURSERYMAN, Ghent Belgium, offers to the Trade, FICUS ELASTICA, beautiful plants, cultivated in pots, £4. £5, £6. per 100; CYATHEA MEDULLARIS, £4 per 100; PTERIS ARGYREA, 25s per 100; P. SERRULATA CRISTATA, 25s. per 100; ADIANTUM CUNEATUM, 25s. per 100; CLIVIA MINIATA, seedlings, one year, best hybridation, 50s. per 100; CAMELLIAS, without buds, grafted, with names, best sorts, £3, £4, £5 per 100; PALMS in store pots. ARECA LUTESCENS, 12s. per 100; COCOS WEDDELLIANA, 40s. per 100; CORYPHA AUSTRALIS, 8s. per 100; LATANIA BORBONICA, 8s. per 100; PHŒNIX RECLINATA, 8s. per 100; P. TENUIS, 8s. per 100; SEAFORTHIA ELEGANS, 10s. per 100. CATALOGUE free on application.

ADIANTUM CUNEATUM, in 5 and 6-in. pots, full of Fronds, 100s. per 100.

PELARGONIUMS, best market kinds, in 60's, ready for shift, 20s. per 100.

BOUVARDIA JASMINIFLORA, in 5-in. pots, will bloom well this autumn, 50s. per 100.
ROBERTS BROS. AND ARNOLD, East Grinstead, Sussex.

To the Trade.
FERNS—FERNS—FERNS.

W. M. CROWE offers as below, in good healthy stuff:—

CHEILANTHES ELEGANS, in small 60's, 9s. per dozen, 60s. per 100.
LOMARIA GIBBA (best variety), in 60's, 20s. per 100; from stores, 7s. per 100.
PTERIS CRETICA ALBA LINEATA, from stores, 7s. per 100.
LASTREA ARISTATA VARIEGATA, in small 60's, 4s. per dozen, 28s. per 100.
Good market sorts, in about ten varieties, strong stuff, in 60's, 20s. per 100.
W. M. CROWE, Boleyn Nursery, Upton, Essex.

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Many thousands of ERICA MELANTHERA.
Many thousands of ERICA GRACILIS, of various sizes.
Many thousands of ERICA CANDIDISSIMA.
Many thousands of ERICA VENTRICOSA COCCINEA MINOR, and other choice varieties of ventricosa
Many thousands of ERICAS of the best varieties, including alopecuroides, colorans, cerinthoides coronata, caffra, Cavendishi, barbata major, grandinosa hybrida, hyemalis superba, perspicua nana, persoluta alba, assurgens, mammosa, rubens, ovata, &c
Many thousands of HARD-WOODED ERICAS, in numerous fine varieties.
Many thousands of CYCLAMENS.
Many thousands of GARDENIAS.
Many thousands of GENISTAS.
Many thousands of EPACRIS.
Many thousands of AZALEA INDICA in variety, of various sizes.
Many thousands of AZALEA INDICA, Fielder's white, narcissiflora, and other white-flowering varieties.
Many thousands of AZALEA AMŒNA.
Many thousands of CAMELLIAS, with flower-buds, various sizes.
Many thousands of GREVILLEA ROBUSTA.
Many thousands of SOLANUMS, well berried.
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FOR

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12 in 4	,,	,,	,,	..	..	2s 6d. and	3	6

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12	,,	12 ,, ,, ...	12	0

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12	,,	4	,, ...		2	0

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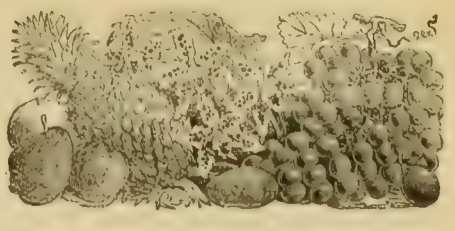
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THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 2, 1882.

NANT-Y-GLYN, COLWYN BAY

THAT there should exist a Devonshire climate in North Wales may be a matter of surprise to some people, but those who have read the notes from time to time communicated to this journal by Mr. A. O. Walker will readily grant that it must be so, even if they do not know how it is brought about. A glance at the situation of the garden reveals the secret. The winter climate of the district is mild—of that there is no doubt, for in much more exposed places Escallonia macrantha and various Fuchsias form bushes just now one sheet of bloom. Hydrangeas show by the size and vigour of their foliage, and the magnificent trusses of blue and pink flowers, that they are not troubled by any inclemency of climate. Still, even with all this evidence, the first sight of Colwyn Bay does not prepare us for finding there a Welsh Torquay. A sandy, treeless plain, wind-swept, and open to the sea, does not seem quite the place one would select as a "*jardin d'acclimatation.*" But less than a mile from the sea marge, on rising ground, is a thick belt of Oak, and Ash, and Beech, forming a "forest" just such as one sees on beginning to mount from a Swiss valley to the slopes of the mountains. Here is shelter then, and hereabouts must be the garden of which we are in search. Presently an opening in the wood shows itself, and we find an Isle of Wight clime. A look up at the sun to see the aspect—a look down at the soil to see that it is naturally well drained—and we are persuaded we are on the right track. We enter a gateway, and see by the plants that assuredly this is "Nant-y-Glyn.' It is satisfactory to arrive at this conclusion, as one's Welsh pronunciation may be faulty, or the Welsh mind not open. As to the plants, there was no mistaking the indications they presented. It was only a pity that one's memory for names was not so acute as one would like it to be; for the reader's sake, perhaps it is as well as it is, for a mere catalogue of names is not entertaining reading. Perhaps the most surprising plant is a small tree or bush—bush in size, tree in habit—of Fremontia californica, growing as a standard on the lawn, and with a profusion of yellow flowers, not a little, but much larger than any we ever saw before, even against a wall, and with plenty of nearly ripe fruit.

Chamærops excelsa we know in the Isle of Wight, in Devonshire, and even at Heckfield, in Hants, but we were not prepared to see it in North Wales; yet here it is, and has been for the last twelve years without any protection. At Pen-men-maer, by the way, we saw another plant of the same species, smaller, indeed, but interesting as having formed part of the collection at Clapham of the late Mr. N. B. Ward, of Fern case notoriety. Azalea mollis, A. amœna, Gasterias in full bloom, various Pelargoniums, Fuchsia splendens, Veronica Traversii, Diplopappus chrysophyllus, several hardy Bamboos, Fabiana imbricata, Eugenia apiculata, Agapanthus umbellatus, Raphiolepis ovata, may be men-

tioned as some among the many half-hardy things which here stand out without protection; it is fair, however, to state that some of these have not been out for more than one or two winters, but most of them for twelve. Of plants that are sheltered by a wall, or which enjoy a warm border close by, the number is legion, for Mr. Walker is a plant lover and an experimentalist. Trachelospermum jasminoides, Choisya ternata, Bomarea oculata, Eryngium pandanifolium in full bloom, Abelia rupestris, Ammobium alatum, Convolvulus Cneorum, C. mauritanicus, C. lineatus, a rarer species with delicate pink flowers, Clianthus puniceus, Statice profusa, Mesembryanthemum uncinatum, and various Opuntias may be mentioned under this head.

In herbaceous perennials the collection is rich—so much so that it may fairly be called representative, and much too numerous to be enumerated. Tropæolum speciosum does well, flowering and fruiting freely. Anemone japonica grows so freely as to be a perfect weed, but the rich colour of the flowers is something much beyond what one is accustomed to see. The white A. Honorine Jobert grows almost as freely. Phygelius capensis is indeed not uncommon, but it is quite uncommon to see it in size like this, forming a low bush, we are afraid to say how many feet through. Salvia porphyrantha, brilliant in colour; Scutellaria lupulina, with very pretty lilac-rose flowers; numerous species of Pentstemon; Telekia speciosissima, like a glorified Inula; Platycodon grandiflorum, with its large blue bells; Papaver pilosum, Erigeron glaucum, Erodium manescavi, Sanguisorba canadensis, the handsome pinnate foliage of which forms an appropriate setting for its elegant dense spikes of white flowers.

Among hardy shrubs in bloom we noted in addition to the before mentioned the beautiful Olearia Haastii, Jamesia americana, Rosa rugosa, Bupleurum fruticosum, Ceanothus rigidus, Pittosporum tenuifolium. Among the Conifers Pinus Devoniana and P. Hartwegi are noteworthy for their vigour; but on the whole, always excepting Cupressus macrocarpa, the soil or site seems not very specially propitious to Conifers.

Some interesting experiments are being made towards testing the hardihood of Ferns. Some have already been out sufficiently long to test their endurance, such as Cyrtomium Fortunei: for others a longer period is necessary. We give a few names only, but in every case the plant has been out at least two years:—Lomaria nuda, Polystichum falcinellum, Adiantum pedatum, Selaginella Willdenovii, Hypolepis millefolia, Polystichum capense, the Australian Polystichum proliferum, Polystichum acrostichoides, Lomaria chilensis, Patersoni, and fluviatilis; Aspidium lepidocaulon, and Lastrea Standishii. In the "limestone fernery" are Lomaria Banksii, Aspidium lepidocaulon, Woodwardia orientalis, Polystichum concavum, and others. Both ferneries are under the shade of trees on a gentle slope, with a clear mountain rill at the base.

But enough has been said to show that this is a garden after the connoisseur's heart, and to explain the reasons for its exceptionally favoured character. *The Rambler.*

A PRETTY COMBINATION.—This was formed of Clematis Jackmanni and Tropæolum canariense, growing together over a cottage porch. They were planted on either side of the doorway, and, mounting upwards, gradually mingled their shoots and flowers, until the rich mass of purple-blue became dotted all over with specks of gold. It has proved a good season for the fine old Canary Creeper; in every position it appears to have done well, making a rare growth, and flowering with unwonted freedom. The Clematis has grown amazingly also, and bloomed with a superabundant wealth of flowers.

PUCCINIA RUBIGO VERA.

IT has long been known that two kinds of rust affect Wheat, one of which, a state of Puccinia graminis, has been fully described in a recent number of the *Gardeners' Chronicle* in its connection with the Barberry Æcidium. The other kind of rust is less important to the agriculturist, because it seldom produces any very great amount of injury to the corn crop; yet it does do so sometimes, especially when it attacks the ears. In a recent article upon the agricultural prospects of the country in one of the daily papers, it was said that the red-rust which occurred upon the Wheat plant in March and April* "was considered to afford only a salutary check to premature development, and the Wheat plant soon recovered." It is difficult to understand how a parasitic fungus which has once gained admission into the interior of Wheat or any other plant can exert a salutary influence, especially when it is borne in mind that this rust is only the early stage of an after-coming Puccinia. Surely the Wheat plant would under any circumstance have enough to do to nourish its own fruit without having at the same time to support a parasite, which will last as long as the Wheat itself does. The red-rust at present under consideration was for a long time thought to be a fungus *sui generis*, but is now known to be only the state of a Puccinia. This Puccinia has not yet been figured in this country, in fact has only been recognised as British since 1878, and I am not aware that any one has pointed it out otherwise than as a botanical curiosity, although, as has been stated above, its Uredo state has been known for many years.

Last spring, during the months of March, April, and May, many of my agricultural friends were greatly alarmed by the unusual quantity of rust upon their Wheats. To such an extent did this occur that my friend Mr. W. Marshall of Ely heard of instances of persons walking through Wheat "who had their boots and trousers covered with the red-rust." In some specimens of Wheat sent to me for examination, I found Uredo certainly upon them, but every yellow patch was not accompanied by spores. This turning yellow of the blade was ascribed by gentlemen who had been connected with agriculture from their youth to the action of frost, and doubtless the cold frosty nights we then had were the exciting cause. The mycelium of the fungus was present in the Wheat plant, and had so reduced its vitality that when the depressing influence of frost came, the chlorophyl was changed, the plant being unable to withstand the cold nights and sunny days. The sickly yellow look of the crop at this time was observable as one drove about this part of Norfolk, and from our severe visitation of mildew last year it was not surprising that those having a large interest at stake should be alarmed. Now although the frost showed us the extent to which the disease prevailed, it does not by any means follow that it did harm, on the contrary its action was beneficial. In causing the death of the affected leaves, it caused the death of the mycelium, which, although unseen, existed in them, inasmuch as the Uredines grow only in the tissues of living plants. Of course all the mycelium was not killed, but a great part of it undoubtedly was.

Puccinia rubigo vera (figs. 52, 53), like P. graminis, is a heterœcismal fungus, that is to say, it passes a part of its life history in the tissues of some other plant. It is unnecessary to go into the same details as were discussed in my previous paper upon Puccinia graminis (p. 233), all that is required is to mention the points in which these two fungi differ from one another. To begin, as was then done, with the Uredo—Uredo rubigo vera, DC.* Uredo rubigo, Berk.,† Cæoma rubigo,



FIG. 52.—PUCCINIA RUBIGO VERA, DC.

a, b, c, d, e, f, Teleutospores of various forms; *g, h*, Teleutospores of Puccinia graminis, showing comparative size and form; *i*, Six Uredo spores of Puccinia rubigo vera; *j*, Three Uredo spores of Puccinia graminis, showing comparative size and form; *k*, Teleutospore of P. rubigo vera on Holcus, which has thrown out two promycelium tubes—May 25, 1882; *l*, ditto, in which one upper cell only has germinated: the lower cell is darker, from the endochrome still being retained in it—May 25, 1882; *m*, Promycelium spores.

* *Daily News*, July 24, 1882.

* De Candolle, *Flore Franç.*, vi., p. 83

† Berkeley, *English Flora*, vol. v., part ii., p. 375.

Link,* Trichobasis rubigo vera, Lév., Trichobasis glumarum, Lév.,† are various names which have been given from time to time to this fungus. It is smaller and more yellow, covered longer by the unruptured cuticle, with smaller and more globose spores than the Uredo of P. graminis. It germinates in a similar manner, and enters the stomata of the host-plant. One great point of difference, however, is that it appears much earlier in the year—it may be commonly met with upon Holcus lanatus in April and May, while the Uredo of Puccinia graminis is seldom found until June and July. The teleutospores (Puccinia rubigo vera, DC.) have also received more than one name, viz., P. striæformis, West.,‡ P. straminis, Fuckel. § They differ from those of P. graminis in being shorter, broader, more irregular, in having very short stalks, and being for a very much longer time confined under the cuticle. The individual pustules are very much smaller and less conspicuous. But perhaps the most remarkable difference is that they are not free amongst the cells of the plant but are surrounded on all sides and below by a number of dark brown bodies called paraphyses. They germinate in spring after a winter's rest and produce promycelium and spores. The germ tubes they emit are, according to my observation, shorter and wider. I was very anxious to watch the heterœcism of this fungus in spring. The Æcidium is so rare in this county that I knew it was useless to hope to obtain it. The promycelium spores were therefore the only resort, but I failed in obtaining a sufficiency for my purpose, although I applied to my friends, Dr. G. Winter of Zurich, Dr. Paul Magnus of Berlin, M. C. Roumeguére of Toulouse: it was only to hear that the season had gone by for this year. Herr E. Rostrup, however, sent me two specimens from Denmark, one on Wheat the other on Holcus, but I was not able to get them to germinate. The two teleutospores which are figured germinating were from a specimen in my herbarium collected in July, 1881, and kept dry until May, when, even under these unnatural circumstances, a few of the teleutospores did produce promycelium and spores.

Æcidium asperifolii, Pers., is the Æcidium which De Bary* has proved to be produced when the promycelium spores of Puccinia rubigo vera are placed upon the cuticle of Lycopsis arvensis and Anchusa officinalis. He has figured them with their germ tubes boring through the cuticular cells of these plants,† and developing mycelium below ‡ in the substance of the leaf. He also found that the spores of Æcidium asperfolii, sown upon young Rye plants on the 1st and 3d of August, produced the Uredo of P. rubigo vera by the 9th and 11th respectively. The spores of this Æcidium are thickly warty, polygonal, and orange-yellow. It must be a rare species, for I have searched diligently for it for some years past, and that especially this year, but always without success, although it is said to have been found near Kings Lynn several years ago. Here, therefore, we have the clearest possible indication that this heterœcismal Puccinia must have some other way of reproducing itself without the intervention of the Æcidium; how this is effected is a problem I will endeavour to solve, next year if I can, and I am not without hopes of being able to do so.

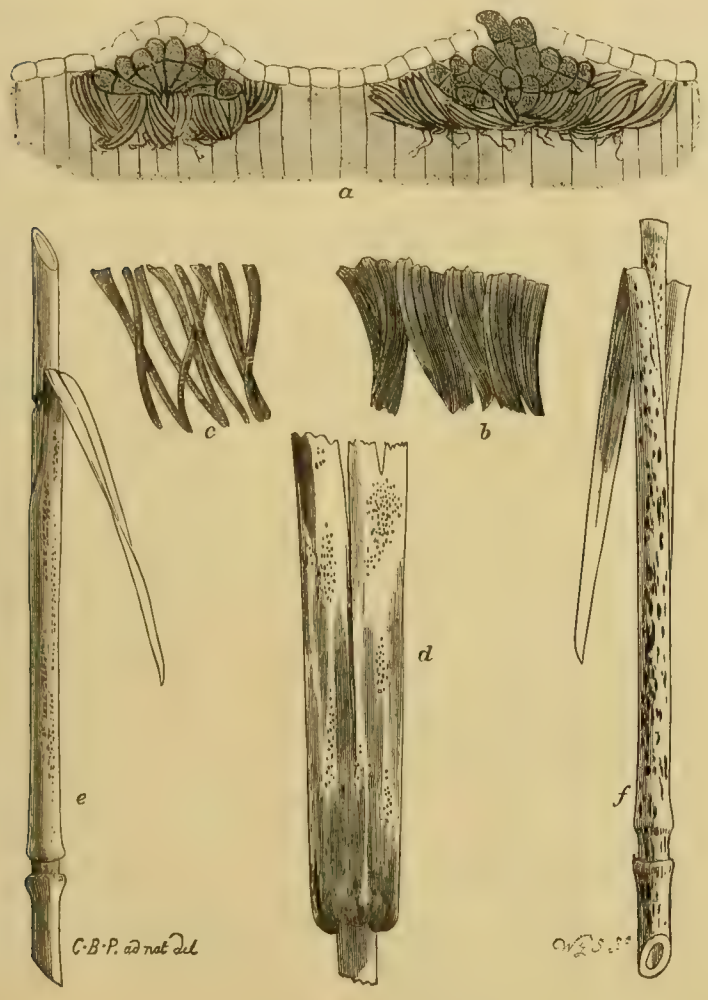


FIG. 53.—PUCCINIA RUBIGO VERA.

a, Two pustules, showing the subepidermal nature of the fungus, and bed of paraphyses; *b*, Group of paraphyses; *c*, Separate paraphyses; *d*, Part of a blade of Wheat with the Puccinia rubigo vera upon it; *e*, A piece of straw with the same; *f*, A piece of straw affected with Puccinia graminis, for comparison.

Puccinia rubigo vera is unusually abundant this year, not only upon various grasses, such as Holcus lanatus, H. mollis, Bromus sterilis, and Hordeum murinum, but also upon Rye and Wheat. Upon the former I found it not only abundant upon the leaves and stem, but also upon the glumes. Upon the latter, since Mr. Marshall sent me teleutospores a week ago, I have found it in great abundance in every Wheat field, and I have examined since then a great many in various villages around Kings Lynn. A variety of Puccinia rubigo vera, the var. simplex of Körnicke,* occurs in Germany and Denmark as well as in this country. It was first described by Fuckel† as a distinct species, under the name of P. Hordei; on the upper surface of the leaves and on the sheaths of Hordeum murinum. Specimens were published by Thümen,‡ under the name P. anomala, Rostrup.

It is characterised by the small size of its pustules, and by the teleutospores being nearly or entirely one-celled, the upper compartment being more or less in abeyance. The teleutospores measure 44 mk. long by 20 mk. wide.

There is no doubt but that the Trichobasis glumarum is nothing more than the Uredo of Puccinia rubigo vera, for although the spores are not very distinctly verrucose, yet careful examination of them, *dry*, will show that they are not smooth. The ordinary form of the Uredo spores also loses its roughness, to a great extent, when examined in water. The glumes which were earlier in the year affected with the Uredo, will be found later on to bear the teleutospores.

Appended are the spore measurements of Puccinia rubigo vera, expressed in micromills (*i.e.*, $\frac{1}{1000}$ millimetre):—

Uredo, 20—32 by 17—24.	Paraphyses, 50—70 long.
Puccinia, 26—80 by 16—24.	Æcidium, 18—20.
Promycelium spores, 10—15 long.	Spermogonia, not known.

The Æcidium in Europe is known to occur on §

Cynoglossum officinale.	Cerinthe minor.
Borago officinalis.	,, alpina.
Anchusa officinalis.	Echium vulgare.
Lycopsis arvensis.	Pulmonaria officinalis.
Nonea pulla.	,, tuberosa.
Symphytum officinale.	Lithospermum arvense.
,, tuberosum.	

Puccinia rubigo vera in Europe is known to occur on §

Calamagrostis epigejos.	Bromus asper.
Holcus lanatus.	Triticum vulgare.
,, mollis.	Secale cereale.
Arrhenatherum elatus.	Hordeum vulgare.
Avena flavescens.	,, distichum.
Festuca elatior.	,, murinum.
Bromus secalinus.	,, secalinum.
,, mollis.	Lolium temulentum.
,, arvensis	

Charles B. Plowright, Kings Lynn, July 24.

New Garden Plants.

ANTHURIUM LONGIPES, *N. E. Br.* (*n. sp.*)

STEM ¾ inch thick, creeping just beneath the earth. Leaves erect; petioles 1—2 feet long, 2—2¼ lines thick, tumid at the base for about ¾ inch, and 6—8 lines thick, dull green, terete, channelled down the face, the edges of the channel subacute, geniculus tumid, ½—½ inch long; lamina coriaceous, bright shining green above, of a lighter and somewhat yellow-green beneath, 11—18 inches long, 2—3¼ inches broad, narrow oblong or narrow lanceolate-oblong, base slightly cordate, gradually narrowed from about three-fourths the way up into a sub-obtuse shortly mucronate apex; midrib slightly prominent above, very prominent beneath, and rounded on both sides, primary lateral veins about twenty on each side of the midrib, slightly impressed above, slightly prominent beneath, rather distant, nearly straight, spreading from the midrib at an angle of 45°—50°, and uniting in a collective vein 5—7 lines in from the margin, interrupted near the base,

* Link, *Linn. Spec. Plant*, vol. vi., part ii., p. 4.
† Léveillé. *Annales des Sciences Naturalles*, 1846-8.
‡ Westendorp, *Bullet. de l'Acad. de Belgique*, xxi., *Notice s. quelques Crypt.*, iv., No. 40.
§ Fuckel, *Ennumer. Fungi Nassau*, p. 9, No. 41.

* De Bary, *Neue Untersuchungen über Uredineen*, ii., 1866, p. 208.
† De Bary, *loc. cit.*, p. 215, figs. 3, 4, 5.
‡ De Bary, *loc. cit.*, p. 210.

* Körnicke, *Land und Forstw. Zeitg.* 1865, No. 50.
† Fuckel, *Symbol Mycol. Nachtr*, ii, p. 16.
‡ Thümen, *Herbarum Mycol. Œconom.*, No. 451.
§ Winter G., *Synopsis Uredineen und ihrer Nahrpflanzen* (reprint from *Hedevigia*), p. 12.

below the interruption the primary veins form an intramarginal vein (on the outer collective vein) about 1 line in from the slightly revolute margin, into which it is excurrent about one-third or a quarter below the apex of the leaf. Peduncle 2 feet long (in the only example seen), 2 lines thick, somewhat compressed, erect, green. Spathe light green, reflexed, 3¾ inches long, 11 lines broad, lanceolate, the base decurrent on the peduncle for about ¾ inch, apex rather abruptly narrowed into ½ inch long subulate point. Spadix shortly stipitate, 4 inches long, 4 lines thick; stipes 2 lines long, green; flowers ½ line in diameter, yellowish.

This is a very distinct and somewhat remarkable species of Anthurium, that was sent to the Royal Gardens, Kew, from Bahia, by Mr. J. Wetherell in 1854. I have watched it growing for the past eight years, but it has never flowered during that time until now (August, 1882). The habit of the plant is different from any other that I have seen, the stem creeping under the earth, and throwing up at irregular intervals its erect narrow oblong leaves, on very long slender petioles that are usually half as long again as the blade. It appears to be a very slow growing species. *N. E. Brown, Kew.*

SCHISMATOGLOTTIS LAVALLEI (*Linden*), VARS. PURPUREA *and* IMMACULATA, *N. E. Br.*

Since this pretty variegated Aroid was described in *l'Illustration Horticole*, xxviii., p. 71, t. 418, I have received specimens of two distinct varieties of it. In the typical form the leaves are bright green above, variegated with irregular greyish blotches, and the under-surface is light green; this form comes from Borneo and Sumatra.

In the variety *purpurea* the leaves are bright green, with irregular greyish blotches above, as in the typical form, but on the under-surface and petioles they are of a deep vinous-purple. This variety I received from Messrs. Veitch, who obtained it from Sumatra through their collector, Mr. Curtis.

The variety *immaculata* has the upper surface of the leaves of an uniform unspotted bright green above, the under-surfaces and petioles being vinous-purple. This form I received from the Compagnie Continentale d'Horticulture, with the information that it was imported from Java. *N. E. Brown, Kew.*

ARUM ELONGATUM, *Steven.**

Tuber roundish, depressed. Petiole rising 6—8 inches above the earth, semiterete, channelled down the face, light green, substance somewhat spongy. Lamina elongate sagittate-hastate, 5—8 inches long; the basal lobes about one-third as long as the oblong, obtuse front lobe, which is 2—3 inches broad, bright green, unspotted. Peduncle much shorter than the petiole, terete, light green. Spathe 6—9 inches long, limb three to four times as long as the tube, elongate lanceolate acuminate, somewhat cylindric, not very open, having a gape of about 1 inch; the tube is green outside, inside it is white or light green at the base, purple in the upper part; the limb is green, stained with a dark purple tint outside, entirely blackish-purple inside. Spadix three-fourths as long as the spathe; ovaries yellowish, with a purple ring around the depressed paler stigma; anthers pale, yellowish with purple apex, or dark purple-brown; neuter organs entirely yellowish, or the subula purplish, base bulbous, slightly verrucose, the lower series in two or three cycles, the upper series in about two cycles, sometimes the cyles of both series are rather irregularly scattered; stipes of the appendix very dark purple, about half as long, and one-third as thick, as the blackish clava. A native of the Crimea.

This appears to be a rare and very imperfectly known species, at least so far as our Herbaria are concerned. Schott in his *Prodromus* places it among the little known species at the end of the genus, whilst Engler in his monograph makes it a variety of Arum orientale, Bieb., uniting with it as synonymous A. Nordmanni, Schott; A. Ehrenbergii, Schott; A. longispathum, Rchb.; A. incomptum, Schott; and A consobrinum, Schott; the two latter doubtfully. From A. orientale it appears to me utterly distinct; and I cannot believe that the Syrian A. Ehrenbergii, or the Caucasian A. consobrinum are identical with it, since the descriptions scarcely agree with it, though I have not seen specimens of them. As for A. incomptum, and A. longispathum, they are certainly distinct from A. elongatum. There remains A. Nordmanni, Schott, to dispose of. I have seen no specimen of this, but to judge from the description I think there can be little doubt that it is the same plant as A. elongatum, although Schott places it in the group having the disc of the spathe green and the margins more or less dark purple-brown, but having only a dried specimen he may have been unable to determine this. Good and complete specimens of this interesting species were sent to me in April last from the Cambridge Botanic Garden by Mr. Lynch, who informs me that it was brought from the Crimea. *N. E. Brown, Kew.*

* *Arum elongatum*, Steven, in *Bull. Mosc.* 1857, part iii., p. 67; Schott, *Prod. Aroid.*, p. 100; Engler, in *DC. Monog. Phanerog.*, ii., p 587 sub A. orientale; *A Nordmanni*, Schott, *Synop. Aroid.* p 12; *Prod. Aroid.* p 88

FLOWERS IN SEASON.

GAZANIOPSIS STENOPHYLLA.—From Mr. A. O. Walker we have received flowers of this comparatively unknown hardy perennial, which is so beautiful that we have no hesitation in recommending it to our readers. A Composite, with long, linear, grassy, deep green leaves, snowy-white on the under-surface, and long leafless flower-stalks, bearing heads of flowers 3 inches across, brilliant in colour and curious in detail; the numerous involucral bracts are all run together at the base into a cup, the free ends leafy, about an inch long, linear and ciliate at the edges. These enclose a circle of ray florets, bronzy green in the centre externally, of the richest golden-yellow internally. The disc florets are of the same colour. The flowers have the same habit of closing in the after part of the day as the Gazania.

JAMESIA AMERICANA.—From Mr. Walker's garden at Colwyn Bay also come flowers of this interesting shrub, with cinnamon-coloured bark, opposite leaves, reminding one as to shape and toothing of the common white Dead-Nettle (Lamium album), but with leaf-stalks dilated and almost connate at the base, and clothed, like the under-surface of the leaf, with whitish down; the veins on the under-surface are of a reddish colour. The flowers are small, white, aggregated at the ends of the branches. The petals are free, oblong, the numerous stamens white and fleshy.

TROPÆOLUM SPECIOSUM.—Mr. Walker manages to grow this against a wall at his residence at Colwyn Bay. The flowers are unusually large, and, as the fruit ripens, the persistent calyx becomes of the deepest purple colour; on this are set the fruits, of the richest cobalt-blue. Such a combination of colours—the pale green leaves, the orange-scarlet flowers, the cobalt-blue fruits ripening into dark purple—must indeed be rare: gorgeous is the only word we can find to express it.

SKIMMIAS.—In Mr. Walker's garden at Colwyn Bay we lately saw a bush of S. oblata literally covered with scarlet berries. The plant had never fruited till a plant of S. fragrans was placed in juxtaposition.

HYPERICUM AUREUM.—In Torrey and Gray's *Flora of North America* this is called "a splendid but very local species." It occurs in South Carolina and Georgia, and in all probability is a very recent introduction to British gardens. At Kew it has been flowering freely, and its large orange-yellow blossoms, sessile, or seated on very short stalks on the leafy short-jointed branches, are both handsome and conspicuous in no slight degree. Some of the flowers measured about 2 inches in diameter.

GENTIANA FLORIDA.—For the front of a shrubbery this is a desirable plant, as it flowers freely at a time when comparatively few shrubs are blooming. Its general character may be described as a G. tinctoria of shrubby habit; the colour of the flowers, too, is about the same tinge of yellow. It is found in nurseries under a variety of names, such as G. thyrsiflora, G. multibracteata, and G. polygalæfolia. Under the first of these names it is mentioned in the Supplementary List at the end of Loudon's *Encyclopædia of Trees and Shrubs.*

HYPERICUM HIRCINUM.—This species is one of the most free-flowering and ornamental of all the semi-shrubby St. John's Worts. It is a plant of the easiest culture—if, indeed, it may fairly be said to require culture at all, for if left alone it will often spread and naturalise itself readily. As a consequence it is exactly a plant which can be safely recommended for the woodland walk or wild garden. It is sometimes found in nurseries under the name of H. chinensis.

PANCRATIUM FRAGRANS.—Never have we seen such fine specimens of this desirable plant as some under Mr. Speed's care at Penrhyn. They are grown in No. 1 pots, in a pit, and kept cool all the summer, by which means they may be had in full flower in September. The bulbs are very large, the leaves deep green, as thick as board, and each plant will throw as many as 8—10 spikes.

POTENTILLA DUBIA.—For covering the ground in patches, and especially for rockwork, this dwarf-growing plant is unsurpassed. There is a charm about the little plant and its pretty yellow flowers which rivets the attention of the plant grower at first sight.

MATRICARIA INODORA FL.-PL.—A plant that will ornament a rockery at any altitude, or grow in a low swampy border, should, if for no other reason, receive the attention of those who are interested in hardy plants and especially those who are about forming new collections. The plant grows from 18 inches to 2 feet in height, and bears showy white flowers at the terminal points of the shoots. It is very striking at a distance and therefore worthy of a place in all hardy-plant collections.

CYCLAMEN HEDERÆFOLIUM ALBUM.—In the Cambridge Botanic Garden this is now the most lovely thing imaginable. The flowers are perfectly pure in colour, and many of them together, nestling in a corner of dark green Ivy, give an extremely charming effect. It grows without difficulty, but requires a moist position with shade. Under a low wall on the north side the hardy species do extremely well. At Chiswick it is also flowering well.

PEDIGREE SWEET PEAS.

UNDER this heading Mr. Henry Eckford, gr. to Dr. Sankey, Boreatton Park, Baschurch, has forwarded a collection of new varieties of Sweet Peas raised from seed after carefully crossing certain varieties. They are all very handsome, and, on the whole, distinct; but another season's culture against the best of the varieties already grown is needed to demonstrate that they are distinct enough to be denominated new varieties. Sweet Pees are decidedly sportive in character, and time is required to ascertain and fix the characteristics of a new form.

The Floral Committee of the Royal Horticultural Society have already acknowledged in the most practical manner their approval of Mr. Eckford's work by awarding him a First-class Certificate of Merit for Bronze Prince. This is a very fine form of the black Sweet Pea, with shining bronzy-maroon standards of large size, and rich purple-blue wings; the flowers are very large and striking in appearance. Blue King is in the way of the purple Sweet Pea, the standards large, stout and bold, as in the case of the preceding variety, and of a showy bronzy-crimson hue dashed with purple, bright pale blue wings, very fine and attractive, and particularly pleasing from its fine shade of blue. Grandeur has fine crimson-rose standards, the wings pale mauve, very fine and showy, the colour of the standards deeper in hue altogether than in the case of the scarlet Sweet Pea. This variety requires to be grown by the side of a fine type of the scarlet Invincible, but we think it will prove distinct from it. Louie Eckford is like Butterfly, and, we think, not sufficiently distinct from it, as Butterfly, though opening very pale and delicately tinted when young, becomes deeper as well as more varied in colour with age. Louie Eckford is a variety charmingly tinted with blue. Princess has pale standards, slightly suffused with magenta and pale purple, the margins slightly beaded with purple, the wings on young flowers white, with a fine wire beading of azure-blue on the wings; but later flowers have the wings and the standards in some parts, but not so heavily, striped and flaked with blue. In any case, it is a very pretty variety. Duchess of Albany has pale standards dashed with delicate magenta and blue, and slightly bearded with purple; the wings white, margined and flaked with blue. As sent from Mr. Eckford this variety comes very near to Princess, but when growing side by side there may be sufficient differences to warrant the two being regarded as dis-

tinct. The examples received were a little old, and they had come a long journey through the post.

One thing is quite certain, that Mr. Eckford has obtained a very interesting and valuable break. Further crosses cannot fail to give something of a valuable character. Years ago Mr. Eckford made his mark in raising Dahlias, zonal and nosegay Pelargoniums, Verbenas, &c., so that he is by no means new to the work; and it is as true of floriculture as of any other department of human work, that what men have done and are doing is but an earnest of what they shall accomplish in the future; there can be no limit to the possibilities of production, for the universe will always be wider than the largest imaginings of the human mind. *K. D.*

THE SOUTHFIELD NURSERY.

A VISIT to Messrs. Veitch & Son's fruit nursery at Southfield, Fulham, cannot fail to be interesting to fruit growers at the present season. To the casual observer there is perhaps not much to be learned from a visit to an extensive fruit growing establishment of this kind, beyond the satisfaction or curiosity of seeing one of the largest collections of fruit trees of all kinds in the country. But the practical man does not proceed many yards before his attention is attracted by the uniform quality of the trees, and naturally inquires as to the cause. There is so much that can be accomplished in nursery fruit tree growing by the skill of the trainer and no more. He may cultivate upon the best principles, and be unremitting in his attention to training—nay, he may balance after a fashion the most vigorous growing tree, and present to view an equal proportion of parts—but he cannot conceal his labours from the practical eye nor hide from view the difficulties of the situation. Therefore, the cause of such excellence and uniform quality must be accounted for through some other agency than hand manipulation, which is, of course, of great importance, but still not so vitally important as being in possession of a suitable, well drained soil.

Taking a tour through the nursery by a walk running from south-west to north-east the first batch of fruit trees upon the left consists of Peaches and Nectarines—last year's maidens—a plot of about 3 acres. The trees are as nearly as possible of equal size, with three shoots upon each side of the leader. The remarkable equality of the shoots, their colour, and the presence of so many fruit-buds are the points which tend to create an impression that both soil and subsoil are of a peculiarly favourable nature, and that to this fact may be ascribed the unusual fertility of trees at such an age. The surface of the soil appears dark (peaty-looking), but upon examination this is found to be only the result of a surface dressing, as underneath it is light and sandy, resting upon a sandy subsoil. In preparing the ground for planting the trees, a thin layer of sand is worked towards the surface, and intermixed with the soil, as from experience it is found to be beneficial. Thus we trace the cause of fertility in the first place to the nature of the soil, which, owing to its composition, and the proportion of sand which it contains, has a tendency to produce and increase in great numbers those swarms of hungry fibrous roots which, when once obtained, are certain to be succeeded by heavy crops of fruit—bar mismanagement.

Having once secured the natural conditions favourable to fruit tree growing, the cultivator has a clear course before him—he gives his trees sufficient space to grow in, trains, pinches, and regulates the shoots when necessary, keeps the surface of the ground regularly stirred, and, finally, transplants frequently, in order that they may be kept in a thoroughly prolific state, and bear removal at any time from October to March without fear of sustaining any check whatever. This is not the language of imagination, as any one may see who chooses to inspect the stock of Apple trees at Southfield, from those a few inches high to others as many feet, literally borne to the ground under the weight of their crops. Trees that were transplanted as late as last March are bearing fair crops of fruit this season. But those who purchase with a view to having a crop the year after planting will, of course, obtain good-sized trees, and plant about the end of October, or, at the latest, in November. It would, indeed, be a great advantage to intending planters if they could but make it convenient to examine fruit trees in bearing, and note their behaviour under certain conditions of soil and climate. Some of the two-year-old trained Peach trees in this nursery are nearly 3 yards wide. Apricots three years old are fine trees, equally balanced, and studded with fruit-buds from top to bottom.

The utmost care is taken in the cultivation and training of the trees, which is an especial benefit to unskilled growers, who, having got a good foundation laid for them, can hardly go astray afterwards. It is the trees with a big shoot and two little ones upon one side, and two large ones and one small one upon the other, that become so perplexing to amateurs, and ultimately end in their growing wild and unmanageable altogether. Of Apricots there are standards, half standards, and dwarf trained trees, of sizes to suit everybody, and embracing all the best kinds in cultivation, of which, however, the following are the most select:—Moor Park, Breda, Frogmore Early, Hemskerk, Kaisha, New Large Early, Peach, Powell's Late, Royal, and St. Ambroise. Over 1000 standards and half-standards of Peaches, and Nectarines, &c., are grown upon a wooden fence, and these are fast ripening their wood and plumping up their fruit-buds. Fig trees for training are represented by such excellent kinds as Black Ischia, Castle Kennedy, White Ischia, Figue d'Or, Brown Ischia, Dr. Hogg, Brown Turkey, and others. Here again there is convincing evidence of the favourable nature of the soil; most of the above varieties being in fruit, many of them indeed bearing good crops.

Journeying still further we find large quarters of the Quince and quantities of young Pears upon the Quince planted out for training, Maiden Apples upon the Paradise stock, and larger trees upon the Paradise and Crab stocks. As regards health, cleanliness, and general appearances of cultivation but little can be said by way of difference regarding this splendid collection of Apple trees. From the largest to the smallest, whether they be trained trees, pyramids, or bushes, the bulk of them are covered with fruit-buds down to their lower branches. There are, however, certain varieties that are regular croppers, and of dessert kinds the following will be found to be the best, though, of course, influenced more or less by soil and climate:—Cox's Orange Pippin, Ribston Pippin (especially fine at Messrs. Veitch's, but seldom seen so good elsewhere), Cockle Pippin, King of the Pippins, Irish Peach, Red Quarrenden, Kerry Pippin, Old Golden Pippin, Duke of Devonshire, Mannington's Pearmain, Scarlet Nonpareil, and Margil. Turning for a moment to the general collection, the size, appearance, and quality of the fruits upon trees so small appear to be somewhat strong negative evidence against assertions lately advanced in opposition to fruit growing for profit. It is doubtful, indeed, whether there are not fruits enough upon many of those little trees which if marketed at once would pay the cost of the trees up to the present moment. Lady Henniker is a very fine dessert variety in spring, and may also be used for culinary purposes. Both the old and new varieties of Hawthornden are among the very best of Apples to grow extensively. Ecklinville Seedling is a wonderful bearer, as also is Wellington, often called Dumelow's Seedling, when grown on the Paradise stock. Manx Codlin bears well on small trees, and Cellini is a fine large Apple, which does well both North and South. Then in rapid succession may be mentioned Lord Suffield (one of the best early culinary sorts), Alfriston, Stirling Castle, Keswick Codlin, Pott's Seedling (a first-rate variety not much known), Lord Derby, and D. T. Fish, a variety having a remarkable likeness to Warner's King. Frogmore Prolific is also a good culinary Apple, and Small's Admirable will succeed in almost any county in England. Other prolific kinds are—Emperor Napoleon, Jefferson (an early dessert Apple, and beautifully striped), Red Hollandbury, Lord Raglan, Norfolk Bearer, Scarlet Nonpareil, Waltham Abbey Seedling, Northern Greening, the old Lemon Pippin, Mère de Ménage (a very large growing variety), Sops in Wine (beautifully streaked), Royal Somerset, Flower of Kent, Barton's Incomparable, Nelson Codlin, Jolly Beggar (much grown in Rutlandshire and Northamptonshire), Wooling's Favourite, Lewis' Incomparable, Graham's Apple (not much known, but a good culinary variety and late keeper), Maltster (a heavy cropper), Aitken's Seedling (bears well in a young state), Betty Geeson, and many others which for obvious reasons cannot be mentioned.

Trained Cherries and Plums, the former very fine trees, and bristling with fruit-buds, are noticed upon the way leading to a large stock of pyramid and espalier Pears, and standard and half standard Peaches, Nectarines, and Apricots. The large pyramidal Pears upon the Quince are denser-furnished trees, and quite thick with fruit-buds. There are also fan and horizontal trained trees, single and double cordons, and others trained "gridiron" fashion, which is simply a set of six upright trained cordons springing from a horizontal base. The most trustworthy varieties of Pears are Beurré Giffard, Clapp's Favourite, Williams' Bon Chrétien, Beurré Superfin, Beurré Hardy, Marie Louise, Beurré Bachelier, Glou Morçeau, Hacon's Incomparable, Winter Nelis (small, as every one knows, but highly flavoured), and Louise Bonne of Jersey. Extra sized Plum and other fruit trees are grown for covering walls, and whole quarters of small fruits of every known variety are in capital order and of various sizes, such as might be expected where fruit tree growing receives so much attention. There is a long orchard-house filled with over 600 Peaches and Nectarines in pots, and four smaller houses filled with Figs in pots, besides quantities of shrubs in pots for forcing plunged in beds out-of-doors. The varieties of Peaches and Nectarines are of a select kind, and some of the trees of the later sorts are bearing good crops (the early sorts are, of course, over). Pears are also grown in pots, a considerable collection, and Strawberries, all the leading forcing varieties, of which thousands are grown in small 60's, good plants, with fine crowns, which only require a shift into larger pots, and have ordinary attention through the autumn to insure a good early crop next season.

BRITISH ASSOCIATION.

PROF. LAWSON, the Chairman of the Botanical Department of the Biological Section, in his address on the Progress of Systematic Botany during the last eight years said that the members of this department were peculiarly called upon to give expression to their feeling of sorrow at the death of Charles Darwin, since it was on this platform that the great battle of evolution was fought. It was here that Sir Joseph Hooker, Professor Huxley, and his friends explained his views, and by their own researches, confirmed as they were by all the leading scientists of the day, succeeded at at last in convincing the world of the soundness of Darwin's speculations. Many now present would never forget the intense excitement which took place in the early days of the doctrine of evolution, and the manner in which Darwin's views were met at the meetings held at Oxford, Cambridge, Norwich, and Exeter. In those days whatever Darwin advanced was viewed with hatred and suspicion, and the popular mind only saw in his works that which tended to overthrow established beliefs in the existence of a Creator. But all the bitter attacks made upon him he met with silence, and never resorted to angry retort, for he could afford to disregard contumely and misrepresentation. The members of this department would also remember how year by year these attacks grew less frequent, and bitter and wholesale denunciation gave place to intelligent questioning, until at last Darwin's views were generally accepted by all scientists and inquiring minds as accurate, and a few months ago his coffin was followed, not only by scientists and laymen, but by clergymen of all denominations, many of whom, no doubt thus sought to atone for the many unjust things which they thought and said about him when they themselves were not really acquainted with the object of his labours. Darwin had the good fortune to live to see his doctrines promulgated, and almost universally accepted. All naturalists regarded him with an admiration and respect accorded to no naturalist since the days of Linnæus. The address, which was of a technical character, was listened to attentively throughout. The lecturer concluded his remarks by saying that the nation owed a debt of gratitude to Miss North for the wonderful collection of paintings, executed by herself, which she had presented to Kew Gardens.

Sir Joseph Hooker proposed a vote of thanks to Professor Lawson for his valuable lecture. He had great pleasure in informing the section that Miss North had gone to South Africa, the only part of the world she had not visited and whose flora she had not illustrated, for the purpose of adding to the collection already at Kew. On her return, she would visit Madagascar and Zanzibar for the same purpose.

Mr. M'Lachlan seconded the vote of thanks, which was unanimously carried.

A report was made of the committee, consisting of Mr. Sclater, Mr. Howard Saunders, and Mr. Thiselton Dyer, appointed to investigate the natural history of Timor-Laut, in which an account was given of Mr. Henry Forbes' attempt to reach Timor-Laut, and a further grant in aid of his explorations was recommended.

The Rosery.

THE COLCHESTER ROSES.—Twenty-four years is a long space in one's life, and yet I have to look back upon that long time since my last visit to Colchester, and that, too, was connected with the Rose; those were days when old Mr. Hedge was the champion Rose grower—when flowers which have long since vanished from our catalogues were regarded as first-class exhibition flowers; and I often wonder now, if we could bring back the stands of those days, what we should think of them. In one thing certainly we have advanced, viz., in the size of our blooms, but that is not everything, and it is too often obtained at the loss of that refinement and symmetry which form so marked a feature in a good Rose. But there rests in my memory still, stands of which I very much question whether we have much surpassed them; there were "kings before Agamemnon," and there were Roses grown before the present generation of amateurs sprang into existence. In one respect Mr. Hedge's stands have never been beaten, viz., in the great neatness with which everything was done; the moss was always good, the labels always neatly arranged, and the flowers the perfection of symmetry and refinement. Roses were not then so much estimated for their width across as for their freshness and brightness.

However, I am digressing, drawn away by the thoughts of bygone days. If Mr. Hedge has gone, Mr. B. R. Cant, or, as he is better known amongst his intimates, "Ben Cant," is still to the fore, and, indeed, as the lads say, very much to the fore; for one who has held for two years the challenge trophy of the National Rose Society, and who has this year taken more than fifty first prizes in all parts of the kingdom, may well lay claim to being in the very front rank: and it was to see his Roses that my journey to Colchester was made. In one respect, August is a bad month to see Roses, the first bloom is over, and the second hardly in; but in another respect it is a favourable time: one is better able to see which are perpetual and which are not; and although it is far from satisfactory to find that that lovely Rose, Gabriel Luizet, is not so, there is a satisfaction in being able to know on what we are to depend, not for exhibitions—for Rose shows in Autumn are a delusion—but for the ornamentation of our gardens; while, in giving an account of Mr. Cant's nursery in conection with those which I have already given in the *Gardeners' Chronicle*, I am giving that of a representative Rose nursery—for if Mr. Cranston be the champion of the Manetti stock—and Mr. Prince of the seedling Brier, so is Mr. Cant of the Brier cutting.

The situation of Mr. Cant's new nursery is very delightful, being placed on rising ground about a mile from the town, of which there is a fine view; it contains about 40 acres of good Rose soil, and this enables him to give his Roses a constant change of soil, some 10 or 12 acres being occupied with Roses each year. The soil is deep, and has been thoroughly well drained and trenched, and thus by its situation it is well calculated to grow a sturdy and vigorous stock. He is, as I have said, a strong advocate for the Brier cutting as a stock, in proof of which he has 100,000 of these ready for next year's supply. He gives it the preference to the seedling Brier, because, he says, it is so much more easily budded, the cutting being much larger than the seedling, and the bud more easily inserted, while it does not seem so liable to throw up suckers. Budding was going on with great rapidity when I was there; the rows were double, and two men went up, one on each side, brushing the shoots into the centre, where they formed a matted mass. This left the stem well exposed, and it was seen that all the shoots emanated from the two top eyes which had been left on the cutting, which was inserted in the ground in October, the other eyes having been cut out to prevent any chance of underground shoots; the buds were inserted very low down, so that after a time, as in the case of the Manetti, they virtually become own rooted Roses. All the upper growth is left on until the spring, when it is cut away, and the plant left to grow at will. Another advantage which the seedling Brier is stated by Mr. Cant to possess is, that the foliage of Roses budded on it remains much longer than on those budded on the Manetti, those on the latter stock being so much more liable to be affected by orange fungus—that horrible complaint, which has, I fear, been very prevalent this year.

In one respect Mr. Cant's nursery differs from those of most of our growers—he has no glass, and consequently those wondrous blooms of Tea Roses which he exhibits are all from the open ground or from a wall which he has built specially for their use. That marvellous bloom of Souvenir d'Elise Vardon which gained the medal of the National Rose Society at South Kensington was from this wall, and I saw a bloom of it very nearly equal to that which had been in flower for a week from the open ground. In truth, the Teas are the especial glory of these grounds at this season, and it has been an exceptionally favourable one for them. It would have been very easy to have picked a grand stand of twenty-four the day that I was there.

The demand for Roses on the Manetti is very great, and although Mr. Cant has gradually increased his stock of the Brier cutting, he has not diminished that of the Manetti; he has 150,000 of these for next year's work. There are many soils for which this stock is peculiarly suitable, and many strong growing Roses which it suits better than other stocks; consequently pace must be kept with the demand; but as Mr. Prince advocates the seedling Brier in all cases, so does Mr. Cant the Brier cutting; and I cannot, from what I see on all sides, doubt that the Manetti is not likely in the future to be so great a favourite as it has been; while for Teas, except for a few very strong growing varieties, it is altogether unsuitable.

The following hybrid perpetuals were in flower, and showing some fine blooms, and may therefore be regarded as deserving that name if by that we are to mean blooming a second time:—Auguste Rigotard, Alfred K. Williams, very fine; Baroness Rothschild—without doubt one of the most constant autumn bloomers that we have; Camille Bernardin, Captain Christy, Charles Lefebvre, Comtesse Cecile de Chabrilland, Comtesse de Serenyi: this was very good and fine; Constantine Tretiakoff: of this, which we all know to be so poor a grower, Mr. Cant has one with a very vigorous shoot, and he hopes by budding from this to get more vigour into a very beautiful Rose; Devienne Lamy, very fine; Duke of Edinburgh, Duke of Teck: this was finer than I have seen it before, even with the raiser, the buds were more pointed, and the colour very bright—a shade or two lighter than Duke of Edinburgh; Duke of Wellington, very bright; Duchess of Valombrosa, François Michelon, Gloire de Bourg la Reine: this, I fear, will never be full enough for exhibition, but as a garden Rose it is most desirable, being of a most brilliant scarlet; Général Jacqueminot, Gloire de Vitry, Duchesse de Morny, very good; John Hopper, La France: this is a most valuable autumn blooming Rose; Lord Beaconsfield, Louis van Houtte, Madame Eugène Verdier, Madame Hunnebelle, Madame Lacharme, very clean and pure; Mons. E. Y. Teas, Madame Nachury: this was the Rose which, being by mistake put on to his stand of 1872, threw Mr. Cant at the Crystal Palace Show; Pierre Notting. It will be seen that Gabriel Luizet is not in the list, unfortunately, as I have never seen it give us second blooms.

The Tea Roses were nearly all in flower, and most interesting they were; Anna Olivier, Catherine Mermet, Comtesse de Nadaillac, Goubault, Homère, Innocente Pirola, Jean Ducher, La Boule d'Or, Mad. Bravy, Mad. Hippolyte Jamain, Mad. Lambard, Madame Welch, Madame Willemorz, Marie van Houtte, most lovely; Moiré, Niphetos, Madame Angèle Jacquier, a most distinct new Rose, Souvenir d'un Ami, Souvenir de Madame Pernet, Souvenir de Paul Néron, Souvenir d'Elise Vardon, Rubens, which has been singularly fine this season; all these were in full flower, and will give blooms for weeks to come. They are on cut-backs, not maidens, and I am quite sure are destined to come more and more into favour each year. The idea that in the southern parts of the kingdom they are too tender, must be given up after the experience of the two last winters, and their refined beauty, delicacy of perfume, and persistence of flower, all demand a large share of patronage.

Such were my impressions of this celebrated nursery, and of all with which I am acquainted it is essentially a Rose farm; other as large growers of the Rose cultivate other things, some a great many fruit trees, forest trees, greenhouse plants, &c., but here it is the Rose and the Rose alone; its requirements are the one thing thought of, and therefore one need not wonder at its owner's great and well deserved success. I had yet another treat in store for me; Mr. Cant was kind enough to take me to Lion Walk, to see the establishment of the Colchester New Plant and Bulb Company, which has been the means of introducing so many new things to our gardens and greenhouses. It was not the best time to make a visit, still there were some noticeable things, of which I may have something to say at a future time. *Wild Rose.*

STANWAY PERPETUAL ROSE.—This is one of the old favourites which still lingers in places, its very double white or pale pink flowers and delicate perfume rendering it a welcome inmate of the Rose garden even in these days. We saw it recently in Mr. George Paul's nursery at Cheshunt.

STREATHAM HALL.

THIS beautiful country seat, the property of Mrs. Thornton West, stands upon a commanding eminence in the parish of St. David's, Exeter. The mansion, which is a comparatively new one, has been erected in a most elaborate and costly style, and its adjuncts of every description are in strict character with the mansion. The garden, in which horticultural readers are most interested, has been designed and laid out regardless of cost in every detail; the lakes, terraces, statuary, and other adornments being, if there is any fault to find, rather too numerous, but as regards material and workmanship they are of the first order. The existence of such a garden establishment as this, kept up as it is in the most liberal manner, must give a great impetus to gardening in the neighbourhood, if, indeed, its influence is not felt a good way from home. The grounds are entered by a massive iron gate set in columns of masonry of an ornamental character, within the portals of which there is a fine lodge at a few yards' distance from the drive. The avenue is much wider than usual—about 20 feet—and is beautifully tapered and levelled from its centre to the tile water-channels by the margin of the grass verge. There is a neat group of flower beds in front of the lodge, and a considerable addition has lately been made to the grass upon both sides of the drive, which is a well conceived improvement. The broad belts of grass are planted with Conifers and flowering trees and shrubs of the rarest kinds, such as Picea lasiocarpa, Pinus insignis and excelsa, Abies Pinsapo, Wellingtonias, Cupressus, and Cedars, intermixed with flowering Chestnuts and Hawthorns.

Near to the mansion, or, rather, within view of it, there are some remarkable specimens of the Turkey Oak—massive trees, in fine health, and having a striking effect from the terraces and principal windows of the house. From here there is an unobstructed view towards Powderham and Haldon, and a large tract of country richly wooded and diversified. To the right of the Oaks there is an ornamental lake (not a mud pond, as many of them are), with an island in the centre. The white and yellow Nymphæas luxuriate in this lake, and are very effective floating upon the surface of the bright clear water. Beyond the lake there is a broad curving band of hybrid Rhododendrons, perhaps the most artistic idea conceived in the laying out of the grounds. The various hues of the Rhododendrons are very striking by the side of the water, and the terraces above them have a tendency to concentrate the vision for the moment, which probably enhances the beauty of this particular view.

In the opposite direction the drive is bordered by a row of Cupressus Lawsoniana and Thujopsis borealis, and these are margined by seedling Antirrhinums and China Roses, which look well under the shade of the deep green Conifers. When the slope is nearly ascended approaching the house, the drive takes a bold sweep to the right, but persons on foot may reach the terrace by the Diana Walk, so called because there is a beautiful statue of Diana in its centre. The steps and balustrades approaching the terraces are no doubt ornamental from one point of view, but they are eclipsed by the wealth of trees and shrubs which are met with at every turn in this fine garden. Never before have we seen Hollies and rare Conifers grow so freely under the shade of larger trees as here; and yet the secret is not far to seek. It is a question of

cost. A thorough preparation was made before the trees were planted, and notwithstanding the adverse influences of shade and drip the Conifers seem to have established themselves in the rich compost, thrive surprisingly, and are apparently likely to thrive for many years to come.

Vases are freely used upon the second chain of terraces, where there are a pair of perhaps the finest specimens of Retinospora plumosa to be seen in England. The plants are over 8 feet high and as much through, and are the most fascinating objects of their kind upon the place. There are also large specimens of the Golden Yew (Taxus baccata elegantissima), and various others. It should be stated that the house is surrounded with chains of terraces one rising above another upon three sides. From the south terrace there is a good view of Exeter Cathedral and the surrounding country for many miles. Between the grounds and the park the show of Rhododendrons in spring is brilliant in the extreme, and the scroll beds upon the terrace were just beginning to show colour at the time of our visit. Looking eastward there is the large Camellia-house and conservatory, and further to the left a steep chain of four terraces planted with the choicest of American plants. The Camellias—plants worthy the house and the garden—are planted out, the roof is ornamented with creepers, and the side stages with flowering plants.

The conservatory is a large oblong building, and is furnished with a collection of hard-wooded, semi-hard-wooded, and other flowering plants, the latter, of course, predominating for the sake of supplying the necessary degree of colour to adorn so large a house. Acacias of sorts, Chrysanthemum fruticosum, Salvia patens, Fuchsias and Pelargoniums of the decorative section are freely intermixed with Orange trees, Myrtles, and others already mentioned. From the grounds above the conservatory there is a good view of St. Michael's Church, Exeter, but the plants and trees are of so choice a character that the horticulturist is more inclined to look at and admire them than distant objects, however pretty. The coniferous trees are very plentiful, and the shrubbery beds and borders are alive with flowering plants, the choicest of everything that is useful and beautiful. The herbaceous garden is simply a continuation of the shrubberies. They are grouped by themselves, and make a fine show.

The walled-in garden is surrounded outside the walls with a range of Johnston Brothers & Co.'s patent fruit-houses; and it would be well for gardening if there were more of them in the country. Before noticing the glass department it may be as well to state that they are not of the ordinary kind; but I do not say they are better for cultural purposes because they are costly. The forcing pits, I noticed, were filled with early crops, and houses of Melons and Cucumbers were both early and of first-rate quality—indeed, a house of Gilbert's green-fleshed Melon would have done even that renowned Melon grower credit, so fine were the fruits, and so beautifully were they finished. A span-roofed fernery contains a splendid collection of Ferns and mosses planted out. The path is up the centre—a broad grating; and two beds having irregular surfaces composed of rockwork are furnished with Ferns. The tall plants comprise an upright growing species of Davallia; Nephrolepis exaltata, looking all the better for being planted out; Asplenium Belangeri, Blechnums, Pteris argyrea, Asplenium fœniculaceum and bulbiferum, and a large variety of Adiantums, which, together with mosses and Selaginellas, form the groundwork of the beds. In the propagating-house, which is fitted up with all modern improvements, there is a good stock of foliage plants for furnishing, and mosses and Ferns for the same purpose, good baskets of Achimenes and pans of Campylobotris refulgens. Peaches in a long lean-to house were a fine crop, large in size and highly coloured. The great house of the place is, however, a plant stove in three tiers of spans, containing an extensive and remarkable collection of plants. Tall Palms and Ferns are arranged down the centre, noble specimens of all the leading kinds, which are too extensive to enumerate in detail, and many fine-foliage plants, including a superbly grown specimen of Cyanophyllum magnificum, with leaves over 2 feet in length. There is a whole house devoted to the cultivation of the Stephanotis, which is trained upon the roof over a collection of Ferns in pots, which consist of many fine specimens of Polypodiums, Davallias, Lomarias, Blechnums, and other kinds of dwarfer habit, as well as mosses and Selaginellas. The ranges of vineries are proportionately extensive, and the crops are good throughout. Of course at such an establishment it is needless to say that early and late Grape growing is carried on as a matter of routine business, just as the forcing of Pines, Strawberries, and vegetables is carried on in a range of houses in five divisions, where every plant is in its place and in good health. The Orchid houses I omitted to mention, but where all is done so well it is needless to say that the collection is well grown, and

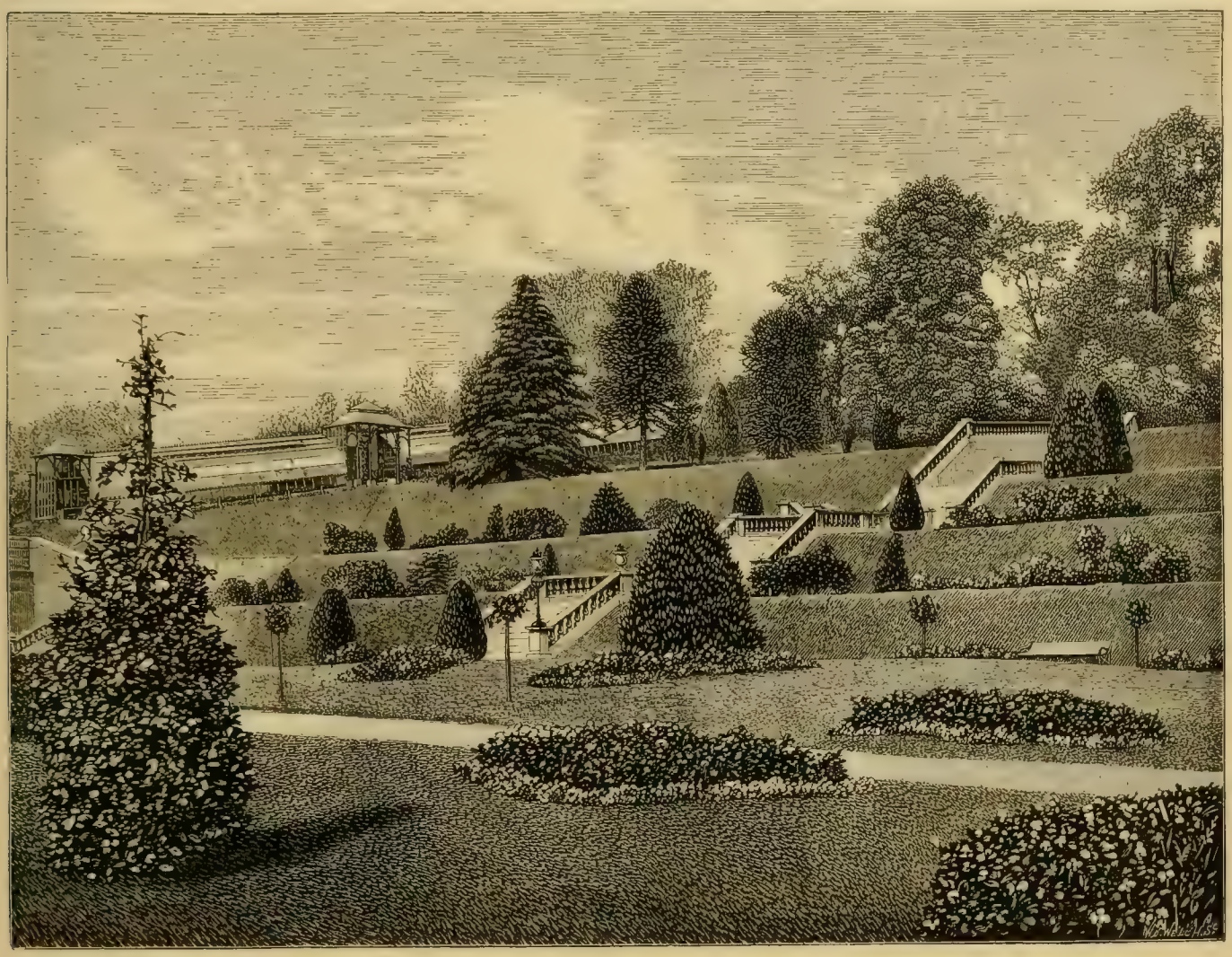


Fig. 54.—View in the Garden at Streatham Hall, near Exeter. (see p. 305.)

that under the management of Mr. Franklin, the head gardener, a great future is in store for gardening at Streatham Hall.

FORESTRY.

A SUBSTITUTE FOR THE LARCH.—"A Country Gentleman," inquires in the *Gardeners' Chronicle* of the 12th inst., at p. 204, what tree is likely to take the place of the Larch, which he thinks is doomed. Having for the last thirty-five years been experimenting with nearly all the coniferous trees which have been introduced since the beginning of the century, on a pretty large scale, I will attempt to reply to his query in so far as my experience and opportunities permit me. I must, however, acknowledge that I do not take such a desponding view of the future of the Larch as does "A Country Gentleman;" although I admit that, wherever planted in these islands, the Larch is liable to frequent attacks of disease, in some situations, soils, and seasons more than others. My observations have been more particularly confined to the south-west of Scotland, where healthy Larch trees of all ages are still to be seen, often growing side by side with diseased ones. In all the estates with which I am acquainted Larches are still planted, mixed with other trees to secure a crop; and unless the tendency to disease increases, which I do not think has been the case of late years, it will continue to be planted to a limited extent unless a substitute is discovered of greater merit.

Owing to the frequent and serious losses from disease I quite agree with "A Country Gentleman," that it will be proper to look out for a suitable substitute, but this I fear will be difficult to find, taking into account hardiness, adaptability to a variety of soils and situations, rapidity of growth, early maturity and value of timber. There are a number of genera, including Abies, Pinus, Cupressus, Thuia, Cryptomeria, Araucaria, Sequoia, &c., which have been experimented with for a long series of years, but I am much afraid that only a limited number of the species of these genera will find their way into our ordinary forests as permanent forest trees. Amongst the remainder, here and there particular species will succeed well, but in general they will be found too fastidious as to climate, soil and situation for planting as forest trees. It is too soon yet to speak positively about the characters of many of them, but when more widely distributed than they have yet been, and when they have had time to develope their respective merits and demerits, in a great variety of soils and situations, it is highly probable that some of the numerous species may come to the front, whose worth is not at present sufficiently known; but this is a question of time, and we must wait for results.

In the meantime, so far as my experience and observation enables me to form an opinion, I think we must confine ourselves, in searching for a substitute for the Larch, or something approaching a substitute, to the three following species, viz. :—

Pinus Laricio, which, according to Loudon, was introduced from Corsica in 1814, although other authorities put it at a much earlier period. It has been more extensively planted than most other species, and is generally doing well. There are a few specimens of it to be met with 70 to 80 feet in height, so that the merits of its timber as grown in this country will in all probability soon be tested. It is grown extensively on the Continent, particularly in the carefully managed Government forests of France and Austria, which is a favourable indication of its worth as a timber tree. Although a mountainous tree it thrives all the better and grows all the quicker when planted in lower altitudes. It does not appear to suffer from insects nor to be liable to the attacks of any diseases; and hares and rabbits are not fond of it. It possesses many of the qualities of the Larch, is equal to it in rapidity of growth, hardiness, and adaptability to a great variety of soils and situations. Its timber is not so valuable as that of the Larch when comparatively young; at maturity there may not be much difference.

Abies Douglasii was introduced by Douglas in 1827 from the north-west part of America, where immense forests of it are found, some of the specimens growing to the height of from 150 to 200 feet, with boles from 8 to 10 feet in diameter. It has a wide range, being abundant in California as well as in the Rocky Mountains. The grand specimen at Dropmore, planted in 1828, now about 113 feet in height, proves that it is at home in our climate. It has been widely planted in limited quantities, and is succeeding well wherever the situation is moderately sheltered, and the soil good; in exposed situations, or in poor soils, it has a stunted appearance, and makes little progress. Cold cutting winds it cannot withstand, and should never be planted in exposed places. In good inland situations on deep rich soil it grows and forms timber with great rapidity, and if the timber should prove good in such situations it will be extensively planted. There are many fine specimens of it to be found over the three kingdoms, producing seed in good seasons in abundance, from which trees 40 or 50 feet in height have been raised. With this, as with all the newer Conifers, there has not been time to prove the quality of its timber when matured as grown in this country; in a young state it is light, and inferior to the Larch at the same age. As a substitute for the Larch it is less promising than Pinus Laricio, on account of the limited range in which it grows freely.

Abies nobilis.—This truly noble tree was introduced by Douglas in 1831 from the northern mountains of California, where it forms vast forests, and is said to produce excellent timber. He says in his journal, "I spent three weeks in a forest composed of this tree, and day by day could not cease to admire it." It has a very wide range in its native habitats. Jeffrey found it on the Shasta Mountains at an elevation of from 6000 to 8000 feet, a tree 200 feet high and 4 feet in the diameter of its bole. For many years after this fine tree was introduced very little good seed was imported, which prevented its being so generally and widely planted as it otherwise would have been. While this scarcity existed many plants were propagated by grafting, and spread over the country, and many of these have in the interval grown to be large trees, producing an abundance of seeds, from which large numbers of seedlings have been and are being raised and extensively planted over the length and breadth of the land. The great vigour and beauty of this handsome and striking tree, as seen in many of our glens and Highland hills, where it is quite at home, cannot fail to induce planters to plant it extensively, the more so as it possesses so many of the essential qualities of a profitable forest tree, being very hardy, adapted to grow in a great variety of soils and situations, at both high and low altitudes, expending its vigour more in developing the bole than the branches, which are very small in proportion to the size of the bole—a very valuable quality in a timber tree. The bole, when a tree gets to be 50 or 60 feet in height, is much larger than that of any other tree I know in proportion to the size of the branches, and as it increases in size this tendency appears to increase. As it grows to a great height, and as the spread of the branches is small, an immense quantity of timber per acre could be grown.

In exposed situations I observe that it stands the blast better than our native Pine, growing and thriving wherever the Scotch Pine succeeds. It appears in greater vigour in moderately damp rather than dry climates, preferring an open porous to a cold retentive subsoil; being a mountainous tree it is not sensitive to cold cutting winds or low winter temperatures. That this tree, when it becomes better known, will be extensively planted, there can be little doubt. As an ornamental tree it has few equals, its soft, dense, glaucous foliage and close carpet-like tiers of branches seldom fail to arrest the eye of the most untutored; and when seen loaded with its large clusters of heavy cones, 8 or 9 inches in length by 2½ or 3 inches in thickness, some near the top standing upright, others standing on the points of the branches in clusters, and as they descend hanging all round at every conceivable angle till they drop below the horizontal, produce an effect once seen not to be forgotten.

If it possesses with us, what it is said to do in its native country, the quality of being a valuable timber tree as well as a highly ornamental one, the extension of its culture will be a matter of national importance, as it grows and forms wood quicker than most other trees. Those who are engaged planting extensively should introduce it freely as a nurse, and for game cover it could not be surpassed. Till it is extensively experimented with, over a wide field, its true place as a timber tree cannot satisfactorily be ascertained. I believe that fifty years hence it will be planted more extensively than any of the recently introduced Conifers, and if the timber proves valuable, it is likelier to take the place of the Larch than any other tree which has come under my observation.

There are two other trees which I think planters should pay some attention to, viz. :—

Cupressus macrocarpa (California), a tree which, in favourable situations, grows as fast as the Larch; but requires a good climate, and does best near the seaboard. Planted as a timber tree it should be drawn up a little when young, as its branches become coarse when it gets much room. It is killed with severe frost in inland districts, but does not suffer in Wigtownshire when planted within a few miles of the sea. Its wood is beautifully grained, full of an odorous resin, and apparently would take a fine polish.

Thuia Lobbii, which is also a Californian tree—more recently introduced—grows very rapidly in inland and moderately sheltered localities, making annual shoots from 3 to 5 feet, and thriving best in a strong soil. It is quite hardy. Its bole is small in proportion to its height, apparently possessing many of the qualities of a timber tree, and is well worth experimenting with. When seen of a considerable size, it has a graceful, Fern-like appearance. *Archibald Fowler, Castle Kennedy, Stranraer.*

Orchid Notes and Gleanings.

PHALÆNOPSIS SPECIOSA.—This beautiful plant has flowered this month, for the first time in England, in the collection of Lieut.-Colonel E. S. Berkeley. The credit of being the first to flower this plant in England is due to the Rev. C. J. R. Berkeley, in charge of this collection. We are informed by Colonel Berkeley, who has flowered the plant abroad, that the proper time for it to flower is from March to May; the flowering in this instance was no doubt retarded by the check the plant received on its transport to England, it being one of those Phalænopsis which travel very badly. The ordinary colour of the flower is white, richly blotched and barred with rosy-purple. In the plant recently flowered the deep rosy-purple colour predominates, which is unusual.

The Kitchen Garden.

AUTUMN CABBAGE PLANTING.—Assuming that the ground from which spring-sown Onions have been removed has been manured and trenched, as advised in my last Calendar, the plants which have been raised from seed sown the last week in July and subsequently pricked out in nursery beds, will now be ready for planting in drills 3 inches deep, 2 feet apart, and the same distance from plant to plant in the rows. The plants in each succeeding row should be planted diagonally, and when the ground is moist. Before drawing the drills it will be necessary to tread the ground immediately under the line before proceeding with the former operation, as it is advisable to have the ground moderately firm before the plants are put in. After planting the Cabbage maggots, which are sometimes very destructive to the roots and base of the stems, must be looked after and destroyed, and the blanks thereby caused be made good from the nursery beds. The whereabouts of these pests is generally indicated by the plants flagging and becoming sickly looking. The present is also a good time to make a planting of red or pickling Cabbage. When this is sown and planted at the same time as the Cabbages, in the autumn of the preceding year, the heads become much larger and finer than those obtained from plants raised in the beginning of the current year. We have plants thus grown the heads of which I estimate will weigh from 20 lb. to 25 lb. each when cut.

CARDOONS.—Take advantage of fine weather, when the plants are dry, to get the earliest planted earthed-up. This is done by bringing the leaves carefully into an upright position, in which they should be held by one person, while another fastens the hay-bands—of which a sufficient number for the row has been previously well twisted—round the bottom of the plant, winding away until the whole of the stalk is bound round, and the end of the rope

secured; the stalks should be brought closely together, but not be too much compressed. Proceed in this way until the row of plants is finished, and then earth-up till the bands are covered with the soil, which should be pressed tightly round the plant at the top, to exclude air and moisture as effectually as possible; and in like manner proceed with the remaining rows until all are finished.

ORDINARY WORK.—From sowings of Endive made at the end of July make good plantings under south and west walls, as also on warm borders; 1 foot apart for the curled varieties, and 15 inches each way, will be none too much for the Batavian varieties, which, being stronger growers, require more room to develope their growth. In the event of dry weather at the time of planting, the plants should be watered until they have established themselves. Plants sufficiently advanced for blanching should be tied up forthwith. Where a sufficient breadth of Parsley for winter and spring use was not sown as recommended in our Calendar for July 8, now will be a good time to supplement the sowing then made by transplanting an adequate quantity of young plants. Thin out the plants of winter Spinach to 6 or 9 inches apart in the rows. Where the crop has not already been sown, no time should be lost in doing so, and in this case it will be advisable to steep the seeds for four or five hours before sowing, in order that they may germinate more speedily. Make successional plantings of Lettuce in warm situations, and tie up plants as they become fit for blanching. Cut down the old stems of Globe Artichokes; and attend to the thinning, stopping, and nailing of Tomatos out-of-doors, so as to prevent overcrowding of the leaves and shoots, and the breaking of the latter by the wind. Provision should now be made for protecting the latest sowing of French Beans from the effects of early frosts by constructing a temporary framework and covering at night with mats or old sashes when the sky indicates the approach of frost.

MUSHROOM BEDS OUT-OF-DOORS.—This will be a good time to collect some short stable-dung and horse-droppings with which to make up beds out-of-doors for producing Mushrooms next April and throughout the summer months. The dung should be turned over a few times when a sufficient quantity of it has been collected for a bed, to allow of the rank heat and steam escaping therefrom, after which the bed or beds can be made. They can be made against a north wall in a dry situation, that is, in a place where water will not lodge, about 4 feet wide and 2 feet high at the wall, and the whole should be trodden well together and spawned when the heat has declined to 70°, and subsequently be cased over with soil sufficiently moist to yield to the pressure of the spade. The bed should then be covered with shutters, if to spare, and long dry litter from the livery stables, over which a few pieces of board should be placed to keep it in position. Failing the wall accommodation the bed can be made in the shape of a Potato pit—say, 4 feet wide and 3 feet high in the centre—in any available spot where the ground is higher than its surroundings, to prevent the lodgment of water, and where this does not exist a few dozen bundles of faggots placed under the beds will answer the same purpose. In making the beds in the open air we drive a few small piles into the ground along the line where the bed is to be made, about 6 feet apart both sides, and inside these, as the bed is being made, a series of boards or slabs about 6 inches wide are placed, thus forming a kind of box for the dung, with sufficient space left at the top to form a foundation for the mould used in casing the beds. The latter, as above recommended, having been previously well trodden and beaten into shape with a four or five-pronged fork and spawned, should then be cased over with soil capable of being beaten firmly together, and thatched over with a good thickness of litter, which should be made secure with several lengths of tar string to prevent its being removed by rough winds. This done, the beds so made will require no further attention until March or April, except to see that the covering is not displaced, and the results will more than compensate for the labour and time of waiting. Successional beds in the Mushroom-house will need making up, and those previously made should be spawned, as soon as the heat has sufficiently declined to admit of its being safely done, and a few days later they should be covered with soil in the usual way.

FORCING DEPARTMENT.—A batch of French Beans should now, if not already done, be sown in pots for use in November. The pots should be only half filled with soil, of a rich though somewhat light description, to allow of the young plants being subsequently earthed-up to the rims of the pots. *H. W. Ward, Longford Castle, Wilts.*

Peaches and Nectarines.

THE trees in early houses, the fruit on which were ripe in May, will by this time have finished their growth and ripened their wood, and will naturally be preparing for a rest, which should be taken during September, October, and a portion of November. Houses from which the lights were removed according to the directions previously given will have had the benefit of a thorough drenching from the recent heavy rains. I have not had the lights taken off ours this season, as we have had so very little sun during the past two months; and as the houses did not require painting, &c., being thoroughly done last year, I decided to leave them on, keeping the doors and ventilators open to the fullest extent. By keeping the lights on the trees require more attention in the way of watering, &c. Any trees that it is desirable to move or that require root-pruning may be done any time in September or early in October, before the trees lose their leaves. Carry out the directions already given for succession-houses by taking out all weak useless wood not required for bearing fruit next season, and if this dull sunless weather continues a little fire-heat may be used to assist in ripening the wood, also in late houses a little may be used with a free circulation of air; it will very much improve the quality of the fruit, and ripen the wood as well. *J. Wallis, Keele Gardens, Aug. 29.*

Plants and their Culture.

STOVE FLOWERING PLANTS.—Many of these can be turned to a good account for the supply of cut flowers during the next two months, till the advent of the winter flowering stock and the Chrysanthemums fill the gap. One of the very best plants for a yield of cut blossom is Rondeletia speciosa and its major variety: both are excellent autumn-flowering plants. If proper attention has been paid to these, giving them a position in the stove where they are fully exposed to the sunshine, to induce thereby a sturdy short-jointed growth, an abundant yield of flower will now be turning in. To ensure this result at this season of the year it is necessary to pinch the plants all over in the month of May; this advice I gave at the proper time for performing it. Cutting these plants benefits them rather than otherwise. They are best grown when well pruned-in every spring, therefore no harm will come to them if a goodly length of stem is taken off with the trusses of flowers. When these plants have knotted for bloom and are swelling up their flower-heads they should receive an abundant supply of water, with occasional doses of liquid manure; for this I have used guano with excellent results. On no account allow them to suffer at the root in this respect, or the individual flowers will not be nearly so fine. Clerodendron fallax, if well grown, will render good service now and for some time to come. This plant soon becomes a prey to brown-scale and mealy-bug: both of these insects must be kept under to retain the foliage in a healthy state. This plant, when in flower at this season of the year, will last much longer if grown in an intermediate-house or cool house, but must be kept free from damp. Occasional doses of manure-water will be beneficial in this case also. Keep all the decaying flowers constantly removed. This remark also particularly applies to the Vincas, the opening flowers of which are quickly injured if the old ones are not removed as soon as they fade. Water these plants freely, to ensure fine large blossoms. Allamandas should have all the light possible, both to ensure short-jointed growth and sturdy flowers with petals that will stand out boldly. The flowers of these plants are often seen with thin flimsy petals, occasioned by too much shade and moisture, making one think that the plant was suffering from drought when it really is not. Other climbing plants that are either grown on trellises or trained near the roof should have an abundance of light; of these Clerodendron splendens, Bougainvillea glabra, and the Dipladenias will give excellent returns for autumn display if well exposed to the sun's rays, to prevent them making a too sappy growth. The Ixoras are best grown, I think, with a trifle of shading; the foliage of many kinds will soon scald if too much exposed. I. coccinea is still one of the very best for supplying cut flowers, being more lasting in a cut state, and the individual trusses not too unwieldy for general arrangement. The Curcumas will also thrive best with a little shade. This handsome and most distinct genus of plants should be more grown than it is, the varied coloured bracts always rendering them attractive, and, flowering as they do in the autumn, should cause them to be more appreciated. They succeed best when grown in a peaty soil. The stock of Pancratium fragrans that are now out of flower and making a new growth may with advantage be repotted, taking off any offsets from the original bulbs, one of which in a pot is far better than several grown together in a crowded state. Treated in this manner the flowering season may be prolonged considerably if the stock is treated judiciously by pushing some and retarding others.

CONSERVATORY.—The climbers in the conservatory should receive a goodly amount of attention at this time, thinning out any of the more weakly shoots that are at all obscuring the light, and thereby preventing the ripening of the growths. Sharp watch should also be kept against insects. Mealy-bug is bad enough anywhere, but I think worse even than in other houses if it has a foothold in this structure, especially if climbers are grown to any extent. Plants taken into it from the other houses, if then clean, will carry a stock back with them. Many a fine lot of Vines has been infested with this pest from this evil alone, causing almost irreparable injury in many cases. Far better take severe measures and cut out the climbers than have to take the same steps with the Vines. This structure should now be gay with Liliums of the speciosum section, and the late auratums; Celosias will also play a prominent part for another month or six weeks, with Vallota purpurea, Globe Amaranths, and Browallias. Late Fuchsias and Balsams will also be serviceable. The stock of scarlet, pink, and other Pelargoniums grown in pots will be more valuable towards the end of the month than just now. As the outdoor flowers fade, the conservatory will want to be made as gay as possible.

CAMELLIAS.—Any of these that are turned out into borders should receive a top-dressing; if seen to at once the coming crop of flowers should benefit thereby. The stock that is grown in pots ought also to be looked over for potting. I have proved this to be a good time of the year to repot Camellias, the roots of which are generally found to be active now. Large shifts are not advisable: if an inch all round can be secured, it is quite enough. Of soil we use about an equal mixture of peat and loam, the best that can be got of each. Should the latter be at all retentive, some charcoal will be a help, or pieces of broken crocks about the size of Walnuts. The addition of a little bone-meal will be of service, and a goodly amount of silver-sand must not be overlooked. Pot the plants firmly, removing any soil from the old ball which the roots have not taken to kindly, and be watchful that the plant is well watered a day or two previously; than afterwards so much water will not be necessary till the plant takes well hold of the new soil. Syringe them on all fine drying days during the afternoon. *James Hudson, Gunnersbury House Gardens, Aug. 29.*

DAVALLIA BARBATA FOR SITTING-ROOMS.—This is a charming Fern for the decoration of sitting-rooms, much preferred by those who know it to other tender species which suffer from rough usage. Adiantums are easily injured unless the fronds are well hardened after they are fully developed. But this Davallia, in addition to being comparatively hardy, has pretty bright green fronds, which are substantial looking as well as being effective. It is known as the Squirrel's-foot Fern, and the interest attaching to the plant is no doubt enhanced by this fact. The surface of the pot is quite covered with numerous rhizomes, from which, of course, the fronds are produced, and which renders the plant interesting, besides being both useful and pretty.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Sept. 4	Sale of Dutch Bulbs, at Stevens' Rooms. Sale of Dutch Bulbs, at the Auction Mart, by Protheroe & Morris
WEDNESDAY,	Sept. 6	Sale of Dutch Bulbs and Established and Imported Orchids, at Stevens' Rooms. Floral Fete at Bath.
THURSDAY,	Sept. 7	Sale of Imported Orchids, at Stevens' Rooms. Flower Show at Kilmarnock.
FRIDAY,	Sept. 8	Grand National Dahlia Show at the Crystal Palace (two days) Cottagers' Show at Old Trafford (two days).
SATURDAY,	Sept. 9	Sale of Dutch Bulbs, at Stevens' Rooms.

A PECULIAR interest attaches to a monograph of certain CHINESE and JAPANESE species of CLEMATIS from the pen of the late Professor DECAISNE, and which has only just reached us. Apart, however, from personal associations the monograph is valuable as giving exact characters and excellent lithographic representations of the species of the tubular flowered Clematis, of which C. tubulosa is the only one generally known in this country. All this group have flowers resembling a single Hyacinth, and most of them differ from our ordinary species in not being climbing or trailing plants. In some the flowers are deep blue, in others opalescent. The seven specially mentioned by M. DECAISNE are C. tubulosa, LINDLEY; C. Davidiana, C. Hookeri (the C. tubulosa of HOOKER, but not of LINDLEY); C. Stans, C. Kousabotan, C. Lavallei, and C. Savatieri, in addition to a few others less well known. These seven species, in M. DECAISNE'S opinion, are very distinct one from the other, and indeed he adduces many distinctions which serve to separate them. Whether M. DECAISNE is right in so doing, or whether M. DE MAXIMOWICZ has right on his side in combining them all under one head, is a question we do not wish to enter upon, and indeed we have no means at hand to enable us to do so.

We refer to the matter more especially with a view to call attention to certain opinions of M. DECAISNE, and which, coming from such a source, and as the outcome of so long an experience, are particularly worth attention. In the first place, at the very commencement of his paper M. DECAISNE calls attention to the necessity of studying living plants rather than herbarium specimens in all cases where it is practicable to do so. No one who has had any experience can doubt the truth of this. Unfortunately it is rarely possible to do so except to a limited extent and in most cases it is quite impracticable. Moreover, while the examination of living plants under cultivation is by no means free from special snares and pitfalls, it is rare that opportunity can be had of studying in gardens large numbers of selected specimens from various localities in every stage of growth and development. From this point of view the herbarium has the advantage. The truth is, however, that no botanist can afford to dispense with any means of study, whatever they may be, and a botanist who (having the opportunity of doing otherwise) would neglect to study the living plants as well as the herbarium specimens, or *vice versâ*, would be equally blameworthy. We hold it quite impossible to gain any adequate idea of some plants, such as Orchids, for instance, without a study of fresh specimens.

The study of garden hybrids, again, though chiefly valuable from a physiological point of view, is yet important for the student of classification, because it affords evidence of the combination of characters and the possible range of variation; and the same holds good with mere seedling variations or superior forms induced by high cultivation. We hold, then, that the examination and study of plants, not only as cultivated in the limited sense of the word, but also as modified by the art of the gardener, are essential to the full comprehension of the plant. In the case of the Clematises, which supply the *motif* of these remarks, each of the seven, says M. DECAISNE, presents a habit of growth of the most characteristic description, but which is scarcely, if at all, recognisable in the dried specimens; so that had M. DE MAXIMOWICZ examined these plants, growing side by side under the same conditions of cultivation, and noted the differences between them, he could not, in M. DECAISNE'S opinion, have combined them all under the head of one polymorphous species. As far as we see, however, there is no reason why the seven should not have had at no relatively remote period a common origin; and if this be so, M. DE MAXIMOWICZ would, after all, be right. But there is no means of ascertaining this, and therefore we have to fall back upon expediency and convenience, and consider whether it is more convenient to classify these plants under one head, or to keep them distinct. Assuming, as of course we are amply justified in doing, that M. DECAISNE'S descriptions are correct, the latter course is the more convenient for garden purposes.

We need not here enter more fully into this part of the subject; the interesting point for us is the recognition of the necessity of studying cultivated plants. And this leads us to the second point of general interest (apart from the mere description of the species) in this monograph, and that is the arrangement and functions of provincial botanic gardens. Many of us know from cursory inspection what miserably appointed and miserably maintained institutions many of these minor university and municipal gardens on the Continent are—dreary and uninteresting to the last degree, and, with all that, most inefficient as a means of study. The reason for this, of course, in most cases, is the absurdly inadequate sums voted for the maintenance of the garden. In other cases it arises from the want of consideration on the part of the Director as to what the functions of the establishment committed to his charge should be. If the garden is intended solely for teaching purposes, then, of course, every means for rendering it efficient for that purpose should be adopted. We shall see further on that M. DECAISNE by no means thought that due efficiency was generally secured. But if the garden be intended partly for recreative purposes, as a pleasant resort for the citizens, then unquestionably the æsthetic element must be sedulously cultivated, as well as the merely useful; and by pleasing the public the Professor will interest them in his more important scientific work, or at least he will secure sympathy instead of indifference and perhaps ridicule. And the sympathy is the more valuable, for it really means supply. If a garden be made beautiful and pleasant, funds will be forthcoming for its maintenance, but if it be uninteresting it is no wonder if funds are difficult to be obtained for its maintenance.

The gist of M. DECAISNE'S recommendations as to the provincial botanic gardens is that they should not aim at too much, instead of desiring to emulate on a small scale the gardens of the capital, and wasting their scanty resources on general collections, which must perforce be incomplete. M. DECAISNE'S recommendation is that the collections should be small but well chosen for the purpose of illustrating the principal types of structure and families, and in this view all botanists and morphologists will surely coincide. Another suggestion is that native plants should be more completely represented than they generally are, and this is no doubt desirable, particularly if the Professor were to point out and explain the peculiarities of structure, and strive to interest his pupils in the conformation of common wild plants, and the reasons for their peculiar structure. As it is, most lads with a fancy for botany are mere collectors; they gather wild flowers, press them, ticket them, put them into their herbaria, and withal get to know next to nothing about the plants they have collected with so much trouble, except the name, and that they get from pictures or from some one more learned than themselves. We are not undervaluing the keen pleasure of collecting, the pleasant rambles, the thrill of delight at finding a novelty or a rarity. These are among the keenest and purest pleasures of life, and few indeed are the delights that can be compared with them. But for educational purposes something more is required—that something which need not detract from, but will rather enhance the pleasure of studying plants. How vastly has the interest in plants, for instance, been extended since DARWIN made public what botanists had always known, the interest attaching to them.

To revert to M. DECAISNE'S proposals, in addition to well selected typical collections he would have the Director undertake the illustration of some one group of plants, selected according to his predilection, and observed and noted for the purpose of preparing a monograph. This garden would be the head centre, say, for Crocus knowledge; this for Ivies, and so on. This plan is, indeed, carried out more or less in various places, as, for instance, at Liège, where Professor MORREN has accumulated the most complete collection of Bromeliads that exists. In fine, adds M. DECAISNE, the smaller provincial botanic gardens should contain complete collections of the plants of the neighbourhood, with selected types of structure and affinity from other sources. To these should be added plants interesting for their use in the arts, in medicine, as well as rarities and ornamental plants. It is by the study of wild plants, in the first instance, that a man becomes a botanist, it is the attractions offered by a beautiful plant or a well ordered garden that make a man a gardener.

—— THE POTATO BLIGHT commenced so early this year that great apprehensions were entertained, at least in my own neighbourhood, as to the result of the general crop. As I have this year given up an unusually large space of ground to Potatos, both of late and early varieties, it may not be uninteresting to state what the result has been now that the whole have been lifted. Myatt's Prolific were absolutely without disease; and of the Lemon Kidney and Rivers' Royal Ashleaf there was not above 5 per cent. diseased, and about the same was the case with Alma Kidney and Lapstone. Of Early Rose and Beauty of Hebron, the percentage of disease was still less. The Late Rose was the very first to show symptoms of disease, and the tops were in a short time completely withered, and with these there are about 8 per cent. of bad tubers, and no reason could be given why certain roots failed more than others, there being no assignable difference whether the ground was comparatively wet or dry. With the Magnum Bonum, though every plant was blotched with the Peronospora at a very early period, the produce was abundant, and there was not above one bad tuber in 600. In a large piece of ground only fifteen diseased tubers were found. Of course it is impossible to say what the result may be after a time, as Potatos often show disease after they are lifted, but the present condition is thus far very encouraging. *M. J. B.*

—— MANGROVES.—Twenty-four young Mangrove trees (Rhizophora sp.), of three different varieties, have recently been brought home in good condition by Lieut.-Colonel E. S. BERKELEY, and are now in the gardens of the Royal Botanic Society of London, Regent's Park. These plants were collected by Lieut.-Colonel E. S. BERKELEY for the Royal Botanic Society at the special request of the Duke of BUCKINGHAM. The tree is one very difficult to transport safely, great attention on the journey being required. It is to be hoped that these plants, collected and brought home with some trouble and skill, may flourish in the Society's collection, as it is believed that there are no other specimens of the Mangrove tree at present in this country. The Mangrove is

found in abundance on the shores and creeks of tropical islands, and at the mouth of large rivers in the East. The tree is very valuable as fuel for river steamers, being as a fuel next to coal in heat-giving properties; the bark is utilised for tanning leather, and is also said to furnish a febrifuge, which, if true, is very curious, as a Mangrove swamp is a fertile source of fever.

—— DAHLIA SHOW.—We are requested to state that the Grand National Dahlia Show to be held at the Crystal Palace on Friday and Saturday next, will, it is believed, be fully up to the expectations of the promoters, since all the various sections of the Dahlia family will be well represented. Intending exhibitors will do well to remember that the entries must be sent in on or before Monday, the 4th inst., as announced in our advertising columns, and should be sent to Mr. T. MOORE, at Chelsea, not to Mr. G. SMITH, of Edmonton, as announced when the show was originally proposed, his failing health not permitting him to carry out the duties then assigned to him.

—— THE SEASON'S CROPS.—Although we are not yet at the end of the year, it is not too early to take stock of the season's products, and of the various estimates which will be taken of them by those most interested. Farmers having had several bad years, and been enabled thereby to enjoy to the full the pleasure of grumbling with a solid foundation for their dissatisfation, seem as yet uncertain whether their better luck this year is or is not to be welcomed. Poor seasons may lead to reduced rents and lowered wages and assessments, whilst good crops will inevitably check the downward tendency in those matters, and send public sympathy in another direction. Evidently agriculture is not yet going to the dogs, and the life-belt of market gardening will not be in request this year to save it from collapse. The nation, in any case, whatever farmers may say or think, will have cause to rejoice over an abundant harvest. On the other hand, fruit growers have, if they were so disposed, just now cause to look glum, because their summer crops are all gone, and they have none to gather now. Market growers, however, have so many visitations of this kind that they have learned to view them philosophically and hope for better luck next time. On the other hand they have had a good vegetable season, and have good prospective crops to meet the autumn and winter demands. Potatos, 'tis true, will not be so plentiful as last year, when we could not only export large quantities, and even then have more left than we could utilise or sell, but all the late sorts are clean and sound, and if obtaining a little better price than last season, the grower will have good cause to rejoice. Flower gardeners will be variously affected in their estimates of the season, for whilst the bedding men will complain of the lowness of the temperature and comparative lack of sunshine, those who specially favour shrubs and hardy plants, Roses especially, will have cause to remember the cool growing summer of 1882 with satisfaction.

—— BEGONIA ASCOTENSIS.—The value of this Begonia is by no means so well known here as it is in Paris, yet it is one of the best bedding plants we have. There is nothing of a similar colour that can beat it in that respect, and as regards durability it far surpasses the Pelargonium. It is in no degree injured by the late washing rains which have done so much harm to other bedding plants. A large bed in the Cambridge Botanic Garden is extremely effective and unique in character. The plants are so far apart as to have preserved their individual symmetry; the bed is carpeted with Viola cornuta and Dactylis elegantissima, and a border of Œnothera macrocarpa surrounds the whole.

—— GRAPES AT PENRHYN CASTLE.—In one of the Hamburgh-houses a large and beautiful crop is now hanging. The bunches run to about 2 lb. in weight, and the berries have that hammered appearance so dear to cultivators in former years, but not so frequently seen now-a-days. Madresfield Court has here unusually large berries, Mrs. Pearson is very well spoken of, and Alicante and Barbarossa are bearing very fine crops. Mr. SPEED manages to get more sugar into his Alicantes than some others do, and attributes his success to the liberal use of fire-heat. In pruning Mr. SPEED does not confine himself to any one system. In some cases he adopts the spur system, in others he simply "cuts to the best eye," and gets a bundle of rods not so pleasing to the eye as the more formal style of pruning, but quite as good as regards results.

—— INTERNATIONAL POTATO EXHIBITION.—Since the publication of the schedule of prizes for this show, which takes place on September 20 and 21 at the Crystal Palace, Sydenham, a new class has been made, as announced in our last number, namely, one



FIG. 55.—STREATHAM HALL, NEAR EXETER, THE RESIDENCE OF MRS. THORNTON WEST. (SEE P. 300.)

for nine dishes of Potatos, the prizes being given by Mr. C. FIDLER, potato dealer, Reading. Class C. is for twelve dishes of Potatos—six English and six American varieties. Messrs. BLISS & SONS, of New York, who are the donors of the 1st prize in this class, stipulate that the six American varieties must be selected from the following, which have been put into commerce by this firm :—Bliss' Triumph, Manhattan, Alpha, Improved Peach Blow, Peerless, Superior, Adirondack, Trophy, Snowflake, Early Rose, Brownell's Beauty, Matchless, Later Beauty of Hebron, White Star, Queen of the Valley, and Pride of America.

—— HECKFIELD PLACE GARDENS.—The customary open week at Heckfield, unavoidably omitted last year, is, by Viscount EVERSLEY's kindness, announced to begin on Monday next, the 4th inst., closing on Saturday. Tickets of admission may be obtained by those desirous of visiting Heckfield from Mr. WILDSMITH, at the Gardens. In spite of a season that has not been eminently favourable to tender bedding plants, the floral display on the terrace, ever one of the most charming of its peculiar kind in the kingdom, is this year as beautiful as ever ; and the variations in the bedding arrangements, whilst giving zest to the appetite of lovers of that style of gardening, naturally induces wonder that in an area so comparatively limited so much of variety should year after year be introduced. The well known kitchen garden bordering is very beautiful, and the Cactus Dahlia helps to furnish a striking background with excellent effect. Whilst every department exhibits the customary perfection in cultivation and neatness, few subjects will strike visitors with more effect than will the many noble trees that so finely ornament the grounds, and which, thanks to the season's invigorating rains, are this autumn singularly rich in luxuriant leafage. Not only gardeners, but all lovers of the beautiful, may well enjoy a trip to Heckfield during next week, paying at the same time visits to the noble domain of Strathfieldsaye, the historic castellated mansion of the COPES at Bramshill, or—and not least—to the grave of the once great and good Rector of Eversley, CHARLES KINGSLEY, whose name should for ever be cherished in loving memory by all English-speaking peoples.

—— ADIANTUM MORITZIANUM.—What is represented under this name in the garden of A. P. STANCOMBE, Esq., Trowbridge, is a variety in the way of A. farleyense, but with smaller pinnæ. It is used here as a basket Fern, and is exceedingly attractive when used in this way.

—— SINGLE DAHLIAS.—Varieties of these will soon be as numerous as the double flowers ; and there is great danger of their becoming large and coarse. This is natural, as increased size and fulness of petals are certain to result ; and already the semi-double form shows itself. A medium-sized flower will be found much more acceptable generally than a larger one. At the meeting of the Trowbridge Horticultural Society on the 24th ult. Messrs. KEYNES & CO. exhibited a number of seedlings of great promise, and especially some purple-flaked flowers on a pale lilac ground. The difficulty is what to select for naming. At the Reading Horticultural Society's autumn show on the following day, Mr. C. TURNER had a fine lot of single Dahlias also, and they were much admired. Some say the flowers do not keep long in a cut state, but this is compensated for in some part by reason of their great productiveness.

—— BAMBUSA METAKE.—Some striking specimens of Bambusa Metake are to be seen in a part of the pleasure grounds known as The Wilderness, at Fairlawn Park, Tonbridge, the residence of E. CAZALET, Esq. Some of the clumps measure 12 feet in height, and 10 feet through, although only planted a few years ago. They stood the severe winters of 1879, 1880, and 1881 without the slightest injury. What a pity this grand decorative plant is not oftener found in such places. It does not seem to be at all particular as to soil, and can be had at a reasonable price from almost any nursery.

—— PINES.—No one would think, to see the extent to which Pine growing is practised by Mr. SPEED at Penrhyn Castle Gardens, that Pine cultivation was on the decline. In few places are Pines grown to so large an extent, or so well, as at Penrhyn. The plants are clean, healthy, and excellent in all stages of their growth. For sorts that are shy to throw suckers Mr. SPEED adopts the plan of laying the crowns down on their sides on a box with a warm bottom, when they produce your plants freely. The plants, fruiters and successions, are for the most part grown in pots plunged in leaves, and grown in low pits close to the glass, which is only very slightly sloped. The sorts grown are Queens, Smooth Cayenne, and Charlotte Rothschild. Mr. SPEED speaks in favourable terms of Lord Carrington Pine for winter work, and certainly the number and vigour of his plants, and the even manner in which the fruits are ripening, fully bear out his good opinion.

TREE PLANTING IN TOWNS.—The success which has attended Mr. B. MALLER's effort to establish trees in Tooley Street, Bermondsey, should encourage others to follow in his footsteps. Out of eighty-four trees planted only twelve have died, and of these some were killed by over kindness at the hands of their neighbours. The trees are all Planes, and their healthy and abundant leafage in such a district (the atmosphere of the place need not be described) is amply sufficient to dictate to us the right course in future in regard to tree planting in towns. It is no credit to us that in this respect we are a long way behind our Continental friends.

—— CLETHRA ARBOREA.—In the conservatory at Fairlawn, Tonbridge, a grand specimen of Clethra arborea has been for some weeks past the leading feature. It is planted in a bed side by side with Camellias, &c., and without the aid of any artificial heat in summer or winter this fine plant bears its crop of beautiful Lily-of-the-Valley-like flowers, which yields a sweet odour throughout the house. The height of the plant is 12 feet, and its diameter 6 feet, and altogether it is in grand health. At the late Sevenoaks show its flowers were used with good effect in Mr. FENNELL's three 1st prize epergnes, giving the stands a light and graceful appearance.

—— SINGLE PETUNIAS.—That these are destined before long to take a prominent position in the flower garden, as well as for other purposes, there cannot be the shadow of a doubt. No one who has seen the display produced by them in mixed beds in the principal parks and many of our best private gardens can fail to recognise their beauty and utility. The thing required is a higher standard of perfection in the quality of the flowers, as well as in size, colour and substance. Messrs. CANNELL & SON, of Swanley, appear to be on the right track to accomplish this. In a box of flowers forwarded to us a day or two ago we were quite surprised at the size of the individual flowers, to say nothing of their exquisite markings. There were selfs of white, maroon, and purple—one, indeed, so nearly blue under a certain degree of light that it would seem as if we might have a real blue Petunia some day. Others, pale lilac and pink, are very striking, as well as mauve, striped, and fringed flowers, which are very pretty but scarcely so showy as some of the others. The sample should certainly inspire the Messrs. CANNELL with confidence, and we expect the last has not been heard of these fine Petunias.

—— A NEW ROSE FROM LOWER CALIFORNIA.—We have just received from Dr. C. C. PARRY an advance sheet of the *Torrey Bulletin*, containing a description of a new Rose, collected by himself and others in Lower California. This is a very interesting discovery in relation to the distribution of the genus, and it seems from the description to be a very distinct species. It was first seen in riding along a well-travelled road skirting the shores of All Saint's Bay, between Sauzal and Encenada, about the parallel of 32° N. lat., becoming abundant and forming dense low thickets on dry slopes, shut off from the sea breezes and composed of crumbling ferruginous sandstone. Forming, as it did, a most conspicuous and agreeable feature in the arid landscape, with its finely divided foliage and showy flowers, it attracted the attention of all the members of the party. Dr. ENGELMANN has named it Rosa minutifolia. It is a densely branched shrub, 2—4 feet high, having hairy shoots armed with straight, or slightly recurved, red-brown bristly prickles, and clothed with leaves remarkable for their smallness, the leaflets, of which there are usually five, being only one or two lines long. The deep rosy-purple or white flowers are ¾—1 inch across. It is further designated "a most striking and lovely species, distinguished from all other Roses by its minute incised leaves." In aspect and habit it is said to come nearest to the Pimpinellæfoliæ, on account of its solitary bractless flowers, its numerous acicular spines, and its small leaves ; but it differs in its pinnatifid calyx-lobes.

—— THE EXTENSION SYSTEM.—In one of Mr. SPEED's Peach-houses at Penrhyn is a fine tree of Grosse Mignonne Peach about 14 yards in the spread of its branches, which are trained along a trellis near to the glass of a lean-to house. The tree is a picture in itself even now, and the crops have been very satisfactory. The tree occupies the whole house.

—— SPECIAL PRIZES AT FLOWER SHOWS.—Where special prizes are offered at flower shows for particular subjects it is the duty of the committee or other officials who accept such prizes to see they are awarded according to the conditions upon which they are given. Thus, at a recent exhibition special prizes were offered for the best dish of nine tubers of any variety of Potato sent out in 1881 or 1882. One exhibitor set up a dish of Vicar of Laleham, and the judges awarded it the prize, notwithstanding that it was sent out as far back as the spring of 1879. This was manifestly unfair to those exhibitors who staged new Potatos sent out within the time prescribed. It would seem that while one exhibitor at least was unacquainted with the time when the sort he staged was put into commerce, all the four judges who awarded the prize were equally as ignorant. It is to be regretted that conditions of this character are accepted as governing a competition without due care being taken that they are observed according to the intentions of the donor. It would perhaps have been best if a certain time had been specified for sending in entries together with the name of the variety to be shown ; and reference could then have been made to some competent authority to know what particular varieties of those entered were entitled to compete.

—— INGA SEED.—Under this title we have received from a correspondent some seeds which appear to be those of the common Lapsana communis. Our correspondent states that the seed is sold as a new kind of bird food, being among the best to help restore an ailing bird, or to keep them in health. The plant is a very common one, and yields an abundant crop of seeds ; it was formerly used as a salad, or boiled as greens.

—— VEGETATION OF KING'S ISLAND.—This island lies in Bass Straits, midway between Tasmania and Australia, and although surveyed some eighty years ago, very few plants were ever collected there. From a few plants of rarity obtained, such as Phyllocladus rhomboidalis, which does not extend to Victoria, and such as Elæocarpus cyaneus and Zoysia punges, which are not known from Tasmania proper, it remained unascertained to which of these regions the flora of the interjacent island more particularly belonged. Baron VON MUELLER now publishes in the *Proceedings of the Royal Society of Tasmania* a list of plants collected by Messrs. SPONG, the sons of a lighthouse keeper at Cape Wickham. This collection, though creditably formed and comprising upwards of one hundred species, is not sufficient to solve this question fully. Only two plants absolutely near to the Tasmanian dominion were discovered by Messrs. SPONG, namely, Podotheca angustifolia and Dictyurus quercifolius.

—— DISEASED CAMELLIAS AND PORTUGAL LAURELS.—We have received from two correspondents leaves of Camellia and Portugal Laurel badly spotted or shrivelled. In the first case, which is a very bad one, the leaves are almost destroyed by oblong dark brown spots after following the direction of the principal veins. There is undoubtedly a fungus in every spot, but in so imperfect a state that we are unable to say to what genus it belongs, but probably to Depazea ; but whether it is the common consequence of disease we are unable to say. We have, however, some years since seen great destruction in Camellias from the development of a species of Pestalozzia, as to which there was evidence to show that it originated in Italy, for the plants are all imported varieties. The case of the Portugal Laurel is quite different ; we have certainly seen it before, and believe that it is the effect of frost in some previous season, as

shoots may sometimes be affected, though not absolutely killed: and where this is the case diseased growth will follow. There is on some of the leaves the white appearance on which remarks have lately been made in this journal in the case of different varieties of the genus Prunus—an effect produced by disease of the main shoots, whether the effect of frost or mycelium of fungi. We are the more inclined to think this a true explanation, as we find indications of disease in the wood itself. *M. J. B.*

—— SHELLED BROAD BEANS FOR EXHIBITION.—There is always a class for these in the schedule of prizes for cottagers at the Trowbridge Horticultural Society. It is required that thirty Beans be shown, and wonderfully fine many of them are. There must be high culture as well as rigid selection to produce such fine Broad Beans as we saw in the Trowbridge Market House a few days ago. It is a most difficult class to judge.

—— SLATE WALLS FOR FRUIT TREES.—In the heart of the Slate Country it is natural to see slate used for all kinds of purposes, accordingly we were not surprised to see it in use at Penrhyn Castle for fruit walls. The walls are wired and have a shallow coping. Mr. SPEED, however, does not report favourably on them. In summer they are too hot even when whitewashed, in winter they do not retain the heat sufficiently. Some of the newer Pears, however, are being tried on them, and with some prospect of success.

—— LISIANTHUS RUSSELIANUS.—This undoubtedly difficult plant to grow is flowering well in the Cambridge Botanic Garden, and is so extremely distinct and handsome that the trouble it involves is well rewarded. The flowers are of large size, violet-purple in colour, and perhaps more resembling a Convolvulus in form than anything else that is common. The plant, though very rarely seen, is tolerably well known, and we gave an illustration in our issue for August 18, 1877.

—— FARFUGIUM GRANDE VARIEGATA.—Nearly every one is familiar with the golden form of this useful old-fashioned plant, which is still not easily beaten as a room or window plant for the cottager or amateur. The silver striped variety makes a capital companion for the former, and while it makes a pretty border plant plunged out-of-doors in the summer, it is equally useful as an indoor plant in winter. Why are not such plants oftener recommended to the masses?

—— PENTSTEMONS AS BORDER PLANTS.—In anything like a sheltered situation these are the most effective of border plants in autumn. By shelter it will of course be understood that we only mean in so far as the plants have some little protection from the violence of high winds or severe storms of any kind. The scarlet, crimson or red coloured sorts make a beautiful show among large-leaved subtropicals which supply leafage only; and perhaps for this purpose they are no less useful than as border plants.

—— TUBEROSES OUT-OF-DOORS.—In addition to the popularity of these flowers as indoor decorative subjects, we expect shortly to see them more extensively planted out-of-doors. No doubt market growers and florists whose principal aim is to have choice flowers out of season will always force these plants so as to have flowers when they bring the highest price. But private gardeners and others are as much interested in having a good display out-of-doors at certain seasons of the year as they are in having choice cut flowers in November or at any other time. The point therefore seems to be to bring the bulbs forward in pots as we do Gladioli, and plant them out in mixed beds, where at this particular season they have an effect which ladies know how to appreciate and admire.

—— ARALIA SIEBOLDI VARIEGATA.—We should be pleased to see this plant more numerously represented in the subtropical garden, which is somewhat overdone with green, unless there happens to be both plenty of sun and heat, in which case there are many plants that are bright enough as regards colour. But broadly speaking, green is the predominating element, and therefore plants that are conspicuous for bright silver markings would add considerably to the effect of subtropical groups. We shall see this plant dotted about singly in one place or another until it strikes some one to plant a whole mass of it, and then it is a certainty there will be lots of people to follow suit. The single plants are seen to the best advantage planted or plunged in their pots upon green sloping banks in little nooks partially enclosed by evergreen shrubs.

—— MALVA MOSCHATA ALBA.—It will be remembered that this variety was last year awarded a First-class Certificate by the Floral Committee of the Royal Horticultural Society. Those who have grown it are well pleased with it. We have just seen plants of it in pots at Gunnersbury Park—nice bushy specimens, flowering freely and looking very chaste and attractive. Mr. ROBERTS speaks very highly of it, and thinks it a useful acquisition.

—— THE CHINESE PLANTS COLLECTED BY FATHER D'INCARVILLE.—In the current volume of the *Bulletin de la Société Botanique de France* M. FRANCHET gives a list of the plants contained in the herbarium of D'INCARVILLE, together with its history. The inducement was a statement in Dr. BRETSCHNEIDER'S *Early European Researches into the Flora of China* to the effect that this collection had never been worked up, and that it was intercolated in the general herbarium at Paris. The former allegation was true; but the collection has been kept just as it was presented to JUSSIEU, and by him to the nation, except a few of the plants collected at Macao, which have been incorporated in the herbarium of JUSSIEU. A few of the plants were named by JUSSIEU, and others, such as Ailantus glandulosa, DESF.; Incarvillea sinensis, JUSS.; and Cedrela sinensis, JUSS. As FRANCHET observes, most of the new genera and species from the neighbourhood of Pekin described by BUNGE in 1832 had been lying in a forgotten French herbarium ever since 1740. Thus it was D'INCARVILLE who first collected Actinidia, Xanthoceras, Orychophragmus, Paratropia, Anemone chinensis, Corydalis Bungeana, Deutzia grandiflora, Viburnum fragrans, Myripnois dioica, Syringa amurensis, and many other plants. D'INCARVILLE also sent home seeds, from which were raised a number of the Chinese plants that have been cultivated in our gardens for upwards of a century. The China Aster is one that we owe to D'INCARVILLE. The herbarium contains 149 species from Pekin and the neighbourhood, and 144 species from Macao. It has now been presented to the Botanical Society of France.

—— LYSIMACHIA NUMMULARIA AUREA.—A few days ago we were pleased to notice a bed of this pretty little creeping plant in the nursery of Mr. B. MALLER, Burnt Ash Lane, Lee, which was of a rich golden colour and therefore very effective as an edging plant. It is somewhat strange that this plant has not found more favour with carpet bedders, who would find it useful for touching up large designs, many of which are rather tame-looking owing to so many plants being used which are not distinct enough in colour. There are the Golden Feather, Mesembryanthemum cordifolium variegatum, Sedum acre elegans, and golden coloured Alternantheras which bear a resemblance to each other at a distance that detracts in some degree from the general effect; but balance the four corners of a bed with a neat pattern or two of the golden Lysimachia and the effect is as striking as it is pleasing. Nor does its beauty wax faint upon closer examination. We have seen it very effectively used by Mr. MASON, Curator, Princes Park, Liverpool, who gives so much attention to the improvement of carpet bedding. It should be planted in a situation where it will get plenty of sun, otherwise it will not put on its brightest golden tint.

—— ROCHEA FALCATA.—A recent opportunity of seeing a good stock of this beautiful succulent in flower acts as a reminder of what numbers of fine decorative plants, after being cultivated generally for a time, are all but lost sight of, for others that have little or nothing except novelty to recommend them. Not only is this Rochea a most effective plant for greenhouse or room decoration when in bloom, but its flowers have a beautiful effect associated with almost any others, the bright shade of crimson-scarlet being distinct from anything else. Not the least of its merits is the length of time the flowers will last. As the plant is so little grown, a few hints on its management may be of use; for ordinary purposes it will be found most serviceable grown in small pots—5 or 6 inches in diameter are large enough to support the strongest single crowns. It propagates readily from sucker shoots, which are often produced round the base of the stem, as also from pieces of the stem, consisting of two or three joints, removing the bottom leaf, and inserting the cuttings in little pots filled with sandy soil, keeping them in a warm but not too moist place, not confined in a propagating frame or under bell-glasses in the usual way; very little water must be given until after the roots are formed, or their succulent nature will cause the cuttings to rot. When well rooted move them into pots an inch larger, using good loam with some sand, and keep the stock through the winter on a shelf in the stove close to the roof. Single leaves inserted in sand will strike, but plants so raised will take two years to arrive at a strong flowering condition.

—— NEW BRITISH FERNS.—At the meeting of the Royal Horticultural Society held on August 8, Messrs. F. W. & H. STANSFIELD, of Sale, exhibited a few very interesting new British Ferns, which by some accident were omitted from our report of the meeting. Three of them obtained First-class Certificates, namely Scolopendrium vulgare crispum multifidum, a very fine variety of Hart's-tongue Fern, with erect, vigorous, evergreen, sterile fronds, which were beautifully crisped at the margin, and differed from the ordinary undulated forms in having the apex of the frond broken up into several divisions, so as to become distinctly multifid; Lastrea montana coronans, a finely crested variety of the sweet Mountain Fern, in which the apex of the normal-shaped fronds were divided into a larger tasselled tuft, and the apices of the pinnæ into smaller roundish crispy tufts, which being well developed and constant give the fronds a very interesting appearance; and Polypodium vulgare cornubiense Fowleri, a refined form of cornubiense, with the fronds bipinnatifidly cut up into narrow divisions, as in the best fronds of that really fine variety, but not degenerating into the production of fronds, either wholly or in part assuming the normal, once pinnatifid, broad-lobed fronds, a freak in which that otherwise charming kind sometimes indulges: the appearance presented by the much divided fronds of this novelty is much more that of a compound-fronded Davallia or Trichomanes than of a common Polypody. A very choice dwarf Lady Fern—Athyrium Filix-fœmina velutinum—in the way of the variety acrocladon, was also shown; but being somewhat damaged by travelling it was thought better to remit it to the raisers, to be sent in better condition to some subsequent meeting.

—— CHEILANTHES CALIFORNICA.—This pretty little Fern was sent up to a recent meeting at South Kensington by Messrs. STANSFIELD, of Sale, near Manchester. It is quite one of the gems amongst small growing evergreen greenhouse Ferns, but not conspicuous enough to take a place amongst the decorative species, which achieve most popularity. The fronds are densely tufted, and about 6 or 8 inches high, the stipes brown and glossy, and the lamina deltoid, measuring about 3 inches in each direction, quadripinnatifid, that is, four times divided in a pinnatifid manner, the lower pinnæ being deltoid, and the segments small and pointed, with from two to six sori placed in the sinuses of the segments. It was named by HOOKER Hypolepis californica, and a good black and white figure is published in the *Species Filicum* (ii., t. 88A); but it was referred to Cheilanthes, with which it most closely accords, by METTENIUS, and a nice coloured figure is given in EATON'S *Ferns of North America* (i., t. 6).

—— TEA ROSE GIGANTESQUE.—One of the finest and freest of Tea Roses for indoor culture, such as training over the back wall of a conservatory, and one which at the present day seems to be amongst the least generally known, is the French variety Gigantesque, raised by M. ODIER, and sent out in 1845. It is remarkably free in growth, and when allowed sufficient scope its flowers are abundant, and exceeding well adapted for cutting purposes. The blossoms are of a deep rose-pink, becoming paler towards the edge, or it might be described as flesh-coloured, with a bright rose centre, the petals being broad, and making up a large, bold, fine-looking flower. We have several times noticed it growing at Trentham, where it is thought very highly of by Mr. STEVENS, on account of the bountiful supply of cut blooms which it furnishes. We have not found the name in the English catalogues which are accessible to us, but Mr.

ELLWANGER includes it in his descriptive list, and says of it that it is often fine, but apt to come malformed and coarse. Our own acquaintance with it is limited to the plant in question, which is planted out against the back wall of an old lean-to house, where we imagine it gets little feeding, but is allowed to run freely without much, if any, training, and under these conditions produced abundantly blossoms which were extremely beautiful, and quite suggestive of this being a neglected Rose.

—— ÆSCHYNANTHUS AS A WALL PLANT.—The many fine species of Æschynanthus which were common in plant stoves some twenty or thirty years since, are now too seldom seen; yet there are few things more strikingly beautiful. They are not exactly exhibition plants—that is, they do not quite adapt themselves to the habits required in, or the conditions allotted to plants grown mainly for show purposes; and they are not exactly decorative plants in the sense in which that term is generally used, that is to say, plants grown on in quantities to blossom and to die, or furnish a supply of cut flowers; but as a distinct forms of vegetation, combining vastness of growth with brilliancy of inflorescence, they have few equals. They bear large two-lipped Gesnera-like flowers, which are in most cases of the richest velvety-scarlet or crimson, and are more or less conspicuously blotched with black or yellow markings on the inner surface of the limb. As basket plants to be suspended from the roof, or stood on elevated brackets, they serve to impart great variety to the aspect of a plant stove; but they are also most effective plants for covering damp walls which are too frequently otherwise unsightly, spreading over the surface like Ivy, and in a similar way displaying their neat ovate foliage in two ranks lying close against the wall, the stems meanwhile rooting and clinging as they go. We have frequently seen and admired them in positions of this kind, on the damp shady back walls of the Orchid-houses and plant-stoves at Trentham; and it is for the purpose of recommending their use in similar situations that we now call attention to this peculiar habit which they possess—a habit which might much oftener than it is be turned to good account. There are several species which appear to be adapted for this mode of culture, such as Æ. Boschianus, Lobbianus, javonicus, cordifolius, pulcher, and tricolor; as far as we remember, however, it was on Æ. Lobbianus that our observations were made.

—— THE WEATHER.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending Aug. 28, issued by the Meteorological Office, London:—The weather has been very dull, rainy, and unseasonable in all parts of the kingdom. At some stations over central England thunder and lightning have been experienced. The temperature has continued slightly above the mean in "Scotland, E.," but in all other districts a deficit is shown, amounting in most places to 3° or 4°. The maxima have been very low for the season, the highest reading registered (at Leith) being only 70°, while in the north-west of England the thermometer did not rise above 62° during the whole period. The minima, which occurred in the northern and western districts on the 24th, and over the greater part of England on the 28th, varied from 40° in the Midland Counties to 46° in "England, S.W." and "Ireland, S." The rainfall has been considerably more than the mean in nearly all districts. Bright sunshine has been very deficient in all parts of the country, the percentage of possible duration being as low as 16 in "Ireland, N.," 19 in "England, N.W.," and 21 in "Ireland, S.," while the highest percentage (in "England, S.") has been only 33. Depressions observed:—Barometrical pressure during this period has been subject to sudden and considerable variations, three well defined and deep depressions, as well as some local secondary disturbances, having travelled in an easterly direction across our islands. The wind consequently varied in direction between S.W. and N.W., and though moderate to fresh generally, increased to a gale on nearly all our more southern coasts on the 23d, and again in some parts of the Channel on the 25th.

—— GARDENING APPOINTMENTS.—Mr. GEORGE BAKER, Gardener to E. C. BARING, Esq., Combe Cottage, Kingston-on-Thames, has left that place to take charge of Mr. BARING'S larger garden establishment at Membland, Ivy Bridge, Devon.—Mr. G. BRUNT, late Gardener to General FYTCHE, Pyrgo Park, Havering, has been engaged as Gardener to the Countess of CHESTERFIELD, Bretby Park, Burton-on-Trent.—We hear that Mr. TUDGEY is leaving Henwick Grange, Worcester, with the intention of removing to the neighbourhood of London.

HOME CORRESPONDENCE.

The Influence of the Previous Summer on the Fruit Crops.—If the theory propounded by Mr. A. O. Walker with respect to the present general deficiency of hardy fruits be correct we can hardly look for a heavy crop of Apples, Pears, &c., next year. We have had a fairly dry August it is true, and one favourable to the harvest, but no one can say that the month will show a warm record; and in spite of the heavy rains which fell last year at this time, I think the August month then was but little cooler than the present one. If the cause assigned by Mr. Walker as to the comparative scarcity of hardy fruits be the right one it is difficult to account for the fairly heavy crops of Cherries that have been gathered, and still more for the very heavy produce in bush fruits of all kinds. I may put against the opinion of Mr. Walker that of such an experienced fruit grower and observer as Mr. Dancer, of Chiswick, who ascribed the lack of fertility in the fruit blossoms to the long-continued low temperature at night which prevailed in the spring, and which, though not down to freezing point, yet bordered upon it for many successive nights. In my own case I find, except upon one large tree due this year to bear, but well sheltered by a large Oak from the west wind, and which is carrying a good crop, that we have no Apples; whilst upon a sheltered row of free-growing Pears there is quite a heavy sprinkling of Williams' Bon Chrétien, Thompson's, Beurré d'Amanlis, Swan's Egg, Alexandre Lambre, and a few others. A row of similar trees on the western side of this fruitful one has but the merest sprinkling, and those chiefly on the eastern side. This fact seems to point to the conclusion that the terrible wind storm of April 29 was an important factor in the destruction of fruit germs here if not everywhere. But perhaps the chief cause of the comparative lack of fruit is to be found in the unusual and unseasonable rainfall of last autumn, which following upon a spring and early summer of unusual drought necessarily provoked renewed root-action even after the fruit-spurs had been formed and nearly ripened. That such action would result in disorganisation of the trees was but natural, for whilst such fruits as Cherries, with Currants and Gooseberries, have set their buds and almost begun to ripen their leafage by the middle of August, Apples, Pears, and Plums are much later growers, and will produce a lot of rank wood under such conditions as existed last year quite late into the autumn. Probably had the month of August last year been drier, even though as cold, we should now have been rejoicing in a good fruit crop. After looking over the trees here, and still farther having regard to the dry state of the soil, the trees yet being in good growth and leafage, I think it is fairly safe to prophesy a good fruit crop on standard trees next year, supposing that next spring the weather fates are favourable. The wood is well studded with buds that during the next month will plump materially and may become eventually fruitful. Should we get a good fruit crop next year we must not forget that the preceding August was comparatively cool but was also comparatively dry. I read with surprise Mr. Walker's observation that espalier trees are more exposed to wind and frost than other trees, or at all events bushes. Howsoever much espaliers are played upon by the wind, their immobility prevents friction and whipping, and little harm is done them. Again, their strictly perpendicular training, if it led to the upper tier of branches being much exposed to frost, it would at least prove protective of the lower ones. For every espalier tree, however, in the kingdom, there are a thousand grown either as free pyramids, bushes, or standards; and it is these which produce in favourable seasons the crops that are to satisfy the masses. Taking up Mr. Whitehead's theme, I would add that farmers may plant, and the clouds may water, but it is favourable seasons (now few and far between) which give the increase. *A. D.*

Eversley.—In his description of Eversley, your correspondent derives the name from the wild boar. In Sussex we have the family names of Eversfield and Evershed, the latter especially can hardly refer to that animal. May not the names be derived from the cart-heavers, or horses, a term used by Sir Walter Scott in one of his novels? *H. K.*

Meconopsis Wallichii.—I enclose specimens of Meconopsis Wallichii showing the same curious upward movement of the pistil that was described lately in the *Gardeners' Chronicle* with regard to M. nepalensis. The drooping position of the pistil in the blossom changing to the upright position of the ripe seed vessel, in some cases even inclining out of the perpendicular towards the stem of the plant, so that the pistil must sometimes move through over 180°. The contrast between the tall pillar-like plants when hung with drooping blossoms and the same plants covered, as they now are, with upright seed-vessels, is striking. As hardly a flower is now in blossom I cannot send good specimens of the drooping pistils except those in the unopened flower. There appears to be a somewhat similar upward movement in the white variety of the Martagon Lily (which I also enclose), the seed-vessels being upright, while the remains of the pistils in unfertilised flowers still incline downwards. While this Lily was in blossom I noticed that the pistils in some flowers curved upwards, much like those of Gloriosa, but forming a less sharp angle. These pistils could easily have been self-fertilised by one of the anthers. There was but one other flowering plant of this Lily in the garden. *C. M. Owen, Knockmullen, Corey.*

Edelweiss (Gnaphalium Leontopodium).—We raised this plant in quantity from freshly-gathered alpine seed two years ago, and have had it blooming quite freely in 3-inch pots during the present summer. We potted off the seedlings in loam and broken limestone, and then plunged the pots in coal-ashes in full sunshine. One or two plants were planted in little pockets on the top of a wall fully exposed, and these bore heads of silvery whiteness, being far more beautiful than those plunged in the ashes or planted out on rockwork. The fact is, the plant grows too vigorously in good soil, and then is rather weedy looking, the flower-heads becoming sage-green, rather than having that sheen-like, or silvery whiteness which is their chief beauty. Now that Mr. W. Thompson, of Ipswich, and others, offer seeds of this alpine at a cheap rate, any one may grow it, even in a pot on the window-sill. *F. W. B.*

Anemones from Seed.—It does not appear to be generally known that Anemone coronaria may be successfully cultivated as an annual, but the fact is, that it does succeed when so treated. We have now flowers appearing in quantity on beds which were sown so late as April last, the ground being merely dug and manured as if for Mignonette or Zinnias, and the seeds sown broadcast. If the winter is mild these beds will continue in bloom until next May and produce an abundant supply of flowers for cutting. By sowing seeds from February until May at intervals of a month or six weeks one may have Anemone blooms all the year round. The only difficulty is to obtain seeds of a good strain, and then the results are semi-double blooms, 3 to 5 inches in diameter, some as large as Asters or Chrysanthemums and very much brighter in colour. It is rather a novelty to most of our visitors to see the vivid scarlet spring Anemones now in bloom along with A. japonica alba and A. vitifolia. *F. W. B.*

Matricaria inodora flore-pleno.—This proves to be very useful as a border plant, and also for cutting purposes. Some seeds were sown on April 18 in a pot and placed in a cool greenhouse, where they quickly vegetated, and in due time were pricked out 9 inches apart in a partially shaded position. They grew rapidly, and are now 2 feet high, and have flowered abundantly for some time past; the flowers, when fully expanded, are very double, over 2 inches in diameter, nicely recurved, and pure white, with the exception of a slight touch of green in the centre, and rival the best of the small flowered Chrysanthemums for perfection of form and purity of colour. I have no doubt it would make a useful subject for winter flowering in a cool house if sown later and grown on in a cool situation. *W. H. Divers, Burghley.*

Grasses for Cultivation on Marsh Lands.—Referring to the enquiry from "R. W.," in your issue of the 26th inst., we beg to say that he could not do better than sow a mixture composed of the following grasses:—Italian Rye-grass, Poa aquatica, Sweet Vernal, Cock's-foot, Red Fescue, Hard Fescue, Smooth-stalked Meadow-grass, Creeping Bent, Rib-grass, White Dutch Clover, and Pusey's Rye-grass. The proportions, of course, would depend somewhat upon the formation of the soil and other local circumstances. Large tracts have been successfully laid down upon the Norfolk coast a few miles beyond Great Yarmouth. *James Carter & Co.*

Moisture for Gardenias.—To grow these well it appears they must have an unlimited supply of moisture at the roots and in the atmosphere. The healthiest batch of young Gardenias I have ever seen were growing in Messrs. Ireland & Thomson's nursery, at Edinburgh. They were standing on shelves arranged over a water-tank in a large stove, and their vigour and cleanliness were most remarkable. The other day another instance of the advantage of plenty of moisture for them came under my notice; this was at Singleton, near Swansea. Here Gardenias have gained a high repute, the health of the plants and the number and size of the blooms being much above the average. One old plant, which grows in the front of a Pine-stove, is the ringleader in this way. It is a very large untrained bush, and Mr. Harris informed me that its rooting bed of soil was only 3 inches deep, but there is a large quantity of drainage under-

neath this, and very large quantities of water are frequently applied. The syringe is used on the plant daily, and many of the branches have thrown out quantities of aerial roots a foot or more in length. With so much moisture these must no doubt give much support to the plant, and it is to this and the great quantities of water applied that Mr. Harris attributes the unusual freedom with which it produces clean luxurious growths and thousands of high quality blooms. Probably in a low temperature excessive moisture might not suit so well, but with plenty of heat, an abundance of moisture applied to root and branch will secure satisfactory results in Gardenia culture. *J. Muir, Margam.*

Golden Feathers.—In the remarks made upon the subjects being grown at Bedfont (p. 268) by a misprint, "Williams" is made to read "Silhams," thus somewhat puzzling the reader. The variety of Golden Feather alluded to is Pyrethrum aureum selaginoides, and a charming thing it is too. It is evident that until we get these bedding Pyrethrums growing out freely in the open ground, where they have plenty of room, light, and air, we cannot well realise their various distinctive qualities. The old plain-leaved form, or Pyrethrum parthenifolium aureum, is the most robust, and has in point of colour not been excelled. Its robustness, however, combined with its too ready tendency to run off to bloom, militates against its employment largely, because so much pinching is needed. The next introduction was the cut-leaved and double-flowered Golden Gem, which is but the yellow-leaved form of P. parthenium flore-pleno. Then followed Osborne's Pyrethrum aureum lacinatum, raised by Mr. Cowburn, of Sunbury, and which, as a simple foliage plant, is a very nice thing, though always less rich in the needful yellow tint than the old and more popular variety. None the less, its less glaring yellow hue ought to make it a favourite with those who deprecate striking contrasts in bedding colours. It is less robust, and not always so reliable as some other kinds. Williams' pretty variety comes between Osborne's and the older form. It has plenty of foliage, is of a rich yellow hue, and has a dwarf robust habit of growth, yet the natural tendency of the leafage to droop renders pinching much less needful. The margins of the leaves are prettily laciniated and even the surfaces are somewhat crimped, rendering the plants altogether singularly pleasing. I find young strong plants far less disposed to run off to bloom than those of other varieties. The much cut-leaved selection from Pyrethrum aureum selaginoides is almost accurately described as a golden dwarf form of Selaginella Martensii, for the foliage of that well known moss it almost exactly resembles. Its drooping habit of growth gives it a very pleasing appearance. *Y.*

Decaying Lombardy Poplars.—The decaying state of Lombardy Poplars is extending to the North as well as in the neighbourhood of Devizes. In the South-west of Scotland scarcely a healthy tree is to be seen this year, and many of all ages, from twenty to fifty years old and more, seem in a hopeless state. The number of them in the district is not great, and wherever planted they seem much in the same state. If they do not recover and continue to go it will be a serious loss, as they appeared in many situations a most valuable tree to plant. *W. H. M.*

Zulu Nuts.—In going through the nursery of Messrs. J. Dickson & Sons, Chester, I saw a plant under the above name which excited my curiosity. I was informed that the tubers were obtained in the Manchester market under that name, and planted to see to what plant they belonged. They prove to be Cyperus tuberosa (Romer and Schultes, from North America, 1827). Plants in 3-inch pots produce from three to six tubers about the size of a Filbert, and something of the shape, much like that fruit in flavour, but sweeter; very superior to our ground or Pig-nut, not leaving the peculiar sensation on the palate which that root does. As it is undoubtedly hardy and prefers boggy soil, I am under the impression that it might be cultivated with advantage in many wet situations where few plants will succeed, and produce a fair quantity of food, if only for pigs or feeding purposes, and might be useful in Ireland. How it got the name of Zulu Nut I cannot conceive, except it be that some enterprising importer thought the sensational name would attract attention, Zulu being now in the ascendant. *Alpha.*

Single Dahlias and Clematis.—A blue Dahlia has been long looked for and wanted, and no doubt it would be a very desirable thing in its way, and a small fortune to the lucky raiser, but a very good substitute may be found in the flowers of some of the Clematis, and notably those of C. Jackmann, and C. rubra violacea, which dress and associate well with single Dahlias, especially the whites and yellows, either of which two colours blend well with the blue. In the arrangement of cut blooms, the best effect is produced by keeping to one or two kinds, which should be of the same class or character, and if such as these are put up or dropped into the glasses lightly, they are far more attractive than a greater mixture, which generally results in an incongruous mass. At one time I rather set my face against single Dahlias, but having grown them and used them for cutting, I must say I like them, and believe they have a future before them. The mistake with the doubles has been in getting them too huge, and except for growing in the backs of borders and to place on the exhibition table they are of no value in a decorative point of view, but many of the singles are; and as some are very dwarf and branch out and bloom with the greatest of freedom, they will make very fine showy beds. Another thing in their favour is that they may be raised readily from seed, and therefore any one having a Cucumber frame may sow and raise as many plants as they like; and as single Dahlias cross readily there is sure to be plenty of variety, and the best can be taken up in the autumn and their roots stored away for the winter. By starting these early they flower much sooner than seedlings, as by hardening them off they may be planted out in the open in May. Seeing that the two Clematis mentioned are so striking in combination with either white or yellow Dahlias in a cut state, they ought to be equally so in a bed with the Dahlias, peeping through and mixing their blossoms up with the blue, and I just throw out the hint that any one desirous of creating a new sensation may act on it and plant them together next year. I would just remark in closing that both Dahlias and Clematis like a loose, deep, rich soil, and therefore, before planting, the bed should be manured and trenched, which will enable the Clematis to get its roots down and last much longer in bloom. *J. Sheppard.*



Fig. 56.—Franciscea calycina.

Franciscea calycina.—This is one of the most useful plants that can be grown for exhibition, or, indeed, for decorative purposes of any kind. It is, however, more sought after by exhibitors than by private growers, owing to its being amenable to a long resting period, and the simple treatment required to bring it into flower at any given time the cultivator may desire. It is the largest flowered variety of the genus, having large, lanceolate leaves of a light green colour, and producing large trusses of its rich purple flowers. The plant of which the accompanying illustration is given (fig. 56) was grown by Mr. George Cole, gardener to J. Lawless, Esq., of Exeter.

Araucarias.—Is it common for Araucarias to throw out stoles from their roots? One of the oldest and I believe largest trees in Scotland, at Cairnmore, near Newton Stewart, is doing so. Its lower branches have died off some years ago, and it has sent up four or five flourishing stoles from the root. The tree seems thriving, and is still growing otherwise. *W.H.M.*

Alnwick Seedling Grape.—I observe in a note at p. 278 that this Grape is doing well at Heckfield. There are also many other places where it is giving high promise, but the finest lot of it I have yet seen were shown at Cardiff the other day by Mr. Crossling, St. Fagan's. They formed the dish of black Grapes in his 1st prize collection of nine dishes of fruit, and were most satisfactory in size of bunch, and perfect in colour and finish. *J. Muir.*

A Curiosity in Vine Growing.—Those who have made up their minds that there is nothing new under the sun are sometimes startled by occurrences taking place which, although not entirely new to everybody, are at least so to the greater part of the world. In horticulture a good deal of scepticism is displayed with regard to any new doctrine that is advanced or propounded. Too many have made up their minds that we are already in possession of sufficient knowledge upon many practical subjects, whereas if we still continue experimenting in the field of practical horticulture there is no knowing what stores of knowledge and what useful and instructive experiences we may yet have to chronicle. We were struck with this fact some time ago upon seeing a Vine at Normanton Park, the seat of Lord Aveland, in Rutlandshire. This Vine—a Black Hamburgh—is "living upon air-roots" instead of roots formed in the orthodox manner, and without the slightest perceptible difference as to results. The Vine, in common with others in the same house, developed air-roots which, having grown to an unusual length, were encouraged downwards a distance of something like 3 feet, until they took root in the border, when the stem of the Vine was severed immediately below them, and removed, together with the natural roots, entirely from the border. There are six roots which form a kind of rough plait, and upon these roots, which we suppose multiply in the border, the Vine subsists. This is a remarkable physiological fact. And the question is—Are air-roots upon Vines as injurious as many gardeners suppose them to be? We are aware that some gardeners encourage atmospheric conditions which are favourable to the development of air-roots, while others condemn the practice and think it inju-

rious. The facts cited above appear to go some way towards proving that it matters but little from what part of a Vine you obtain roots so long as they are covered with soil and encouraged to grow. Assuming this to be correct how about adventitious roots, which a great many gardeners object to? The subject ought to be an interesting one to practical gardeners, whose experiences in the matter, if related in plain and concise language, would prove of great benefit, and enlighten a great many Vine growers upon a highly important subject. *H. W.*

Campanula planiflora, Lam. (C. nitida, Ait.).—In last week's issue Mr. Wolley Dod asks for information as to the native country of this plant, but up to the present time nothing satisfactory is known about it. All the old authors state that it is a native of North America, but Asa Gray in his *Synoptical Flora of North America*, vol. ii., part i., p. 14, thus deals with it:—"C. planiflora, Lam. (C. nitida, Ait.), long ago described from cultivated specimens, vaguely attributed to North America, is wholly unknown in a wild state; apparently allied to C. persicæfolia, L., and not North American." Of course this proves nothing, except that it has not yet been discovered in North America in recent times, and that may still be the right region for it. Nevertheless it is impossible to overlook the fact that the North American flora is exceedingly well known, and that there is a certain amount of improbability that if this Campanula really came from North America, it should hitherto have escaped detection by the numerous sharp-eyed American botanists; though this same remark applies with even greater force to such well worked ground as Europe. The name C. planiflora should supersede that of C. nitida, since both names were founded upon the same plant, but the name C. planiflora was published six years earlier than that of C. nitida, and has therefore the claim to priority. In Johnson's *Gardeners' Dictionary* I find that C. planiflora (which in that work is considered as distinct from C. nitida) is stated to be a native of Siberia, but upon what authority I cannot discover, since no references are given in that book. I have carefully gone through the whole of the material of the genus Campanula and allied genera at Kew, and compared the specimens of C. planiflora with every other specimen in the Herbarium, and I can find no other species with which it can be specificially associated. The plant is a very distinct one, and not likely to be mistaken for, or confused with any other species. The only other species that the Kew Herbarium contains which at all resembles it is C. aizoon, Boiss., a native of Greece, and that is abundantly distinct. *N. E. Brown, Kew.*

A Pretty Mixed Bed.—A few days ago, when looking through the gardens at Heytesbury House, Wilts, I noticed in the well-arranged flower garden opposite the south front of the mansion a large central bed planted with Iresine Herbstii and Golden Harry Hieover Pelargonium, and edged with Pelargonium Manglesii, which I thought had a very pleasing effect, the dark, silver, and golden foliage, together with the crimson and pink flowers harmonising very effectively. A bed of this kind comes within the reach of anybody possessing a small garden and greenhouse, inasmuch as the arrangement of colours is simplicity itself, and the materials wherewith to produce such a floral picture are easily grown and wintered, and on this account the bed in question is, I think, deserving of passing notice. Moreover, now is the time to note the effects produced in the flower gardens by the judicious massing and blending of colours. Our own method is to make a plan of the flower garden, which is a large one, and geometrically laid out, and about August or September, which is the proper time for arranging the colours, &c., in the flower garden for the following year, when the practised eye can see at a glance where by the transposing of colours an improvement would thereby be effected, and thereon mark what each bed is to be planted with the next season. By adopting this plan a great saving of time is effected when the time of bedding-out arrives, as all that is necessary is to furnish the foreman in the flower garden with the said plan, tacked on to a piece of board and indicating what each bed is to be planted with. *H. W. W.*

Earliest of All Peas.—This Pea is rightly named, and certainly one of the best that has come under my notice. I sowed on February 7, and gathered on May 29; the same day we had the first dish of Ringleader, which were sown early in November. It is a blue Pea, nine in a pod, and of excellent flavour. I consider it a great acquisition. It is one of Mr. Laxton's raising, I believe, and was sent out by Messrs. Hooper, of Covent Garden. *Thos. Bailey, Shardeloes Gardens, Amersham.* [Several other correspondents write to the same effect, but none have pointed out the resemblance of this Pea to Carter's First Crop Blue. As grown side by side at Chiswick this season, we could not tell the one from the other. ED.]

Reports of Societies.

Sevenoaks Floral and Horticultural: *Aug.* 24.—The exhibitions of this Society are representative of horticulture in the surrounding neighbourhood, for although the competition is open to all comers, still the excellent displays annually forthcoming are mainly from gardens not far distant. Plants, cut flowers, fruit, and also culinary vegetables, alike reflect favourably on the gardening skill brought to bear on their production. In the class for six stove and greenhouse flowering plants Mr. Gibson, gr. to T. F. Burnaby-Atkins, Esq., Halstead Place, took the lead with a beautifully flowered group composed of Dipladenia amabilis, bearing some eighty large, highly coloured flowers; D. Brearleyana, only a little inferior; well managed examples of Ixora Prince of Orange, I. Williamsii, Allamanda Hendersoni, and the white Lapageria, carrying a number of unusually large flowers. Mr. Burt, gr. to H. B. Mildmay, Esq., Shoreham Place, was a good 2d, staging a well managed half dozen, the best of which were Erica cerinthoides coronata, over 3 feet in diameter, and well furnished with its bright red flowers; Eucharis amazonica and Ixora Prince of Orange. Mr. Bolton, who came in 3d, had amongst others a large bush of Clerodendron fallax, Anthurium Scherzerianum, full of flower; and Franciscea confertiflora. With four miscellaneous plants, excluding florists' flowers, Mr. H. Vallins, gr. to J. L. Worship, Esq., took the lead; Mr. F. Knight, sen., being 2d. For a single specimen stove or greenhouse plant Mr. Gibson was 1st, with another finely flowered Dipladenia amabilis; 2d, Mr. Fennell, gr. to E. Cazalet, Esq., who staged Allamanda nobilis, nicely done. Six fine-foliaged plants were well shown, in a close competition, in which Mr. Burt took the 1st prize, having in a handsome lot a very large example of Croton variegatus, a well-furnished C. Weismanni, and Anthurium crystallinum; 2d, Mr. Waterman, gr. to H. A. Brassey, Esq., M.P., Preston Hall, his best specimens being of Croton undulatus, Pandanus Veitchii, and Cycas revoluta; 3d, Mr. Bolton. Mr. Goodman, gr. to Mrs. Crawshay, Bradbourne Hall, had an extra prize in this class, showing amongst others a good plant of Monstera deliciosa in fruit.

In the class for six Orchids there were two nice collections staged, Mr. Cooke, gr. to B. De Barri Crawshay, Esq., taking 1st with a well flowered group containing Odontoglossum vexillarium, bearing four good spikes of large highly coloured flowers; O. Uro-Skinneri, a fine variety; Zygopetalum Gautieri, the seldom-seen Peristeria elata, and Oncidium incurvum. 2d, Mr. Burt, whose most noteworthy examples were a nice plant of Saccolabium Blumei majus, Phalænopsis grandiflora and Odontoglossum crispum. With a single Orchid Mr. Bolton was to the fore with a well bloomed beautiful variety of Cattleya crispa, bearing four spikes with twenty-eight flowers. It is not a common occurrence to see one specimen in bloom of the scarce Vanda Batemanni, but here there were a couple, much the best of which was contributed by Mr. Cooke.

Ferns were very well represented, Mr. Hatton, gr. to Mrs. Swanzy, The Quarry, Sevenoaks, being well in front, staging along with others Cibotium princeps, at least 10 feet in diameter, the not-often-met-with Marattia salicifolia, almost as much across, and Asplenium fœniculaceum, 4½ feet over. Mr. Bolton, who was 2d, had in his six, beautiful specimens of the drooping Goniophlebium subauriculatum, Davallia Mooreana, and Dicksonia squarrosa; 3d, Mr. Goodman, also showing a well grown lot. Mr. Meakin, gr. to C. R. C. Petley, Esq., Riverhead House, took 1st with six Fuchsias, Mr. Vallins holding a similar position with four, and Mr. Dow, gr. to J. W. Booker, Esq., Durham House, Riverhead, 2d. Begonias were remarkably well flowered, and Caladiums were also present in good condition.

Groups of plants arranged for effect are unusually well represented here, both in the number and the effective way in which they are displayed. On this occasion there were some seven or eight competitors, Mr. Fennell taking 1st honours with a pretty arrangement, in which were the white and blue varieties of Campanula pyramidalis remarkably well done, single-stemmed plants of Lilium auratum, Francoa ramosa, Tuberoses, and Nerium splendens, associated with Palms, Aralias, Palms, and Pandanus, in a setting of Adiantums, Lycopodiums, and Caladium argyrites; 2d, Mr. Burt; 3d, Mr. Waterman; 4th, Mr. Bolton, all having meritorious exhibits.

Cut Flowers.—Of these an immense lot were staged, and in the case of most they were of good quality. With twenty-four Roses, Messrs. Bunyard & Co., Maidstone, took the lead with, for the advanced season, a very good lot of blooms; 2d, Mr. Standen, gr. to E. Wilden, Esq., Tunbridge Wells; 3d, Mr. C. F. Cattell, Sevenoaks, both having nice flowers. Twelve Roses.—Here Mr. Gray, gr. to Earl Stanhope, Chevening, was 1st, with a beautiful dozen; 2d, Mr. Hollingworth, Maidstone; 3d, Mr. Blundell, gr. to G. Christy, Esq., Buckhurst Lodge. For twenty-four Dahlias there was a close run, Messrs. Cannell & Son, Swanley, taking the lead with a good stand; 2d, Mr. W. Seale, Sevenoaks. Eighteen Gladiolus.—With these Mr. C. F. Cattell was 1st, Messrs. Bunyard 2d. Phloxes were present in abundance, Mr. Bolton taking the lead with eight varieties; Mr. J. Cattell, Westerham, 2d. With twelve varieties of cut stove and greenhouse flowers, Mr. Bolton took 1st. Mr. Gibson 2d, and Mr. J. Cattell 3d—all showing beautiful collections, that, in addition to the merits of the flowers, were commendable for the effective manner in which they were staged. There are few places where table decorations are better understood than in this part. On the present occasion Mrs. Fennell took 1st honours for three pieces, with a distinct and exceedingly pretty arrangement, the centrepiece consisting of a small Palm—Geonoma gracilis—around the base of which was a green setting, in which were thinly introduced single flowers on pretty long stems of blue and white Campanula, with a few Allamanda blooms; these were relieved by Ferns and grasses; supporting this, right and left, were a couple of low glass baskets filled principally with leaves of Acer Negundo variegata, sparingly interspersed with pink Cape Pelargonium.

Fruit, as usual here, was plentifully shown, both tender and hardy, and mostly in good condition. With six dishes, Mr. Staples, gr. to H. Oppenheim, Esq., took 1st, having medium sized examples of Black Hamburgh and Muscat of Alexandria Grapes, Pitmaston Orange Nectarines, Barrington Peaches, well coloured; Green Gage Plums, and a Melon. Mr. Waterman, who was 2d, had Black Hamburgh, and Muscat of Alexandria Grapes, a good dish of Bananas, Royal George Peaches, and a nice dish of Le Grosse Sucrée Strawberry; 3d, Mr. Fennell. Mr. Waterman had 1st for a Queen Pine; Mr. Sears 2d. There were a number of exhibitors of black Grapes. For three bunches, any variety, Mr. Fennell had 1st with beautiful examples of Madresfield Court, fair sized bunches, with very large, even, well-finished berries; Mr. G. Goldsmith, gr. to P. C. Hardwick, Esq., Tonbridge, was 2d, with Black Hamburgh, good bunches and large berries, well coloured; Mr. Reeks, gr. to R. W. Smith, Esq., Wadhurst Castle, who was 3d, also had Black Hamburgh, with unusually large berries. Mr. Gray had an extra prize in this class, for large and finely finished examples of Black Alicante. Three bunches of white Grapes.—With these Mr. Gray was 1st, staging Muscat of Alexandria, rather small bunches, but highly coloured; Mr. Goodman 2d, and Mr. Goldsmith, 3d; both showing Muscat of Alexandria. With three bunches, three varieties, Mr. Goodman was to the fore, having Black Hamburgh, Muscat of Alexandria, and Buckland Sweetwater, all in nice condition. Mr. Goldsmith, who took 2d, had Muscat of Alexandria, Foster's Seedling, and Black Alicante; 3d, Mr. Gray. Peaches were well shown, Mr. Abbot, gr. to Sir W. Hart Dyke Lullingstone Castle, taking 1st, and Mr. Staples 2d. With a dish of Nectarines, Mr. Staples had 1st, Mr. Hatton 2d. Three dishes of dessert Plums.—In a numerous and close competition, Mr. Staples took the lead with very fine examples of Coe's Golden Drop, Jefferson, and Kirke's; 2d, Mr. Bolton, with Green Gage, Kirke's, and Jefferson. In the class for three dishes of culinary Plums, Mr. Waterman was 1st, with Pond's Seedling, Magnum Bonum, and Goliath, all large; 2d, Mr. Bolton, likewise having large and fine fruit. Three dishes of Pears.—1st, Mr. Staples, with Williams' Bon Chrétien, Jargonelle, and Doyenné d'Eté; 2d, Mr. Waterman. With a Melon, Mr. Henderson, Tonbridge, was 1st; and Mr. Hatton 2d.

Mr. B. S. Williams, Holloway, had an excellent group of miscellaneous plants, not for competition, consisting of Orchids, Palms, and Ferns, intermixed with hard-wooded and other flowering subjects. Mr. Searle made an extensive display of Roses, Dahlias, and other cut flowers, also not for competition; and Messrs. Bunyard contributed a variety of cut flowers, amongst which were Hydrangea paniculata grandiflora, a shrub well known for its merits as a forcing plant, as likewise for growing in the open air.

Glamorganshire Horticultural.—The nineteenth annual show of this Society was held on Wednesday, August 23, under very adverse conditions. The whole of the marquees erected on the Sophia Gardens field (where the show is held by permission of the Marquis of Bute), were swept down by the gale of the previous night, and it was with the greatest difficulty that the committee were enabled to hurriedly prepare the market buildings for the reception of the exhibits after the dawning morning showed the state of things. The grouping of plants, &c., was not, therefore, as perfect as might have been desirable, but the exhibits were numerous and good, and the competition close in most classes. In the open class Mr. Cypher secured the 1st prize for twelve stove and greenhouse plants in bloom with his fine specimens that are too well known to frequenters of horticultural exhibitions to need description now; the 2d prize was awarded to J. Howell, Esq., Cardiff (gr., Mr. J. Hemmings). The same exhibitors secured the prizes for fine-foliaged plants in similar order. For eight exotic Ferns Mr. Cypher had to be contented with 2d honours, the 1st prize being taken by C. Luard, Esq. (gr., Mr. Woodward), in whose collection was an Adiantum farleyense of immense proportions. The classes for zonal Pelargoniums, Fuchsias, &c., were well filled with fine plants full of bloom, and the competition was exceedingly keen. Roses were not largely exhibited, the weather having been very adverse. In the nurserymen's classes the 1st prize for thirty-six hybrid perpetuals was secured by Messrs. Earl, of Newport; and that for a like number of Teas by Mr. Crossling, Penarth. The dinner-tables, laid for eight persons, were rather overdone with flowers, and were a little heavy; that securing the 1st place, exhibited by Mr. Ellis, Roath Nurseries, being certainly the best. The stand of cut flowers for the drawing-room table, shown by Mr. Cypher, was in his happiest mode, and gave the judges little trouble in arriving at a decision. A very chaste arrangement in a similar class for amateurs was especially worthy of notice; only wild flowers had been used, and these were arranged by Miss Knight with such effect as to distance all competitors who had used the conventional stove subjects. Dahlias, Gladioli, and other florists' flowers were largely exhibited, and afforded an effective display.

The fruit classes were well filled, and especially notice-

able were those of Grapes, Pines, and Melons, which were in more than usual abundance, and of more than ordinary quality. The 1st prize collection of fruit came from Lord Windsor, St. Fagan's Castle (gr., Mr. Crossling), who had fine Alnwick Seedling and Muscat of Alexandria Grapes—the latter rather green in colour; Red Magdalene Peaches, Lord Napier Nectarines, Moor Park Apricots, Dell's Hybrid Melon, Brown Turkey Figs, Cherries, and Plums. Colonel Tuberville, Ewesmy Priory (gr., Mr. Hawkins), and the Misses Rous, Courtyrala (gr., Mr. Greatrex), were 2d and 3d in the order in which their names are given. J. A. Rolls, Esq., M.P., Hendre, (gr., Mr. Coomber), secured the 1st prize for a collection of Pine-apples, and took 2d place in the other classes for the same fruit; Crawshay Bailey, Esq. (gr., Mr. Wood) being 1st for the Queen, and also in the any other variety class. J. A. Rolls, Esq., also secured the leading place for three bunches of Muscat of Alexandria and Black Hamburgh Grapes, with grand samples in strong classes. The Marquis of Bute (gr., Mr. Pettigrew) was successful in the any other variety classes by carrying off the 1st prizes with large and faultless examples of Foster's Seedling and Black Alicante.

The vegetable classes are always well filled, and strongly contested at the meetings of this Society, and this season proved no exception to the rule, the produce being more numerous than usual. The collection of nine dishes brought out ten competitors, and the 1st place was deservedly awarded to C. R. M. Talbot, Esq., Margam (gr., Mr. Muir), whose collection included grand examples of Trebons Onion, Defiance Celery, Muir's new Vegetable Marrow, Crossling's Glamorgan Tomato, Schoolmaster Potatos, Intermediate Carrots, &c. Lord Windsor was placed 2d with a similar collection, including a fine brace of Pettigrew's Cardiff Castle Cucumber. Torrents of rain fell during the course of the day.

Maidenhead Horticultural: *Aug.* 17. — The annual exhibition of this spirited young Society was held on the above date under the most favourable circumstances. Kidwell Park, the place selected for holding the show, is specially well adapted for the purpose, and it was pleasant to note the happy *esprit de corps* existing amongst the various officials, and the warm interest evinced in the show by the large attendance of visitors. The exhibition itself was fully up to the standard of former years, in some points possibly superior. A great difficulty experienced by the managers of many local societies is that of getting the exhibitors to give proper notice of their intention to exhibit — many defer until the actual morning of the show, thus leading to a great stress of work at the last moment. At Maidenhead Mr. Mount, the energetic secretary, makes a charge of 1s. for all late entries, and the sum thus realised this year amounted to 63s.

A special feature at Maidenhead, and that for which the premier prize is awarded, is the class for twelve variegated plants or handsome foliaged plants in 10-inch pots. This always commands a spirited competition, and brings out just the size and style of plant that is most useful for general decorative purposes. The 1st prize on the present occasion went to Mr. Martin, gr., to G. H. Vansittart, Esq., Bisham Abbey, who staged very fine plants of the following:—Crotons, Johannis, majesticus, pictus, Weismanni, &c.; Maranta alba and princeps, Chamærops humilis, Areca rubra, Dracæna Mooreana, Cissus discolor, &c. Mr. Elliott, gr. to J. Hibbert, Esq., Braywick, obtained 2d honours, having in his collection very fine examples of Cocos Weddelliana, Croton Weismanni and Cissus discolor. Mr. Gribble, gr. to Miss C. Malins, Braywick, was placed 3d with an excellent collection. In the class for a group of any number of plants for effective arrangement, occupying a space of 12 feet by 10 feet, there were three competitors, the 1st prize being awarded to Mr. Elliott for a very effectively arranged group, the groundwork being composed of fine plants of Ferns (Lomaria gibba) overhung with very fine Lilium auratum, Cocos Weddelliana, Pancratium album, &c., with an edging of Caladium argyrites and small Cockscombs. Mr. Gribble was placed 2d, his group containing some fine Crotons, Cocos Weddelliana and Begonias; and Mr. G. Martin 3d. For a specimen foliaged plant Mr. J. Elliott obtained the 1st prize with a fine plant of Croton Veitchii. For a single specimen stove or greenhouse plant in flower, Mr. Martin obtained the 1st prize, with a fairly well bloomed plant of Dipladenia splendens, Mr. Gribble coming in 2d. Ferns were fairly well shown, the 1st prize being awarded to Mr. Elliott, who had in his collection a noble plant of Adiantum farleyense, and another of Dicksonia antarctica. Fuchsias only presented a moderate display. Zonal Pelargoniums were well shown, Mr. E. Jones obtaining 1st honours. In his collection was a very pretty pink-flowered variety, named Mrs. Findlay, which we do not remember having seen before. Some very large and well-grown Cockscombs were exhibited by Mr. Hopkins, gr. to J. W. Burrow, Esq., similar plants from the same garden being shown every year. Some very nice plants suitable for table decoration were exhibited, but call for no special remark. Coleuses were well shown, the plants large and finely grown, the 1st prize going to Mr. T. Capers, gr. to Mrs. Langworthy, Holyport, the collection containing Mr. G. Simpson, Miss Rosina, and Captain Watson, all three excellent sorts. Begonias were badly shown by the gentlemen's gardeners, but three remarkably fine plants were staged in the amateurs class by Mr. John Smith, which ought to set a good example. Cut flowers are generally remarkably well shown here, especially Zinnias, Asters, and Dahlias; the present season being somewhat backward neither of these classes were so well represented. The Zinnias, however, from Mr. Emms, gr. to the Rev. S. Taylor, Eveshem, were by far the finest we have seen this season, and the Asters from Mr. Gribble and Mr. Elliott were very good.

Fruit was very well shown, the Peaches being especially good; Mr. Croker was awarded the 1st prize. In the collection of six dishes of fruit the 1st prize was awarded to Mr. C. Goodman, gr. to C. Hammersley, Esq., Abney House, Bourne End, who had good Alicante and Foster's Seedling Grapes, Bellegarde Peaches, Spencer's(?) Nectarines, Moor Park Apricots, and Belgian Purple Plums.

Vegetables were remarkably well shown in nearly all the classes, Mr. Gribble being awarded the 1st prize for six dishes of Potatos, comprising the following varieties:—Porter's Excelsior, Radstock Beauty, Triumph, International, Early King, and Wonderful. In Mr. Elliott's stand, which obtained the 2d prize, a very fine dish of Adirondack was staged. Mr. Moore, gr. to J. Haig, Esq., Bray Court, was placed 1st with Tomatos. The special prizes offered by Messrs. Sutton & Sons for nine sorts of vegetables, induced nine competitors to enter. General excellence was noticeable in most of the lots staged, the 1st prize being awarded to Mr. Gribble, who staged very fine Tomatos, Onions, Alexandra Cos Lettuce, Cauliflowers, Carrots, Turnips, Canadian Wonder French Beans and Beet, the last-named being somewhat coarse. The various exhibits of Potatos, Cabbages, Peas, &c., coming from the cottagers, were remarkably good, and worthy of all praise.

Amongst miscellaneous articles sent for exhibition and decoration special mention must be made of a very fine group of plants sent by Mr. Fleming from the Duke of Westminster's garden at Cliveden, and which was much admired. Mr. Broughton, nurseryman, Maidenhead, also contributed a very nice lot of plants; and from Mr. Charles Turner, Slough, came a splendid assortment of Dahlias, show, fancy, pompon, and single-flowered; also Roses, which were the admiration of everybody. Mention must also be made of a very fine stand of various varieties of the Sunflower by A. H. Neve, Esq., one of the honorary secretaries of the Society, which were justly appreciated by the emotional visitors.

Trowbridge Horticultural: *Aug.* 23.—It is impossible to do full justice to shows the schedule of prizes for which contains 130 classes, in the comparatively small space that can be allotted to a report. The services of twenty-two judges were required here to make the awards within a given time, and the competition, being very keen in almost all the classes, a good deal of time was occupied in this work. The show was held, as usual, in the grounds at the back of the Post Office, which are in the centre of the town, and very convenient of access. The town was, as usual, gaily decorated, and the day being fine, a very large attendance visited the show, which was generally pronounced to be one of the best the Society has yet held.

The leading feature of this show is undoubtedly the Fuchsias, and they were shown on this occasion in splendid condition. Mr. James Lye, Cliff Hall Gardens, Market Lavington, was 1st with six varieties, staging plants 8 feet in height, and grandly grown and flowered. The varieties were:—Bountiful, the Hon. Mrs. Hay, and Elegans, dark; and Beauty of the West, Emily Lye, and Mrs. Bright, light varieties. 2d, Mr. H. Pocock, gr. to J. P. Haden, Esq., who had very fine plants indeed of Doel's Favourite, Rover of the Flock, Miss Emily Doel, Mabel, Beauty of Trowbridge, and Arabella. 3d, Mr. Matthews, gr. to W. R. Brown, Esq. Mr. Pocock had the best four, staging rare plants of Charming, Arabella, Mazzini, and Doel's Favourite; 2d, Mr. J. Lye, with Elegance, Favourite, Pink Perfection, and Miss Welch; 3d, Mr. Tucker, gr. to Major Clarke. In the nurserymen's class Mr. W. C. Drummond, Bath, was 1st, with good plants, but they fell much below the specimens shown by gardeners.

Stove and greenhouse plants in flower are always a leading and attractive feature at this show. The best nine plants came from Mr. J. F. Mould, nurseryman, Pewsey, who had good examples of Statice Holfordi, Ixora regina, Clerodendron Balfourianum, Dipladenia Brearleyana, Allamanda Hendersoni, Erica Irbyana, E. cerinthoides coronata, &c.; 2d, Mr. J. Matthews, gr. to W. B. Brown, Esq., who had good specimens of Allamanda Hendersoni, Statice profusa, Bougainvillea glabra, Allamanda nobilis, Ixora coccinea, Erica retorta major, E. Marnockiana, &c.; Mr. Tucker was 3d, staging, among other things, a pretty specimen of the pink-flowered Chironia ixifera. In the class for six plants there was a good competition, Mr. H. Pocock being 1st, with very good specimens of Dipladenia Brearleyana, Bougainvillea glabra, Ixora Williamsii, Dipladenia amabilis, Allamanda Hendersoni, and Stephanotis floribunda. In the class for three plants Mr. Tucker was a good 1st, with Statice profusa, Allamanda Hendersoni, and Stephanotis floribunda; Mr. Matthews was 2d.

In the class for fifteen specimens of Ferns and mosses there was a close and exciting competition, Messrs. Pocock and Tucker being 1st and 2d. The collections contained well-grown specimens of the varieties usually seen in such competitions. There was also a good competition in the class for nine fine-foliaged plants, and also in the class for a single specimen. Petunias and Verbenas were, as they always are at this show, numerous and good; and the same remark holds good of Achimenes, Gloxinias, Balsams, Cockscombs, &c.

The cut flower classes were numerous, and there was a close competition in all. In the open class for twenty-four Dahlias Messrs. Keynes & Co., Salisbury, were 1st, with a very fine lot, all of superb quality; the following were the leading flowers:—W. N. Williams, brilliant scarlet, very bright; Henry Walton, William Rawlings, Mr. Stancomb, Joseph Ashby, Henry Bond, Canary, James Cocker, J. C. Reid, Duke of Connaught, Flora Wyatt, Herbert Turner, Triumphant, John Downie, Charles Wyatt, Enchantress, Hon. S. Herbert, Clara, James Vick, Miss Cannell, a fine variety, heavily tipped with magenta-purple on a pale ground; Walter Wren, Emily Edwards, Champion, Rollo, and Lady Golightly, the latter a most delicately-tipped flower, shown in exquisite character. 2d, Mr. Thomas Hobbs, Bristol. Mr. H. Bush, Swainswick, had the best twelve flowers; Mr. W. Sloper being 2d. Messrs. Keynes & Co. had the best twelve fancy Dahlias, showing the following very fine:—Rev. J. B. M. Camm, Mrs. Saunders, John Forbes, James O'Brien, Fanny Sturt, Gaiety, Robert Bruce, Parrot, George Barron, Miss Rodwell, &c. Messrs. Keynes & Co. were 1st with the best six blooms of a seedling Dahlia, staging Senator, purple, with a deep flush of bright magenta in the surface, fine petal and outline, and close high centre; this is a fine self flower of great promise. First-class Certificates of merit were awarded to Mars, very bright scarlet, large, fine in shape, and with a high centre; and W. Hope, pale ground, tipped and suffused with bright lilac-pink, fine outline, good petal and centre; Condor, a pleasing orange-buff self; and Madame Soubeyre, a delicate lilac-pink fancy variety, flaked with rosy-lilac, very pretty.

Hollyhocks were poor, and had suffered from the disease. Gladioli were good, and Asters of all sections surpassingly fine. In the Rose classes there was a good competition, Messrs. Cross & Steer, nurserymen, Salisbury, being 1st with twenty-four varieties, staging some very good blooms indeed; Mr. Humphries, Chippenham, was 2d, and Mr. George Cooling, Bath, 3d. In the other classes good collections were staged. Stands of cut flowers were, as usual, very good. Some boxes of seedling and named single Dahlias were shown by Messrs. Keynes & Co. in prime condition. Some of the former were specially fine. Mr. George Cooling also had blooms of the same. Messrs. Cross & Steer staged fine flowers of their white Clove Carnation, The Governor.

Fruit was scarcely so well represented as usual, except in the class for a collection of ten dishes. Here Mr. T. King, gr. to R. V. Leach, Esq., Devizes Castle, was 1st, with Black Hamburgh, Buckland Sweetwater, and Alicante Grapes, in fine condition; very fine—Exquisite, Barrington, and Lord Palmerston Peaches; Prince of Wales and Pine-apple Nectarines; Moor Park Apricots, and Jefferson's Plum; 2d, Mr. Miller, gr. W. H. Long, Esq., M.P., Rood Ashton, Trowbridge, who had very fine Black Hamburgh, Muscat of Alexandria, and Alicante Grapes; Bellegarde and Barrington Peaches, Balgowan Nectarines, Moor Park Apricots; Best of All and Hero of Bath Melons, and Kirke's Plum. The best two bunches of Black Grapes came from Mr. F. Crossman, gr. to T. O. Bennett, Esq., Burton, who had well finished Black Hamburgh; Mr. Miller was 2d with the same; and the same exhibitors were also 1st and 2d in the class for two bunches of white Grapes, not Muscats, staging Buckland Sweetwater and Foster's Seedling. In the class for Black Muscats, Mr. King was 1st with fine Madresfield Court; Mr. John Looseman, gr. to W. Cowper, Esq., being 2d, with Trentham Black. Mr. Looseman was 1st with White Muscats, staging Muscat of Alexandria; Mr. H. Clark, Roundway Park, being 2d with the same. Melons, Apricots, Plums, Cherries, Apples, Pears, &c., were all well shown, though, with the exception of Apricots, not quite so numerous as usual.

Of the vegetables in all the divisions, suffice it to say they were numerous and very fine; and filled the spacious market house. They were a show in themselves; as Trowbridge is a rare vegetable growing district.

Hastings and St. Leonard's Horticultural: *Aug.* 23.—This exhibition was held in the Warrior Square Grounds, and was undoubtedly the best ever held in Hastings. In the open class for eight stove and greenhouse plants the exhibits were exceedingly fine. Mr. Gilbert's collection, which was awarded the 1st prize, contained two good Allamandas, Bougainvillea glabra, Rondeletia speciosa major, Erica cerinthoides coronata, 4 feet through, and loaded with flowers; Anthurium Scherzerianum, and Statice imbricata. Mr. Portnell, gr. to Sir A. Lamb, Beauport, was a good 2d, with a well flowered Stephanotis floribunda, two good Allamandas, Lapageria rosea, &c. In the class for six stove and greenhouse plants, Mr. J. Dennis, Oak Leigh, was 1st, with a remarkably well coloured and fresh Kalosanthes, Erica Aitonia turgida, &c.; Mr. Warner 2d, with Statice imbricata, Clerodendron Balfourianum, &c. In the classes for fine-foliaged plants as well as those for Ferns all the competing collections were good, those of Mr. Gilbert, Mr. Portnell, and Mr. Jupp, of Eastbourne, taking the prizes in the order named. In Mr. Gilbert's lot were noticeable Dicksonia antarctica and squarrosa, and Todea africana, with fronds 9 feet long. Mr. Portnell had Davallia Mooreana, very fine; and Mr. Jupp A. farleyense. Good Fuchsias and double and single Pelargoniums were plentiful. For a single specimen plant in flower Mr. Gilbert was 1st with Lapageria rosea; 2d, Mr. Burgoyne, gr. to the Duke of Cleveland, Battle Abbey, with Pancratium fragrans. Fruit was in abundance and exceptionally good. In the class for a collection of eight dishes there were eight lots, Mr. Allen, gr. to Sir Thos. Brassey, M.P., being awarded the 1st prize for fine examples of Grapes, Peaches, Nectarines, Brown Turkey Figs, &c.; Mr. Portnell was 2d, with a good collection; and two equal 3d prizes were awarded, leaving four really deserving collections without a prize.

In the class for Black Hamburgh Grapes, Mr. Allen was 1st with three bunches, that could hardly be equalled for colour and size of berries. With three bunches, not Black Hamburghs, Mr. Williams was 1st; Mr. Johnson, Bayham Abbey, and Mr. Barnes, Hawkhurst, 2d and 3d. The classes for Peaches, Nectarines, Melons, &c.,

were also well filled. In the tent for cut flowers, Roses, &c., there was a good show, Mr. Slaughter, Steyning, Mr. Piper, Uckfield, Mrs. Woolard, Cook's Bridge, each standing well forward. Boxes of cut flowers, twenty-four varieties, were very fine. Mr. Gilbert was 1st, with fine bunches of Lapageria, both red and white; Mrs. Woolard, 2d; Mr. B. W. Jenner, St. Leonard's, 3d. Plants for table decoration were well shown by Mr. Portnell and Mr. Allen. The table decorations and bouquets were a very pretty and attractive feature in this tent, Mr. Gilbert securing 1st honours in the open class, and Miss Lucy Young and Miss Cockburn 1st and 2d in the ladies' class. In the second division, for gentlemen's gardeners, Mr. J. Dennis again came to the fore with six good stove and greenhouse plants in flower, including Erica Marnockiana, Bougainvillea glabra, Vallotta purpurea, &c.; Mr. Portnell 2d, Mr. Warner 3d, with two Begonias of the Ingrami type loaded with bloom, &c. For four fine-foliaged plants, Mr. Dennis was 1st, with Croton Queen Victoria, Cycas revoluta, &c.; Mr. Jupp 2d, with beautiful coloured Crotons and other variegated plants. Vegetables of all kinds were good, especially the collection from Lady Herschell, Hawkhurst. Mr. T. Bunyard had a fine display of Gladioli, not for competition. (*From a Correspondent.*)

Reading Horticultural: *Aug.* 24.—So fierce was the wind on the day preceding, that it tore into tatters the roof of the huge tent which covers the place of exhibition within the Abbey ruins; and in consequence the whole of the exhibits had to be accommodated in the municipal buildings — both the old and new Town Halls being filled—while the vegetables and other things found space in the roomy corridors. It was as well, perhaps, that the show took place in the town, for the day proved very wet, and hundreds who could not have gone to the Forbury Gardens were able to attend the show in the Town Hall. It was a remarkably good show throughout, and the centre of the new Town Hall was occupied by the groups arranged for effect. These proved a very attractive feature; and Mr. Lees, gr. to Mrs. Marsland, The Wilderness, again had the premier position with an excellent arrangement; Mr. Phippen, nurseryman, Reading, being 2d; and Mr. Powell, gr. to J. Blandy, Esq., Reading, 3d. In front of the orchestra were arranged the two groups of nine stove and greenhouse plants competing in class 1; and here Mr. Mould, nurseryman, Pewsey, was placed 1st with the same group as was staged by him at Trowbridge on the preceding day. Mr. Lees was 2d with good specimens of Bougainvillea glabra, Allamanda Schottii, Tabernæmontana coronaria flore-pleno, Ixora Williamsii, &c. In the amateurs' class for four plants Mr. Mortimer, gr. to Major Storer, Purley Park, was 1st with good examples of Allamanda Hendersoni, Stephanotis floribunda, Ixora Williamsii, and Bougainvillea glabra; 2d, Mr. Hope, gr. to the Hon. R. Boyle, Purley, with well grown and flowered plants of Tabernæmontana coronaria flore-pleno, Allamanda Schottii, Bougainvillea glabra, and Plumbago capensis. The best specimen stove or greenhouse plant in flower was a finely grown Erica Irbyana from Mr. Bennett, gr. to M. Lonergan, Esq., Cressingham; Mr. Hope being 2d with Allamanda Schottii. Mr. Ashby, gr. to W. Fanning, Esq., Bozedown, had an extra prize for a wonderfully fine plant of zonal Pelargonium Fanny Catlin; and Mr. Lees for what is now very seldom seen —the Brazilian Stigmaphyllon auriculatum, a stove twiner with yellow flowers.

Other flowering plants included Fuchsias, which were numerous, but by no means good; Achimenes, Balsams, Cockscombs, very good; Liliums, the only exhibitor being Mr. Bridge, gr. to J. F. Hall, Esq., Erleigh Court, who had some well grown and bloomed specimens, &c. Dahlias in pots were a special and interesting feature, and they were well grown and flowered; the best four came from Mr. Uphill, gr. to R. W. Garrard, Esq., Wokingham; Mr. Bridge being 2d. In the class for six bedding or zonal Pelargoniums, Mr. Ashby staged a lot of plants so grandly grown and flowered as to place him in the front rank of cultivators; they were large but thoroughly well finished, the varieties being Sophia Birkin, Lizzie Brooks, Leviathan, Mrs. Storey, Lady Sheffield, and Mrs. Moore; 2d, Mr. Mortimer, with smaller but very good plants of Mdlle. A. Baltet, Premier, Mr. W. Paul, Col. Holden, Marengo, and Wonderful. Mr. Ashby also had the best six variegated Pelargoniums, Mr. Lees coming in 2d.

In the class for six variegated and handsome foliaged plants, Mr. C. Ross, gr. to C. Eyre, Esq., Welford Park, Newbury, staged a very fine half-dozen, consisting of Croton Weismanni, Maranta zebrina, Alocasia macrorhiza variegata, A. metallica, Cyperus alternifolius variegatus, very good; and Bonapartea gracilis; 2d, Mr. Mortimer, with Croton Weismanni, Alocasia metallica, A. macrorhiza variegata, Maranta rosea lineata, &c. In the class for six Ferns, Mr. Mortimer was 1st with some finely grown examples of Alsophila australis, Dicksonia antarctica, Adiantum cardiochlæna, Davallia Mooreana, D. bullata, and one other; 2d, Mr. C. Ross, with such a finely grown example of Pteris argyrea as one seldom sees; Platycerium alcicorne, Davallia Tyermanni, &c. In the class for four Ferns, Mr. Lees was 1st, with very nice specimens of Gymnogramma chrysophylla, G. pulchella, Adiantum farleyense, and A. gracillimum; 2d, Mr. Hope, with some good plants, Davallia Mooreana being very fine. Mr. Bizant, gr. to A. H. Simonds, Esq., Caversham, had the best four fine-foliaged plants, staging fine plants of Alocasia metallica, Croton variegatus, C. majesticus, and Maranta zebrina; 2d, Mr. Lees. The best specimen new or rare plant was Croton tingitanus, from Mr. Howe, gr. to Sir R. Sutton, Bart., Benham Park; Mr. Ross being 2d with Cycas circinalis. Lycopods were a truly remarkable feature, and the collections staged by Messrs. Hope and Mortimer were so fine throughout, and so evenly balanced, that they were awarded equal 1st prizes. Mr. Hope had S. stolonifera, Martensii variegata, denticulata variegata, cæsia, Krausiana aurea, and Apus, all very large and finely grown. In addition to four of those named, Mr. Mortimer had S. plumosum and Poulteri. It seemed almost impossible that plants could be finer or better grown.

In the cut flower classes herbaceous Phloxes were finely shown by Mr. Tranter, Upper Assenden; and Mr. Hope. Mr. C. Turner, Royal Nursery, Slough, had the best eighteen Dahlias, staging fine blooms of W. R. Williams, James Cocker, Julia Wyatt, W. Rawlings, Sunbeam, J. N. Keynes, Henry Walker, Rev. J. Goodhay, Constancy, Rival Queen, Prince Bismarck, Hon. Mr. Wyndham, John Standish, Goldfinder, Burgundy, John Wyatt, and Flag of Truce; 2d, Mr. J. Tranter. With twelve fancy flowers Mr. Turner was also 1st, having fine blooms of Grand Sultan, Louisa Haslam, Fred. Smith, Chang, Gaiety, Peacock, Rev. J. B. M. Camm, James O'Brien, Professor Fawcett, Magician, Annie Pritchard, and Lucy Fawcett; 2d, Mr. Tranter. Mr. Turner also had the best eighteen Roses, setting up bright, clean blooms; Mr. Mayo, Oxford, being 2d. Asters—French, quilled, and crown flowered—were very good; and some very fine spikes of Gladioli were shown by Mr. E. Jones, Henley-on-Thames. Double Zinnias were shown in good form by Mr. Munday, of Basingstoke.

In the class for eighteen bunches of cut flowers Mr. J. Atkins, gr. to Sir R. Loyd-Lindsay, Bart., M.P., Lockinge Park, was 1st, with a very fine and choice lot; Mr. Phippen being 2d. In the class for twelve bunches there was a capital competition, Mr. Herve taking the chief honours. The best three pieces for table decoration came from Mr. Sams; Miss Kate Phippen being 2d. The three stands of wild flowers were finely done, and there was an excellent competition. Miss Gosling and Miss Phillips, both of Reading, were placed equal 1st, Miss Cole being 2d, and Mrs. Smith 3d. Miss Kate Phippen had the best basket of sweet-scented flowers, and also the three best button-hole bouquets. The best bridal bouquet was staged by Mr. G. Phippen. Messrs. Charles Lee & Son, Hammersmith, staged a great number of sprays of hardy variegated and pictorial trees that were much admired; and Mr. Turner had several boxes of Dahlias.

There was a rare display of fruit; it was both extensive and good. The best collection of eight dishes came from Mr. J. Austen, Ashton Court Gardens, Bristol, and consisted of a good Pine-apple, White Muscat and Madresfield Court Grapes, Melon, Pears, Peaches, and Nectarines; 2d, Mr. W. Miller, The Gardens, Rood Ashton, who had a good lot also; Mr. Atkins being 3d. Mr. Goodman, gr. to C. Hammersley, Esq., Bourne End, had the best six dishes, having Foster's Seedling and Alicante Grapes, Humboldt Nectarines, and Crimson Galande Peaches, very good; 2d, Mr. T. Lockie, gr. to Lord O. Fitzgerald, Oakley Court, Windsor. Mr. Ashby had the best three bunches of Black Hamburgh Grapes, staging very fine examples; Mr. Miller being 2d. In the class for three bunches of black Grapes, any other variety, Mr. Heath, gr. to R. Overy, Esq., Henley, was 1st, with finely finished Alicante; Mr. Ashby being 2d, with the same variety. Mr. Austen had the best three bunches of Muscat of Alexandria, Mr. Robinson, Englefield Green, being 2d. In the class for white Grapes, any other variety, Mr. Ashby was 1st, with fine Buckland Sweetwater; Mr. Atkins being 2d, with good Golden Queen. Peaches, Nectarines, and Apricots were numerous and very fine throughout; Melons were numerous and generally good, and there were fine Figs, Plums, Apples, Pears, &c. Space will not admit of giving particulars of some very interesting competitions. The 1st prize in the class for eight dishes of fruit was a handsome Silver Cup, given by Messrs. Sutton & Sons, Reading. Special prizes were offered by Messrs. Carter & Co., Holborn, for the best brace of Blenheim Orange Melons, which brought a good competition, the 1st prize going to Mr. Lockie; Mr. Mortimer being 2d, and Mr. Burgess 3d. The same firm also offered prizes for Model Cucumber. Mr. Lockie had the best brace, Mr. Burgess being 2d.

In the vegetable classes Messrs. Webb & Sons, seedsmen, Stourbridge, offered prizes for six dishes, Mr. Lockie being 1st with a very good lot; Mr. Bryant being 2d. In all the other classes there was a very fine display, and the competition was exceedingly keen.

The officers of the Society deserve great praise for their pluck and perseverance in arranging the show under such grave difficulties. Happily the tent was injured before many, if any, of the plants had been placed in it, and by the first thing in the show morning the town was placarded with the notification of the forced change of site for the exhibition.

Sandy Horticultural: *Aug.* 25.—This is unquestionably the most popular of all the Bedfordshire horticultural exhibitions. It appears to be a general resort for the Bedfordshire people, and on a fine day is visited by thousands. It is of such a widely-representative character that quite a large ring of tents is required to accommodate plants, fruits, flowers, farming and market gardening produce; needlework, honey, butter, eggs, and trussed fowls, cage birds, pigeons, poultry, bees, &c. All these interests attract those who are nearly interested in them, and all classes are represented at the show. It is held in the finely-wooded park of Sandy Place, the residence of J. N. Foster, Esq., which is almost in the centre of the village. In the plant tent the leading feature was the handsome prizes for a collection of ten stove and greenhouse plants in flower Mr. J. Parker, nurseryman, Rugby, was 1st with Bougainvillea glabra, Dipladenia amabilis, Allamanda nobilis, A. Hendersoni, Statice imbricata, and Lapageria rosea, as his best plants. Mr. W. Rabbits, gr. to General Pearson, Sandy, was 2d, his best plants being of Allamanda Hendersoni, Lasiandra macrantha, Ixora Fraseri, Anthurium Scherzerianum, Stephanotis floribunda, &c. Another leading class was for twelve zonal Pelargoniums, and here Mr. Rabbits was 1st with small but nicely bloomed plants; Mr. Redman being 2d. Mr. Redman had the best six stove and greenhouse plants, staging the specimens he exhibited at St. Neots a few days previously; Mr. G. Clayden, gr. to J. H. Astell, Esq., St. Neots, being 2d. Some very good Achimenes were shown, but other flowering plants did not call for comment. Mr. Clayden had the best six fine-foliage plants, staging Pandanus Veitchii, Croton interruptus, Chamærops humilis, Alocasia Veitchii, and two nicely grown Caladiums; 2d, Mr. Rabbits. Mr. T. Tillbrooks, Hyton, St. Neots, had the best six Ferns; Mr. G. Clayden being 2d; amongst his collection was a very fine Dicksonia antarctica.

In the open class for forty-eight blooms of cut Roses, Messrs. Paul & Son, the Old Nurseries, Cheshunt, were 1st with a nice fresh lot of small-sized blooms; Mr. J. House, nurseryman, Peterborough, being 2d. In the class for twenty-four varieties, the Rev. H. Jackson, Stagsden Vicarage, Bedford, was 1st; and the Rev. E. L. Fellows, Wimpole Rectory, 2d. Other cut flowers were of a varied character, and, on the whole, good; but they did not call for special remark.

The open-to-all and amateurs' fruit and vegetables filled a large tent. We were able only to note that the 1st prize for six dishes of fruit was won by Mr. Tillbrook with Black Alicante and White Muscat Grapes, Peaches, Nectarines, Apricots, and Plums. The same exhibitor had the best two bunches of black Grapes, and also of white, showing for the former Black Hamburgh, and for the latter Muscat of Alexandria; the latter, though scarcely so well coloured as some Buckland Sweetwaters shown against them, were yet better flavoured, and decidedly finer in the bunches. Peaches, Nectarines, Apricots, Plums, Gooseberries, Currants, Apples, Pears, &c., were numerously, and, on the whole, well shown. Vegetables were numerous and very good. Some excellent samples of Potatos were shown.

In the market gardeners' tent there were three classes for seven collections of Potatos and Onions in twelve varieties. The naming of the latter was decidedly better than the former, but both were well represented by leading varieties. This was a most interesting tent, and we regret that time did not admit of full notes being taken.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, AUGUST 30, 1882.

Month and Day.	Barometer. Mean Reading Reduced to 32° Fahr.	Barometer. Departure from Average of 18 years.	Temperature of the Air. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years.	Hygrometrical Deductions from Glaisher's Tables 6th Edition. Dew Point.	Degree of Humidity. Sat. = 100.	Wind. Average Direction.	Rainfall.
Aug.	In.	In.	°	°	°	°	°				In.
24	29.45	—0.38	63.5	48.2	15.3	54.3	— 6.3	47	78	W.; WSW	0.08
25	29.25	—0.59	65.9	52.0	13.9	57.2	— 3.3	51.6	84	S.; S.S.W.	0.15
26	29.47	—0.38	63.0	53.0	15.0	57.8	— 2.6	51.8	79	W.	0.02
27	29.60	—0.25	64.0	52.4	11.6	57.2	— 3.1	49.1	71	WNW; NNW	0.00
28	29.52	—0.34	64.3	48.2	16.1	56.5	— 3.7	50.7	81	S.; S.S.W.	0.01
29	29.39	—0.47	64.6	52.5	12.1	57.0	— 3.1	49.9	77	S.W.	0.11
30	29.84	—0.04	67.2	51.3	15.9	57.8	— 2.2	45.7	64	WNW; NNW	0.00
Mean	29.50	—0.35	65.4	51.1	14.3	56.8	— 3.5	49.5	77	S.S.W.; S.W.	0.32

Aug. 24.—Partially cloudy; showery at times. Cold windy night.
— 25.—Cloudy generally; rain in morning. Slight rain at night.
— 26.—Generally cloudy; slight rain in afternoon and evening.
— 27.—Cloudy day; fine night; white thin clouds.
— 28.—Overcast generally; slight showers in evening.
— 29.—Partially clear and cloudy alternately, showery till evening; generally cloudless at night
— 30.—Fine day; sun's place visible; partially cloudy. Cloudless at night.

LONDON: *Atmospheric Pressure.*—During the week ending August 26, the reading of the barometer at the level of the sea decreased from 30.02 inches at the beginning of the week to 29.78 inches by 9 A.M. on the 21st, increased to 29.85 inches by 9 A.M. on the 22d, decreased to 29.28 inches by 9 A.M. on the 23d, increased to 29.66 inches by midnight on the 24th, decreased to 29.36 inches by 3 P.M. on the 25th, and was 29.76 inches by the end of the week.

The mean reading for the week at the level of the sea was 29.65 inches, being 0.20 inch lower than last week, and 0.35 inch below the average of the week.

Temperature.—The highest temperature in the

shade in the week was 71°.6, on the 20th. On the 24th the highest temperature was 63°.5. The mean of the seven high day temperatures was 67°.1.

The lowest temperature in the shade in the week was 48°.2, on the 24th; on the 20th the lowest temperature was 55°. The mean of the seven lowest temperatures was 52°.

The greatest range in one day was 17.8°, on the 22d; the smallest was 13°.5 on the 21st and 23d. The mean of the seven daily ranges was 15°.1.

The mean temperatures were—on the 20th, 61.°2; on the 21st, 58°; on the 22d, 58°.4; on the 23d, 57°.3; on the 24th, 54°.3; on the 25th, 57°.2; and on the 26th, 57°.8; of these the 20th was above its average by 0°.4, the rest were 2°.7, 2°.3, 3°.4, 6°.3, 3°.3 and 2°.6 respectively below their averages.

The mean temperature of the air for the week was 57°.7, being 3°.4 lower than last week, and 2°.9 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo, placed in the full rays of the sun, was 141° on the 20th; the highest on the 21st and 26th was 110°, The mean of the seven readings was 119°.5.

The lowest reading of a minimum thermometer with its bulb placed on grass and fully exposed to the sky was 44°.8 on the 24th. The mean of the seven readings was 47°.

Rain.—Rain fell on six days to the amount of 0°.47 inch.

ENGLAND: *Temperature.*—During the week ending August 26 the highest temperatures were 76° at Sunderland, 73°.8 at Cambridge, and 71°.6 at Blackheath. The highest temperature at Bolton was 62°.4, at Liverpool 62°.7, and at Bristol 64°.4. The general mean was 68°.2.

The lowest temperatures in the week were 44°.2 at Wolverhampton, 44°.7 at Nottingham, and 45° at Hull and Sunderland. The lowest temperature at Truro was 51°, at Plymouth 50°.8, and at Bristol 50°.5. The general mean was 47°.4.

The greatest ranges of temperature in the week were 31° at Sunderland, 27°.7 at Cambridge, and 25° at Hull. The least ranges were 13°.9 at Bristol, 14°.6 at Liverpool, and 16° at Truro. The general mean was 20°.8.

The mean of the seven high day temperatures was 69°.1 at Sunderland, 67°.6 at Cambridge, and 67°.1 at Blackheath; and was lowest at Bolton, 59°.2, at Liverpool 59°.6, and at Wolverhampton 60°.9. The general mean was 64°.

The mean of the seven lowest night temperatures was highest at Truro, 54°.3, at Plymouth 53°.2, and at Bristol and Liverpool 52°.1; and was lowest at Sunderland, 47°.6, at Hull 48°, and at Bolton 48°.4. The general mean was 50°.6.

The mean daily range was greatest at Sunderland, 21°.5, at Cambridge 17°.3, and at Hull 16°.9; and was least at Liverpool, 7°.5, at Bristol 9°.8, and at Bradford 10°.5. The general mean was 13°.4.

The mean temperature was highest at Truro, 58°.1, at Plymouth 57°.8, and at Blackheath 57°.7; and was lowest at Bolton 52°.2, at Wolverhampton 53°.1, and at Liverpool 54°.2. The general mean was 55°.6.

Rain.—The largest falls were 2.71 inches at Bolton, 1.90 inch at Sunderland, and 1.55 inch at Hull; the smallest falls were 0.47 inch at Blackheath, 0.49 inch at Bradford, and 0.51 inch at Leeds. The general mean fall was 1.04 inch. It fell on five or six days at most stations, and on every day in the week at Nottingham, Liverpool, Bolton, Bradford, and Leeds.

SCOTLAND: *Temperature.*—During the week ending August 26 the highest temperature was 72°, at Dundee; at Paisley the highest temperature was 64°. The general mean was 67°.1.

The lowest temperature in the week was 40° at Paisley; at Edinburgh the lowest temperature was 47°.1. The general mean was 44°.6.

The mean temperature for the week was 55°.6, being 4°.3 below that of the week immediately preceding, but 3°.2 above that of the corresponding week of 1881; and was highest at Dundee, 57°.2, and lowest at Paisley, 53°.8.

Rain.—The largest fall was 0.77 inch at Greenock, the smallest was 0.10 inch at Dundee. The general mean was 0.40 inch.

JAMES GLAISHER, F.R.S.

Obituary.

WE regret to record the death, on August 24, at Atherton Grange, Wimbledon, of JOHN DILLWYN LLEWELYN, Esq., F.R.S., of Penllergare, near Swansea, aged seventy-two years. He was the eldest son of the late Mr. Lewis Weston Dillwyn, some time M.P. for Glamorganshire; was a magistrate and Deputy-Lieutenant for Glamorganshire, of which county he served as High Sheriff as far back as the year 1834; and was a man of high scientific attainments, like his father, and one of the oldest members of the Royal Society. He was also one of the oldest Fellows of the Royal Horticultural Society, and the father of Mr. J. T. D. Llewelyn, a member of the present Council of the Society. He also contributed to the Society's *Journal*, years ago, one of his best known papers, being a description, with illustrations, of an epiphyte house, erected at Penllergare in 1845, and through which a waterfall was directed so as to dash over rocks and fall into a basin on the floor.

—— We have also to record the death of Mr. JOHN PEARSON, late of Kinlet, which took place on August 23, rather suddenly, after a long period of failing health. Mr. Pearson was the third son of Mr. J. Pearson, of Kirklees, Yorkshire, and was in his seventy-ninth year. He was one of the most energetic promoters of the *United Gardeners' and Land Steward's Journal*, and formerly an occasional correspondent of this journal. Amongst the craft he was perhaps better known by the *noms de plume* of "Bewdley Forester," "Ishmael," "Ben Giles," &c. He was for forty-nine years gardener and forest planter to the late W. Lacon Childe, Esq, at Kinlet, Bewdley, who granted to him and his wife a pension for their lives.

Enquiries.

He that questioneth much shall learn much.—BACON.

BROOM.—Some years ago we sowed down nearly an acre of ground with common Broom, part of which flowers at the usual time, and the other part—the centre of the ground—fully a month later; in fact, all through July. What is the cause of this? *G. P.*

Answers to Correspondents.

BEDDING PLANTS: *A Subscriber.* Such a house as you describe would answer your purpose very well, provided that when fire-heat is used in the winter and spring you do not let the temperature rise much above 40°. The bedding plants will be quite safe at this temperature, and the Peach trees too, but if you exceed it in the early spring months its effect on the trees will be to induce an early growth.

BEGONIA SEEDLING: *J. Chudley.* Your seedling Begonia, raised last spring, is a first-rate double white. It is very pretty in form, and should be taken care of.

BERBERIDOPSIS CORALLINA: *H. K.* The name of Mr. Nesbitt's plant is correct.

BOOKS: *Leeds.* We do not know of any book that gives the information in the form you desire.

FUNGUS: *T. S. P.* The great fungus, more than 3 feet round, is Polyporus squamosus, a terrible pest to the Ash and Elm, especially the latter. Elms are destroyed in large numbers by this fungus, and its spawn often causes large limbs to drop from the trees.

GALL ON OAK: *H. Hill.* Silk-button Galls, the work of a small gall-fly.

INSECTS: *E. C. C.* The minute insects are the Aleyrodes vaporariorum. They are as injurious to plants as aphides when equally numerous, so that they must be constantly kept in check by tobacco smoking. *J. O. W.*

MOSS ON LAWNS: *J. B.* The lawn should have been drained before being laid down to grass, and you will do no good until it has been done. Drain it during the months of October or November, and in spring apply a dressing of nitrate of soda at the rate of about 100 lb. to the acre.

NAMES OF FRUITS: *J. Banner.* It is hopeless to try to name such scrubs.—*J. C.* Plum, Belle de Louvain. —*G. H, Kent* 1, Beurré Clairgeau; 2, 4, 6, Williams' Bon Chrétien; 3, Duchesse d'Angoulême; 5, Beurré Sterckmans; 7, Jersey Gratioli; 8, King of the Pippins; 9, Gloria Mundi, probably; 10, Fearn's Pippin; 11, Vicar of Winkfield; 12, Cox's Pomona.

NAMES OF PLANTS: *Camjee.* The plant sent is Lapsana communis, and we do not doubt that the "Inga" seeds are from that plant. So far as we know it is not injurious.—*R. J. H., Preston.* 1, Adiantum Capillus-veneris; 2, Catalpa bignonioides.—*G. F. Wilson.* Hypericum reptans. Sikkim.—*M. T. M.* Erica stricta.—*R. M. L.* Pyrus elæagnifolia.—*H. J.* 1, Siberian Crab—two species are included here, Pyrus baccata and P. prunifolia; 2, Mammoth Crab (must see specimens, leaves and fruit, &c.); 3, the Fairy Crab, and 4, Brussels Elm, are names not known to us; 5, English Elm (Ulmus campestris); 6, Huntingdon Elm (Ulmus glabra, Mill., var. vegeta); 7, Siberian Elm (? Ulmus pumila = U. parvifolia); 8, Manna Ash (Ornus europæa); 9, Scotch Laburnum (Cytisus alpinus); 10, Southernwood (Artemisia Abrotanum.—*Llandegai.* Lastrea Filix-mas var. Jervisii, or too near it to be worth separating. The fronds of Jervisii are not always ramose, but sometimes normal in outline. Yours appears to be a good form, which has probably originated under cultivation.—*J. Anderson.* 1, Haworthia clariperla; 2, Gasteria verrucosa; 3, Senecio (Kleinia) repens; 4, Crassula portulacea; 5, Circæa lutetiana.—*T. A. N.* Saponaria officinalis.—*John Downes.* Agrostis vulgaris.—*Agrostis.* 1 and 2, Agrostis alba; 3, A. canina; 4, A. vulgaris; 5, the Wig Plant (Rhus Cotinus).—*W. S.* 1, Heloscladium nodiflorum; 2, Epilobium hirsutum; 3, Mentha hirsuta; 4, Lythrum salicaria; 5, Bartsia odontites; 6, Sparganium simplex. The rest next week.—*H. T. T., Wallington.* 1, Bartsia odontites; 2, Erigeron acris; 3, Calamintha clinopodium; 4, Galeopsis Ladanum; 5, Euphrasia officinalis.

PEA: *J. M., Pontypool.* It is only one of the varieties of the Sugar Pea, a sort easily recognised by its pods, not having the tough film of skin on the inside, peculiar to other kinds. It is more appreciated on the Continent than in this country. What is the history you refer to?

PEACHES ROTTING: *Gardener* gives no information as to whether his trees are out-of-doors or under glass, or any other information likely to give us any clue.

*** Correspondents are specially requested to address, post-paid, all communications intended for publication to the "*Editor*," and not to any member of the staff personally. The Editor would also be obliged by such communications being *written on one side only of the paper* and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Letters relating to ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the Publisher, and* not *to the Editor.*

CATALOGUES RECEIVED.

GEORGE BUNYARD & CO., Maidstone — Roses and Dutch Bulbs.
R. CLEAVER, Bore Street, Lichfield — Dutch Bulbs, Flower and Vegetable Seeds, &c.
WM. DRUMMOND & SONS, Stirling — Dutch Flower Roots.
HOGG & ROBERTSON, 22, Mary Street, Dublin—Hyacinths, Tulips, and other Flowering Bulbs.
JAMES DICKSON & SONS, 108, Eastgate Street, Chester —Bulbous Flower Roots.
DICKSON, BROWN & TAIT, 43, Corporation Street, Manchester—Dutch and French Bulbs, &c.
ROBERT VEITCH & SON, 54, High Street, Exeter — Dutch Bulbs and other Flower Roots.
LOUIS DE SMET, Ledeberg, near Ghent, Belgium — Stove and Greenhouse Plants, &c.
STEPHEN BROWN, Weston-super-Mare — Bulbs and Flower Roots.
JOHN CATTELL, Westerham, Kent—Dutch and other Bulbs.
CLARK BROTHERS & Co., 65, Scotch Street, Carlisle—Spring Flower Roots.
SUTTON & SONS, Reading—Bulb Catalogue.
WEBB & SONS, Wordsley, Stourbridge — Bulb Catalogue.
JAMES W. MACKEY, 23, Upper Sackville Street, Dublin —Dutch Flower Roots, &c.
KENT & BRYDON, Darlington—Flowering Bulbs.
WATKINS & SIMPSON, Exeter Street, London, W.C. —Dutch Bulbs and other Flower Roots, &c.
JAMES COCKER & SONS, Aberdeen—Dutch and other Bulbs.
LAW, SOMNER & Co., Melbourne, Australia — Plants and Fruit Trees.
HARRISON & SONS, Leicester—Flowering Bulbs, &c.

COMMUNICATIONS RECEIVED:—F. W. B.—F. A. F.—R. C —Agrostis —H. Eldridge.—G. E. C —T. P. & Sons —R. F.— R. A —C. M. S.—J. G.—G. T.—N. E. Br.—J. R. M.— Rusticus.—J. C. L.—M. T. M.—C. B. P.—D. T. F.—W. T. —Dr. M. W. Beijerinck —D. B. C.—J. S.—A. Grant.— H. H.—A. C.—J. Veitch & Sons.

Markets.

COVENT GARDEN, August 31.

Trade still remains quiet, without any material alteration in the prices. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Apples, ½-sieve	3 0	4 6
Aubergines, per doz.	4 0	..
Currants, Black, per ½-sieve	4 6	5 6
— Red per ½-sieve	2 3	3 3
Figs, per dozen	2 0	3 0
Filberts and Cobs, per lb.	0 6	0 7
Grapes, per lb.	1 0	3 0
Lemons, per 100	6 0	10 0
Melons, each	2 0	4 0
Peaches, per dozen	2 0	10 0
Pears, per dozen	1 0	2 0
Pine-apples, Eng., lb.	3 0	4 0
Plums, ½-sieve	5 0	8 6

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.
Artichokes, Globe, per doz.	3 0	6 0
Beans, French, English grown, p. lb.	0 4	..
Beet, per doz.	1 0	..
Cabbages, per doz.	1 0	2 0
Carrots, per bunch	0 4	0 6
Cauliflowers, English, dozen	2 0	4 0
Celery, per bundle	1 6	..
Cucumbers, each	0 6	1 0
Endive, per doz.	2 6	..
Garlic, per lb.	1 0	..
Herbs, per bunch	0 2	0 4
Horse Radish, bund.	4 0	..
Lettuces, Cabbage, per score	1 6	..
Mint, green, bunch	0 4	..
Mushrooms, p. baskt.	1 6	3 0
Onions, per bushel	4 0	..
— Spring, per bun.	0 6	..
Parsley, per bunch	0 4	..
Peas, per qt.	1 6	..
Radishes, per doz.	1 6	..
Small salading, pun.	0 4	..
Spinach, per bushel	3 0	..
Tomatos, per doz	2 0	..
Vegt. Marrows, doz.	3 0	..

POTATOS:—Foreign Potatos finished. Regents, 80*s.* to 100; Myatt's, 100*s.* to 120*s.*; Magnums, 100*s.* to 110*s.* per ton.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d		s. d	s d
Aralia Sieboldii, doz.	12 0–24 0		Foliage Plants, various, each	.. ..	2 0–10 6
Arbor vitæ (golden), per dozen	.. .. 6 0–18 0		Fuchsias, per dozen	4 0– 9 0	
— (common), dozen	6 0–12 0		Genista, per doz	.. 8 0	12 0
Balsams, per dozen	.. 3 0– 6 0		Gloxinea, per dozen	12 0–18 0	
Begonias, per doz.	.. 6 0–12 0		Heliotrope, per doz.	3 0– 6 0	
Calceolaria, doz.	.. 4 0– 9 0		Hydrangea, doz.	.. 9 0–12 0	
Cockscombs, dozen	4 0– 6 0		— paniculata, doz.	12 0–30 0	
Cyperus, per dozen	6 0–12 0		Lilium, in var., doz.	18 0–42 0	
Dracæna terminalis	30 0–60 0		Marguerite Daisy, per dozen	. 9 0–18 0	
— viridis, per doz.	..12 0–24 0		Myrtles, per doz.	.. 6 0–12 0	
Euonymus, various, per dozen	.. .. 6 0–18 0		Palms in variety, each	.. .. 2 6–21 0	
Evergreens, in var., per dozen	.. .. 6 0–24 0		Pelargoniums, doz.	.. 6 0–12 0	
Ferns, in variety, per dozen	.. .. 4 0–18 0		— scarlet, per doz.	2 6– 6 0	
Ficus elastica, each	1 6– 7 0		Rhodanthes, doz.	.. 6 0–12 0	
			Solanum per doz.	.. 9 0–12 0	

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s d. s. d
Abutilon, 12 blooms	0 2– 0 4	Pelargoniums, 12 sprays ..	0 9– 1 0
Arum Lilies, per doz.	4 0– 6 0	— zonal, 12 sprays	0 3– 0 6
Bouvardias, per bun.	0 9– 1 6	Pinks, 12 bunches ..	2 0– 6 0
Calceolaria, 12 bun.	6 0–12 0	Primula, double, per bunch	1 0– 1 6
Carnations, 12 bun.	2 0– 6 0	Pyrethrum, 12 bun.	3 0– 9 0
Cornflower, 12 bun.	2 0– 4 0	Rhodanthe, 12 bun.	6 0– 9 0
Eucharis, per doz.	3 0– 6 0	Roses (indoor), doz.	1 0– 3 0
Fuchsias, 12 bunches	6 0– 8 0	— (outdoor), doz.	0 4– 0 9
Gardenias, 12 blms.	3 0– 8 0	— Coloured, doz.	1 0– 2 0
Gladioli, 12 bun.	.. 6 0–12 0	Stephanotis, 12 spr.	3 0– 6 0
— brenchleyensis, 12 sprays ..	1 6– 3 0	Stocks, 12 bunches	4 0– 9 0
Heliotropes, 12 sp.	.. 0 6– 1 0	Sunflower, 12 blooms	0 6– 2 0
Lapageria, white, 12 blooms	3 0– 6	Sweet Peas, 12 bun.	2 0– 6 0
— red, 12 blooms	.. 1 0– 3 0	Sweet Sultan, 12 bun.	4 0– 6 0
Lilium various, 12 bl.	3 0– 6 0	Tropæolum, 12 bun.	1 0– 2 0
Marguerites, 12 bun.	4 0– 6 0	White Jasmine, 12 bunches .. .	4 0– 0 0
Mignonette, 12 bun.	1 6– 4 0		
Pansies, 12 bunches	1 0– 3 0		

SEEDS.

LONDON: *Aug.* 30.—There is a fair demand for Trifolium, the supply of which continues abundant. The samples of new white Clover and new Trefoil which are coming to hand from the Continent do not at present meet with attention. Mustard and Rape seed find buyers at full rates. The prices asked for French and Italian are above the views as to value entertained in this country. Some choice new blue Peas are now offering. Winter Tares keep steady. Linseed is firm. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

At Mark Lane on Monday the Wheat trade was dull and depressed. Good old Russian Wheats were fairly steady, but American and Calcutta ruled 6*d.* and 1*s.* lower on the week, and other foreign barely up to Monday se'nnight. English Wheat was fully 1*s.* lower, except for finest. Flour was without material change, but tending rather in favour of buyers. A moderate demand prevailed for new malting barley; grinding sorts were dull. Oats realised steady value. Maize, Beans, and Peas were quiet, and not quotably altered.—On Wednesday the tone was flat, especially for Wheat. Red winter Wheat was sold lower, and in other descriptions there was not sufficient doing to establish prices. Maize was quiet, but steady in value. Barley was dull, so were Oats, and Beans and Peas were without alteration.—Average prices of corn for the week ending August 26:—Wheat, 47*s.* 10*d.*; Barley, 30*s.* 4*d.*; Oats, 24*s.* 9*d.* For the corresponding period last year:—Wheat, 51*s.* 10*d.*; Barley, 30*s.* 9*d.*; Oats, 24*s.* 6*d.*

CATTLE.

At the Metropolitan Market on Monday, Cattle sold readily, though not briskly. Choice qualities were the turn dearer than on Monday se'nnight, supporting Thursday's improvement. Sheep and lambs met a steady sale at late value, and calves brought full prices. Quotations:—Beasts, 4*s.* 4*d.* to 5*s.* 4*d.*, and 5*s.* 8*d.* to 6*s.*; calves, 5*s.* to 6*s.*; sheep, 5*s.* 4*d.* to 6*s.*, and 6*s.* 4*d.* to 7*s.*; lambs, 7*s.* to 8*s.*—Thursday's trade was very quiet. Fine beasts were firm, but inferior dull and weak. Sheep and lambs maintained Monday's prices, with a quiet demand, and calves and pigs were unaltered.

HAY.

Tuesday's Whitechapel Market report states that supplies were large, and prices as follows:—Prime old Clover, 120*s.* to 145*s.*; inferior, 75*s.* to 90*s.*; new, 90*s.* to 110*s.*; prime meadow hay, 100*s.* to 128*s.*; inferior, 55*s.* to 90*s.*; new, 70*s.* to 95*s.*; and straw, 30*s.* to 44*s.* per load.—On Thursday supplies were very large. Best old Clover was steady, but meadow hay and straw easier to sell.—Cumberland Market quotations:—Superior meadow hay, 115*s.* to 126*s.*; inferior, 70*s.* to 84*s.*; new, 70*s.* to 95*s.*; superior old Clover, 130*s.* to 140*s.*; inferior, 90*s.* to 115*s.*; new, 80*s.* to 105*s.*; and straw, 42*s.* to 50*s.* per load.

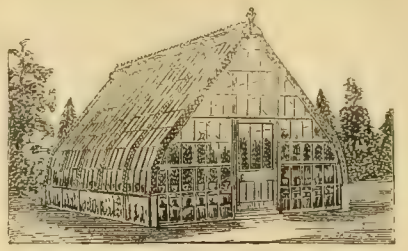
POTATOS.

The Borough and Spitalfields Markets reports state that moderate supplies are to hand, with a slow trade. Quotations:—Kent Regents, 90*s.*; ditto, kidneys, 100*s.*; Essex Regents, 80*s.* to 90*s.*; ditto, Magnum Bonums, 90*s.* to 100*s.*; London, ditto, 90*s.* to 100*s.*; and kidneys, 90*s.* to 100*s.* per ton.

COALS.

The following are the prices current at market during the week:—East Wylam, 15*s.* 6*d.*; Ravensworth West Hartley, 15*s.*; Walls End—Hetton, 18*s.* 6*d.*; Hetton Lyons, 16*s.*; Lambton, 18*s.*; Wear, 16*s.*; East Hartlepool, 17*s.* 3*d.*; Tees, 18*s.* 6*d.*

REGISTERED DESIGNS.



"The Chatsworth."



"The Balmoral."

The above are drawn from Photographs of Conservatories erected upon their

SHUTTER-BAR SYSTEM of GLAZING

BY

ARTHUR DASHWOOD & CO.

HORTICULTURAL BUILDERS

AND

HOT-WATER ENGINEERS,

who, having been entrusted with the erection of the extensive series of HORTICULTURAL BUILDINGS in the beautiful Grounds of Forest Lodge, have great satisfaction in printing the following letter received from J. FREEMAN, Esq.:—

"FOREST LODGE, FARNBOROUGH, HANTS,
"August 1, 1882.

"DEAR SIRS,

"Now that sufficient time has elapsed since the completion of my Greenhouses built by you, to make me appreciate your System of Glazing, I have much pleasure in stating that I am perfectly satisfied with the whole work done; and, to show how strong the buildings are, they resisted the severe gales we had last autumn and this spring. The Houses, which consist of of over *thirty-four thousand* (34,000) square feet of glass, did not have a single pane broken during the gale of October 14, 1881. The Heating has been well carried out, and has given me great satisfaction in its working, which consists of 1¾ mile of 4-inch piping. The Pulsometer you have erected works also well; in fact I am very pleased with the large outlay I have made, and shall be glad to testify to your good workmanship to anybody who may be desirous of giving you an order. You are also at liberty to use the above.

"Yours faithfully,

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782 Bulbs in all.

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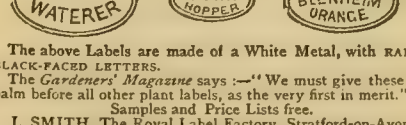
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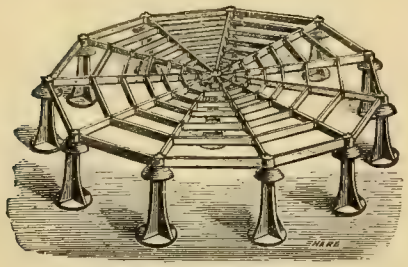
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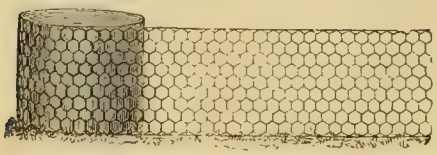
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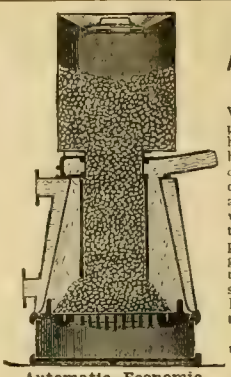
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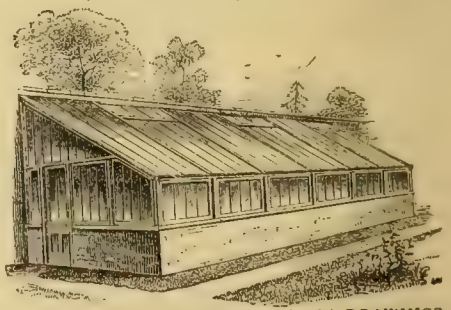
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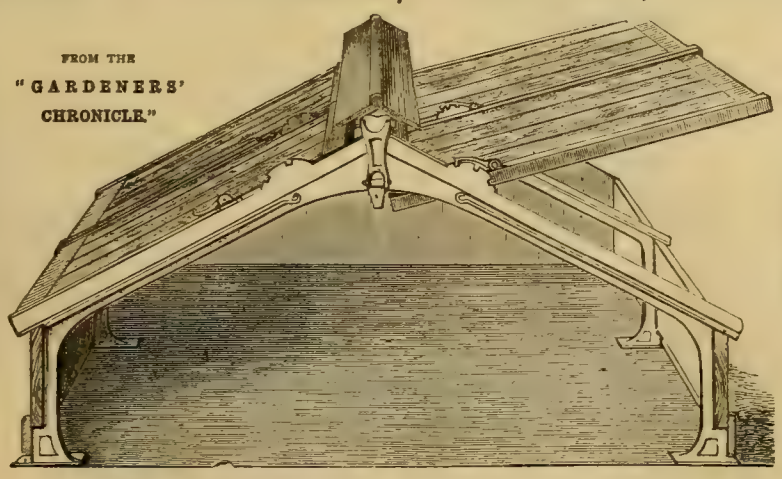
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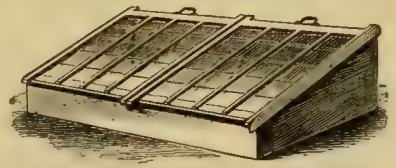
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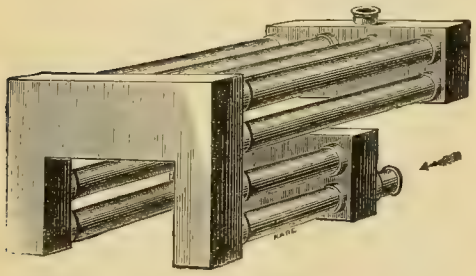
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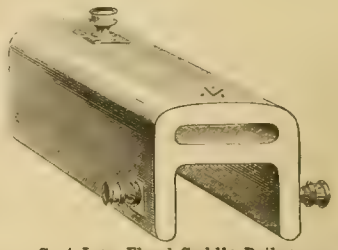
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THE

GARDENERS' CHRONICLE.

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With this Number is presented a Double-page Coloured Plate of a "GROUP of GLADIOLI."

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NOTICE.

The GARDENERS' CHRONICLE for SATURDAY NEXT, Sept. 16, will contain a Full, Detailed Report of the Great International **FRUIT and FLOWER SHOW at EDINBURGH,** *also a DOUBLE-PAGE and other Engravings illustrative of the GARDENS at SYON HOUSE.*

ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.
NOTICE!—COMMITTEES' MEETINGS, Fruit and Floral at 11 A.M.; General Meeting for the Election of Fellows, &c., at 3 P.M., on Tuesday next, September 12. Admission 1s.

THE INTERNATIONAL POTATO EXHIBITION will be held at the CRYSTAL PALACE, SYDENHAM, on SEPTEMBER 20 and 21, when Prizes amounting to ONE HUNDRED and FIFTY POUNDS will be awarded. Entries close on September 12. For Schedules and particulars apply to
W. PRETYMAN, 23, Upper Thames Street, E.C.

THE GARDENER'S ROYAL BENEVOLENT INSTITUTION.
By the kindness and under the Patronage of Lord and Lady HENNIKER, and Patronage of the Dowager Lady HENNIKER, a FÊTE will be held in the grounds at Thornham Hall, Eye, Suffolk, on TUESDAY, September 12, in aid of the above Institution. Mellis Station, Great Eastern Railway, is about 2 miles from the grounds. Admission cards, 1s. each, may be had on application to
J. PERKINS, Hon. Sec.

THE CALEDONIAN HORTICULTURAL SOCIETY.
The BANQUET in connection with the GREAT INTERNATIONAL EXHIBITION at Edinburgh will be held in the WATERLOO HOTEL, on WEDNESDAY, the 13th inst., at 6 o'Clock. Tickets, 15s. each, may be had at the Hotel, Waterloo Place, at the principal Seed Shops in Town, and from Members of Committee.

HARBORNE and DISTRICT POTATO EXHIBITION will be held at the Masonic Hall, Harborne, near Birmingham, on SEPTEMBER 15 and 16. Schedules and all information may be obtained from
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Thursday Next.

CATTLEYA CRISPA and SUPERBA.

MR. J. C. STEVENS has been instructed by Mr. F. Sander to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, September 14, at half-past 12 o'Clock precisely, a splendid importation of this fine CATTLEYA: there are many distinct looking masses among the importation, and many novel varieties may be expected—the consignment is in extra good condition; also five plants of MASDEVALLIA ARNIMI, described in the *Gardeners' Chronicle*, July 22, p. 102, where Professor Reichenbach says:—"It will prove a noble addition to the collection of Masdevallia genus." The sale will also include a large and specially fine lot of ODONTOGLOSSUM ALEXANDRÆ, St. Alban's varieties; ANGULOA UNIFLORA, MASDEVALLIA LINDENI, CYPRIPEDIUM believed to be a giant form of SCHLIMII, and other ORCHIDS.

On view morning of Sale, and Catalogues had.

Phalænopsis intermedia (Portei), in Flower.

MR. J. C. STEVENS will include in his SALE on THURSDAY NEXT, September 14, a fine SPECIMEN PLANT of the above, in flower, with five leaves.

On view morning of Sale, and Catalogues had.

Auction Rooms and Offices, 38, King Street, Covent Garden, W.C.

Special Trade Sale of Dutch Bulbs.—Monday next.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Mart, Tokenhouse Yard, City, E.C., on MONDAY NEXT, at 11.30 o'Clock precisely, over 800 lots of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, SNOWDROPS, and other ROOTS, from Holland; lotted specially to suit the Trade.

Catalogues at the Mart, and 8, New Broad Street, E.C.

Walthamstow—Clearance Sale.

MESSRS. PROTHEROE AND MORRIS are instructed by the Proprietor, who is leaving the residence, to SELL by AUCTION, on the Premises, The Priory, Clay Street, Walthamstow, on TUESDAY, September 12, at 1 o'Clock, the whole of the STOVE and GREENHOUSE PLANTS, CAMELLIAS, and AZALEAS; a very fine collection of Show CHRYSANTHEMUMS (described in *Gardeners' Magazine* in November last), Standard and Dwarf ROSES, LAWN MOWER, IRON ROLLER, SEATS, and numerous other GARDEN REQUISITES.

Catalogues had of the Gardener, on the Premises, and of the Auctioneers, 8, New Broad Street, E.C.

F. & A. Smith's Nursery, Thurlow Park, West DULWICH.

Important to the Trade and others.

Great UNRESERVED SALE.—By order of the Mortgagees.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, as above, on WEDNESDAY and THURSDAY NEXT, September 13 and 14, at 12 o'Clock precisely each day, the whole of the Indoor Stock-in-Trade, comprising 60,000 STOVE and GREENHOUSE PLANTS, including the following:—

3000 AZALEAS and CAMELLIAS—a splendid lot, embracing several fine specimens.

10,000 Soft and Hard-wooded HEATHS, in 48's and larger pots.

11,000 small succession HEATHS.

6000 SOLANUMS, well berried.

15,000 PELARGONIUMS.

3000 Zonal and Tricolor GERANIUMS, including 36 new varieties, the finest yet introduced.

5000 CINERARIAS, a beautiful strain.

30 magnificent plants of the new ASPARAGUS PLUMOSUS.

The entire stock of EPIPHYLLUM TRUNCATUM species not yet in commerce.

106 plants forming the whole stock of the new GREENHOUSE RHODODENDRON "Queen of England," not yet sent out; and other stock too numerous to mention.

Also the Utensils, comprising Covered and Open VANS, Heavy and Light Spring CARTS, POTS, BARROWS, &c.

May be viewed. Catalogues had on the Premises, of W. H. BENNETT, Esq., Solicitor, 14, Red Lion Square, W.C.; and of the Auctionee, 8, New Broad Street, E.C., and Leytonstone.

N.B. The well-known NURSERY to be DISPOSED OF, at a great sacrifice, by order of the Mortgagee in possession. Rent moderate. Terms and full particulars on application to the Auctioneers.

Wood Green, N.—Important Trade Sale.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Lordship Nursery, Lordship Lane, Wood Green, N., by order of Mr. J. W. Hurst, on FRIDAY, September 22, at 12 o'Clock, 10,000 DECORATIVE FOLIAGE PLANTS, comprising beautifully grown Palms in variety, Draccænas, well furnished clean grown plants, including the true D. rubra congesta, Cooperii and ferrea grandis; choice Ferns, Adiantum cuneatum, Lomaria gibba, Dicksonia antarctica, fine well set plants of Camellia alba plena and fimbriata, Azaleas, and other Stock.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 8, New Broad Street, E.C.

Lea Bridge Nurseries, Leyton.

TWELFTH ANNUAL SALE.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Fraser to SELL by AUCTION, on the Premises, as above, on WEDNESDAY, September 20, at 11 o'Clock precisely (there being nearly 1100 lots), without reserve, 30,000 remarkably well-grown WINTER BLOOMING HEATHS, including 20,000 hyemalis, 2500 gracilis, 1000 Wilmoreana, and large quantities of Regerminans, grandinosa, persoluta alba, caffra, and others; 3000 EPACRIS, of the choicest kinds; 3000 CYCLAMEN PERSICUM (Fraser's superb strain), 1500 GENISTA FRAGRANS, 1000 SOLANUM CAPSICASTRUM, in berry; 1000 AZALEAS, full of bloom-buds; 500 early-flowering CHRYSANTHEMUMS, 400 double White PRIMULAS, 200 Maréchal Niel ROSES, 10 feet; 300 AMPELOPSIS VEITCHII, LAPAGERIA ALBA and ROSEA, and a quantity of Miscellaneous STOVE and GREENHOUSE PLANTS.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 8, New Broad Street, E.C.

N.B. Messrs. P. AND M. beg to announce that there will be only one Sale this Autumn at these Nurseries, and although the plants are catalogued in larger quantities than usual, it is not on account of their being inferior in quality; on the contrary, this is the best lot ever offered.

Tottenham, N.

GREAT ANNUAL TRADE SALE.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Maller to SELL by AUCTION, without reserve, on the Premises, the Brunswick Nursery, Tottenham, close to White Hart Lane Station, on THURSDAY, September 21, at 11 o'Clock precisely (in consequence of the unusually large number of 1100 lots), 20,000 beautifully grown WINTER BLOOMING HEATHS, abundantly set with flower-buds, including hyemalis, gracilis, caffra, Wilmorea, and other best kinds; 10,000 remarkably well-berried SOLANUMS, unsurpassed in the Trade; 3000 particularly fine CYCLAMEN, 1000 ACACIAS in variety, 1000 handsome PALMS, 500 well furnished ADIANTUMS, 500 FICUS ELASTICA, a grand lot of 2000 TREE CARNATIONS, best varieties; 4000 BOUVARDIAS, 1000 EUPHORBIA JACQUINIFLORA, 1000 AZALEAS, 1500 GENISTAS, 1000 MYRTLES, 2000 GREVILLEA ROBUSTA, 1000 Double White PRIMULAS, 500 EPIPHYLLUMS, large CAMELLIAS and AZALEAS for cutting from, several thousands of small ERICAS and GENISTAS for growing on, Golden EUONYMUS and CUPRESSUS VIRIDIS in pots, and large quantities of other attractive stock.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 8, New Broad Street, E.C.

Lee, Kent, S.E. (adjoining the Station).

GREAT ANNUAL SALE, to commence punctually at 11 o'Clock, in consequence of there being 1100 lots.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. B. Maller to SELL by AUCTION, on the Premises, the Burnt Ash Lane Nurseries, Lee, S.E. on TUESDAY, September 19, at 11 o'Clock, without reserve, 20,000 WINTER BLOOMING HEATHS, which for vigorous growth and profusion of flower-buds are unsurpassed in the Trade, comprising 6000 extra fine Erica hyemalis, also Vilmoriana, gracilis, autumnalis, grandinosa, caffra, assurgens, ventricosa, melanthera, colorans, and others; 10,000 ERICA HYEMALIS and others in large or small 60's, particularly promising; 7000 SOLANUMS, well berried; 600 fine ADIANTUM CUNEATUM and GRACILLIMUM; 500 LOMARIA GIBBA, and other choice decorative FERNS; 1000 extra fine CYCLAMEN PERSICUM; 4000 BOUVARDIAS, red and white, including a grand lot of the new double white "Alfred Neuner;" 2000 GENISTAS, GREVILLEA ROBUSTA, several pairs of ARAUCARIA EXCELSA, BOUVARDIA TRIPHYLLA, Maréchal Niel and other dwarf ROSES, English grown CAMELLIAS, AZALEAS, and other PLANTS

May be viewed. Catalogues may be had on the Premises, and of the Auctioneers, 8, New Broad Street, E.C., and Leytonstone.

Stoke Newington, N.—Trade Sale.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Stroud & Son (in order to make room for other stock) to SELL by AUCTION, on the Premises, the Lordship Nursery, Green Lanes, Stoke Newington, N., on TUESDAY, September 26, at 12 o'Clock, 1500 ARALIA SIEBOLDI, 3000 ASPLENIUM BULBIFERUM, 1000 GREVILLEA ROBUSTA, 500 DRACÆNAS, 500 PALMS, in variety; 500 well set CAMELLIAS and AZALEAS 1 to 4 feet; 500 YUCCAS, 2000 IVIES, 3000 EUONYMUS, 3000 CLIMBING PLANTS, and other stock; the whole of which are well established in pots, and worthy the attention of the Trade and other extensive buyers.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 8, New Broad Street, E.C.

Acton, W.—Trade Sale.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Reeves to SELL by AUCTION, on the Premises, The Nursery, Acton, N., on WEDNESDAY, September 27, 20,000 FERNS, in great variety; PALMS, CROTONS, FICUS, 2 to 3 feet 6 inches; specimen CAMELLIAS and AZALEAS, BOUVARDIAS, and other stock.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 8, New Broad Street, E.C.

Maryland Point, Stratford, E.

By order of the Executors of the late Sir Antonio Brady.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, as above, on WEDNESDAY, September 27, a small COLLECTION of CHOICE STOVE and GREENHOUSE PLANTS.

Catalogues on the Premises, and at 8, New Broad Street, E.C.

Lewisham, S.E.

CLEARANCE SALE, in consequence of the Land and Premises being required by the Local Government Board for the Erection of New Buildings.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Biggs to SELL by AUCTION, on the Premises, the Nursery, High Road, Lewisham, S.E., on FRIDAY, September 29, without reserve, the whole of the Indoor Stock in Trade, including 20,000 Maidenhair FERNS, 10,000 LOMARIA GIBBA, PTERIS, TREE and other FERNS, 2000 BOUVARDIAS, Specimen White AZALEAS and CAMELLIAS, PALMS, ERICAS, GENISTAS, SOLANUMS, CHRYSANTHEMUMS, &c., and the first portion of the OUTDOOR NURSERY STOCK.

Further particulars will appear. Catalogues at 8, New Broad Street, E.C.

N.B.—The remaining portion of the OUTDOOR NURSERY STOCK will be SOLD on NOVEMBER 7 and 8.

Tooting, S.W.—Annual Sale.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Parker to SELL by AUCTION, on the Premises, the Exotic Nursery, Tooting, S.W., on THURSDAY, September 28, an assortment of beautifully-grown STOVE and GREENHOUE PLANTS, Choice ORCHIDS, Exotic FERNS, Selected PALMS, AZALEAS, and CAMELLIAS, and a capital Exhibition VAN.

May be Viewed. Catalogues had on the Premises, and of the Auctioneers, 8, New Broad Street, E.C.

Leytonstone.

Re P. E. White.—In Liquidation.

To SMALL CAPITALISTS.—In TWO LOTS.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, at the Mart, E.C., on THURSDAY, September 28, the BENEFICIAL INTEREST in the LEASES of the commanding Shop in the High Street (which could be used for any other business), and also of the Cottage and Nursery Ground in Temple Street.

The Stock-in-Trade, Glass Erections, and Utensils will be included in the purchase of the respective lots.

Particulars and Conditions of Sale had at the Auctioneers' Offices, 8, New Broad Street, E.C.

Great Sale of Established and Semi-Established ORCHIDS.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions by W. B. Freeman, Esq., to SELL by AUCTION, at the Mart, Tokenhouse Yard, City E.C., on FRIDAY, September 29, a grand lot of ESTABLISHED and SEMI-ESTABLISHED ORCHIDS, comprising Vanda cœrulea and V. teres, Phalænopsis Schilleriana, P. amabilis, Dendrobium Falconeri, D. Wardianum, D. nobile pendula, and others; Oncidium Marshallianum, O. Rogersii, and O. Forbesii; Cattleya Eldorado, and other varieties.

Catalogues had at the Mart, and 8, New Broad Street, E.C.

Fulham, Sunbury, and Hampton.

By order of the Executors of Mr. R. N. Osborn, Deceased.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL by AUCTION, at the Mart, Tokenhouse Yard, City, E.C., on THURSDAY, October 5, at 2 o'Clock precisely, the following properties:—

FULHAM.—In one or two lots, an attractive FREEHOLD BUILDING ESTATE, known as Osborn's Nursery, situate in New King's Road, having frontages of about 2000 ft. to existing roads, and containing a total area of 4 a. 0 r. 11 p.; also the modern detached brick-built Residence and Seed-shop with Conservatory attached. These premises could be utilised for any other business, and notably that of a Licensed Victualler.

SUNBURY.—The FREEHOLD PROPERTY known as Osborn's Old Nursery, containing an area of 17 a. 0 r. 11 p., together with the Goodwill of the Nursery and Seed Business, which was established in the year 1700. There is a detached eight-roomed House, nine newly-erected Greenhouses, fitted and heated upon the most improved principles, ranges of Pits, Stabling, Sheds, and other Out-buildings. The property has Frontages of 1100 feet to two Public Roads, the greater portion of which is particularly adapted for building purposes, without deteriorating the remainder of the land for carrying on the present business.

HAMPTON.—A compact FREEHOLD ESTATE known as Osborn's Nursery, possessing a frontage of 332 feet to Broad Lane, and containing an area of nearly 5 acres. It is now cultivated as a nursery, but is also eligible for building.

Particulars and plans of the several estates are now ready, and may be had at the Mart; of Messrs. WALKER, BELWARD AND WHITFIELD, Solicitors, 5, Southampton Street, Bloomsbury, W.C.; and of the Auctioneers and Surveyors, 8, New Broad Street, E.C., and Leytonstone.

NOTE.—The purchasers will have the option of taking by valuation within 7 days, the whole of the beautifully grown Stock in Trade, but should they not decide to do so, it will be sold by Auction on the Premises, due notice of which will be given.

Brixton, S.W.—Two Days' Sale.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nursery, Loughborough Park, Brixton, S.W., by order of Messrs. Ponsford & Son, on THURSDAY and FRIDAY, October 5 and 6, a large and extensive variety of GENERAL NURSERY STOCK, and the surplus stock of STOVE and GREENHOUSE PLANTS.

Further particulars will appear. Catalogues at 8, New Broad Street, E.C.

Woking.—Preliminary Notice.

GREAT UNRESERVED SALE, in consequence of the Lease having expired of a portion of the Nursery.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Jackman & Son to SELL by AUCTION, on the Premises, the Nurseries, Woking, on TUESDAY, October 10, and two following days, several acres of NURSERY STOCK, in fine condition for removal, thousands of FOREST and ORNAMENTAL TREES, &c.

Catalogues had when ready at 8, New Broad Street, E.C.

Re Mr. N. A. Osborn, Deceased.

MESSRS. PROTHEROE AND MORRIS beg to announce that (in the event of the purchasers of the Freehold Estates not electing to take the stocks by valuation) they have fixed the FIRST SALE for TUESDAY, October 17 and four following days, which will include a splendid lot of VINES, TEA ROSES in pots, and other GREENHOUSE PLANTS, and the first portion of the beautifully grown NURSERY STOCK, FRUIT TREES, and ROSES, which for careful selection of sorts and luxuriance of growth cannot be surpassed.

An early inspection is solicited. Further particulars will appear in future advertisements.

Preliminary Notice of Forthcoming Sales.

MESSRS. PROTHEROE AND MORRIS beg to announce the following SALES of NURSERY STOCK:—

NOV. 2 and 3.—By order of Mr. J. B. Goubert at the nursery, Kilburn, N.W.

NOV. 7 and 8.—By order of Mr. Biggs, Lewisham, S.E. Clearance Sale of the whole of the well grown NURSERY STOCK, the land being required by the Local Government Board.

DATE NOT FIXED.—By order of Mr. T. S. Ware, at the Hale Farm Nursery, Tottenham.

Messrs. P. and M. beg to call the attention of Gentlemen and others engaged in planting to their Sales, and will be glad to furnish Catalogues of all Sales throughout the season, on application at their Offices, 8, New Broad Street, E.C.

Important Sale of Orchids and Other Stove and Greenhouse Plants.

MESSRS. LYON AND TURNBULL have received instructions from Messrs. Drummond Brothers, Nurserymen, Edinburgh, to SELL by AUCTION, on WEDNESDAY and THURSDAY, September 13 and 14, within the Calton Convening Rooms, Waterloo Place, Edinburgh, a valuable portion of their NURSERY STOCK, in fine condition, and comprising a large number of Orchids, including Lycaste Skinneri alba (true), Phalænopsis amabilis (true), Dendrobium nobile Wallichianum (true), and several varieties of Calanthe, Cattleya, Cypripedium, Dendrobium, Lycaste Skinneri, Odontoglossum, Oncidium, &c.; also a number of Camellias, Azaleas, Ferns (including Angiopteris Brongniartiana), and other Stove and Greenhouse Plants, many of them being large specimens.

The Sale will take place in the Calton Convening Rooms, Waterloo Place, Edinburgh, on WEDNESDAY, September 13, at 1 o'Clock, and on THURSDAY, September 14, at 12 o'Clock.

Catalogues will be forwarded on application to the Auctioneers, 51, George Street; or, to Messrs. DRUMMOND BROTHERS, 82, George Street, Edinburgh.

Highly Important Sale of Orchids.

MESSRS. SMITH AND DEWAR, 79, George Street, Edinburgh, beg to intimate that they have been instructed to SELL by AUCTION, on THURSDAY, September 14, at 12 o'Clock noon, a very valuable lot of SPECIMEN ORCHIDS, the property of Alex. Paterson, Esq., M.D., Bridge of Allan, whose houses are getting too crowded, and is thus compelled to sell some of his larger specimens to make room. The plants offered are in perfect health, and are worth the attention of all Orchid buyers. They consist of specimen Vandas of the best varieties of tricolor and suavis, Cattleya Warneri, with 79 bulbs, and nearly 30 inches across; Cattleya labiata, true Cattleya Trianæ Symei, Cattleya Mendelii, "" Boyd's var.;" Aërides suavissimum, original var.; A. Reichenbachii, Chysis bractescens, largest known plant; a splendid Anthurium Scherzerianum, Veitch's var., nearly 15 feet in circumference, &c.

There will also be SOLD, same day and place, a very valuable consignment of ORCHIDS, the property of Mr. Sander, St. Alban's, consisting of Cypripedium Spicerianum, Cattleya Sanderiana, a lot of very rare Masdevallias, such as M. Macrura, M. Winniana, M. Roezlii, &c.

Catalogues can be had by applying to Mr. WM. THOMSON, Jun., Clovenfords, by Galashiels, N.B., who has charge of the sale, and who will also be glad to execute commissions for any one who is unable to attend.

In Chancery.

UNRESERVED SALE.

MR. MALCOLM SEARLE will SELL by AUCTION, at the late Mr. George Steel's well-known Residence and Market Gardens, Grove House, Sands End, Fulham, on TUESDAY, September 19 and following day, at 11 o'Clock, the LIVE and DEAD MARKET GARDEN STOCK, Implements, Boxes and Lights, Horses, Pony, Pigs, Ducks, fat Cow, Mastiff, Carts, Vans, Dog-cart, Waggonette, Brougham, Pony, Pony Phæton, Manure, Household Furniture, and costly effects.

Catalogues of Mr. MALCOLM SEARLE, Auctioneer, Market Garden and Farm Stock Valuer, 2, Bond Court, Walbrook, City, E.C.

To the Trade.

WINTER FLOWERING PLANTS.

JOHN FRASER, of The Nurseries, Lea Bridge Road, Leyton, begs to invite attention to his large and fine stock of the best sorts of Winter-flowering HEATHS, EPACRIS, AZALEAS, GARDENIAS, LAPAGERIAS, Autumn-flowering CHRYSANTHEMUMS, SOLANUMS, GENISTAS, Double White PRIMULAS, and other useful plants, many thousands of which will be offered for SALE by AUCTION on SEPTEMBER 20 next in large lots to suit the Trade. There will also be included in the sale a large quantity of fine plants of Maréchal Niel ROSES, about 10 feet; and considerable numbers of AMPELOPSIS VEITCHII, 3 to 4 feet; CLEMATIS JACKMANNI, and other HARDY CLIMBERS; together with upwards of 3000 of Fraser's choice strain of CYCLAMEN, and many other plants.

An inspection is respectfully solicited. Catalogues are being prepared, and may be had on application.

Hook Heath Nursery, near Woking, Surrey.

London and South-Western Railway: nearest stations, Woking and Brookwood.

UNRESERVED SALE OF NURSERY STOCK.

MR. H. W. COPUS has received instructions from Mr. Chapman, who is leaving the neighbourhood, to offer by AUCTION, at a DATE NOT YET FIXED, without reserve, the whole of the well-grown NURSERY STOCK at the above Nursery, comprising Aucubas, Hollies, ditto various, Yews English and Irish, Rhododendrons, Cupressus, Retinosporas, Cedars, Heaths of sorts, Ivies, Berberries of sorts, Laurels common and Portugal, Roses of sorts, Arbor-vitæs, Lilacs, Climbing Plants, Box, &c.

Further particulars will be announced and Catalogues ready in due course, which may be had of the Auctioneer, 16, Friary Street, Guildford, and Woking Station.

Exhibition Plants.

TO BE SOLD by AUCTION, early in APRIL NEXT, the well-known EXHIBITION PLANTS, the property of Mr. J. F. Greswolde Williams, Henwick Grange, Worcester, who is giving up exhibiting; and the 3 well-built Exhibition Plant VANS, the property of E. Tudgey: or privately.

Seed Business Wanted.

WANTED, to PURCHASE, an established SEED BUSINESS.—Preference would be given to West of, and within 100 miles of London, in a good Market Town. Answers to

G. W. B., *Gardeners Chronicle* Office, W.C.

WANTED, a SMALL NURSERY, near London. Apply with full particulars to

E. TUDGEY, The Gardens, Henwick Grange, Worcester.

TO BE LET, on Lease, about 2 Acres of productive NURSERY LAND, with Stabling, Outbuildings, and about 13,500 feet super of Glass; also a SHOP if required. Apply to

E. A. H., Queen Anne's Villas, Waltham Cross, N.

TO LET, an Old-established NURSERY and MARKET GARDEN in Kent; 25 Acres, well stocked; long Lease, low Rental. Coming-in about £800, or would TAKE a PARTNER to fill the place of one retiring to go abroad.

Apply personally, or by letter, to Mr. R. WOOD, 326, East Street, Old Kent Road, London, S.E.

To Nurserymen and Florists.

TO LET, near the Kent Road, a Large GARDEN, with several first-class Hothouses, for Forcing, containing many thousand feet of Glass, and fitted with every Modern Improvement.

For further particulars apply, 68, Nutcroft Road, Naylor Road, Peckham, S.E.

To Market Gardeners, Florists, and Fruiterers.

TO LET, by Tender, the GARDENS of a mansion at present unoccupied, situated at Sunbury-on-Thames, including range of Greenhouses and Forcing-Houses; an extensive Vinery, Wall Fruit, Orchard, and Kitchen Garden.

Apply to WALTER SNELL, Surveyor, 2, Southampton Street, Bloomsbury, W.C.

DESIGNS Made and Works EXECUTED

In the Arrangement of TERRACES, CONSERVATORIES, FLORAL CORRIDORS, ROOF GARDENS on uninteresting Lead Flats, &c., formed with substantial PULHAMITE KERB for the FLOWER BORDERS, JARDINIERE, &c., in TERRA-COTTA or ARTIFICIAL STONE of various colours.

BALUSTRADES, VASES, PEDESTALS, FIGURES, FOUNTAINS, CONSERVATORY and WINDOW BOXES in great variety, suitable for any style of House.

Various Specimens of KERB or EDGING, PULHAMITE PERMANENT GRAVEL PATHING for GARDEN, TERRACE and other WALKS and FLOORS, to be seen at the Horticultural Company's, Regent Street, W.; at The Orchard, Philip Lane, Tottenham; and at our Brixton Depot there is the greatest variety of the above to be seen. DURABILITY GUARANTEED.

A Photographic Book of over 200 Illustrations, with Sizes and Prices, sent for Inspection on receipt of twelve stamps.

Address—

PULHAM & SON, The Works, Broxbourne.

(Established in 1837.)

FUNKIAS, for Forcing, in three brilliant sorts, with variegated leaves, specially adapted for groups, even in very shaded situations. Suitable for Bouquets, Jardinières, and Etagères, for winter. Price £2 per 100; three sorts of ten each, 9s.; six sorts on hand.

Also APPLE and PEAR WILDLINGS, CRATÆGUS OXYACANTHA.—Large stock, and recommended by

ALBERT MILLARD, Florist, Schlenther's Gärtnerei, Tilsit, East Prussia.

STRAWBERRY PLANTS, HERBACEOUS CALCEOLARIAS, CUTTINGS of SOFT-WOODED PLANTS.

STRAWBERRY PLANTS in 50 of the finest varieties, true to name. Catalogues post-free. Purchaser's selection, per 100, from ground, 3s. 6d.; in 5-in pots, 25s.; in 2½-in. pots, 12s. 6d. Our selection, per 100, from ground, 2s. 6d.; in 5-in. pots, 20s.; in 2½ in pots, 10s. 500 plants, our selection, in 20 good varieties, for 21s. 100 plants, our selection, in 40 good varieties, for 5s.

HERBACEOUS CALCEOLARIAS, of a beautiful strain, dwarf, and in good variety of colour, strong seedlings for potting, 1s. 6d. per doz., 10s. per 100; also in 2½-in. pots, 3s. per doz., 20s. per 100.

CUTTINGS of FUCHSIAS, GERANIUMS, HELIOTROPES, LANTANAS, PHLOXES, PENTSTEMONS, SALVIAS, ABUTILONS, COLEUS, PANSIES, our selection, all named, 12 of any of above for 1s. 3d., post-free: plants of any 12 sorts for 2s. 6d.

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

HUGH LOW AND CO. have pleasure in informing their friends and the Public that their stock of WINTER and SPRING FLOWERING PLANTS is this season unusually extensive and fine in quality, and well worth the notice of intending purchasers, who are very cordially invited to an inspection of the plants, which comprise amongst other things:—

Many thousands of ERICA HYEMALIS, of various sizes.
Many thousands of ERICA MELANTHERA.
Many thousands of ERICA GRACILIS, of various sizes.
Many thousands of ERICA CANDIDISSIMA.
Many thousands of ERICA VENTRICOSA COCCINEA MINOR, and other choice varieties of ventricosa
Many thousands of ERICAS of the best varieties, including alopecuroides, colorans, cerinthoides coronata, caffra, Cavendishi, barbata major, grandinosa hybrida, hyemalis superba, perspicua nana, persoluta alba, assurgens, mammosa, rubens, ovata, &c
Many thousands of HARD-WOODED ERICAS, in numerous fine varieties.
Many thousands of CYCLAMENS.
Many thousands of GARDENIAS.
Many thousands of GENISTAS.
Many thousands of EPACRIS.
Many thousands of AZALEA INDICA in variety, of various sizes.
Many thousands of AZALEA INDICA, Fielder's white, narcissiflora, and other white-flowering varieties.
Many thousands of AZALEA AMŒNA.
Many thousands of CAMELLIAS, with flower-buds, various sizes.
Many thousands of GREVILLEA ROBUSTA.
Many thousands of SOLANUMS, well berried.
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After Three Months no discount can be allowed.

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Lilium Harrisii, true.
Very early and dwarf, pure white.

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Very early, bright scarlet.

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Bright scarlet, quite hardy.

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CHOICE FLOWER ROOTS.

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400 CROCUS, in four distinct colours
36 GLADIOLUS, best mixed
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782 Bulbs in all.

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A hardy hybrid Rhododendron, of bushy habit. Flowers deep crimson, large conical truss, so full and compact that neither rain nor wind changes its form, which is a defect with most varieties. The flowers standing erect are always conspicuous. Price of nice bushy plants, 15 to 18 inches high, 15*s.* each. Usual discount to the Trade when three are taken.

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Also Double and Single SNOWDROPS and LILIUM CANDIDUM, fine samples.
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50 Assorted Lilies
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30,000 ERICA HYEMALIS and other sorts, well set with flower.
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RETINOSPORA PLUMOSA, 6 to 9 inches..	2 6	15 0	120
,, ,, 9 to 12 inches	3 0	20 0	150
,, ,, 12 to 18 inches	7 0	50 0	..
,, ,, 18 to 24 inches	10 0	85 0	..
,, ,, 24 to 30 inches	12 0	90 0	..
,, ,, AUREA, 4 to 6 inches	3 0	18 0	150
,, ,, ,, 6 to 9 inches	5 0	35 0	250
,, ,, ,, 9 to 12 inches..	10 0	75 0	..
,, ,, ,, 12 to 18 inches	18 0	..	..
,, ,, ,, 18 to 24 inches	24 0	..	..
,, FILIFERA, 12 to 15 inches	6 0	40 0	..
,, ,, 18 to 24 inches	12 0	90 0	..
DEUTZIA GRACILIS, 9 to 12 inches ..	..	10 0	70
,, ,, 12 to 18 inches	..	12 0	..
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4*d.* per bushel : 100 for 25*s.* ; truck (loose, about 2 tons), 40*s.* ; 4-bushel bags, 4*d.* each.

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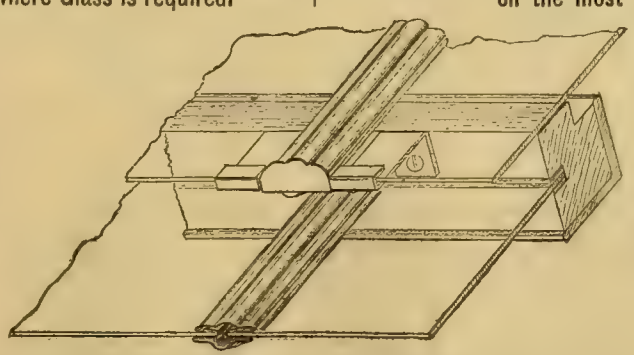
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JOSEPH S. MOYE, Esq.,

ARCHITECT TO THE "HURLINGHAM CLUB."

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"I am, Gentlemen,
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"JOSEPH S. MOYE.
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THE

GARDENERS' CHRONICLE

FOR

SATURDAY NEXT, SEPTEMBER 16,

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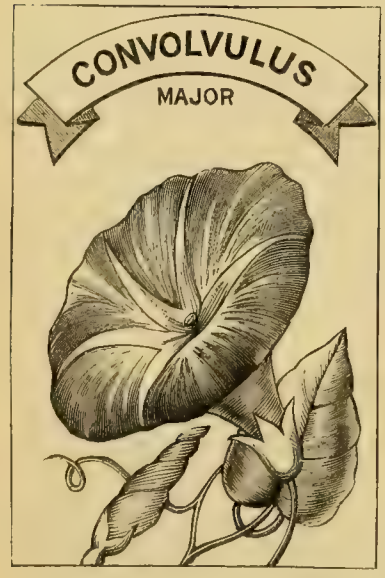
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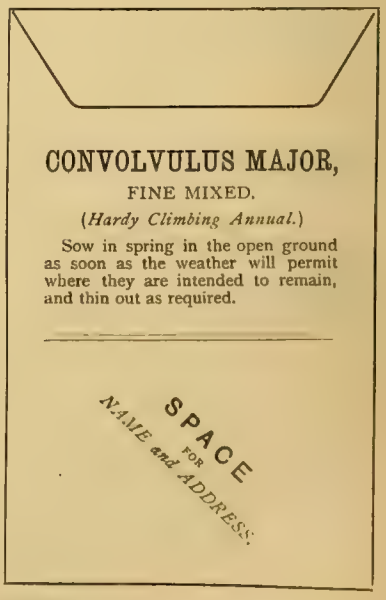
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1. PRIMULA
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11. SWEET WILLIAM
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13. VERBENA.
14. PERILLA
15. NEMOPHILA INSIGNIS
16. VIRGINIAN STOCK.
17. BALSAM
18. SWEET PEA.
19. PETUNIA
20. ANTIRRHINUM
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30. NASTURTIUM
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32. SUNFLOWER
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Carriage Pre-paid.

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Have the pleasure to announce to their numerous Patrons and the Public generally, that their

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100 choicest	selected bulbs	in 100 varieties	..	80*s.* and 100*s.*	*od.*
100 choice	,, ,,	in 100 ,,	..	60*s.* and 75*s.*	*od.*
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Selected Strong Flowering Bulbs, per 100, 24*s.*; per dozen, 3*s.* 6*d.*

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100 in 12 choice named varieties	.. ..	25	0
50 in 12 ,, ,, ,,	.. ..	12	6
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12 in 4 ,, ,, ,,	.. .. 2*s.* 6*d.* and	3	6

EARLY SINGLE TULIPS.

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100 in 20 choice named varieties	.. ..	18	0
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25 in 5 ,, ,, ,,	.. ..	8	0
12 in 4 ,, ,, ,,	.. .. 2*s* and	3	6

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CHOICE NAMED SEEDLING CROCUSES.

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1000 in 20 choice named varieties	.. ..	30	0
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250 in 10 ,, ,, ,,	.. ..	8	0
100 in 10 ,, ,, ,,	.. ..	3	6

SNOWDROPS.

Double or Single, selected, large bulbs, Per 1000, 21*s.*; per 100, 2*s.* 6*d.*

For other Flowering Bulbs and Roots see our AUTUMN CATALOGUE.

DICKSON & ROBINSON,

SEED MERCHANTS and BULB IMPORTERS,

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BEAUTIFUL FLOWERS AT CHRISTMAS

May be secured by planting

SUTTONS'

FORCING BULBS

SPECIAL COLLECTIONS OF BULBS

Most suited for Late Summer and Early Autumn Potting,

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EARLY ROMAN HYACINTHS, DOUBLE ROMAN NARCISSUS, PAPER WHITE NARCISSUS, SNOWDROPS, CROCUS, JONQUILS, DUC VAN THOL TULIPS, SCILLAS, &c., &c., at

42s., 31s. 6d., 21s. and 10s. 6d.

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ROMAN HYACINTHS

(*FOR FORCING*).

		s.	*d.*
Single White	per dozen	3	6
,, ,, ...	per 100	25	0

EARLY NARCISSUS

(*FOR FORCING*).

		s.	*d.*
Double Roman ..	per dozen 2*s.* 6*d.*; per 100	17	6
Paper White ..	,, 2*s.* 0*d.*; ,,	14	0

SUTTONS' HYACINTHS

(*FOR FORCING*).

		s.	*d.*
50 Hyacinths, in 25 named varieties	.. ..	42	0
25 ,, 25 ,, ,,	.. ..	22	6
12 ,, 12 ,, ,,	.. ..	12	0

EARLY TULIPS, Single & Double

(*FOR FORCING*).

		s.	*d.*
100 Tulips, in 10 varieties	.. ..	15	0
50 ,, 10 ,,	.. ..	8	0
25 ,, 5 ,,	.. ..	4	0
12 ,, 4 ,,	.. ..	2	0

For full particulars of

SUTTONS' Choice FLOWER ROOTS

SEE

SUTTONS' AUTUMN CATALOGUE,

Gratis and post-free on application,

Sutton & Sons

THE QUEEN'S SEEDSMEN,

and by Special Warrant to

H.R.H. THE PRINCE OF WALES,

READING, BERKS.



THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 9, 1882.

THE GENUS GLADIOLUS.

OF the genus Gladiolus about ninety species are now known to exist. Of these about a dozen inhabit Europe, Western Asia, and Northern Africa, twenty the high mountains of Tropical Africa and Madagascar, and the other fifty or sixty various parts of Cape Colony, more especially the southern and eastern provinces.

The European and Oriental species are all closely allied to one another in general habit, but show two types of structure in the seeds. The handsomest are G. segetum (*Bot. Mag.*, t. 719), which is widely spread in cultivated land through the Mediterranean region and southern half of Europe, and has globose seeds; and G. byzantinus (*Bot. Mag.*, t. 874), which has flat discoid seeds. A third species, G. illyricus, of more slender habit and with narrower leaves and smaller flowers, is found wild in the New Forest and the Isle of Wight; and a fourth, G. communis (*Bot. Mag.*, t. 86 and 1575), is widely distributed through the southern half of Europe.

The African Gladioli fall into three subgenera—Gladiolus proper, Hebea, and Schweiggera.

Schweiggera is marked by its numerous small, tightly packed flowers, of which all the six segments have a very small blade and a very long claw, and by its rigid brown spathe-valves. There are only two species, both of which are common in the vicinity of Cape Town, and only worth growing in a botanical garden.

Hebea is distinguished by the segments of the perianth, especially the three lower ones, being furnished with a very distinct claw. Of the nine species only one is showy enough to be of any value for horticultural purposes, and it is rarely seen in cultivation. This is G. alatus (*Bot. Mag.*, t. 586), marked by its dwarf habit, short divaricating sword-shaped leaves, and few large bright red flowers, with orbicular divisions, narrowed suddenly to a very distinct claw. A robust broad-leaved variety of the same species, called G. namaquensis, is figured in the *Botanical Magazine*, t. 592, and substantially the same variety, under the name of G. equitans, is figured by Andrews in the *Botanical Repository*, tab. 122. A new species of this section was discovered lately by Mr. Joseph Thomson, in his exploration of the mountains round Lake Nyassa.

Of the true Gladioli we have first a series of species with narrow, often convolute leaves, and oblong acute perianth-segments, of which G. tristis is the type. The twelve species of this group are none of them much cultivated. The type, G. tristis, which is figured in the *Botanical Magazine*, t. 272, has very narrow leaves, half-orbicular in transverse section, and three or four dull yellowish-white flowers with oblong acute segments, in a very lax spike. Thunberg's G. grandis is hardly more than a variety of G. tristis, with a more robust habit and larger flowers. G. recurvus (*Bot. Mag.*, t. 578) (often called maculatus), has yellowish-white flowers, with copious small

purplish-black dots. G. gracilis of Jacquin (*Bot. Mag.*, t. 562) is like a small tristis of slender habit with pale lilac-blue flowers. G. angustus has narrow flat leaves, and a few large pure white flowers with a very distinct spade-shaped blotch on the three lower segments. G. cuspidatus (*Bot. Mag.*, t. 582) differs mainly from the last by having all the perianth segments lengthened out into a long point.

Next we come to a series of species marked by narrow leaves in combination with obovate obtuse perianth segments. The principal Cape species of this set are G. brevifolius and G. villosus, in both of which the flowers are small and few in number. There are several allied small-flowered Angolan kinds, and three or four more showy ones from Central Africa, and a very fine one from Madagascar (G. Garnieri of Platt, G. ignescens of Bojer), which are not yet introduced into cultivation.

Last of all we come to the series to which all the large handsome cultivated kinds belong, and which is marked by its robust habit, ensiform leaves and obovate much imbricated perianth segments. There are nearly thirty species of this series now known, and they fall into four groups, as follows :—

First the Parviflori, distinguished by their comparatively small flowers. Of these the most valuable for decorative purposes are two species of comparatively recent discovery—G. purpureo-auratus, from Natal, represented in the centre of the large coloured plate issued with the present number, with yellow flowers and much-imbricated orbicular segments, the two lower of the inner three marked with a large very distinct spade-shaped reddish-brown blotch in the centre ; and G. Papilio (*Bot. Mag.*, t. 5565), shown on the left hand side of the plate, from Natal and the province of Colesberg, with pale lilac flowers, with the lower segments marked in the centre with a large reddish blotch with a yellow border. Three other species of this group have been figured in the *Botanical Magazine*—G. ochroleucus, tab. 291 ; G. Eckloni, tab. 6335 ; and G. sericeo-villosus, tab. 5427 : but these are not nearly such fine plants as the two our artist has selected, and they are all three rare in cultivation.

Of the Blandi, marked by their large funnel-shaped flowers, varying in colour from pure white to rose-red, the oldest and best-known species is G. blandus (*Bot. Mag.*, t. 625), of which there are a great many varieties, one of the finest of which is shown in the centre of our plate. G. Mortonianus of Herbert (*Bot. Mag.*, t. 3680) is closely allied to G. blandus, and so also is Herbert's G. oppositiflorus, which differs from it mainly by its more robust habit and more numerous, more closely packed and more spreading flowers. It is said to be a native of Madagascar, but this should be verified, as it has not been in any of the numerous parcels we have lately received from the interior of that island. G. undulatus, Milleri, and floribundus are all three near G. blandus, but the perianth-segments are more obtuse. G. hirsutus of Jacquin is a well marked species of this group, distinguished by its rose-red flowers and strongly ribbed, hairy leaves. A new species of this group, G. brachyandrus, with bright pale scarlet flowers and very short stamens, has lately been figured in the *Botanical Magazine* (tab. 6463) from bulbs sent from the highlands of the Zambesi country by Mr. John Buchanan, and raised in the Edinburgh Botanic Garden by Mr. Sadler.

Next we come to the Cardinales, which have the same open, funnel-shaped perianth as in the Blandi, but in which the colour is a bright deep crimson or scarlet. Only three species are known, and these all come from the Cape. The type, G. cardinalis, figured *Bot. Mag.*, t. 135, with its funnel-shaped flowers, acute bright red segments, the three lower reflexing, and running off to white towards the claw, has been known for nearly a century, and has been probably the most widely cultivated and best known of all the Gladioli. The two other species are G. splendens, which figures conspicuously on the right-hand side of our large coloured plate—a very fine plant, recently introduced from the mountains of the province of George, with large imbricated segments of the brightest crimson, broader and more obtuse than in the old familiar species ; and G. cruentus (*Bot. Mag.*, t. 5810)—the conspicuous bright-coloured species in front of Papilio on the left-hand side of the plate—a Natal plant, with a widely-expanding limb, and bright scarlet, oblong-obtuse, much imbricated segments, the three lower as obtuse as the three upper, but spotted with red on a pure white ground in the lower half.

Last of all we have the Dracocephali, or Snake's-head Gladioli, in which the upper segment of the perianth stands forward from the others even when the flower is fully expanded, like the head of a viper when it is going to spring. Of this group the old familiar type is G. psittacinus, or, as it is often called, G. natalensis, which is figured *Bot. Mag.*, t. 3032, and was introduced from Natal half a century ago. G. Cooperi (*Bot. Mag.*, t. 6202), which appears at the back of our plate, is very closely allied to psittacinus, differing mainly in its more acute perianth segments. The grand novelty of this group of recent introduction is Gladiolus Saundersii (*Bot. Mag.*, t. 5873), another discovery of Mr. Thomas Cooper's—the prominent bright-coloured species on the right-hand side of our plate—which perhaps more than any other plant will be likely to keep up the memory of the great horticulturist we have lost so lately, from generation to generation of bulb lovers. The fourth Cape species of this group, G. dracocephalus (*Bot. Mag.*, t. 5884), is very distinct, but not of much horticultural value. It has large flowers of a decided Snake's-head type, with fine crowded purplish lines on a greenish ground. There is another Natal Snake's-head species, G. aurantiacus, with large bright yellow flowers, which has not yet been introduced ; a fifth, G. decoratus, in Zambesiland ; two in Angola, and a very fine one that has its headquarters in the mountains of Abyssinia. None of these species have yet been brought into cultivation.

Of the innumerable hybrids which have been raised in gardens, many of which are better known in trade lists than the original wild types, such as G. gandavensis, brenchleyensis, Colvillei, ramosus, and Lemoinei, I shall not say anything now. *J. G. Baker.*

THE GLADIOLUS AND ITS CULTURE.

WHILE recently admiring a very fine group of Gladiolus spikes at an exhibition, a noted horticulturist remarked to me "The spikes are very pretty indeed, but the Gladiolus is the most unsatisfactory of garden flowers to cultivate," and I felt very much inclined to endorse his statement. We have grown the hybrids of G. gandavensis for many years, but during the last few years our efforts to obtain good results have not been successful ; still, as we learn as much or even more from our failures as we do from our successes, the record of our experience may be useful to others. Those who intend to make a start in the cultivation of Gladiolus must begin by purchasing the best varieties that can be obtained ; if a dozen should be too costly then I would have six, and it would be better to have six really good ones than fifty of inferior quality. The main object in starting with the best varieties is to obtain a good strain to save seeds from, for to be very successful in the culture of this or any other florists' flowers one must raise seedlings. One of the great charms of floriculture is having seedlings to anticipate at blooming time. I do not know any flower that is easier to hybridise than the Gladiolus or that produces seeds more freely, at least in the South of England.

I began to hybridise and save seeds as soon as the first named varieties flowered in the garden, and enough seeds were obtained to produce over 200 plants ; the seeds were sown in April, and nearly the whole of the plants flowered the following year. Amongst them were some very fine varieties ; and one of them, which was greatly admired by the late Mr. John Standish, was named in his honour, and received the award of a First-class Certificate from the Royal Horticultural Society. The next year I had a larger batch of seedlings, and three or four of them received First-class Certificates. The great difficulty in the way of permanent success in the raising of these seedlings is the provoking manner in which they degenerate after the second or third year. The second year the spikes do not come so strong as they do in the first, nor so strong the third as they do in the second, and so unsatisfactory were they that not one of my seedlings were ever sent out. The best named varieties degenerate in the same manner as the seedlings. Nearly all the growers of Gladioli with whom I am acquainted complain that they cannot get good spikes from their bulbs after growing them a year. Still, it is only fair to say that two noted growers at least have stated that the Gladiolus does not degenerate with them, viz., Messrs. Kelway, of Langport, and the Rev. H. H. D'Ombrain. Under these circumstances I have often wondered what has become of all the fine seedlings exhibited by the Messrs. Kelway, and certificated by the Floral Committee, for with a very few exceptions I have never seen them in public after the first year. I cannot keep Mr. Kelway's seedlings in health any more than I can my own or the French raised varieties.

The system of cultivation which I pursue may be summed up in a few sentences. Trench the ground at least 2 feet deep, if the nature of the soil admits of it. If the soil is very light and sandy, work in a liberal dressing of cow-manure ; on heavy soils I would use stable-manure. The trenching ought to be done early in the autumn, so that the soil is exposed to the influence of sun-heat as well as of winter's frost. The surface should be lightly forked over during the winter and spring months. The time for planting is from March 1 to the end of April, or a few bulbs may be planted even later. The method of planting is to draw a deep drill as if it was intended to sow Peas. Place the bulbs in the bottom of the drill with a little clean sand under and over them, and fill up the drill with good loam free from manure of any kind. The distance apart should be from 9 to 15 inches between each bulb. As soon as the plants appear above-ground, keep the hoe at work to keep them clear of weeds. As soon as dry weather sets in mulch the ground amongst the plants, and water freely. Some persons use guano or other manure water, but I have never done so. If the spikes are intended to be cut for exhibition, they must be protected from rain and sunshine in some way—either by a canvas tent being stretched over them, or, as I used to do when I was an exhibitor, place a few sticks round two or three plants, inserting them firmly in the ground ; then cause them to meet at the top, and pin a sheet or two of newspaper over them. If they are not shaded the lower flowers fade before the top ones open. A good exhibition spike should have ten or eleven flowers open on it at one time. Lifting and storing the corms is done in October, sometimes early, at other times late in the month ; it is best to take them up in dry weather. Cut the stems from the corms as they are lifted, but take care not to shake off the loose earth and small bulbs, which vary in size from that of shot to large Peas. Put each variety into a pot or box and place them in an airy position until they are dry, when the small bulbs and earth must be removed from the corms—the bulblets to be wrapped in paper with a little sand, the large corms without any sand.

Hybridising for seed is easily done ; as soon as the petals of the fresh flowers on a spike open, remove the anthers before the pollen cases burst. In about twelve hours the flowers will open, when the stigmatic portion of the flower may be touched with the pollen from a suitable variety. The seeds should be sown in pots if the quantity is not large, and if the pots are plunged in a hotbed the seeds will vegetate in two weeks. When the plants are all through the ground admit air rather freely, and as the season advances the lights should be removed entirely ; by the end of September they will be ready to be gently dried off. If they receive water after the leaves decay they start into growth immediately. Shake the roots free from soil as soon as the leaves change colour or decay, and wrap each variety in paper with a portion of dry soil. The Gladiolus, in its many species and varieties, is sufficiently hardy to stand out-of-doors during the winter, and clumps will grow and flower in the same place for more than twenty years, as I have seen in my own experience. *J. Douglas, Loxford, Ilford.*

GRAPES AT ST. FAGAN'S.

ST. FAGAN'S CASTLE is the Welsh seat of Lord Windsor. It is situated about six miles westward of the thriving town of Cardiff, and during the last ten years the garden there has been regarded as one of the best-managed in South Wales. Until the spring of last year the vineries were not numerous, but at that time a new range was erected. This is a well-constructed span-roofed structure, 64 feet long and 22 feet wide. It is divided in the centre, one end being given up to Muscats, and the other chiefly to Lady Downe's, Black Alicante, and Alnwick Seedling. In making room for the border, space had to be cut out of the limestone rock to the depth of 3 feet. This forms the natural drainage and the bed of the border, which is 3 feet deep, and composed of 500 cartloads of good loam taken from the surface of old pasture. Two tons of half-inch bones were mixed with this, but no other manure whatever was added, or given in any way.

The house and border were completed twelve months ago last April, and then the Vines—ordinary planting canes—were planted inside, between the walls and the hot-water pipes, and at about 5 feet apart. Only one rod was taken from each root, and the growth made in the summer and autumn of 1881 was most satisfactory. The top of the house was soon gained, and the canes became as thick as ordinary walking-sticks. Although excessively strong, they ripened thoroughly well, and at pruning-time last winter only one-quarter of the growth was cut away from the point of each. This left the rods three-parts up the house, and they have done wonders this season.

At pruning time the wood was found to be so short-jointed, and the buds so close to each other, that half of them were not wanted to supply the side-shoots; but, had the ordinary course of practice been followed, all would have been allowed to remain until it was seen which were going to start into growth and which would remain dormant. But Mr. Crossling had more confidence in them than is generally the case, and every bud was cut out at pruning time excepting those left to form the side-shoots and bear the crop; and in doing this their strength was not over-estimated, as every bud allowed to remain started freely into growth at the desired time, and they have produced strong, short-jointed, well-developed branches, which are carrying leaves the equal of which are very seldom seen.

The strength and uniformity of development of both the wood and leaves is most remarkable, and, considering their age, the crop of fruit they are bearing is still more remarkable. The Muscats of Alexandria are carrying four and five bunches each, and none of them can be less than 4 lb., and many of them over 5 lb., in weight. The bunches are well formed, the berries compactly arranged, and above the average in size; in fact, the bunches are perfect models; and although they are only about half ripe now, they give unmistakable indication of gaining the highest state of maturity. Madresfield Court, in the Muscat-house, is equally satisfactory.

In the other division the Black Alicantes are exceedingly fine, the bunches being about 4 lb. each, well formed, and spotless in the rich colour and bloom which is fast creeping over the handsome berries. The Lady Downe's are almost as large in the bunch as the Alicantes, and the berries might be compared to those of Gros Colmar. Alnwick Seedling is doing well here. It has grown as well as any of them, and its large handsome clusters of fruit make it a formidable rival to the Alicante; in fact, as seen growing side by side, I think it is the best of the two, as the fruit of the Alnwick Seedling is remarkably rich in colour and firm in the flesh, and without that undue quantity of seeds which detracts from the perfection of the Alicante.

Not an insect or blotch is to be found on one of the leaves in these vineries. Everything bears the stamp of perfection. From time to time we have seen many vineries of the same age, and of all ages, but to this we give the palm. In eighteen months they have been brought to a condition which years are wanted to attain as a rule, and few indeed reach their state at all; and certainly they cannot be characterised as a mere flash in the pan; every inch of their appearance disproves this, and the fact that the borders were made without any rich manure is a guarantee that their fine growth is not the result of gluttonous or temporary feeding. *Discriminator.*

BODORGAN.

THE situation of Bodorgan is not altogether what one would choose for a residence—wide tracts of low moor or bog land, monotonous and dreary, ditches and creeks which give the impression that high tide never can visit them any more—if ever it did, architectural remains not attractive except to the specialist, cottages of the peasantry not picturesque, the language of the people a bar to conversation. What would the benighted Saxon wayfarer do, for instance, who wished to find his way to a place with sixteen syllables and fifty-three letters to its name, all more or less unpronounceable by him in the detail, and wholly so in the aggregate?*

For all this it is clear the place would have great attractions for the naturalist and the sportsman, while the mere tourist would be consoled for the dreary flatness of Anglesea by the distant vision of the mountain peaks of Carnarvonshire. In the midst of this scenery, Bodorgan, the estate of Sir G. E. Meyrick, lies as an oasis. Some former proprietor has provided rest and beauty for the eye, as well as shelter from the fierce blasts which sweep over the land from the sea, by judicious plantations of Oak, Sycamores and Coniferous trees, within whose protection noble Conifers and shrubs, which remind us of the Isle of Wight or of Devonshire rather than of North Wales, rear their lofty heads or startle us by their vigorous development. Winter here is evidently not the same winter as is experienced, as a rule, further south. Frost is hardly dreaded, for it is never severe or of long duration, but fierce blasts from the sea leave their traces only too plainly. Where, however, a little shelter can be given, there the Conifers luxuriate, Cupressus macrocarpa is at home, Pinus insignis forms grand trees—one specimen we measured has a trunk 6 feet in girth at breast-height. Pinus Jeffreyi, Picea Menziesii, Thuiopsis borealis, and Lawson's Cypress form fine specimens. Araucarias abound, and but for the cruel winds would have made noble specimens. One is about 43 feet in height, with a girth of trunk of 6 feet at breast-height. Speaking of Araucarias, Mr. Ellam pointed out to us a singular instance of the formation of a fresh leader on the trunk of a fine Araucaria, the top of which had been broken off by the wind. There is, of course, nothing very unusual in the formation of a new leader by an Araucaria, the interesting feature here was the length of time that must have elapsed after the injury before the new leader was formed. Put a short stake into the middle of a big Globe Mangel, and stick that on the end of a thick Araucaria stem, and you will have an idea of the appearance presented by this specimen.

Among the most noteworthy shrubs may be mentioned a Myrtle (against a wall it is true), 13 by 20 feet; while Rhododendrons, Hollies, especially Hodgin's variety, Escallonia macrantha, Veronica Traversi, Hydrangea paniculata, Viburnum plicatum, Choisya ternata, and the Chusan Palm, all flourish.

Two or three big bushes of Osmanthus Aquifolium, 15 or more feet through, are the biggest of the kind we ever set eyes on, and they are the more interesting as they afford conclusive proof of a fact (established, indeed, by herbarium specimens), of the identity of the two species as illustrated by us in these columns in 1877, vol. vii., p. 239. The variegated variety is naturally less robust, but still forms a fine bush. But if our attention was attracted by the shrubs, what was our surprise to see one of the lawns carpeted with Selaginella Kraussiana. The plant has quite established itself, and so far from disappearing is spreading—a fact which offers great temptations to the experimenter. It must, however, be borne in mind that although the winter temperature is mild, the summer sun is only very moderately intense.

The houses under Mr. Ellam's charge are in good condition, the crops regular and uniform, and the quality good. In the Peach case Mr. Ellam finds Stirling Castle preferable to Royal George, inasmuch as it is not subject to mildew. Rivers' Early Orange Nectarine, and, of course, Lord Napier, are well thought of here. In one of the Grape-houses, owing to circumstances, the Vines are grown in what may be termed a tank-border against a back wall, the roots being in a kind of box 2 feet in width by 3 feet in depth. Abundance of water and manure being supplied, the Vines furnish as good crops in proportion as those in which the roots have more root-range.

The original glass fruit wall erected by M'Ewen is still in use here, but it does not find favour with Mr. Ellam, being so cold and draughty that the trees do not ripen their wood in it even so well as they do out-of-doors. It occurred to us, however, that if the plan of ventilation were altered, and especially if more piping were put in, these constructions might still be made very serviceable in certain situations, though they would never be so useful as a well constructed house. Like most other gardeners now-a-days, Mr. Ellam has to supply almost unlimited cut flowers and Ferns for bouquet and other decorative work. Adiantums planted out under the stages, grown in troughs under the lights at their junction with the wall, and in any similar place, are proved to answer better than when grown in pots. A very large quantity of the variegated Panicum is grown under like conditions. A special fernery, in which the plants are grown in the natural style, forms one of the features, and a very beautiful one, of the gardens at Bodorgan. Altogether the wanderer in Anglesea of gardening proclivities will find a great deal to interest and instruct him in the delightful gardens of Bodorgan, over which Mr. Ellam presides with so much intelligence and ability. *The Rambler.*

* The name of the parish in question is given in the guide-books as—Llanfairpwllgwyngyllgogerchwyrndrobwlltysiliogogogoch (*sic.*) It is fair, however, to say that on the maps the word ends at the expiration of the second order of *l*'s, and that in conversation the word is shortened to Llanfair P.G.

THE WHEAT MILDEW.

CAN WHEAT MILDEW PROPAGATE ITSELF APART FROM THE BARBERRY?—If any botanist or agriculturist residing in Norfolk or in the Fen district were asked whether Wheat ever became mildewed without the presence of the Barberry he would unhesitatingly answer in the affirmative, for the simple reason that we have the Wheat mildewed to a greater or less extent every year, while the Barberry is a very rare shrub with us. This is one of the strongest arguments used by those who oppose the theory of the heteroecism of Puccinia graminis, but apart from this consideration it is of importance practically. Nothing seems more natural than to suppose the promycelium spores of Puccinia graminis should penetrate the leaf or stem of the Wheat plant through the epidermis by their germ-tubes, and so give rise to the Uredo. But De Bary* distinctly says:—"The germination of the spores formed by the promycelium gave me previously the unexpected result that the germ-tubes do not bore through the epidermis of the host plant. In various parts of Triticum repens, T. vulgaris, and Avena sativa they remained as if they had been sown upon glass. The tubes turned irregularly in the most different directions, and died off quickly; the grass plant on which they were sown remaining intact." It is obvious that De Bary is clearly decided in his own mind that these promycelium spores do not penetrate the epidermis not only of Wheat, but also of Twitch and Oat plants. In my former paper on this subject† two experiments are mentioned, one of which was unsuccessful; but in the other, performed on April 17, 1882, five Wheat plants were infected with freely germinating promycelium spores of P. graminis; on April 24 the plants were uncovered, and on May 7 the true Uredo graminis appeared upon one plant. From the fact of these plants being exposed to accidental infection from the atmosphere from April 24 to May 7 a source of possible error is admitted, which considerably dimishes the value of this culture, for although this experiment was performed at a time of year when the spores of Uredo graminis and Æcidium berberidis were exceedingly unlikely to be blowing about in the atmosphere, yet my last year's experience in Uredine culture impressed me very strongly with the extreme care necessary to exclude error from the entrance of foreign spores. Still, it must be remembered that the central plants were growing all the time this experiment was going on in the open air in the same garden, and yet showed no traces of the fungus. This experiment was repeated later on in a more careful manner. On June 29 four flower pots were filled with earth, and had Wheat planted in them. They were at once placed under two bell-glasses. Next day some pieces of grass with abundance of last year's Puccinia graminis on them were laid upon two of the flower pots under one of the bell-glasses. The P. graminis had not at that

* De Bary, *Neue Untersuchungen uber Uredineen*, p. 24—25.

† Plowright, *Gardeners' Chronicle*, August 19, 1882, p. 233.

time germinated; it had been for some time in my study, and previously to being employed in this experiment was soaked for about a week in pure water. The pots were watered and examined from time to time, and on July 28 the Wheat growing in the pots on which the grass stems were laid had true Uredo graminis upon it. The other Wheat plants remained free from the fungus up to the end of August. The bell-glasses were thoroughly cleansed before being used, by being washed inside and out with a strong solution of cupric sulphate. The earth used was purposely taken from a few inches below the surface so as to be free from stray Uredo spores, and the flower-pots were new ones. The plants were uncovered for watering three or, at the most, four times, and then only for a few seconds. The grass on which the P. graminis was, was cut into short pieces, and laid flat upon the earth, so that as soon as the young Wheat plants appeared above the surface they came into direct contact with it. Some light will also be thrown upon this subject by the investigation of the other heterœcismal Puccinia. P. rubigo vera has this year been extremely abundant; hardly a specimen of Holchus lanatus exists in this neighbourhood without harbouring it. But the Æcidium which occurs on various Boraginaceæ I have never been able to find. This Puccinia recurs year after year on the same plants of Holchus, with no Boraginaceous plant in the vicinity. Again, only yesterday I walked over some pasture land not very long reclaimed from the sea on which Puccinia coronata in both the Uredo and Teleutospore state occurred in the greatest profusion; and to my certain knowledge there is no shrub of either Rhamnus frangula nor cathartica within 4 miles. All this points to but one conclusion, namely, that the heterœcismal Pucciniæ can propagate themselves without the intervention of their Æcidia.

The heterœcismal Pucciniæ at present known are all found either upon grasses or carices. In this county they are seven in number, namely, P. graminis, with its Æcidium on Barberry; P. rubigo vera, with its Æcidium on Boraginaceæ; P. coronata, with its Æcidium on Rhamnus frangula and cathartica; P. Moliniæ, with its Æcidium on Orchis latifolia, &c.; P. poarum, with its Æcidium on Tussilago farfara; P. caricis, with its Æcidium on Urtica dioica; P. sylvatica, with its Æcidium on Taraxacum officinale. As the Æcidium state is known to be the product of the promycelium spores, one is led to consider whether there be anything in the structure of the grasses and carices inimical to the entrance of the germ-tubes of these spores. In the passage already quoted from De Bary he speaks of the germ-tubes of the promycelium spores not boring through the epidermis, and suggestively adds that "they remained as if they had been sown upon glass." Here I believe lies the explanation, these germ tubes do not bore through the epidermis because they cannot. The amount of silica in the Graminæ is well known, and has been spoken of as "Nature's waterproof mantle;" it may with equal truth be said to be "Nature's spore-proof mantle." The germ-tubes of the promycelium spores, it will be remembered, are very diminutive structures compared to most of the Uredo and Æcidium spores. They are not long enough to travel over the surface of the blade and search for the stomata as those of the latter spore-forms do. The last-named germ-tubes do veritably search for the stomata. The main tube almost always travels across the blade at right angles to its long axis, sending off here and there short rectangular branches when it passes over the junction of two cells, as is shown in figures in my previous paper.* Of course the minute germ-tube of the promycelium spores is quite inadequate to do this. There is no reason, however, why these germ-tubes should not enter any part of the Wheat plant that is not armour-plated. In the two experiments just mentioned, in which Wheat plants grown under glass were so placed that their plumules came in contact with the Teleutospores of P. graminis as soon as they came above-ground, became infected with the fungus, while the central plant remained healthy. That this is by no means an impossible suggestion is shown by the analogous case of Cystopus candidus, in which De Bary found the plants became infected with the fungus through the entrance of the zoospore germ-tubes into the cotyledons. But we are not confined to the plumule as the only vulnerable point; the rootlets may be points of entrance. Considering how constantly stray Wheat plants growing upon manure heaps are affected with mildew, this mode of entrance does not seem at all improbable under those conditions. The roots and root-stock of the Wheat plant are more likely to be in contact with the germinating Teleutospores than when the plant is grown in the ground. The fact, too, of perennial grasses being annually the hosts of various heterœcismal Pucciniæ would also seem to indicate the possibility of the plants being infected through some other channel than the plumule. These points are, however, at present only suggestions, which I hope to put to the proof next spring. *Charles B. Plowright, Kings Lynn.*

* Plowright, *l. c.*, p. 232, fig. 39, *o*; p. 236, fig 41, *i*.

FRUIT NOTES.

APPLES ON THE PARADISE STOCK.—It seems strange, and in many respects incomprehensible, why more market growers have not before now ventured to grow dwarf Apples upon the Paradise stock. A few select early culinary kinds, such as Dutch Codlin, Keswick Codlin, and Lord Suffield, would bring remunerative prices before there was anything like a glut in the market to lower the returns, and in all reasonable probability would more than pay for themselves the first season. This idea occurred to us when, upon a recent visit to Messrs. Veitch's Southfield Nursery, we saw the strongest proof that such a plan as we have suggested might be undertaken with every chance of obtaining a profitable return. The little trees on the Paradise stock are so fruitful, we were informed, that the first shoot from the bud produces plenty of blossoms, and the crops the trees are bearing this season, when fruit is so scarce everywhere, ought really to point to some departure from the beaten track in Apple growing. There seems to be no obstacle in the way, if growers will only exercise discrimination in selecting free-bearing varieties and plant in a warm soil.

FIGS.—One of the remarkable features at Penrhyn consists of a fine Brown Turkey Fig against a wall in a Fig-house. The tree occupies the whole of the back of the house, and is very prolific. For pot-work, however, Mr. Speed prefers Negro Largo.

WORCESTER PEARMAIN APPLE.—This variety is well worth cultivating, if only for its fine colour. At two seasons of the year Apple trees are very ornamental—namely, when they are in flower in May, and again in the autumn when they are in fruit. They make a good show in the shrubbery border at either season, and we know of no more striking ornament at the present season than a tree of the above variety with its highly-coloured fruits brought into contact with a variegated Aucuba or such-like plant having richly marked leaves.

LORD NAPIER NECTARINE.—Much has been written recently in praise of this variety, but however deserving it may be of such commendation for cultivation in a warm soil, or under glass, it is perhaps well to make known, that so far south as the neighbourhood of Bristol, it quite fails to ripen on a cold clayey soil, though against a brick wall with a good aspect, where other kinds of Nectarines and Peaches ripen perfectly, and are of excellent quality. *A. S.*

FIG CULTURE IN POTS.—So many have tried and failed to cultivate Figs successfully upon open walls, that by this time it might be thought that the experiences of fruit growers would have dictated a different course of action. In making this statement so frankly we are fully aware that there are certain conditions of soil and climate that are especially favourable to Fig culture out-of-doors. But this does not mend the case of those who are differently situated. What is the use of practice if, by it, we are not able to grasp and even overcome difficulties? If a garden will not grow Peaches, well, then, let us direct our attention to the cultivation of something else. So in like manner, if we cannot, after fair trial, grow Figs profitably upon open walls or planted out, should we not grow them in pots? We were forcibly reminded of this a day or two ago upon a visit to Messrs. Veitch's fruit nursery at Southfield, Fulham, where there are four good-sized houses filled with Figs in pots, most of which are bearing a good crop. Even the non-practitioner can hardly help seeing that restriction at the root is the main cause of fertility. And if he knows where to look for the proof he will find it in the numerous brown-coated rootlets, white at the points, creeping over the surface of the pots, so unlike those made in a prepared border. We once saw a splendid sample of pot Fig culture, where a bush—and a big one, too—had fruited in the same pot for twelve years with the assistance of top-dressings and copious supplies of liquid manure. We do not even want a special house to grow Figs in—they can be grown in a vinery, Peach-house, or other forcing structure, and it cannot be denied that a good dish of Figs is a great acquisition to the dessert. We have overheard people say, "Oh! we should like Figs if we only had a house to grow them in." Let it be distinctly understood that it is not always those who possess Fig-houses who enjoy the greatest quantity of ripe Figs. Nor does it even require as much skill to grow Figs as it does to grow a crop of Melons or Cucumbers at certain seasons. Out of a large collection at Messrs. Veitch's nothing approaches the new variety, Negro Largo, which obtained the honour of a First-class Certificate at South Kensington a short time ago. It is of large size and is more luscious and sugary than any other known variety. There is none of that "mealy" taste about it which is said by some to be objectionable in Figs, and we are sure that those who grow it once will continue to grow it, and that those who taste it once will desire to possess it. The best of the other sorts grown in pots are Brown Turkey, White Marseilles, Dr. Hogg, and Angélique.

FLOWERS FOR CUTTING.

AT Penrhyn Castle vast quantities of plants are grown out-of-doors for cutting, so that flower-beds in the ordinary sense of the term are there relatively few. The Castle itself is so stately that it is fitting it should rise straight from the soft green sward without terrace or flower-bed. The mountains and the sea are so close and so majestic that flower-beds would be an impertinent intrusion, and, as such, they are kept away from the mansion and placed where their presence does not jar with grander scenery. It may be noted in passing that there is not summer sun or heat enough to allow of the growth of Iresines or Alternantheras—they dwindle rather than grow. On the other hand, Mr. Speed has to meet unusual demands for cut flowers, and it is interesting to note how he manages to supply them. Without alluding to Adiantums and Eucharis, and the usual provision of this character, we cannot forbear to notice the immense quantities of such old-fashioned things as the Oak-leaved and lemon-scented Pelargoniums. They are grown in borders, in lines in the kitchen garden—anywhere, in fact, where room can be found for them, mixed with zonal and other varieties. The effect is charming, the foliage forms so pretty a contrast to the ordinary Pelargonium foliage, and is so delightfully fragrant.

In addition to these Pelargoniums, Mr. Speed makes large use of herbaceous plants. There is no pretence of a regular herbaceous border, but large quantities of select herbaceous plants are grown in borders for cutting purposes. We may enumerate at hazard some that we saw in bloom at the end of August, as it may be useful to others to know what may be done with these plants:—Gaillardias, summer flowering Chrysanthemums, single Dahlias, Erodium manescavi, Pyrethrum lacustre and P. uliginosum, Spiræa Aruncus, S. japonica, S. palmata, Anemone japonica and A. Honorine Jobert, Harpalium rigidum, Scabious, Salpiglossis, which endured last winter without injury; Eupatorium Fraseri, Eryngium amethystinum, Phloxes, Pentstemons, Geums, Potentillas, Verbena venosa, Polemoniums, &c. There is of course nothing remarkable in the plants, but the extent to which they are grown, and the purpose for which they are cultivated, are worthy of attention. With their aid there is scarcely a day in the year when cut flowers cannot be supplied from the open garden, only they must be grown in quantities. Narcissus, Scillas, and spring flowering bulbs are largely grown, as well as Hellebores, Pæonies, Aconites, Larkspurs, and scores of other things; Hydrangeas and Riccarton Fuchsias seem to grow like weeds, and the leaves of Primula japonica might truly be mistaken for Lettuces.

BEGONIA FLORIBUNDA.—This is one of the best of autumn-flowering Begonias, and is well named floribunda. The flowers are pink and white, and whether they are used for cutting, or the plants are retained for window or table decoration, they are alike useful.

New Garden Plants.

HOYA LASIANTHA, *Korth.* (fig. 57).*

THIS exceedingly handsome species, which is also known as Plocostemma lasiantha, has recently been exhibited by Messrs. Veitch at one of the Horticultural exhibitions. It is a native of Borneo, and was first imported into this country by Mr. Low, of Clapton. When well grown, and in good flowering condition, such as I once saw it under Mr. Green's care in the late Mr. Wilson Saunders' garden at Reigate, it forms one of the handsomest and most effective of the Hoyas. The specimen kindly sent me by Messrs. Veitch to make this description from, has a much more slender peduncle than is represented in the *Botanical Magazine* at t. 5081, and the hairs at the base of the corolla lobes are not yellow, as there represented, but white; nevertheless in these particulars individuals may vary. The plant is easy to cultivate and very free flowering; the fluffy appearance given to the flowers by the hairs at the base of the lobes at once distinguish this species from all other Hoyas in cultivation. The following is a description of it:—

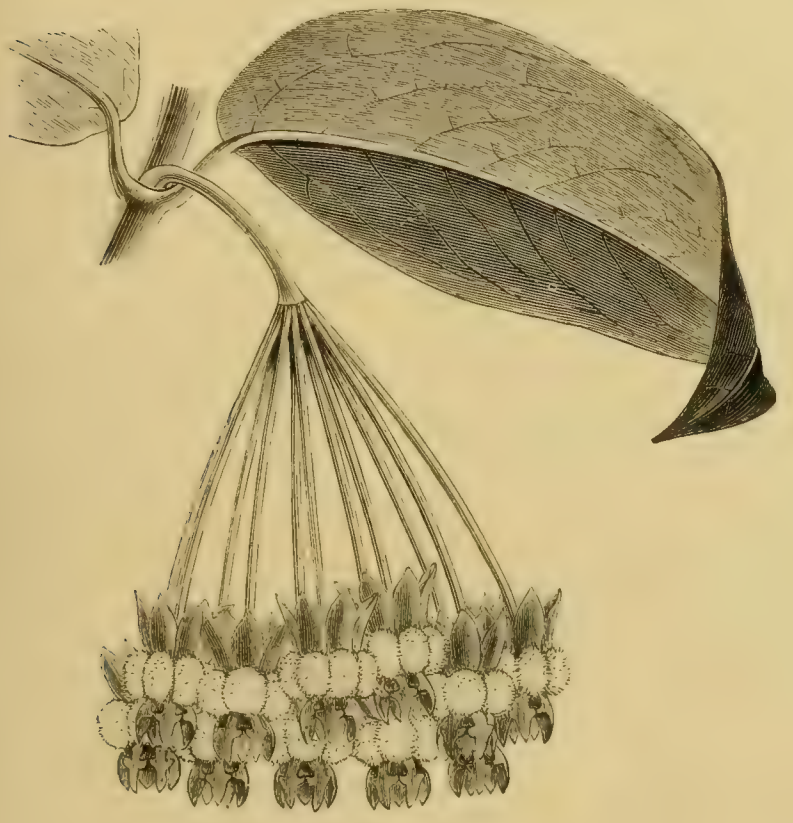


FIG. 57.—HOYA LASIANTHA.

Stems long, climbing. Leaves opposite, quite glabrous; petioles ½ inch long, terete, channelled down the face, with a tuft of hard points at the apex of the channel; lamina 5—7 inches long, 3—4 inches broad, subcoriaceous (rather thin for a Hoya), elliptic, ovate-elliptic or elliptic oblong, base rounded or sub-cordate, apex cuspidate-acuminate, bright green with some pale greyish blotches and spots above, pale green beneath. Peduncles 2—3 inches long, glabrous, 8—12 flowered. Pedicels 1½—1¾ inches long, ½ line thick, glabrous. Calyx lobes oblong obtuse, not extending beyond the sinuses of the corolla. Corolla 5-lobed almost to the base, the lobes abruptly reflexed upon the pedicel, with very revolute margins, shining orange-yellow, the basal half densely covered with long soft white hairs. Corona ochreous-yellow, shining, the lobes erect, compressed-ovoid, channelled down the back. Borneo. *N. E. Brown, Kew.*

AGLAONEMA HOOKERIANUM, *Schott.**

This species was sent to the Royal Gardens, Kew, from Cachar, by Mr. R. L. Keenan, in 1874, but did not flower until April of the present year. It is a plant of botanical interest only, having nothing but its dark green leaves to recommend it to the notice of horticulturists in general.

The following is a more complete description of the plant than has yet been published. Stem about ¾ inch thick, annulate. Petioles dark green, 5—9 inches long, vaginate for about half their length, the free part compressed-terete, with a narrow, flat face in the upper part. Lamina dark green above, a little paler beneath, spotted, 6½—10 inches long, 2¾—4½ inches broad, elliptic, elliptic-ovate, or elliptic-oblong, acuminate, base rounded, or very shortly cuneate into the petiole; primary lateral veins 7—9 on each side of the midrib, ascending, curved, and as well as the midrib impressed above, prominent beneath. Peduncles two or three from an axil, 4—5 inches long, obtusely subtrigonous, dark green. Spathe boat-shaped, expanded, 2 inches long, ¾ inch broad, apex mucronate-acute, base decurrent on the peduncle for half an inch or more, not convolute, light or dark green outside, a little paler inside, but nearly concolorous. Ovaries 9—12 in number, flask-shaped, green, style ½ line long, stigma light brown. Male part of spadix 1 inch long, anthers and pollen white. Berries oblong, ¾—1 inch long, ½ inch thick.

A native of North-Eastern India; Khasia (Churra, 4000 feet, and Terrya Ghat, 250 feet, Hooker fil. and Thomson; Griffith, 5982 !); Chittagong, 0—1000 feet (Hooker fil. and Thomson); Shapore, Cachar (Keenan). *N. E. Brown, Kew.*

* *Hoya lasiantha*, Korthals, in Miquel. *Flor. Ind. Bat.*, ii. p. 526; *Plocostemma lasiantha*, Blume, *Mus. Bot.*, 1., p. 60, f. 14; *Bot. Mag.*, t 5081.

* *A. Hookerianum*, Schott, in *Bonplandia*, 1859, vii, p. 30; *Prod. Aroid*, p. 301; Engler, in *DC. Monog. Phanerog.*, ii, p. 438.

The Herbaceous Border.

PLANTS IN FLOWER IN THE YORK NURSERIES.—At this season there are not so many of these plants flowering as in the earlier months of the year; it may therefore possibly prove interesting and useful to some of our readers if we notice a few which attracted our attention when passing through these nurseries a few days since. Amongst the herbaceous plants there were some extremely showy, especially so Tritoma uvaria glaucescens, with its immense spikes of orange-scarlet flowers, with stems from 4 to 6 feet high; in fact, we never remember seeing this plant so finely grown. There are some useful things among the Composites; Helianthus multiflorus and its varieties, simplex major and flore-pleno, are fine, growing from 4 to 6 feet high; the variety simplex major is a noble plant, flowers bright yelllow, nearly 6 inches in diameter. Stenactis speciosa, with its lilac-purple flowers, although an old plant, is not to be despised. In the Coreopsis family, too, we have some useful decorative subjects. C. auriculata is tall and somewhat lax in growth, but the flowers are large, and of a deep orange-yellow. C. præcox and C. pumila are also very nice. Rudbeckia Newmanni and R. nitida are also useful kinds for autumnal decoration. What singular beauty there is in the blossoms of Gladiolus purpureo-auratus; it grows about 3½ feet high; the flowers slightly droop; they are creamy-yellow outside, internally yellow, with two distinct and heavy bars of deep purple; it is perfectly hardy as a border plant. Statice latifolia is a charming subject for autumn display; and the same may be said of Veronica longifolia subsessilis, Pentstemon heterophyllus, P. Jaffrayanus, and P. gentianoides, in variety. Fuchsia coralina, F. gracilis, and F. Thompsoni, are now in great beauty in the open borders. Campanula Sibthorpii has small flowers, but they are borne in such profusion as to make the plant attractive. Lychnis vespertina flore-plena is very useful, continuing as it does for so many weeks in bloom; the flowers are pure white and very double. Lathyrus tuberosus, L. latifolius, Rosa rugosa, Hemerocallis Middendorfiana, Chrysanthemums, the summer-flowering section; Pyrethrum lacustre, and many others, are useful kinds for the mixed herbaceous borders, &c. Those most noticeable among the alpine flowers at this season are the following:—Hypericum decussatum an interesting kind, with numerous flowers about 1 inch in diameter; Arnebia echioides flowering nicely on the rockery; Silene Schafta, a most desirable plant at this season either as a rock or border plant; Mazus Pumilio, with its Pinguicula-like flowers, is both interesting and pretty; and Campanula hederacea, a delightful little subject for damp, mossy positions. Amongst the Primulas we noticed two kinds in flower, P. capitata and P. Munroi. The pretty little trailing Linnæa borealis, with its miniature Honeysuckle-like flowers, is here in sheets, and is charming. There are three species of the Grass of Parnassus finely in bloom—P. palustris, P. fimbriatus, and P. asarifolia; the latter being by far the largest and finest of the genus. A few of the lingering blossoms on the different kinds of Cistus have quite a cheerful appearance; C. crispus, C. formosus, C. florentinus, C. lusitanicus are distinct and very good. Another interesting plant which was seen both on the rockwork and also in the nursery beds was a New Zealand Geranium, G. Traversi; it has long branching, prostrate shoots, bearing a number of large rosy-pink flowers, with short purple veins in the centre. Antirrhinum rupestris is a dwarf prostrate kind, with white or creamy-white flowers, and is a pretty alpine plant. The following were also seen in flower:—Gaultheria procumbens, Erica Maweana, Polygonum vaccinifolium, P. brunonis, Dianthus Seguieri, Cyclamen hederæfolium and the white variety, Daphne rupestris, Tropæolum speciosum, Colchicum alpinum, C. maximum, C. floribundum, C. speciosum, and many others. *R. P.*

HARPALIUM RIGIDUM.—The fashion of late seems to have run on gigantic Sunflowers, which are all very well in their way, and suitable for certain positions; but the best thing among that class of plants is Harpalium rigidum, which bears a profusion of medium-sized bright, clear yellow blooms. Plants of this Harpalium form conspicuous and fine

objects in the foreground of shrubs—a place for which they are well adapted, as in good soil they grow from 3 to 5 feet high, and are very striking, backed up as they then are with green foliage. Being perennial, and forming strong crowns, Harpalium rigidum may be divided readily, the best time for doing which is in autumn or spring, when any clumps may be cut through and transplanted at pleasure. Like all herbaceous plants of a similar nature, it requires good depth of soil, in which it will grow freely, and send up numerous stems with plenty of flowers. *J. S.*

Orchid Notes and Gleanings.

WORK IN THE HOUSES.—From the middle to the end of the present month is the most favourable season in the whole year for giving the plants in the East Indian-house a thorough overhauling, and preparations for this should now be made by getting a stock of good fresh sphagnum moss cleaned and selected. This, with a few clean potsherds, will be all that is required to put the majority of the plants in this house in good order for the winter. Any plants that may have lost their lower leaves can be lowered with less risk to the plants at this season than at any other. In severing the stems of any of the plants that require lowering a very sharp knife should be used, to make sure of a clean cut, otherwise the stems will be liable to decay, and when this happens disease soon shows itself in the leaves.

In potting these plants the newly severed stem should be well buried in the drainage of the pot, so as to be quite safe from coming in contact with the damp sphagnum moss. Before lowering the plants in this way make sure that they have a few healthy roots up their stems. These should be brought down, and carefully introduced among the sphagnum when potting the plants. Water liberally for two or three weeks after the operation, and keep a moist atmosphere around the plants to sustain them till they commence rooting freely again. Plants that are well clothed with foliage to the surface of the pot will only need to have the old moss removed and new substituted, and only a thin layer of this will be required during the winter months. Young plants that have outgrown their pots should be moved into others a size or two larger, saving every bit of living root during the operation.

One of the shyest-rooting plants in this house is Angræcum sesquipedale, and when it gets leggy it requires very careful handling to put it safely through the lowering process. It should never be attempted except when the plants are throwing a few young roots up their stems. As the early-flowering form of this plant will soon be showing its spikes it will be better not to interfere with them at present; but the late or spring flowering one may safely be repotted in a fortnight's time, providing it has a few healthy young roots to sustain it till re-established. Phalænopsis that are at all slow in making their growth should now be pushed forward, and any that are getting their young leaves fully developed may be placed in the coolest end of the house, to prevent them from starting any more foliage at this late season of the year. It takes some weeks to fully develope a leaf on these plants, and any that start at this season are never so fine as those made by the plants in summer. They always lack substance, and are the first to show signs of decay which often runs right through the plant, and reduces it to a worse condition than a newly-imported piece. In the Mexican house the earliest plants of the autumn blooming Lælias will be pushing up their spikes, and the bulbs will soon be fully swelled. When this takes place a reduction of water at the roots will be necessary. Cockroaches and other insects are very fond of the roots of these Lælias, and as the bulbs will be making roots freely soon after they are formed, the young roots should be carefully guarded from injury, otherwise the plants will not be in the best condition for making good growths another season. These plants need but little shade at this season of the year, but as many plants of other genera are usually grown in this house that need a little shade during bright weather, no more should be given than is necessary for the latter. *J. Roberts, Gunnersbury Park Gardens.*

THE COLLECTION OF ORCHIDS which has been recently established by E. Wischhusen, Esq., at Lordship Lane, Wood Green, shows the increasing interest that is being taken in this beautiful class of plants. The garden is close to the Green Lanes station of the Great Eastern Railway, and within easy distance of the Alexandra Palace. What makes this collection valuable is not so much the size of the plants at present, as the variety grown and what the plants promise to become hereafter; for, although the great bulk of the stock—which, it may be remarked, fills four houses—are small plants, yet they look so thriving and healthy that, judging from their present condition, it would not be hazarding too much to say that many of them ere long will make fine specimens. The Dendrobiums come first upon the list, and these consist of small plants of Dendrobium nobile, speciosum, Farmeri, Ainsworthii×, Schröderi, macrophyllum and macrophyllum giganteum, Bensoniæ, Dalhousianum, fimbriatum oculatum, thyrsiflorum, densiflorum, Parishii, Devonianum, and a small batch of Brymerianum. In an adjoining house we noticed one or two good plants of Cattleya gigas and a small batch of C. citrina doing very nicely on blocks. A long, wide span-roofed house in three divisions is well stocked from top to bottom with a general assortment of plants of different sizes. The medium-sized plants, most of them in capital health, occupy the centres of the houses. The first division is filled with Maxillaria grandiflora, nigrescens, and others; Odontoglossum coronarium, triumphans, Pescatorei, crispum in variety, Warscewiczii, Ruckerianum, Wilkianum, and Chestertoni; Oncidiums, several good-sized plants; and a considerable stock of Masdevallias, chiefly small plants of Harryana, Lindeni, ignea, Chelsoni, Dayana, infracta purpurea, tovarensis, trochilus, bella, and others. The second division is filled with Cymbidiums, Oncidium ampliatum majus, Angræcum Kotschyi, Lycastes, a stock of Odontoglossum vexillarium, Cypripediums in great variety, including venustum, Sedeni, spectabilis, Lawrenceanum, insignis, and Maulei; Anguloa Clowesii and uniflora, a good stock of Cattleyas, comprising C. Skinneri, Trianæ, lobata, exoniensis, Mendelii, Mossiæ, superba, amethystina, and a good many others; Vanda cœrulea, Lælia elegans, and L. e. alba. The third division is stocked principally with East Indian Orchids, among which will be found a considerable variety of the best species, such as of Aërides, Saccolabiums, Vandas, and Phalænopsis. We noticed good plants of Aërides odoratum and Fieldingii, crispum, Lobbii, Veitchii, and Schroderi, Saccolabium Holfordi, and Phalænopsis amabilis, Schilleriana, grandiflora, and one or two newer kinds in a healthy growing condition. From a cultural point of view the most noteworthy point is the numbers of healthy young roots, which are plentiful upon large and small plants alike; and the thorough cleanliness observed everywhere shows that Mr. Calvert, the gardener, not only understands Orchids but spares no pains to cultivate them properly.

MIMICRY IN ORCHID FLOWERS.—When I was a very young boy I remember seeing a picture of the Devil in a book entitled *A History of His Satanic Majesty*. The appearance of his face as therein represented has never been quite effaced from my memory. He was represented with a very long chin and beard, an open ugly mouth, and four horns. You can imagine my surprise the other morning upon finding in my houses an Orchid in bloom (Stenia fimbriata), the flower of which bears a striking resemblance to the face of Mephistopheles as represented in the book referred to. Many of my friends who have seen the flower have been highly amused with the supposed likeness to the "old gentleman." *Alexander Paterson, M.D., Bridge of Allan.*

ORCHID PEAT.—We have lately had a sample of Orchid peat sent us by Mr. H. G. Smyth, horticultural sundriesman, 17A, Drury Lane, W.C., which is stated to be a fair sample of the general stock, or, to use the owner's words, "just as it comes." The sample is of the very best fibrous quality, such as Orchid or Heath growers delight to get; and we think the whereabouts of such excellent material cannot be too widely known. Considering the first expense of Orchids and hard-wooded plants, and their after-value when well grown, cultivators generally would act more in accordance with their own interests if they were more careful in selecting potting material, of which it appears there is plenty of the right quality to be obtained.

The Flower Garden.

ROCKERIES.—The different varieties of Heaths have made an unusually grand display of bloom this season, thus exemplifying the great advantage to be derived from the operation of clipping the plants over with the garden shears in the spring, as the new growth thrown out, especially by Menziesia polifolia both purple and white, as well as the hardy Heaths, and mediterranea in particular, have flowered most profusely, and for some time have formed a most conspicuous feature in this department. This shows that Heaths should enter largely into combinations where the rocks are supposed to jut out from the turf in a natural way, as such situations are very well adapted for them if they are planted close to the foot of the rocks with the turf running up close to them. They thus grow in a charmingly natural manner, very different to the effect produced by planting in a bed of soil, thus showing how much better those varieties which bear this annual clipping so well are adapted for the outlying parts of the rocks, where they are joined by the turf, and ought not to occupy the pockets amongst the stones, where they soon outgrow their bounds. These remarks, however, do not apply to the smaller growing sorts which flower in the spring, such as Erica herbacea and carnea, which may occupy positions in the pockets, but close to the outer edge of the stones, over the tops of which they should be encouraged to ramble and hang down. Many other plants in this department will require to be frequently looked over to prevent the strong-growing sorts from overcrowding smaller and choicer varieties, which they are very apt to do at this season if not reduced in time.

HARDY FERNERIES.—These will require to be constantly picked over for the removal of all decaying and broken fronds, which are apt to accumulate at this season; seedling weeds also are apt to appear, and must be kept in check so as to keep up a neat and trim appearance as long as possible.

TRELLISES.—These will still require constant attention. As the various sorts of Clematis go out of flower they will become unsightly, and will require regulating by the removal of the superfluous growths and tying-out the remainder neatly; the same attention must also be paid to Roses, Honeysuckles, and other ornamental climbers, by the removal of superfluous growths and fastening the remainder to the walls or trellis as may be necessary. The evergreen Magnolias, such as the Exmouth variety of grandiflora, form very fine features on such walls; but as they are apt to overgrow their bounds at this season, they must be well thinned out and refastened, keeping a sharp look-out for the retention of such branches as indicate bloom; at the same time they cannot well have too much room for development, and are therefore very suitable for planting at the gable ends of houses, or indeed in any place where they can run up from twenty to forty feet high. The tall growing Nasturtiums of the Brilliant class are very suitable for introducing amongst these climbers, and will make a very gay appearance at this season; they will need a guiding hand now and then, but generally speaking they look best where they can ramble unchecked.

CARNATIONS AND PICOTEES.—The strongest layers should now be in fine condition for potting in pairs in 5-inch pots to be kept in a well ventilated pit through the winter, and shifted in the spring into 8-inch pots for blooming. Thorough drainage is essential at each shift, and the soil must be carefully examined in order to destroy worms and grubs. Any rooted layers not required for potting may be planted in raised beds, rather than in patches in the mixed borders, as in ordinary soils a complete system of drainage is most essential to success, and unless the borders are naturally well drained this cannot be ensured in small patches. Clove Carnations are rather more accommodating, but these, too, will flourish best in a well-drained soil, particularly a chalky one.

VIOLETS.—If the beds of Violets which were planted from rooted suckers in May have been well supplied with water, and surface cultivation has been followed during the summer, they ought now to be in fine condition for flowering through the autumn, and if

the ground is at all poor it would be a good thing to apply a dressing of decomposed manure, and afterwards cover that with cocoa-fibre, which will keep the flowers clean. I find that plants of the same type as the Old Czar will generally throw most bloom in the autumn.

Dahlias.—The beautiful single Dahlias have been such a feature in the flower garden of late years, and there has arisen such an infinite variety of colours, some of which are so distinct and beautiful, that it becomes desirable to select only the best, both for seed and as reserved roots for propagating from. So many desirable sorts may now be secured with comparatively little care, that it becomes useless to trust to seed saved at random from inferior varieties, and now is the time to mark those sorts which are to be retained. *John Cox, Redleaf.*

Grapes and Vineries.

Still keep the earliest house as cool as possible, giving an abundance of air night and day. Where the laterals have been allowed to ramble about freely after the Grapes were cut, if not already done, shorten them all back to admit as much light as possible. The present is a good time to top-dress the borders, taking out all the old soil possible without disturbing the roots, and adding a good top-dressing of turfy loam, bones, and charcoal, filling the border a few inches higher than it was previously, to allow for the soil settling. After the border is finished, give it a good watering with cold water to settle the soil among the roots. Houses in which ripe fruit is hanging must be kept cool and the atmosphere dry; on dull wet days do not open the front ventilators and use very little fire with a chink of air on the back ventilators, but on bright days admit air freely both on front and back ventilators. If the laterals get crowded thin them out to admit light and air. The latest houses of Hamburghs will now be nearly ripe, and should have a little fire-heat on wet or sunless days to assist them to finish, giving air on the front and back ventilators according to the weather outside. On dull days very little front air will be required, and sufficient heat to keep the atmosphere light and buoyant. Give clear tepid water at the roots when the borders are dry, choosing a fine bright day for the operation. Damping down can now be dispensed with, except on very bright days, but if the atmosphere is very dry a damping down occasionally in the early part of the day will be beneficial. Muscats that are ripe, keep as advised in my last Calendar. Still keep those that are ripening at a night temperature of 70°, with a rise of 10° by day, giving them plenty of clear tepid water at the roots when the borders are dry. Late varieties of Grapes for keeping through the winter will now be nearly ripe if started on March 1, as advised in previous Calendars, and can be kept at a night temperature of 65° to 70°, with a rise of 10° by day. Keep a little air on front and back ventilators night and day, increasing it as the temperature rises, until mid-day; then reduce it as the sun-heat declines in the afternoon. If wet sunless days occur a few degrees lower temperature will be better than too much fire. Water the borders inside with clear tepid water when dry, and only damp the house down on the brightest mornings. Go over the house weekly with a hair broom to dislodge the spiders, or they will disfigure the bunches with their webs. Any houses that were started late and are only commencing to colour will require pushing on to get them ripe, for if not ripe by the end of September they never keep well. Ours are always ripe by the middle of September, which I think is the best time, for I find they keep much better than if ripened later. Thorough ripening of fruit and wood is the great secret of Grapes keeping well through the winter. Newly planted vineries, or those making their second or third years' growth, and the growth is very strong, must have fire-heat in the daytime with plenty of air until the wood is thoroughly well ripened: do not damp the borders any more, but give clear water at the roots when required. Those planted later in outside borders will require a little fire-heat for the next few weeks to ripen off the wood, when it must be discontinued and the house be kept cool: no more damping down of the inside paths will now be required. Pot Vines, now that the wood is ripening, must have plenty of heat and air, with plenty of water at the roots and a drier atmosphere. *Joshua Atkins, Lockinge Gardens, Wantage.*

The Hardy Fruit Garden.

Fruit gathering continues to be the most important operation in this department. Apricots are now over in all but the latest positions, and it will be well to see to the removal of all freshly-forming growths induced by the late rains, and to the thorough cleansing of the trees by the application of water from the garden-engine, where projecting copings have prevented the heavy showers from performing that office. Peaches and Nectarines have required more than the usual amount of vigilance to secure them in their best condition; the excessive moisture occurring just at the ripening period having caused the skin to become ruptured in many cases, and speedy decay has resulted where the fruits have not immediately been removed and placed under drier atmospheric conditions. Where there is any appearance of crowding in the interior of the trees, all fruit-bearing shoots can be cut out as soon as their burthen is removed, to admit as much light as possible to the shoots laid in to take their places for next year; all sub-laterals must also be persistently removed as soon as formed, and all growing points of extensions stopped after this time, to arrest, as far as possible, further growth, and concentrate the energies of the tree upon the consolidation and perfecting of that already formed. Note individual instances of trees refusing to be thus checked, and endeavour to rectify when the proper time comes by drainage, root-pruning, lifting the roots nearer the surface, or substitution of more suitable soil, as the particular case may indicate as necessary. Prevent the appearance of red-spider by the frequent use of water upon the trees as soon as the crop is gathered, and combat it if present by the addition of sulphur to the water. Too much attention cannot well be given to the state of the trees for the next few weeks, for upon this time depends the following season's crop of such wall fruits as are given the benefit of efficient protection of some description in the spring. The early Pears will require to be gathered in batches so as to prolong their season. Codlin and other early Apples will shortly require to be gathered, to prevent their being blown down and bruised by high winds; but see that only those are removed that are sufficiently forward to be liable to fall. Continue to stop late growths on Pears, Apples, Plums, Figs, &c., and to keep all extensions well fastened in and secured from the wind. Preparation must soon be made for the protection of autumnal-bearing Raspberries from birds. The framework used for the support of netting over the quarter of Gooseberries will now be in most cases available, and will admit of the fruits being gathered with comparative ease. Take every opportunity afforded by fine days to destroy weeds on fruit breaks, as the dripping weather lately experienced has allowed them every chance of establishing themselves. Notes on new varieties of fruits, and on the most suitable of the older sorts, should be made while the opportunity offers of personal comparison and inspection of their respective degrees of hardiness, cropping qualities, and general excellence, in order to avoid planting unsuitable varieties that may prove extremely unsatisfactory, and a source of disappointment after several years' labour in establishing them as permanent trees. *Ralph Crossling, St. Fagan's.*

The Orchard House.

At p. 207 instructions were given to repot any trees that required it, and that were grown in the early house. If this was done at that time the trees will now be well established in their pots, and they can be freely aired night and day, and the nearer the light they are placed the better. If it is seen that the wood on any of the trees is not well ripened, these should be placed where the house can be closed a little during the day, so that they may have a high temperature and plenty of light. A high night temperature is not necessary, as it encourages the development of red-spider and other insect pests. When the wood is well ripened, but not before, the trees may be plunged out-of-doors in cocoa-nut fibre refuse until the season comes round again, when they have to be introduced to the house to be started into growth. I need not say how important it is to keep the foliage quite clean up to the time that the leaves fall naturally; indeed, it is quite as important to pay strict attention to the trees after the fruit is gathered as it is before. If the buds are not formed and well matured before the leaves fall, they will not form afterwards. In our late house we have had a really good growth on the trees, and exceedingly good fruit. As the roots of all the trees are entirely confined to the pots, their main supply of nutriment is from surface-dressing. This season we used a compost of equal parts of loam and stable-manure, with a liberal proportion of Clay's Fertiliser. All the early, and most of the mid-season Peaches and Nectarines, have been gathered. Princess of Wales, a rather late variety, has been remarkably fine this year; the fruit is of large size, and though it is not usually highly coloured, the quality is excellent. Goshawk, another of the late Mr. Rivers' seedlings, is an excellent Peach, and a much better variety for pot-culture than Barrington, to which it bears some resemblance. Prince of Wales is better this year than usual. The fruit of this variety is just coming in; it is of large size and excellent quality, and the fruit also sets very freely. Two excellent late Nectarines are also just ripening their fruit—viz., Albert Victor and Victoria; but unless the fruit of the former is well exposed to the sun it is neither highly-coloured nor very richly-flavoured, but when at its best it is really a good variety; it is, however, surpassed for pot-culture by Victoria, a very fine Nectarine. *J. Douglas.*

The Pine Stove.

In the cultivation of the Pine every effort should be made to keep them scrupulously free from insects, for unless this is done satisfactory results cannot be attained. The golden rule should be, to prevent in cultivation contact with insect-infested plants. When mealy-bug and white-scale get established on a stock of Pines, it is only a waste of time to try to clear them. To throw away a whole collection is a thing that cannot always be carried out, as it takes some time to replace them. In the present time it will take from eighteen months to two years to get up a new stock of any size with a corresponding number of succession plants of various sizes. It is a costly business to purchase a large number of fruiting or succession plants, therefore the best and most economical way is to grow on the old stock and fruit them; at the same time to start a new lot that are known to be clean, grow them on as fast as possible in another part of the garden, or in detached houses, so that there is no fear of contact between the two sets of plants. In checking the progress of the mealy-bug and white-scale on the stock to be discarded, the most efficacious way of keeping these insects in check and not injuring the growth of the plants is to get water at a temperature of 150°, but do not exceed 160.° With a can and rose pour it quickly over the crown, fruit, and leaves when the fruit is in a green state. The insects soon lose their hold, and fall off in great numbers. It acts on the white-scale with marvellous effect, but the mealy-bug is more difficult to deal with; yet it keeps them in check. The heat of the water should be correctly tested by thermometers specially made to indicate the temperature of heated liquids, such as are used by brewers. In ten to fifteen minutes after the first application pour a second lot at a temperature of 100° over the same parts; this will wash off any insects that are adhering to the plants, as well as cool them down. These operations are best performed in the morning, when the plants are not over-stimulated by heat. Many remedies have been recommended from time to time, such as immersing the plants in soft water, allowing them to remain under water some time; but with large plants this is a long and tedious business. After long and continued trials we have come to the conclusion that timely destruction of the plants is the only judicious remedy. Where any portion of a collection of Pines is affected do not be tempted to keep back a few, but resort to rigid measures of extermination, so that all the insects are certain to be eradicated. Before establishing a fresh lot of Pines let the compartments be thoroughly disinfected by sulphurous fumes strongly applied when the houses are empty. This is the only reliable remedy. The Pine is a clean plant, and when in a high state of luxuriance is seldom known to be troubled with any kind of insects. Although this is the case yet if grown in close proxmity to dirty plants the Pine soon becomes affected. *D. Wilson, Castle Hill.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Sept. 11	Sale of Dutch Bulbs, at the Auction Mart, by Protheroe & Morris
TUESDAY,	Sept. 12	Royal Horticultural Society: Meeting of Fruit and Floral Committees, at 11 A.M. Sale of Plants, at the Priory, Walthamstow, by Protheroe & Morris.
WEDNESDAY,	Sept. 13	Great International Fruit and Flower Show, at Edinburgh (two days) Sale of Plants, at Messrs. F. & A. Smith's Nursery, West Dulwich, by Protheroe & Morris.

AS nothing succeeds like success, so there is no recipe for A CROP OF FRUIT IN 1883 so sure and certain as a good crop in 1882. Unfortunately, however, sterility is about as certain to reproduce itself as fertility. Neither are the reasons in either case very far to seek nor difficult to understand when found. Fruit-bearing is a somewhat exhaustive process, but unless carried to excess such exhaustion as the maturing of a full crop of fruit involves is favourable to the production of moderate-sized, short-jointed wood. Such wood in moderate quantity is almost sure to get thoroughly matured during the growing season. Well ripened wood may be said to possess a full crop in its plump buds. True, the fruit is in embryo, and has to run through a whole chapter of accidents before it shows, becomes perfectly developed, and fit for table. Still, it is something—a good deal in horticulture—to have the possibilities of fertility assured, as they assuredly are in every well ripened bough or branch.

In sterile trees the whole vital force of the plant runs into woody channels; relieved from their natural burden of fruit bearing, the trees make double—treble—the quantity of wood that they would make under the natural strain of a load of fruit. This, at first sight, may seem a positive benefit, or at most only a small evil. Indeed, there are occasions and conditions when a year or two's sterility might rejuvenate or save the lives of trees, exhausted through over-cropping, or starved for lack of suitable food. Relieved of the burden of a crop of fruit they grow with such force as to burst through their stunted state. The roots extending in a corresponding ratio with the emancipated tops also reach fresh root-runs, and pour abundant stores of better food into the trees. By this compound process of having fewer mouths to feed and more and better food to feed them with, the strength and lives of many stunted, exhausted fruit trees have been renewed.

But fruit trees in fair health and full vigour are by no means in need of augmented powers of growth. The prevailing fault in our cool and dripping climate is that they grow too much, and fruit capriciously and far too seldom. Seasons like the present are very apt to make them worse instead of better; in proof of which it is only needful to look at the enormous amount and great strength of the breastwood made on Apple and Pear trees. Having little or no fruit to support, they have rushed off into wood-making with a vengeance.

Those who have tried early stopping or pinching back seem almost to have fared worse than those who have left the young shoots unstopped, for hardly were they stopped till the buds at the base broke forth into a fresh crop of breastwood, and these secondary shoots are not only far more numerous but almost as strong as the first. As to those unstopped, some of them are a yard long, and of corresponding strength: all this abnormal energy of growth is so much the worse for the fruit crop of 1883. Neither is this forcible arrestment of growth of much use or benefit. In all matters relating to vegetable life it is emphatically true that mere force is no remedy. This is especially so in regard to the pruning of the heads of trees; and yet a certain amount of pruning of breastwood seems necessary, especially for trees of limited size and formal shape. Cordons, wall trees, espaliers, pyramids, bushes, must needs be pruned if they are to preserve their characters as such. Pruning is a means to form as well as an aid to fertility. The first part of this sentence is a fact more obviously true than the second. The thoroughly scientific, and therefore successful, practical pruner makes pruning the means of moulding his trees into shape, as well as leading or forcing them into fertility. Returning to the question of breastwood, it is cut back to temporarily arrest as well as alter the place of growth. Leave each shoot full length, and the future fruit-buds, if any, would be posted on or near to the extremity of the shoots. Cut them back at the right time, and to the best extent, and such buds would be formed near the base of the breastwood. To thus change the site of fertility is a matter of the utmost importance to cultivators, who are forced to concentrate the largest possible amount of fruit into the smallest possible area.

Nor is this change of the situation of fertility the only result of stopping back the breastwood of fruit trees. Most of the latter develope fruit-buds other than those on or near to the base of the young shoot. Such spurs are smothered into a weakness that prevents the fruit-buds maturing to any useful purpose; cut these back, and you give the natural fruit spurs a chance; in fact, all they need is full exposure to sun and air to ensure their growing into a fruitful condition. It follows that the removal of breastwood in time will ensure that all the buds on such spurs shall be endowed with all the potentialities of fertility. But should the dripping weather continue other means may have to be adopted to ripen the wood of fruit trees. A really sunny September and a true brown October might do all yet wanting to mature and ripen the wood of fruit trees. On Plums, Cherries, Peaches, Nectarines, Apricots, as well as Apples and Pears, the crop of young wood is abnormally abundant, as well as vigorous. Therefore, unless the sun or dry atmosphere or earth come to the help of the cultivator, he will have to do something to cut off the supplies. Supposing the trees, such as Peaches and Nectarines, are heavily laden with fruit, the crops so far have tended to suppress grossness of growth. But these will soon be gathered, and, indeed, in their later stages do not seem to draw much out of the trees. The finishing touches to fruit appear to proceed more from the sun and air than the soil or fluids of the tree; hence it may be needful to partially arrest the growing strength of fruit trees in order to give atmospheric influences a fair chance to ripen the growth already made.

In a word, our remedy for over-strong and late growth is root-pruning. The time to apply that remedy, if it is to be effective and to tell on next year's fertility, is now. Not a week is to be lost. Root-pruning is often performed too late. In such cases it may, and generally does, aid fertility, but it may be years afterwards; but by root-pruning now the wood may, to a greater extent than is generally supposed, be ripened in its making, and before the end of the growing season flower-buds may be plumped up in numbers and in places where none would have been found without its aid.

Of course such prunings must be performed skilfully and tentatively. A root at a time should be the safe rule, and during the process let the trees be carefully watched. The effects will soon be felt by the trees, and quickly seen by a skilful eye. The moment that growth is seen to be checked, prune no more. Enough in this matter of root-pruning is better than a feast. The skilful pruner, like the skilful surgeon, will never cut a hair's-breadth further than is needful. This caution in cutting, which distinguishes the best practical pruners at all times and seasons, is never so needful as in the root-pruning of fruit trees in the autumn to augment and heighten their fertility. Performed too soon, or carried too far, it is injurious and dangerous, delayed too long it is useless; but if performed carefully and well, at the right time, and to the proper extent, it is a safe, sure, and speedy means of augmenting and rendering almost perpetual the fertility of most of our fruit trees.

—— TROPICAL FRUITS AND VEGETABLES.—We have been favoured by our occasional correspondent, Mr. J. HART, Superintendent of the Cinchona plantations at Gordon Town, Jamaica, with photographs of a flower show held in Kingston, Jamaica, in June last, and of a group of tropical fruits and vegetables exhibited on that occasion. The latter we have had engraved, and now present it to our readers (fig. 58). The group, which was arranged by Mr. HART, included in the centre a plant of the Calalu, Phytolacca icosandra, a common subject in the West Indian Islands; in front of it Pine-apples and Artichokes, and on the right Bananas, Mangoes (Mangifera indica), the fruit of the Naseberry (Achras Sapota), Seville Oranges, Carrots, the Cocoa-nut (Cocos nucifera), Vegetable Marrow, Celery, Turnips, Plantains (Musa paradisiaca), and Rice (Oryza sativa). On the left are the Jack Fruit (Artocarpus integrifolia), large Beans, Potatos, Indian Corn, Gourds, Yams, Colocasia esculenta, Pumpkins, Cucumbers, Cabbage, Muscat Grapes, the Mammee Apple (Mammea americana), the Shaddock (Citrus decumana), and above these is a comb of honey. The exhibition on the whole appears to have been a great improvement on that of the previous year, and included a considerable number of plants of a decorative character, sent from the various public gardens, &c., under the supervision of Mr. D. MORRIS, and many admirably-grown specimen plants exhibited by residents in Kingston.

—— THE GREAT FRUIT SHOW AT EDINBURGH.—We are pleased to hear that the great fruit and flower show to be held in the Waverley Market on Wednesday and Thursday next, promises to be the largest and best that has ever been held in the modern Athens. The entries, which closed on Wednesday night, are much more numerous than on any similar occasion in Edinburgh, and include most of the well-known autumn exhibitors of fruit and plants from England and Ireland, as well as from Scotland, so that there is certain to be a keen competition in most of the classes, and of Grapes especially a large display is expected. The Waverley Market, one of the finest places in the country for the holding of such a show, is but a few minutes' walk from the Waverley Station of the North British Railway Company. Cheap trains will be run from the principal places on the North British system, and it is anticipated that there will be a great gathering of gardeners. The usual hotel accommodation for the judges has been provided for at the Waterloo Hotel, Waterloo Place, which will be the headquarters of the Society during the show, and where a dinner will be held on Wednesday evening, under the presidency of the Lord Provost, Sir JAMES BOYD. The judging commences at 6 A.M. on the 13th, and the show will be opened to gardeners at a cheap rate between the hours of 9 A.M. and 11 A.M. on the same day.

—— THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—Mr. CUTLER requests us to state that on Wednesday and Thursday next he will be in Edinburgh, and will be glad to see any friends or supporters of the Institution, who may visit the great International Fruit Show in the Waverley Market. Enquiries should be made for him at the *Gardeners' Chronicle* stand.

—— THE CHUSAN PALM.—There is a specimen of this (Chamærops Fortunei) at Penrhyn which has proved hardy now for several winters. The plant is about 10 to 11 feet high, and flowers every year. Elsewhere, near the coast in North Wales, we noticed this Palm out-of-doors as at Colwyn Bay, Penmaenmawr, and Bodorgan, though none of the specimens equal those at Heckfield or Osborne.

—— ALPINE GARDEN AT LLANDEGAI.—There is a surprise in store for those who visit the "model village of Llandegai," near to the fine estate of Penrhyn Castle. In the garden attached to his house Mr. JACKSON, the schoolmaster, has accumulated within a few years a collection of herbaceous and alpine plants such as only persistent zeal and natural love of plants could amass. The alpines are grown

any way, all ways—on the flat, in borders, on rockeries, and in flower-beds proper. This last is a method that deserves imitation, though it is possible than an edging of blue Gentians, of Thrift, of Erica carnea, or of Sedums, might look better and more appropriate than Box. But Mr. Jackson is a man of originality and resource, and he is not likely to confine himself to one sort of edging, so that we may hope for a report of novel combinations and pleasing effects. To show how little conventional is Mr. Jackson, we may say that he does not scruple to use zonal Pelargoniums on his rockery, and very well they look. Duly subordinated as to height and colour, we know of no reason why Pelargoniums, or any other plants that look well, should not be grown on rockeries, under the limitations we have mentioned. Mr. Jackson has a fine collection of hardy Heaths, comprising most of the species and varieties. One, called Calluna vulgaris Merloughiana, a double white form, was very noticeable at the time of our visit. It would be impossible, however, to enumerate a tithe of the many plants Mr. Jackson cultivates, but for the reasons above mentioned his garden is so remarkable that a few minutes' inspection, which was Swanley, and this week we have been favoured with a very interesting collection of single and double flowers from Messrs. James Carter & Co. Some of the single flowers are remarkable for their great size and substance, but they are still more remarkable in point of variety, representing, as they do, many distinct looking self-coloured flowers, ranging from dark purple, maroon, and red, to white; purple and lilac-striped blooms, and several mottled flowers of peculiar delicacy and softness of shade. The doubles are especially striking, some being purple-fringed and others rosy-purple shaded; all being showy decorative subjects. One of the varieties, a rosy-purple flower, with fringed edges, promises to be very telling as a pot specimen.

—— Indiarubber and Cinchona in Guayaquil.—In a Consular Report recently issued on the trade and commerce of Ecuador through the port of Guayaquil during the year 1881, it is stated that the amount of indiarubber collected during the year exceeded that shipped in 1880 by about 10 per cent. Up to the present no measures have been taken by the Government to prevent the cutting down of the trees producing this article, and this practice is slowly destroying the resources of the country in this respect. Under the head of Peruvian Bark we are informed that the sudden fall in the price of this article in Europe considerably curtailed the exportation, which would otherwise have been in excess of 1880. As it is there is a small decrease noticeable, from the fact that most of the inferior grades of bark which had been collected were retained in Ecuador, the owners fearing that the expenses of conveyance would consume even more than the proceeds of the bark in Europe. New districts containing large forests of the best quality of bark-yielding trees have been recently discovered in the interior.

—— Flora of the Macgillicuddy's Reeks, Kerry.—We have a reprint from the *Proceedings of the Royal Irish Academy* of an interesting report by Mr. H. C. Hart on the botany of the Macgillicuddy's Reeks. The Reeks stretch from their eastern extremity at the Gap of Dunloe to the end of the Beenbane spur, above the road from Glencar to Cloon Lake—a distance of about 10 miles from the Gap. As the author says, these Reeks afford the grandest bit of mountaineering in Ireland. The main ridge maintains for several miles an altitude of 3000 feet, sometimes narrowing into a jagged knife-edge, and here and there descending abruptly into some of the numerous lakes nestled among the precipices below. Carran Tushill is the highest point, slightly exceeding 3400 feet. Beenkeragh is 3314 feet; Skregmore, 2790; Caher, 3200; and Curraghmore 2680 feet. The Reeks are composed for the most part of hard green and purple grits and sandstones of the geological formation of the Old Red Sandstone age. Mr. Hart observed 220 species in the district examined, and his report is so attractive as to make one wish one was there in those beautiful wilds—if it did not rain too much! Great care seems to have been taken in observing the altitudes as near as can be from an aneroid. The following of Watson's Atlantic types find their way up slopes of the Reeks:—Sedum anglicum, Cotyledon umbilicus, Carum verticillatum, Bartsia viscosa, Pinguicula lusitanica, Euphorbia hyberna, Scirpus Savii, Hymenophyllum tunbridgense, and H. Wilsoni. The undermentioned are interesting, as not being native in Great Britain:—Saxifraga geum, S. umbrosa, S. hirsuta, Arbutus Unedo, Pinguicula grandiflora, and Trichomanes radicans. Mr. Hart saw only one specimen of the Arbutus, and that an old tree, at an elevation of 500 feet. Trichomanes radicans was not observed, but "a shepherd lad showed me where he had once gathered, and exterminated, the Killarney Fern here"—*i.e.*, on the south side of Mount Brassel. Hymenophyllum Wilsoni and H. tunbridgense were met with in abundance, forming carpets among the loose boulders.



Fig. 58.—A group of tropical fruits and vegetables. (see p. 336.)

all we could give it, sufficed to create a feeling of gratified surprise.

—— Plurality of Cotyledons in the Genus Persoonia.—It has long been known that the embryo of some of the species of Persoonia has from three to five cotyledons. Lately Baron von Mueller has examined the embryos of between thirty and forty species, most of which have more than two cotyledons, varying in different species, though apparently constant in the same species within certain definite limits, from three to eight. Mueller says in the species of Persoonia with more than two cotyledons the segments of the embryo cannot be traced into two sets: contrarily, as in many Coniferæ so also in Persoonia, the cotyledons, as regards size and also shape, are quite or nearly alike to each other, and not rarely odd in number; whereas in merely lobed cotyledons, such as Shizopetalon, Howittia, Amsinckia, and many other genera, and even some species of Eucalyptus, the lobes are always traceable to two cotyledonar elements. Again, as in Coniferæ so also in Persoonia, the number of embryo segments ranges only within specific definite limits.

—— Single and Double Petunias.—Last week we noticed some very fine specimens of single Petunias sent us by Messrs. Cannell & Sons, of

—— Rochea falcata Out-of-Doors.—People who have grown this lovely plant in pots in the greenhouse for so many years find it hard to believe that it will succeed so well out-of-doors during the summer and autumn. It should be given a dry situation, and planted in a groundwork of green its heads of richly coloured flowers have a singularly effective appearance.

—— Henri Jacoby Pelargonium.—It would be impossible to say too much in favour of this fine Pelargonium, which, regarded either as a pot plant or a bedder, is not likely to be superseded for a long time to come. The object of this notice is, however, to recommend it as a wet-weather plant, as from its vigorous habit, the dense trusses of flowers are not easily injured by rain.

—— Varieties of Ceanothus at Chiswick.—Every year Mr. Barron is receiving new varieties of these at Chiswick, until a unique and truly representative collection is gathered there; and it is sur-

prising how numerous these charming summer-flowering plants have become. As they are planted in beds and other places in the open ground they are seen under circumstances most favourable to judge of their value. A few in the Chiswick collection are specially worthy of notice, such as Sceptre d'Azur, having large and striking spikes of pale blue flowers, a decided improvement on Gloire de Versailles—this is a very fine decorative variety, worthy a place in any garden; Firmament, one of the darkest in colour, small-flowered, distinct, and very free; Gloire de Vaise, blue, dwarf, very free and good; Leon Senion, pale blue, very pretty and free; Marguerite Andusson, very fine, the flowers a kind of lavender-mauve tint; Bleu Céleste, very dwarf in growth, and one of the most delicate in colour; Celestial, dark blue, good in colour, and late flowering; Marie Senion, one of the best in the collection, colour pale carmine-rose, very pretty, fine and distinct; and Le Géant, in the same way, but paler than the foregoing. What very attractive beds these varieties of Ceanothus make at Chiswick; and the wonder is these pretty plants are not more generally used in this way. The best plan would be to use young plants for making beds, placing them out in good soil in spring, when they grow away freely and flower profusely. At the end of the summer the plants should be lifted and planted against walls, where something of the kind is required to cover them. They do well in warm, sunny positions, and make a charming display in summer.

—— POLYGONUM CUSPIDATUM. — There is no more ornamental plant for a shrubbery bed or border at this season than tall-growing plants of this Polygonum. In habit, leafage, and the manner in which the inflorescence is produced, the plant is unique among its congeners. In a moderately good soil it grows from 4 to 5 feet in height, and their arching branches show off the white inflorescence from the axil of every leaf in the form of a naturally grown wreath in which leaves and flowers are produced in about equal proportions.

—— ŒNOTHERA YOUNGI.—This is decidedly one of the best, if not the very best, of the yellow varieties for bedding purposes. Its golden-coloured blossoms are intensely bright and effective, and look best when the shoots are pegged down, so that the surface of a bed appears to be clothed with healthy leaves and flowers. Allowed to grow in a natural way the plant attains a height of about 18 inches.

—— MAHOGANY IN SAN DOMINGO.—In consequence of the demand for mahogany of late, it has been feared lest the supplies should fall short; we are assured, however, in a report of the Vice-Consul at Puerto Plata, San Domingo, that the diminution in the exports of mahogany is by no means to be attributed to a scarcity of the wood, for the forests are apparently inexhaustible, but it is to be accounted for through the absence of suitable tonnage for charter in the neighbouring colony of St. Thomas throughout the year.

—— A NEW SPECIES OF COTTON.—The "silly season," as it is popularly called, seems of late to have become productive of vegetable eccentricities. The bone-picking tree has been succeeded by another which, according to the description, embraces the earth—though for what purpose is not shown—at regular intervals, and now we are introduced by the *St. James' Gazette* to a new and extraordinary species of Cotton plant, which we are told is "attracting much attention in Georgia, and bids fair, it is stated, to prove immensely valuable. For many years experiments have been made with the view of hybridising the Cotton plant growing wild in Florida with the common Okra (Hibiscus esculentus). The Cotton plant used is of the species found on the lowlands of the Caloosahatchie River. The new plant retains the Okra stalk and the foliage of the Cotton. Its flower and fruit, however, are strikingly unlike either Cotton or Okra. The plants have an average height of 2 feet, and each plant has only one bloom. This is a magnificent flower, very much like the great Magnolia in fragrance, and equally large. Like the Cotton bloom, the flower is white for several days after it opens, then it becomes, first a pale pink, and gradually assumes darker shades of this colour until it becomes red, when it drops, disclosing a wonderful boll. For about ten days this boll resembles the Cotton boll, and then its growth suddenly increases, as if by magic, until it finally reaches the size of a big Cocoa-nut. Not until it reaches this size does the tint appear, then its snowy threads begin to burst from the boll, but are held securely in their place by the Okra-like thorns or points that line the boll. One inexperienced picker can easily gather 800 lb. a day, and fast hands a good deal more."

—— STATICE LATIFOLIA. — A charming plant for the outdoor garden. It is not much, if at all, exceeded in beauty by the finer greenhouse kinds, and whole beds of it would be the way to create a show instead of using single plants in mixed borders, as is usually done. Its broad leaves are produced in low tufts or bunches overlapping each other, and the heads of flowers upon an ordinary sized plant are fully 2 feet across. The flowers are of a deep blue colour, and are very striking at a distance.

—— CAMPANULA TURBINATA ALBA.—A pretty late flowering variety, hardly entitled to be called alba, as the flowers rather shade to mauve; but they are very chaste in appearance, and little patches of the plant give variety in a rockery or in the front line of a mixed border.

—— CLUB IN CABBAGES, &c.—Market gardeners are complaining that the frequent light showers—none of which penetrate the soil to the utmost beyond an inch, leaving the deeper earth still dry—are promoting club amongst the Brassica family. For some time past blueness was the prevailing tint in the leafage of all this tribe, except where growing in soil unusually favoured with moisture. No better indication could be given as to the root condition of the plants, showing that root-action was for the time arrested. Beyond the fact that arrest of growth leaves the plants the more easy prey to diseases and the attacks of parasites, there was nothing, however, to show that clubbing was unusually abundant, or that the club ambury was unusually active. Presently, however, the varying showers come, cooling and refreshing the leafage; then a few hours' warm sunshine is felt, and the leaves are seen generally to flag—pretty good evidence that the roothold is defective, and that the plants are in that department materially suffering. It is easy to ascribe this flagging to club, because it saves discovering any other reason, but it by no means follows that it is club after all. With the deep roots in soil that is dry, and therefore nonpromotive of action, it is but natural that the moisture which has fallen upon the surface of the soil should induce the development of stem-roots, and some of a by no means substantial kind are thrown out. The result is that the main roots are more checked in their action, the descending leaf-sap is arrested and diverted into another channel; then the root-stem shrivels and dies, and the plant, unable to exist upon its stem-roots, dies also. If club were to be specially prevalent at this or in any other season in market gardens it would hardly be wondered at when it is remembered that with many growers the cultural rule is to plant Potatos in one year and sow Peas the next in the same ground, and always to follow with some sort of Cabbage, Broccoli, or other member of the Brassica family. The best remedy for the ills which affect the tribe is found in deep cultivation, whilst the free use of soot and an occasional salting of the soil are valuable aids.

—— AGERATUM PRINCE IMPERIAL.—Mr. HUGH HENDERSON, of Hall Place, Cranleigh, lately forwarded to us a sample of his new seedling Ageratum Prince Imperial, which appears to be an extremely dwarf-habited, free-flowering variety, and therefore a very useful plant for the flower garden. The colour is bright, almost purplish-blue, and the variety is likely to be largely grown for massing in beds, as well as an edging plant. Ageratums stand wet weather so well, and flower so late in the autumn that we can hardly have too many good sorts, and we shall not be surprised to hear of Mr. HENDERSON'S seedling having a prominent place in the flower garden before long.

—— THE ESSEX FIELD CLUB.—The annual cryptogamic meeting of this Club will be held on Saturday, September 23, in the northern section of Epping Forest (High Beach, Monk Wood, Theydon Woods, &c.). The Club will assemble in the woods about 1 o'clock, the rendezous being the large sedgy glade in Monk Wood. After tea, which will be taken at the Crown Hotel, Loughton, at about 5.30, a discussion of the gatherings and discoveries of the day will take place, and the following papers and notes will be read:—"Some Observations upon the Reproduction of the Uredines," by C. B. PLOWRIGHT, M.R.C.S.; "On the Rhizocarpeæ," by Professor BOULGER, F.L.S., F.G.S.; "On Fairy Rings," by WORTHINGTON G. SMITH, F.L.S.; "On Marine Algæ," by E. M. HOLMES, F.L.S.; and "Fungi as Food," by Dr. WHARTON, M.A., F.L.S.

—— WHITE AND RED POMPON DAHLIAS.—For autumn decoration there are few flowers that are more useful in a cut state than Pompon Dahlias. They last a considerable time and find favour with many because of their pretty form and bright colours. The ordinary Londoner has only one name for a bunch of flowers—a bouquet; if you put it in a vase or stand on the dinner-table, it is a bouquet; arranged loosely in an epergne, it is a bouquet; hence it is hard at times to define the difference to the satisfaction of many people between a stand of flowers and a bouquet. Dahlias are not what gardeners would call suitable flowers for making up a bouquet, but they are invaluable in large arrangements for the dinner-table. Gardeners in the country know how valuable they are during shooting parties, when flowers have to be cut in basketfuls. It is the large stands that take so much making up, and it is in these that we would use the Dahlias. Two of the brightest colours that can be selected will be found in Guiding Star (white), and Dr. Webb (bright red); and these, whether used upon a large table or as a Londoner's bouquet, are about as cheap and showy flowers as any one can possess. We lately saw the two varieties above mentioned very fine in Mr. HURST'S nursery, Lordship Lane, Wood Green.

—— VIOLA BLUE BELL.—Travellers by the Great Western Railway from London to Slough cannot fail to notice the two massive bands of rich blue-purple on either side of the broad central walk in Messrs. JAMES VEITCH & SON'S trial grounds at Langley, which adjoin the Great Western Railway. From early spring until now these two broad bands of this useful variety have been blooming with wonderful freedom, and whether the weather be still, hot and dry, or stormy, cool, and wet, this Viola maintains its effect in floral service unimpaired and undimmed in respect of its striking hue of colour. There are very few Violas indeed that in such an open and exposed position could hold on so long. It has a wonderful constitution, a dense creeping growth, which is constantly being renewed, and an unwonted freedom from mildew, the enemy to and spoiler of so many of the bedding Violas. It may interest some to know that it originated as a chance seedling in a garden where Violas had not been grown; and it has become so widely distributed that it is to be met with in many cottage gardens, and it is as popular as Viola cornuta ever was a few years ago. It will outlive many if not all the blue Violas, and will be a thing of beauty in thousands of gardens for years to come.

—— DOUBLE DWARF GERMAN SCABIOUS.—Only a Scabious!—a common flower that at one time not far distant was scarcely tolerated in gardens, and which is now welcomed as beautiful and useful alike. Thanks to the German florists, they have not only given us a dwarf, but a very double, handsome, and varied race of dwarf Scabious. Before us, as we write, lies a group of flowers picked from a collection of dwarf Scabious grown by Mr. J. ROBERTS, of Gunnersbury Park. We make out nine distinct varieties, viz., dark maroon, crimson, rose, purple-rose, mauve, lilac-pink, salmon, blush, and white. It would not be difficult to name others, but these are all as distinct as they are large and full in the flowers. If any one will look at a well developed bloom they will perceive there is an exterior circle of large four-petalled flowers, and within this a dense mass of much smaller flowers of the same shape, quite filling up the surface. They remind one of double Pyrethrums, but are not so large or high centred; they are wonderfully free of bloom, and those who grow them find them extremely useful for cutting purposes. It is the custom of the German seed growers to make up collections of these dwarf Scabious in six or nine colours, and on the whole they come pretty true from seed; but the tendency to sport, which is characteristic of so many flowers, is certain to display itself in the case of the Scabious, and does do so, but not to

any great extent. At Gunnersbury Park Mr. Roberts has some beds of dwarf Scabious, and very pretty they are; but in almost every case where a particular shade of colour is employed there are some sports, as if varieties would run back to some other type; and Mr. Roberts' belief in the usefulness of the Scabious is so great that he has potted up something like a thousand plants in pots, raised from seed sown at a later period than that sown in the open ground. These plants are all standing out-of-doors in a full exposure, and the plants are making a sturdy and branching growth. By-and-bye they will be wintered in cold frames, and batches brought on into flower in a little warmth as required. Mr. Roberts regards the dwarf double Scabious as one of the most useful plants a gardener can grow, and he is not far wrong. In course of time the new dwarf strain will drive the old tall form almost, if not quite, out of cultivation.

—— Erica Bowieana. — That Heaths are less grown than they ought to be is a fact that cannot be confuted. Why everybody should do alike is a social problem which we are very likely never to have satisfactorily solved. But it is a remarkable fact that if Jones takes to Heath growing, his neighbour Robinson will in all probability do the same. And whoever thinks of making the venture will find in the above variety a striking and useful plant. The shoots are of a silvery shade, and are covered with elegant white waxy-looking flowers of great substance and purity. The variety flowers during the autumn, and makes a lovely conservatory or room-plant.

—— Erica cerinthoides coronata.—One of the most striking of autumn-flowering Heaths. It bears from eighteen to twenty of its bright scarlet flowers upon the point of each shoot, which renders it an invaluable variety for cutting, or, grown in small pots, a few plants would be very effective arranged among double white Primulas, the early kinds of which will be coming into blossom in a few weeks.

—— Genista fragrans. — That people should struggle to bring neglected old plants of these into good health seems hard to understand, when young plants nearly a foot across, and covered with flowers, may be grown from the cutting in twelve months, and bought for a mere song. Now is the time to get hold of plants for growing on into specimens for greenhouses and conservatories next season, after they have been used as table or window plants through the winter.

—— Clematis Flammula.—As an amateur's plant we know of few others more useful than this. It is especially fitted for covering trelliswork in villa gardens, or creeping up rusticwork or balustrading, where its little white flowers, if not particularly fascinating, are at least more effective than many other creepers which will not thrive in draughty or exposed situations.

—— Hydrangea paniculata grandiflora.—It will be many more years before the last is heard of this beautiful flowering shrub. Individual plants of it have found their way about, and may be seen here and there sometimes fairly well grown, and at other times languishing in a poor dry soil, where it never will or can succeed. It is a plant that wants a little cultivation before it developes its true characteristics. The flower-heads are seldom seen half the size they ought to be, nor anything approaching their true colour. We have seen single plants of it frequently making a good show, but had no idea of the fine effect it produces *en masse* until we saw it a few days ago in Mr. B. Maller's nursery at Lee. A whole bed of it liberally cultivated will be the coming feature of the shrub garden.

—— Philadelphus aurea variegata.—When we cannot have flowers we can at least have leaves, and even leaves are pretty, especially in autumn. This plant is nearly the colour of variegated Balm, and looks well at the front of a shrubbery.

—— Bouvardia corymbiflora. — A plant so well known and so universally grown seems to require no further recommendation were it not for the fact that private gardeners only grow a single plant where they ought to grow a dozen or a score. The flower-trusses are not so compact as in many other varieties, but the florist who knows what to do with the individual pips does not grumble at this. He wires them, and smiles all the while he is doing so. Every private gardener now-a-days is more or less of a florist; and, besides, a flowering plant of any kind or habit is useful to him during this month and next. Even when the flower-truss spreads about among the green leaves, the plant is pretty for a sitting-room, and we think more of it should be grown for autumn decoration. Mr. B. Maller has a fine stock of it now in flower in his nursery near Lee.

—— Rhodochiton volubile.—The climate of Penrhyn is not to be taken as a criterion for other places less favourably situated, none the less it is worthy of notice that the plant above named proves hardy against a wall there.

—— Dissolution of Partnership.—The firm of Brown & Dickson, of Nonpareil, St. Peter's, Jersey, Vine growers, has been dissolved, and the business will in future be carried on by Messrs. Dicksons & Co., under the personal superintendence and management of Mr. W. H. Dickson.

—— Mr. Ralph Crossling. — Our esteemed correspondent, Mr. Crossling, leaves Lord Windsor's service on the 14th inst., and will be succeeded as Gardener at St. Fagan's Castle by Mr. Meredith, late Gardener to Lady Downe, at Baldersby Park, Thirsk. Mr. Crossling has taken a nursery, about 11 acres in extent, at Penarth, a fashionable watering-place near Cardiff; and we are sure his many friends will heartily wish him the success that so good a cultivator well deserves.

—— The Weather.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending Sept. 4, issued by the Meteorological Office, London:—The weather has again been very gloomy and unsettled in all districts. Rain has been very general, and, excepting in the N.E. and E. of England, the amounts measured have been large. In some parts of Great Britain thunderstorms have been experienced. The temperature, although higher than during last week, has again been a little below the mean in most places, but in "England, S.," "Scotland, E.," and "England, N.E.," it has been about equal to the mean for the season. The maxima, which were registered on various days in different districts, ranged from 67° in "England, N.W.," and "Scotland, W.," to 71° over E., central, and S. England, and 72° in "Ireland, N." The thermometer was generally lowest on August 31, when it fell to 38° in "Scotland, W.," 41° in the Midland Counties, and to between 42° and 46° elsewhere. Rainfall has been slightly less than the mean in "England, E.," and "England, N.E.," but more in all other districts. In Scotland, the south of Ireland, and the south-west of England, the excess was large. Bright sunshine does not differ materially from that reported last week, the percentages varying from 17 in "England, N.W.," to 34 in "England, S." Depressions observed:—Barometrical pressure over our islands and their neighbourhood has again been influenced by several disturbances, more or less serious, travelling in an easterly direction. The wind has consequently varied in direction between S. and S.W., and during the early part of the period rose to a strong breeze or gale in nearly all parts of the kingdom.

—— Gardening Appointments.—Mr. W. Sheppard, late Gardener to R. L. Bevan, Esq., Brixworth Hall, Northampton, has been appointed to succeed Mr. Payne at Birkfield, near Ipswich; and Mr. W. Lewis, Foreman under Mr. J. Sheppard at Woolverstone Park, is leaving to take charge of the gardens of H. T. Gurdon Rebow, Esq., at Wivenhoe Park, Colchester.—Mr. William Ware, late Foreman in the Gardens at The Daison, Torquay, is engaged as Gardener to Admiral Tucker, Trematon Castle, Saltash, Cornwall.—Mr. Lewis Jordan, formerly Gardener at Norman Court, Salisbury, has been engaged as Gardener to Major Tempest, Coleby Hall, Lincoln.—Mr. W. Kendall, late Gardener to the the Rev. H. E. Chapman, The Rectory, Donhead St. Andrew, Wilts, is engaged as Gardener to the Lord Justice Brett, Heath Farm House, Watford, Herts.—Mr. T. Hatherly, from the Gardens, Howsham Hall, Kirkham, York, is engaged as Gardener to W. Dunlop, Esq., The Grange, Bingley, Yorkshire.

SOUTH BANK, IPSWICH,

The Residence of F. Vulliamy, Esq.

This is not a large garden, like many of those reported on from time to time, but what it lacks in size is more than made up for by the way in which it has been laid out and the rich variety of shrubs and plants it contains. As its name implies, it is a sunny bank, which bank rises from the road, forming its front boundary, to a height of 70 or 80 feet, and near the centre of the ground the house and conservatory are built. From these winding walks are carried and edged with turf, around and through bold masses of earth thrown up, on which shrubs, both evergreen and deciduous, are planted, and amongst these and in front flowering plants in great numbers may be seen; and instead of these being arranged after the too prevalent fashion in masses, in beds, or in interminable rows along the borders, they are planted in the mixed style, and therefore there is something of fresh interest at nearly every step one takes. The soil being loose, through having been moved to a great depth, and of a sandy nature, everything does well in it, but much of this is no doubt owing to the loving care Mr. Vulliamy bestows on his pets, as he not only laid out the place himself without professional aid, but he is gardener-in-chief, and only employs an ex-policeman and other similar help to keep all in order—and such order, too, as any one might envy, for every inch is neatness and smoothness itself, without a weed to be seen.

In planning the garden Mr. Vulliamy has had an eye to the useful as well as the ornamental, as at the top part, at the back of the lawn, low bush fruit trees are planted, and these are pictures of health, and as they can be seen from nearly all parts of the ground they must form a most pleasing sight when in bloom. Lying behind these fruit trees, quite at the top, at a high elevation, the tennis court is made, and being partly shaded by tall Poplars, the spot, with its summer-house, must be an enjoyable one for those who look on or take part in the game. The cutting out and throwing up of the many high mounds or banks has not only added greatly to the extent of the place by increasing its surface, but has afforded many different aspects for plants, and the shade-loving and those that require a little or much sun can all be accommodated. On the north side Rhododendrons, Azaleas, and Kalmias are just at home, and do well in the natural soil, which, as before stated, is sharp and loose, and on the more sunny parts all other things flourish. Running up the bare stems of the many young trees, Convolvulus and Nasturtiums may be seen in all their natural beauty, as they support themselves by laying hold of the branches and droop and festoon in the most pleasing manner, and show off their gay blossoms to the greatest advantage.

Among the shrubs to cover up and furnish the bare ground, Epilobium angustifolium, the giant Impatiens glandulifera, and Foxglove, were towering aloft, and well fitted for the position they looked. Nearer the foreground, single Dahlias, Hollyhocks, Kniphofia, and other stately herbaceous plants, form quite a bold feature. In a large clump near the house Castor-oils and several kinds of Abutilons are planted, and a mixture of these latter and Fuchsias in a long winding bed promised to be particularly good. Lantanas, which are not generally seen in gardens, were specially fine, and it is surprising with the great variety of these there now is, that they are not more grown, as they are most valuable for decorative purposes, either indoors or out, and they are very easily raised and increased either by cuttings or seed.

Many have great difficulty in keeping Lilium auratum, but with Mr. Vulliamy it not only lives and grows strong, but increases, which shows clearly that the bulbs to remain healthy require a clean, sharp, fresh kind of soil. This also suits Gladiolus, as Mr. Vulliamy has them particularly fine, sending up magnificent spikes of their finely coloured blooms. Another bulbous plant that strikes every one, Mr. Vulliamy grows in quantity—the Tigridia Pavonia, which is gorgeously beautiful and showy in the extreme, with its large, beautifully spotted flowers. The bulbs of these, like Gladiolus, are hardly safe left in the ground during winter, but should be taken up, stored in dry sand, and be planted out again early in spring. The Cardinal flower, Lobelia cardinalis, is also a striking plant; this, too, is to be seen at South Bank in all its splendour. The best of these mixed borders, like Mr. Vulliamy's, is that there is

no limit to the variety one may have, and with him there are not only perennials and biennials, but numerous annuals, among which I specially noticed the showy Godetia Whitneyi, which, when the sun is on it, is brilliant, and makes a fine show. Small as the place is, it has a few beds, and one filled with mixed single Petunias is very effective. *J. Sheppard.*

PLANT PORTRAITS.

AËRIDES HOULLETIANUM, Rchb. f., *Gard. Chron.* 1872, p. 1194; *Illust. Horticole*, t. 465.—A beautiful species, with yellowish sepals and petals, yellow-buff; lip large, 3-lobed, the central lobe spade-shaped, white, tipped with pink.

APPLE DOUBLE BON POMMIER, *Revue Horticole*, Aug. 1.—This "doubly good" Apple is apparently a large, handsome, spherical variety, somewhat depressed at both ends; yellow, brightly streaked and tinged with red on the sunny side. The stalk is very short, the eye open, the flesh white, sugary, and delicately perfumed. It was raised by M. Dubois.

APPLE WILHELM VON ELSNER'S SEEDLING, *Garten Zeitung*, August.—Fruit of middle size, oblong, furrowed towards the apex, eye closed, base umbilicate, with a short stalk. Season, November—March.

BESCHORNERIA BRACTEATA, Jacobi; Baker, in *Bot. Mag.*, t. 6641.—The most robust and free-flowering of all the cultivated species. The glaucous lanceolate leaves are in tufts, the inflorescence 4—5 feet long, with tufts of stalked cylindrical flowers, the ovary brownish, the perianth segments greenish, pink at the base. Hort. Kew.

CATTLEYA TRIANÆ, *Garden*, July 22.—Backhouse's variety, with relatively dark flowers, the lateral petals pencilled and the lip violet with a deeper coloured centre and a white base. The white variety is also figured. Flowers in winter and spring.

CŒLIA BELLA, Rchb. f.; Moore, in *Orchid Album*, 51.—Pseudobulbs globose smooth; leaves in pairs, evergreen, linear lanceolate; racemes from the base of the bulbs 5—8 flowered; flowers 1½ inch diameter; sepals and petals oblong, creamy-white, tipped with magenta; lip 3-lobed, the central lobe spreading, ovate acute, yellow, prolonged into a long spur. Native of Guatemala.

FRIESIA REFRACTA, and F. REFRACTA LEICHTLINII, *Garden*, July 29.

GENTIANA DECUMBENS, L., and PALLASII, Regel, in *Gartenflora*, t. 1087, figs. 1, 2.—Leaves lanceolate, flowers in terminal tufts, funnel-shaped, deep blue. Native of the Altai Mountains.

HEDYCHIUM GRACILE, Roxb.; Hook., in *Bot. Mag.*, August, t. 6638.—Leaves lanceolate, glaucous green; flowers numerous in terminal spikes, white with style and stamen crimson, and protruding far beyond the flower. Sikkim. Hort. Kew.

LÆLIA AUTUMNALIS VAR. ATRORUBENS, Backhouse, in *Gard. Chron.* n.s., xii., 232; Moore, in *Orchid Album*, t. 49.—Flowers in terminal racemes, large, rich magenta. Mexico. It likes exposure to the sun, and plenty of water in the growing season.

ODONTOGLOSSUM MACULATUM, Lindley; Moore, in *Orchid Album*, t. 52.—A Mexican species, with erect racemes of large flowers; the sepals lanceolate, chocolate-brown; the petals broad, oblong, yellow, marked at the base with brown spots; the lip cordate acuminate, yellow, with brown spots.

SAXIFRAGA CAMPOSII, Boiss. et Reut.; Hooker, in *Bot. Mag.*, t. 6640.—A Spanish species, closely allied to S. Maweana, but has smaller leaves. Habit tufted; leaves long, stalked, roundish, coarsely toothed; flowers dull, in terminal panels. It is the S. Wallacei of gardens.

SONCHUS JACQUINI, DC.; Hook. f., in *Bot. Mag.*, t. 6642.—A suffrutescent Composite, with pinnately lobed leaves, white on the under-surface; flower-heads large, yellow. Native of the Canary Islands. An ornamental greenhouse plant.

TULIPA DIDIERI, Jordan; Baker in *Bot. Mag.*, t. 6639.—Like T. Gesneriana, but with more pointed segments, crimson, with a basal spot, margined with yellow. Savoy. Hort. Kew.

ZYGOTETALUM CLAYI, Rchb. f., in *Gard. Chron.* n.s., vii., 684; Moore, in *Orchid Album*, t. 50.—A hybrid between Z. crinitum and Z. maxillare, with evergreen foliage, and racemes produced from the base of the pseudobulbs. Sepals and petals brownish-purple with a narrow green border; lip broad, deep violet.

THE HOLLYHOCK MOTH.

(DEPRESSARIA MALVELLA, *Hübner.*)

DURING the months of August and September the Hollyhocks may occasionally be found to be infested by small caterpillars, the button-like seed vessels or capsules looking dirty and dead as if they had become rotted by wet, but on pulling back the calyx it becomes at once evident that insects have been at work, and on breaking one of the capsules in halves a hole is to be found bored through the centre of each seed, as shown in the middle left-hand detached figure in our woodcut (fig. 59). This hole not unfrequently forms an uninterrupted gallery nearly half round the capsule or button, and sometimes larger cavities are to be found; and by the rain getting in they become mouldy and rotten and the seed destroyed. In each of these injured capsules one or more caterpillars are to be found as large as our middle right-hand figure. They are of a dull ochre colour, slightly setose, with two broken ferruginous lines down the back, not close together and forming kidney shaped spots; another similar but less connected line runs along each side above the feet. The head is small, black, and shining; the next segment bearing the first pair of legs is horny, brown, and shining, with a pale dorsal line; the two following segments are the largest, each having a transverse line of six brown dots, the remaining segments have four similar dots on the back, two of which, nearer the fore margin of the segment, are closer together; and there is a line of dots along each side, and another line of more elongated dots just above the legs. There are six pectoral, eight ventral, and two anal feet.

The caterpillars may be found (as we are informed

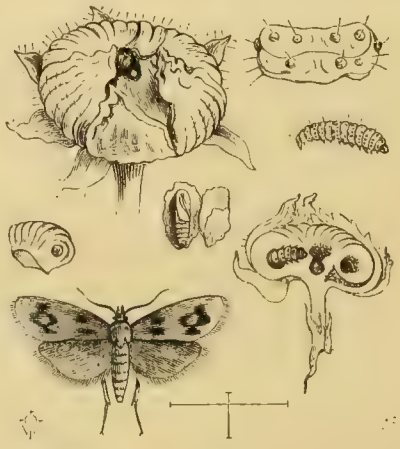


FIG. 59.—THE HOLLYHOCK MOTH (DEPRESSARIA MALVELLA).

by Fischer von Röslerstamm, who has given an illustrated account of this species in his *Abbildungen der Schmetterlingkunde*, tab. 46) from August to October. One was observed by our correspondent, full grown, wandering about to undergo its transformation; and being placed upon a sound capsule, in a very short time it worked its way into the centre of the seeds. Ordinarily they bury themselves beneath the surface of the earth, where they form a strong oval cocoon of silk, coated externally with grains of earth, where they remain in the chrysalis state till the following June or July, when the moth appears. The chrysalis is yellowish-brown, of the usual form, with about six short slender spines or bristles at the extremity of the body, each of which is curved at its outer end. The moth is of a clay colour, varied with dirty brown, with a silky gloss, with two small brown spots placed obliquely towards the base of the fore wings, followed beyond the middle by a larger irregular spot, and the darker apical margin of the same wings is interrupted by a row of pale dots. The fringe of the wings is greyish-brown; the hind wings are ashy brown, with paler fringe. On the under-side the fore wings and the fore margins of the hind wings are greyish-brown, the remaining part of the latter being brighter grey; the fringe of the fore wings yellowish-brown, and of the hind wings yellowish-grey. We need hardly say that it is most advisable to pull off and burn such of the seed-vessels or capsules as show signs of injury caused by these insects, which should be done before the latter descend to the earth to become chrysalids.

The figures in our woodcut represent the caterpillar of the natural size, above which is the figure of one of the segments of its body; a capsule, into the heart of which a caterpillar has bored and buried itself; a half capsule, showing the burrow formed by the caterpillar through the seeds, some of which are represented detached; the chrysalis within its cocoon; and the perfect moth magnified. *J. O. Westwood.*

HOME CORRESPONDENCE.

Melons Without Soil.—The most successful growers of the Melon have generally recommended the use of a rich and somewhat stiff loamy soil for the purpose; and those growers who are unable to procure such, and are compelled to use soil of a lighter description, generally press the same as firmly as possible, considering that loose rich soil tends to an over-luxuriant production of leafage, accompanied by a paucity of fruit. In a little book on the subject of Melon growing, which was published many years ago by an eminent grower of this fruit at that period, the author recommended the use of at least 2 feet of stiff loamy soil, considering that a good depth of such soil obviated the necessity of frequent applications of water, which he considered injurious rather than otherwise. The rules, however, which he gave for successful Melon growing being somewhat dogmatical, have been possibly more honoured in the breach than in the observance, and excellent Melons continue to be produced under circumstances very different to what he recommended, even in a depth of soil not exceeding 6 inches, and this placed upon the surface of a slate shelf. In the Botanic Gardens of this town during the spring of the present year, a hotbed was formed of the usual material, viz., stable manure, and on this was placed a two-light frame, while the surface of the bed was covered with some 2 inches of tan, on which to place the pots which were used for the purpose of striking the various kinds of bedding plants, &c. It also contained some young plants of a favourite Melon in pots some 3 or 4 inches in diameter, and it so happened that one of the Melon plants was accidentally left in the frame after all the other plants had been removed; when observed it was found to have emitted roots from the small pot in which it stood into the tan which covered the surface of the bed, and the shoots of the plant had also made some progress in covering the same. It had now water given to it, and the necessary attention of thinning out the shoots, &c., but the frame did not contain a particle of soil with the exception of what the 4-inch pot contained, and the roots of the plant appear to have extended themselves into the material of which the hotbed was formed, which, as has been said, was ordinary stable-yard manure. The plant is now (the first week in September) carrying a good crop of remarkably handsome fruits, probably some 4 or 5 lb. in weight each, and most of them are nearly ripe, while the foliage of the plant continues perfectly healthy and of a dark green hue insuring a thorough and satisfactory ripening of the fruit. This condition is not always secured, even in cases where the plants have had the advantage of the most approved description of soil supplied to them; and notwithstanding which—more particularly at this period of the year—when the decay of the foliage, and even the decay of the plants, not infrequently precede the ripening of the fruit. In relating the above circumstance, it is by no means intended to imply that a sound loamy soil is not in all respects the best suited for the production of Melons, but merely to notice a somewhat interesting circumstance, and to show (other circumstances being favourable) that this much-appreciated fruit may be satisfactorily grown without it. *P. Grieve, Bury St. Edmunds.*

The Influence of the Previous Summer on the Fruit Crops.—In answer to the letter of "A. D." (p. 308), permit me to say that I have only given an opinion on the Apple and Pear crops. Doubtless, the causes affecting the crops of Cherries and other fruit are of the same nature, but differ in detail. Confining myself, therefore, to these two fruits I would remind "A. D." that what I contend is that imperfect ripening of the wood during the preceding summer is the principal cause of a poor crop. I do not know the climatic conditions of "A. D.'s" locality (which he does not give), and it is possible that he might have had a good crop but for the storm of April 29, which must have seriously damaged the blossoms exposed to it. But, as I have already stated, no damage was done here on that day—the wind not amounting to a gale—yet we are as badly off as anybody for fruit of the above kinds. With regard to Mr. Dancer's opinion I would only remark that the opinion of a cultivator, however experienced, on the meteorological conditions which have affected his crops is worth no more than the opinion of a meteorologist on the cultivation of fruit. My remark as to the exposure of espaliers to wind had reference to the nipping influence of a cold easterly wind rather than to the violence of a storm, which I think does not often injuriously affect the bloom. I entirely agree with "A. D." as to the injurious effect of a wet August on the crop of the ensuing year: that being one of the principal factors in preventing the ripening of the wood. But as a wet August is pretty sure to be accompanied by a low temperature, the mean maximum for the month will still continue to be a good

guide. Having now made up my weather report for the past month I find the results to be as follows :—

1881.	Mean Max	Rainfall.	No. of days of rain.
		Inches.	
July	69.8	1.540	14
August	64.3	3.496	21
	134.1	5.042	35
Mean	67.0		
1882.			
July	67.7	3.52	25
August	66.7	2.52	16
	134.4	6.04	41
Mean	67.2		

It will be seen from the above table that, taking the months of July and August together, while the temperature this year has been very slightly higher than last, it has been a wetter season both as regards the amount of rain and the number of rainy days. I conclude, therefore, that as far as this locality is concerned, we shall have a poor crop of Apples and Pears again in 1883. I should also expect that, inasmuch as Cherries, as "A. D." remarks, ripen their wood earlier than the above, and July this year has been considerably colder and wetter than last year, we shall also have a poor crop of this fruit. In conclusion, allow me to remark that this is a subject of no small economical importance to the country. We cannot alter our climatic conditions, but if we can ascertain the true causes of the failure of our crops, we can then consider what means to adopt to remedy them. *Alfred O. Walker.*

Eversley.—In reply to "H. K." (p. 308) it seems probable, according to the authorities, that Eversley and the other names he mentions have all the same origin. An omission occurred in Mr. Isaac Taylor's letter to Kingsley, as published in the article on Eversley. Mr. Taylor wrote :—"It is my decided opinion that you are right in taking the name of Eversley as one of the few remaining records of the former existence of the wild boar in England. In Anglo-Saxon a wild boar, *eofer*. An Anglo-Saxon *eo* commonly answers to modern English *e*, and Anglo-Saxon *f* to modern English *v*, and Anglo-Saxon *o* often to English *e*. All these changes are seen in the word *seven*, which in Anglo-Saxon was written *seofon*. Hence, Anglo-Saxon *eofer* would take the English form *ever*—genitive *evers*." Among the local names which preserve evidence of the existence of animals now extinct, Mr. Taylor, in his *Words and Places*, enumerates Wolvesey, near Winchester, where the Welsh tribute of Welsh wolves' heads was annually paid. He derives Bagshot from the Badger. Two other names affording evidence as to the wild boar are Eversholt, a parish in Bedfordshire, and Evershot, in Dorsetshire. In reference to the family names in Sussex mentioned by "H. K." I should think Sussex was a nice place formerly for wild boars on account of the abundance of acorns. *Writer of the Article on "Eversley."*

New Varieties of Potatos.—I cannot help thinking that, at present, Potato exhibitions are not doing the amount of good which is generally credited to them. The new varieties as they are introduced are steadily losing in quality, as compared with some of the older English varieties. Some of the leading prize winners are positively unfit for food, and especially is this the case in bad seasons like the present. They are all that can be desired in size and shape, and are also heavy croppers, and great favourites with the kitchenmaid who has to clean them, as their smooth skins, size, and freedom from eyes give little trouble in paring ; but the cook's art is thrown away upon them. I think that if good prizes for cooked Potatos were more freely given at shows, it would to a great extent bring those varieties which possess good cooking qualities more prominently before the gardening world. This is being done at some local shows already, and I have noticed that the cooked Potatos attract more attention than the others. In a contest of this kind, what chance would the celebrated International Kidney, or the Vicar of Laleham, and other well-known prize-takers, have against the old Lapstone Kidney, Fluke, the Ashleafs, or Paterson's Victoria, and many other old sorts, that are now so seldom seen inside an exhibition tent? Some of the new sorts are, of course, of good quality ; the Schoolmaster is one in a fair season, but this season even that popular variety is a long way behind some of the older sorts I have named grown beside it. Most of the new exhibition varieties are also very poor disease-resisters, so that in a season like the present they go wholesale in spite of all the efforts made to save them. The first spots of the disease that appeared this season was in a batch of Ashleaf Kidneys which were growing on a plot of ground on which, last year, a lot of American varieties were grown for trial, some of which were badly diseased, and had rotted in the earth. *G. B. G.*

Branch Propagation of Apple Trees. — On visiting a cottage garden near to this town during the summer of 1881, I was interested in the appearance of an Apple tree which had the appearance of being some twenty or more years old, and which was carrying a good crop of Apples, but at the time I saw it the fruit was in an unripe condition. The singularity of the tree, however, was the circumstance of its branches, at irregular distances, showing protuberances or burrs, which I at first sight supposed to be indications of canker, although the tree was remarkably healthy, and the owner assured me that if any of the branches were cut off close under the burr, and the same inserted in the soil, roots would soon be produced, and the branch would become a young tree. The tree in question, he said, he brought, in the form of a branch, from a distant part of the country many years ago. On visiting the same garden during the present season I found the tree still quite healthy, but bearing no fruit, but in this respect it does not differ from other trees in the garden, and in the neighbourhood. On close examination the burrs or protuberances appear to be accumulations of undeveloped roots, which when placed in moist soil speedily become active. There may be nothing unusual in what I have related, but I have no recollection of having before seen an Apple tree present the singular appearance which this tree does. *P. Grieve, Bury St. Edmunds.* [The variety is, no doubt, the old Burr-Knot, which has all the characteristics of the tree described by our correspondent. ED.]

Gladiolus Colvillei albus. — At p. 122 a correspondent refers to this beautiful early white Gladiolus as being specially adapted for pot culture and for early forcing. It is well known to be perfectly hardy, and that when planted outside in October or November, which is the best time, it blooms in July following. I should feel obliged for any further information as to its growth in pots, especially when forced, for if it can be forced with ease and certainty the fact will greatly enhance the value of this most useful and elegant Gladiolus. *Albo.* [This useful variety of Gladiolus should be potted early—as soon, in fact, as it is received—if it is contemplated to somewhat hasten their flowering by this means of culture. They may be had in flower with comparative ease by April ; care must, however, be taken not to push them on too rapidly. The plants mentioned by "Albo" were grown in 6 inch pots, with six or seven bulbs in each. When the growth of these commenced, and it was considered safe to trust them out-of-doors, they were plunged in cocoa-fibre to counteract too rapid evaporation. The growth came away vigorously, and produced excellent spikes. The fibre was allowed to remain around them till the plants were removed to the greenhouse to protect the flower from rain. In forcing this bulbous plant the chief things I consider towards successful cultivation are early potting, and when growth commences to bring them along very gradually at first, even until the flower-spikes appear, after which they will bear a trifle more forcing. The ordinary soil in which Hyacinths are potted will suit them very well. When the spikes commence to push forth occasional doses of liquid-manure will be beneficial. A position near the glass should be accorded them to prevent the spikes becoming too much drawn. *J. H.*]

Growing Vegetables on Farms. — We have heard much of late years about the depressed state of agriculture, but much of it arises through farmers growing or depending so much on corn, which comes in so cheap from abroad, but what is wanted as well as corn is cheaper meat and vegetables, which people in towns might have, if farmers would only devote more of their land to green crops and stock. Without cows being kept we cannot have calves ; and the same with sheep and lambs, which accounts for the enhanced prices of beef and mutton, which is becoming more scarce and dear every year, and would be more so were it not for our foreign supplies. I do not intend, however, to go into this question now, and shall only deal with vegetables which people in cities and towns never get enough of, for the simple reason that they are only grown by a few market gardeners, who are heavily handicapped by having the dearest of land, and when grown they go into the hands of greengrocers and middlemen, who retail them at about twice as much as they give. This might all be done away with if there were proper markets open where things could be sent on certain days in the week, so that consumers could come and buy of the growers, which the lower classes at least would only be too happy to do. To attempt to cultivate fruit in this uncertain climate of ours is futile and risky in the extreme ; but not so with vegetables ; and to show what may be done, I will just mention the case of a farmer near here who this year had his Broad Beans gathered green from three-quarters of an acre and sold them to people who came after them from the town, to whom they were supplied at 3s. per sack, and the produce from the three-quarters of an acre was over 100 sacks. At this extremely low rate they paid well, for besides the £15 odd, there was the green straw the farmer had for food for his cattle, which they ate with avidity ; and as the Beans stood so short a time on the land, they could not have robbed it to anything like the extent they would have done if they had stood to ripen before being used. The same farmer had his white Turnips left thick, and keeps on pulling out any that are large enough for boiling and sending them into the market. By doing this, he will have a full crop to stand for feeding if he so wishes, or he can, and most likely will, market the whole. If Beans and Turnips pay so well, Cabbage and Cauliflower would do so even better, especially during spring and autumn, and Brussels Sprouts drilled and thinned out instead of being planted, would yield a fine revenue in the winter, as they are hardy enough to stand anywhere. Of course it is only farmers near cities and towns who could go in largely for this vegetable growing, and for these there is a fine opening and a certainty of large profits, and not only would they benefit themselves, but their fellows also, by producing a food they so much stand in need of. *J. S.*

The Past Season and the Fruit Crops.—Many of the Apple trees here, which, owing to a succession of unfavourable seasons, had got into a very bad state of health, made a better growth last year, and are this season bearing a fair crop of fruit, so that here we cannot blame last year for this year's unfruitfulness. At the same place some of those which bore heavy crops last year have scarcely any this season, although growing by the side of the unhealthy trees and under exactly the same conditions ; this applies to dwarf and standard trees also, and in various situations. In my opinion the dull and damp weather, with the low temperature prevailing at the time of flowering, is accountable for this season's failure, probably aided to a certain extent by the partial exhaustion of the trees after the heavy crops of last year. *W. H. Divers, Burghley.*

Watering Fruit Tree Borders.—An erroneous notion prevails among a section of fruit growers largely composed of amateurs, that fruit trees grown under glass should be kept dry in autumn, as a certain remedy in ripening the wood. How fallacious this doctrine is, experienced gardeners are well aware. But our predecessors had faith in the system, and there are a good many pupils of the old-fashioned school who believe in it to this day. No wonder, then, that those of less experience take the wrong tack in fruit growing. When Grapes are cut and Peaches are gathered attention to fruit trees too often practically ceases for several months, until it is time to prune the trees late in autumn or early in winter. Rest is important to fruit trees, but rest is one thing, starvation another. The line must be drawn about mid-way, and the resting period must be given at the proper time. When should trees be rested? Circumstances vary so much that hardly any two cases are alike, therefore I will endeavour to be explicit, and leave my readers to act upon their own judgments. In the case of Peach trees no end of mischief is caused through allowing the trees to get too dry at their roots. As long as there is a leaf left upon a Peach tree its roots should be kept well supplied with water—yes, and afterwards—in very light soils. There is no blinking the fact, that there can be more done in the autumn towards producing a heavy crop the following season than at any other period of the year. It is when trees are forming their fruit-buds and swelling them, that we ought to be kind to them. Feed them well in the autumn as long as there is heat and light, and let them rest in winter, when there is an absence or at least a minimum of both. Light causes the tree to grow and make wood, but we are indebted to the heat-rays for the highest degree of fruiting power. But the action of the latter is neutralised if we starve a tree when its buds are in process of development. Try the experiment, and what is the result? Why, that half the buds fall when the sap begins to move in the spring. I have known cases where, in trying to make amends for a bad system of treatment, even greater blunders have been made. For example, if a tree is found to be very dry at its roots, it should not be deluged with water all at once, but have a little given at a time upon several occasions until the desired condition has been brought about. Vines may be treated in the same way, and they will bear more copious supplies of liquid-manure when their young roots begin to change colour from white to brown, at which season the fruiting eyes for next season cannot develope or swell properly unless the roots are in vigorous action and are kept well supplied with water. In winter, after the leaves have fallen, I like to see fruit borders in that free mellow state which is best described as being neither too wet nor too dry. *W. H.*

Reports of Societies.

Royal Horticultural: *Sept.* 5.—A meeting of the Fruit and Vegetable Committee was held at Chiswick on the above date, John Lee, Esq., in the chair, to examine the collection of Potatos. The following varieties proved of handsome appearance and to be possessed of good cropping qualities:—Clarke's No. 2, a long white kidney of the Magnum Bonum type; Sir Walter Raleigh, white round; No. 6 (Fenn), pink kidney; Richter's Imperator, white kidney; Stewart's Seedling, white kidney; New Early Premier, white round; Lord Rosebery, red round; Seedling No. 1 (Kerr), red-flaked kidney; Carter's Eight Weeks, white round; Brand's No. 4, 39, and 31, white round; Brownell's No. 8, white round; Recorder, white, long kidney. On being cooked the following varieties proved of excellent quality, and were awarded First-class Certificates, viz., Richter's Imperator, a long white kidney, received from the Lawson Nursery and Seed Co., Edinburgh; Clarke's No. 2, a long white kidney of the Magnum Bonum type; and Rand's No. 39½, a long kidney of the Snowflake type, received from Messrs. Bliss & Sons, Boston. Sutton's Prizetaker, Certificated by the committee last year, proved again to be of splendid quality.

Specimens of a Pear named Tyson, grown in the gardens on a dwarf bush tree, received from Mr. Rivers, were submitted, and being considered of very excellent quality for the season, was awarded a First-class Certificate.

Mr. Muir, Margam Park, South Wales, sent examples of Muir's Hybrid Perpetual Vegetable Marrow, which were considered very handsome.

Scottish Horticultural Association. — The ordinary monthly meeting of this Association was held on the 5th inst., the President in the chair. Mr. Robert Lindsay, Royal Botanic Gardens, read a paper on "Sarracenias and Droseras." He said that the number of forms of these had increased by one-half during the last ten years. For this we are indebted, not to travellers in foreign parts, but to the perseverance and skill of the hybridist at home. The late Dr. Moore, of Glasnevin, was the first to raise a new hybrid, having accomplished this in the year 1874. To Dr. Paterson, of Bridge of Allan, was also due the credit of having raised a new Sarracenia; it was a cross between purpurea and Drummondi, and was a decided acquisition to this class of plants. Mr. Lindsay said that Sarracenias and Droseras should be repotted annually, and that February was the best month to perform the operation. Greenfly attacked the young leaves vigorously, and was as great an enemy to them as it was to the other plants. Mr. Lindsay illustrated his paper by showing and explaining the characteristics of a considerable number of specimens, the Darlingtonia californica and Dionea muscipula coming in for a large share of his remarks.

Mr. M. Todd, Maitland Street, next read a paper, the subject of which was, "The Poet and the Flowers."

Mr. Geo. C. Murray, The Schoolhouse, Carnwath, received a First-class Certificate for a new seedling fancy Pansy, named Archibald Bowe; it had a creamy-white ground with a dark maroon blotch. He also received a Commendation for a seedling fancy Pansy named David Aitkin, a yellow ground flower with a very dark blotch. Messrs. Thos. Methven & Sons received a Certificate for a seedling double Begonia, named The Premier; the colour of which is rosy-pink. Mr. Thos. Bowman, gr. to the Hon. Lord Deas, at Pittendreich, received a Cultural Certificate for a Jefferson Plum tree, grown in a 14-inch pot, which had sixty-four fruit upon it.

Mr. A. McIntosh, Paxton House, Berwick-on-Tweed, exhibited two new seedling Potatos of some merit; Messrs. Downie & Laird exhibited three seedling Coleuses; Mr. R. Munro, Abercorn Nursery, exhibited Calceolaria sulphureus splendens; Mr. Thos. Ferguson, Shu-le-Crow, showed flowers of the wild Balsam; Mr. Chapman, Easter Duddingston Lodge, sent a collection of hardy herbaceous plants in flower; and Mr. Peter Robertson, Hartrigge House Gardens, exhibited a new seedling white Clove Carnation.

Sherborne Horticultural.—This Society held its annual exhibition on August 30 in the midst of the ruins of the old Castle. It was considered to be the finest the Society has held, the competition in all classes being very spirited—plants and cut flowers, fruits and vegetables alike. The total number of entries were 2576; and with very few exceptions all were staged.

The principal class for plants, twelve varieties, distinct, in or out of bloom, brought out five competitors, Mr. Cole, gr. to J. Lawless, Esq., of Exeter, was deservedly awarded first honours. This was the first time a collection has been staged at Sherborne from this establishment, placing former prize winners of course in the background. In this splendid collection was staged a magnificent Erica Marnockiana, Ixora Colei, Clerodendron Balfourianum, Allamanda Hendersoni, Dipladenia Brearleyana and amabilis, Thrinax elegans, Cycas revoluta, and Crotons Disraeli and Victoria. Mr. Appleby, gr. to Mr. T. D. W. Bide, Yeovil, and Mr. Hazel, gr. to Sir Richard Glyn, took 2d and 3d prizes respectively with very creditable collections. In class 2, for twelve stove and greenhouse plants, in or out of bloom, Mr. Commins, gr. to Mr. J. Aitken, Wyke Hall stood 1st, Mr. Hazel 2d, and Mr. Appleby 3d. Fuchsias shown in nine distinct varieties, brought out a good competition, and the best grown plants that have been staged at any show in the West this season. Mr. Garaway, of Bath, was an easy 1st with splendid pyramidal plants; 2d, Mr. Harris, of Dorchester; 3d, Mr. Hazel. For twelve Ferns and Lycopods, Mr. J. Crump, gr. to Mr. J. Neal, Kingsdon, was as usual 1st, with a very nice collection.

Cut flowers formed a most attractive feature of the show, eight competitors staging twenty-four trebles of Roses. Messrs. Cross & Steer, of Salisbury, were awarded the 1st prize; Mr. J. Davis, Wilton, the 2d. The class for twenty-four Dahlias brought together among the competitors two of the most famous growers—Messrs. Keynes & Co., of Salisbury, and Mr. J. Nation, Staplegrove, who were placed 1st and 2d, as given, each of them showing in splendid form. The executors of Mr. Blandford won the 1st prize for twenty-four Verbenas. Messrs. Kelway & Son, of Langport, Somerset, were 1st for Gladioli, with a very fine collection; Mr. Daley, of Yeovil, being 2d. The classes for twenty-four and twelve Asters were strongly contested in both cases, and Mr. Garaway took the 1st prizes.

Fruit was a great feature also; but though the entries were numerous the quality was absent. The Digby Cup, given annually by the President, was this year won by his own gardener, Mr. Pragnell—Mr. Pullman, gr. to Mr. R. B. Sheridan, Frampton Court, the Cup winner last year, taking the 2d place. In Mr. Pragnell's collection the Black Hamburghs were very good indeed, Foster's Seedling, good bunches, but not coloured; good dishes of Brown Turkey Figs, and Williams' Bon Chrétien Pear. Mr. Pullman was close on the heels of the former gentleman with good Black Alicante and Muscat of Alexandria Grapes, Dymond Peaches, and Pine-apple Nectarines, his weak points being in Morello Cherries, Melons, and Plums.

For a collection of twelve distinct vegetables Mr. Pragnell also took the lead with a well grown clean fresh lot. These collections being decorated with Parsley, and staged on the tables instead of dishes, presented a very pleasing appearance. There were classes for amateurs not employing gardeners regularly, and for cottagers, and their productions compared very favourably with those of the professional gardeners, &c. *D. C. Powell.*

Harpenden Horticultural.—The fourth exhibition of this Society was held on Thursday, August 31. The site of the exhibition was Rothamstead Park, the seat of Sir John Bennet Lawes, the marquees for the purposes of the exhibition being erected just beyond the entrance gates to the spacious grounds. Weather excepted, the show of this youthful Society was a decided success, and a great advance on those of the three previous years. The principal marquee was 130 feet long by 60 feet wide, and being tastefully decorated, was very effective. The plants, although not large, included some exquisite flowering and foliage plants, as well as Ferns. The schedule was a very comprehensive one, the important feature being a long list of special prizes offered by ladies and gentlemen of the immediate neighbourhood; but as space will not admit of a detailed account of each, the more prominent exhibits will only be noticed.

The special prize offered by J. Blundell Maple, Esq., of Childwickbury, for a group of plants arranged for effect in a space 18 feet by 6 feet, brought out two competitors, between whom there was a close run. The winner was Mr. G. Underwood, gr. to C. R. Fenwick, Esq., High Firs, Harpenden, who showed beautifully Coleuses, Gloxinias, and some elegant foliaged plants, which predominated, as they ever should in such a collection. The 2d lot came from Mr. J. Freeman, gr. to W. B. Greenfield, Esq., Beechwood Park, Dunstable. The special prize offered by Arthur Flower, Esq. J.P., The Hyde, Luton, for twelve miscellaneous plants, in or out of flower, distinct, was also taken by Mr. J. Underwood, with well grown and healthy specimens of Vinca oculata, Begonia Weltoniensis, Dipladenia boliviensis, Croton pictus, Cassia corymbosa, Bougainvillea, glabra, &c. The special prize offered by John S. Hill, Esq., J.P. Hawkswich, St. Albans, for nine zonal Pelargoniums, not less than six varieties, and that offered by Abel Smith, Esq., M.P., Woodhall, Hertford, for six double zonal Pelargoniums, distinct, were both won by Mr. C. Sibley, gr. to H. T. Hodgson, Esq., Harpenden, with remarkably good and clean-looking plants in beautiful flowering condition. Mr. J. Elmer, gr. to Mrs. Warde, took the 1st prize, offered by R. L. Howard, Esq., Mackerye End House, Wheathampstead, for six tuberous Begonias, distinct; and Mr. C. Sibley, gr. to H. T. Hodgson, Esq., secured 1st honours for a special prize offered by W. S. Brown, Esq., J.P., Digswell House, Welwyn, for six Coleus, distinct. Messrs. E. P. Francis & Co., Hertford, adorned the entrance of the principal marquee with a fine collection of Plants, not for competition; and Sir J. B. Lawes, Rothamstad, contributed a similar group for the extreme end of the staging. Roses were present in considerable numbers and of great merit. The class for forty-eight varieties brought out some splendid blooms from Messrs. Paul & Son's well-know nursery, Cheshunt,

Messrs. W. Paul & Son, Waltham Cross, exhibited a meritorious collection of cut Roses, not for competition, including Marie Baumann, Alfred Colomb, Louis Péronet, Duchess of Bedford, and Star of Waltham. The Rev. W. H. Jackson, Vicar of Slagsden, took 1st for twenty-four varieties of cut Roses, clear and lovely in colour. Messrs. Kelway & Son, Langport, Somerset, en-livened the show as to colour, with a grand collection of Gladiolus which were greatly admired, and attracted as much notice as perhaps anything in the show; for brilliancy of tint and for the elegance of the spikes, it would be extremely difficult to find their equal.

The Society is to be congratulated on its exhibits of Dahlias which with those competing and those sent not for competion, certainly formed a glorious lot, surpassing anything hitherto produced at Harpenden. In the class for forty-eight cut blooms, distinct, Messrs. Paul & Son, Old Nurseries, Cheshunt, were awarded the 1st prize, their collection containing specimens of Prince Arthur, Beauty of Wilts, Leah, and the peculiarly tinted Northern Spy. The other competitor in this class was Mr. Henry Glasscock, of Bishops Stortford, to whom the judges allotted the 2d prize, but it appeared to be the pretty general opinion of visitors that the two collections were of equal merit. These stands were undoubtedly exquisite, as were also two boxes of beautiful blooms sent, not for competition, by Mr. Chas. Turner, Slough, one of these boxes containing the choicest varieties of the single Dahlia. Grand as the Dahlias were as shown by the nurserserymen those from amateurs were little inferior, the stands of Mr. James Wigan, Bishop's Stortford, and Mr. John Henshaw, Harpenden, being particularly fine. Mr. Henshaw also carried off the Palm with an interesting lot of pompon Dahlias, comprising, among others, Little Nigger, Little Hermann, Lady Blanche, Sensation, and Northern Light.

The show of fruit was excellent both in the gardeners and amateurs' divisions, and the quality of the vegetables exhibited, and more particularly in the cottagers' division, presented a marked improvement upon other years. Amongst the *inter alia* was a remarkable Orange tree, about 2½ feet high, from Mrs. Warde, Harpenden, literally laden with clusters of comparatively large ripe fruit, said to be the Myrtle-leaved variety.

In Division E, open to all lady subscribers, the class for dinner-table decorations was contested by three competitors, the regulations requiring tables 7 feet 6 inches long by 4 feet 6 inches broad completely laid out for eight persons, and so arranged as to show the best means of utilising fruit and flowers in their adornment, Miss Field was placed 1st, Mrs. Mardall 2d, and Miss Elmes 3d. On Miss Field's table, in the centre, was a large glass epergne containing many choice flowers, gracefully arranged; the decoration of the table included Pelargoniums and Roses, intermingled with sprays of Maidenhair Fern, &c. The fruit included a Pine-apple, a Melon, Pears, Peaches, Grapes, and Plums. In the same tent were shown vases of cut flowers, hand bouquets, flowers for lady's hair and dress, and button-hole bouquets.

Collections of wild flowers as shown at local exhibitions have often little to recommend them, either as representing the wild flora of the district or in their arrangement and nomenclature; but at Harpenden, owing in great measure to the painstaking efforts of Mr. Henshaw, the master of the British School, collections of wild flowers and grasses, and of wild fruits, form a very important feature in all the exhibitions; and the excellent assortment afforded evidence of having been collected with much care and at the expense of great time. Moreover, most of them were correctly named, both with their botanical and common name.

Although the committee of management are to be congratulated on the good display of exhibits, there being more than 800 entries, yet they are deserving of commiseration in other respects, for the weather from about 2 o'clock was most unfortunate. The unpropitious character of the elements was all the more disappointing seeing that the fineness of the morning had led every one to expect a brilliant day. Yet we trust that the Secretary, Mr. J. J. Willis, the indefatigable collector, Mr. J. Henshaw, and their *confrères*, will fight on with courage, and bring the Society out of its difficulties. (*From a Correspondent.*)

Shirley and Freemantle Horticultural.—This Society, which operates over a large suburb of the town of Southampton, held its sixteenth annual show in the grounds of Whitewood Park on the 23d ult., and in weather that, considering the Society's usual experience, must be esteemed favourable. The recent exhibition was not only an exceedingly good one for the district, but, what is not now always the case, it was very gay, flowering plants largely predominating. Exhibitions in rural districts almost always lack ample tent space, and the exhibits can seldom be displayed to the best advantage. Thus at Shirley had there been half as much more tent room the entire space might have been well occupied, much to the general advantage, as well as to that of each exhibit. In plants the most important class was that for twelve stove or greenhouse plants, in which Mr. Amys, gr. to Mrs. Eliot Yorke, of Netley Castle, was an easy 1st, with capital specimens, stuff that ought in another year to make really first-rate examples. The collection included three fine Crotons, a large Cycas revoluta, Clerodendron Balfourianum, Vinca alba, Allamanda Hendersoni, and Trachelospermum jasminoides, all finely grown and bloomed; and, not least, a first-rate specimen of the climbing Fern, Lygodium scandens, on a globe-shaped trellis that was worthy of all praise. In the lesser class for six plants the only noticeable feature was a remarkably fine clump of Valotta purpurea, carrying a grand head of bloom. This clump of bulbs in a 12-inch pot gets but indifferent culture and plenty of exposure to hot sunshine on a low greenhouse stage, hence the bulbs get well ripened. In the large decorative groups, fine pyramids, having each 100 square feet base, Mr. Wells, gr. to Mrs. Pearce, Bassett, was 1st, having, in accordance with the terms of the schedule, both effective arrangement and quality. Specially noticeable was a fine spike of Dendrobium formosum magnificum, consisting of nine large, pure white blooms. The other plants were chiefly Ixoras, Begonias, &c., well dressed with Palms, Ferns, Dracænas, and the little Caladium Belleymei, with good effect. Mr. Wills was

also 1st with six fine pyramid Fuchsias, and in the class for single specimens had one of Letty Lye, so good that it was worthily placed before a good Allamanda, shown by Mr. Amys.

In single zonal Pelargoniums Mr. Wills was also placed 1st with superbly bloomed plants, including Mehsta, Le Grande, Beauty of Surrey, Dr. Hogg, &c., these being always well shown at Shirley, as also are doubles, the plants of these staged presenting a most effective feature. In that class Messrs. Ransom & Co., Southampton, were placed 1st, having dwarf well-foliaged and flowered plants, whilst those shown by Mr. Wills, if having perhaps more flower, were taller and not so well clothed with leaves. Mr. Wills was the only exhibitor of variegated kinds, having good well coloured varieties. Mr. Wills, too, had the finest six Begonias, tall well bloomed plants, that were greatly admired. Very interesting were the three collections of Pelargoniums in pots exhibited by trade growers, each one including some 150 plants of fine varieties, single and double. Messrs. Ransome & Co. took the 1st prize, and Mr. B. Ladhams, of Shirley, the 2d. Mr. Amys had the best six Cockscombs, huge well coloured heads; and the 2d best lot came from Mr. Temple, gr. to R. Morris, Esq., Southampton, also very fine combs. There were also classes for Ferns, Celosias, and numerous other plants, inclusive of those in the amateurs' and cottagers' sections, all well filled.

In the fruit section the best six dishes came from Mr. Windebank, Bevoir Mount, who had good Black Hamburgh Grapes, fine Grosse Mignonne Peaches, Duchesse d'Angoulême Pears, Victoria Plums, &c.; Mr. Hayes, gr. to A. Barlow, Esq., Shirley, who was 2d, having, amongst other fruits, some superb Morello Cherries, Some finely-finished bunches of Black Hamburgh Grapes came from Mr. Molyneux, gr. to W. H. Myers, Esq., Swanmore Park, who was placed 1st; the second best lot, large but loose bunches, the berries well finished, coming from Mr. Harris, gr. to J. M. Mordaunt, Esq., Bitterne. Mr. Molyneaux had also the best white Grapes in medium-sized but well-ripened Muscat of Alexandria. Mr. J. Stocker, gr. to C. C. Isted, Esq., Freemantle, coming 2d, with fairly good Foster's Seedling. Amongst Melons, Read's Scarlet-flesh, and William Tillery green-flesh, were by far the best. Mr. C. Baxter, of Shirley, an amateur, sent remarkably fine fruits of Sea Eagle and Grosse Mignonne Peaches. The finest kitchen Apples were Lord Suffield, and the best dessert kind Irish Peach, Red Astrachan coming 2d. Duchesse d'Angoulême and Williams' Bon Chrétien were the ripest and best-flavoured Pears.

In the cut flower classes Dahlias and Roses were shown in capital form; Asters but middling, though plentiful. Boxes of cut flowers were good, Mr. Wills having in this class a rich lot of blooms. Table stands were not meritorious. Bouquets were moderately good, but button-holes were excellent, the six put up by Mr. Ladham being worthy of high praise.

Vegetables form a large element in the Shirley shows, and were on this occasion remarkably good. Potatos especially were in fine form, though as a rule too big. A small collection of nine kinds, shown by Mr. R. Dean, Ealing, attracted much attention, as showing something like refined quality and beauty. Cosmopolitan, Adirondack, Defiance, American Purple, Vicar of Laleham, Early Cluster, and Bedfont Prolific, were all kinds almost unknown in the locality. The best bushel shown in baskets was Bresee's Prolific, and the second best the round American Idaho, a white kind, much grown there for market. The best half-bushel from cottagers was Snowflake, and the second best King of Potatos—both very good. The best nine dishes came from Mr. Axford, gr. to C. Shipley, Esq., Twyford, chiefly American kinds, Mr. Wills having the second best lot, Mr. Bresee and Radstock Beauty being exceptionally good.

Chalfont St. Peters, Bucks: *Sept.* 5.—Under terribly distressing weather auspices did this truly rural Society hold its annual show in the beautiful park attached to the residence of J. N. Hibbert, Esq., for the rain set in early and came down pitilessly all the afternoon. But for this untoward occurrence it would indeed be most difficult to conceive a more delightful place in which to hold a floral exhibition, or where there are more appropriate surroundings. Though ostensibly promoted for the benefit of the cottagers of the district, yet gardeners materially help the show, and foremost amongst their contributions was a superb lot of decorative plants arranged in a long centre table in the show tent by Mr. Hibbert's gr., Mr. Herrin, who had not only capital things but had arranged them with striking effect. Pans of the rosy-purple Achimenes Carl Wolfarth, and of the big longiflora major were amidst Coleus, Crotons, Begonias, Ferns, and Palms, singularly effective. Mr. Herrin also staged as a non-competitive collection fine Black Hamburgh Grapes, Golden Hero of Lockinge Melons, Grosse Mignonne Peaches, Bon Chrétien Pears, Lord Suffield Apples, Morello Cherries, &c., with handsome dishes of International, Vicar of Laleham, Schoolmaster, Royal Ashleaf, Covent Garden Perfection, and Beauty of Hebron Potatos—with other products, all excellent. From other gardeners whose names, unfortunately, were not given, came good collections of plants, fruits, and vegetables, all in unlimited variety and generally good. The bailiff of the estate, Mr. Hilton, seems to be a capital gardener, for he, too, put up, with just pride, most interesting and admirably grown collections of plants, fruits, and other garden produce. In the vegetable classes the Potatos were the chief feature, these being fairly good and shown in great abundance. It is worthy of remark that no product out of season was put into the schedule, and therefore all classes were well filled, even Red Cabbage being shown in fine form. In the plant classes, where bedding Pelargoniums and Fuchsias predominate, the exhibits were unusually good—perhaps the best we have seen from cottagers—all grown in the open air, large, compact, and full of bloom. This little Society affords but another instance, if such were wanting, of the remarkable progress horticulture is making among all classes of the community.

Florists' Flowers.

AURICULAS.—It is now the season when the plants do not require very much attention, but it will not do to leave them entirely to themselves, as greenfly is very fond of the leaves; and decaying foliage, if not removed, is both unsightly and injurious; but the plants, if placed where they ought to be, behind a north wall, will not require water more than twice a week, a large supply of water having a tendency to cause a preponderance of autumn bloom, which is very objectionable. The plants from seeds sown last summer are of various sizes; the largest are good strong flowering plants in large 60-sized pots, and the smallest are still from three to six plants in small 60's. We shall pot all these off this week, each plant singly, in small 60's. We are careful to give each plant good compost to grow in, and as much care is taken of them as if they were all examples of John Simonite. The present season's crop of seed has been sown for nearly two months, and young plants at distant intervals are appearing above-ground; the main body of them will not appear until February or March. All the plants must be well exposed to light and air. We do not put on the lights except as a protection from heavy rains.

CARNATIONS AND PICOTEES.—These require very careful attention as to watering. They are injured by either too much or too little—over-dryness kills the young rootlets formed at the base of the layers. Keep the soil moderately moist. If there are any decayed leaves or weeds about the plants, remove them. It will be time enough at quite the end of the month to remove the layers from the parent plants, and even in October it will be in good time. The compost may be prepared at any time, so that it may be stored in the dry to be ready for use.

DAHLIAS.—Some time ago I was careful to urge the importance of thinning the shoots, and disbudding the flowers, while they could easily be pinched off with the fingers and thumb. All such work ought to be completed by this time. If it is intended to make a display in the garden only, it will not be necessary to cut away many flower-buds, but the laterals must be removed, else the flowers do not show well. Blooms for exhibition must be protected both from rain and sunshine. It is now very interesting work to attend to the seedlings, marking any plants to be grown again, and watching the development of any flowers that give good promise of being advances on existing varieties. *J. Douglas.*

GOLDEN TRICOLOR PELARGONIUM MR. HENRY COX.—If golden tricolors are produced with less freedom than they were a few years ago it can be said of the few new varieties that do put in appearance from time to time that they are decided acquisitions. The variety which heads this paragraph is remarkable for its vigorous short-jointed habit, free growth, fine form of the leaf, and brilliant colouring. It was distributed a year or two ago by Mr. C. TURNER, of the Royal Nursery, Slough, and it was there we recently saw plants of it growing in small pots, and in really fine form. But it is as fine in the open ground as in pots, and makes a charming bed. The variegated tricolor Pelargonium rivals the Croton or Dracæna in the brilliancy of the colours found on the leaves, and it is altogether so unique a plant that it must on no consideration be allowed to drop out of cultivation. At present this is scarcely likely, seeing what great numbers are grown for market purposes. Mr. Henry Cox should make an excellent market variety, and its strong constitution and free growth should make it a formidable variety to Mrs. Pollock. But Mrs. Pollock has become a kind of national household word among tricolor Pelargoniums, and a long time will elapse ere it is driven from this proud position.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON

FOR THE WEEK ENDING WEDNESDAY, SEPT. 6, 1882.

Month and Day.	Barometer: Mean Reading Reduced to 32° Fahr.	Barometer: Departure from Average of 18 years.	Temperature of the Air: Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years	Hygrometrical Deductions from Glaisher's Tables 6th Edition: Dew Point.	Degree of Humidity. Sat = 100.	Wind: Average Direction.	Rainfall.
Aug.	In.	In.	°	°	°	°	°	°			In.
31	29.80	−0.08	62.7	48.0	14.7	54.8	− 5.0	50 5	85	W.: WSW	0.21
Sept. 1	29.51	−0.38	65.0	55.6	9.4	60.4	+ 1.0	59 0	94	S.	0.07
2	29.40	−0.49	69.5	57.5	12.0	61.0	+ 1.7	56 3	85	S.S.W.	0.05
3	29.66	−0.24	69.0	56.5	12.5	61.2	+ 2.1	52.4	74	S.W.	0.00
4	29.99	+0.09	67.0	55.0	12.0	59.0	+ 0.2	51.6	76	N: NW	0.00
5	30.00	+0.10	62.8	53.0	9.8	57.3	− 1.3	51 2	80	WSW	0.34
6	30.10	+0.19	69.2	52.7	16.5	58.5	+ 0.1	50.9	76	N.E.	0.00
Mean	29.78	−0.12	66.5	54.0	12.4	58.9	− 0.2	53.1	81	S.W.	0.67

Aug. 31.—Fine and bright morning; overcast from 2 P.M. with rain falling.

Sept. 1.—Overcast dull day, with light rain; dull, windy, warm night. Maximum temperature of the day 65° at midnight.

— 2.—Windy wild morning; lowest reading of barometer at noon 29 36; squally afternoon; fine night, strong wind.

— 3.—Occasional bright sunshine; strong wind: fine night.

— 4.—Dull morning, fine day and night.

— 5.—Fine, clear, and bright morning; steady rain from 5 P.M. to 10 P.M. Cloudy night, with slight rain.

— 6.—Fine cold morning; sun shining brightly from noon; occasionally overcast after noon; fine clear night.

LONDON: *Atmospheric Pressure.*—During the week ending September 2, the reading of the barometer at the level of the sea increased from 29.76 inches at the beginning of the week to 29.79 inches by 9 A.M. on the 27th, decreased to 29.77 inches by 3 P.M., increased to 29.80 inches by 9 A.M. on the same day, decreased to 29 43 inches by 9 A.M. on the 29th, increased to 30.11 inches by midnight of August 30, decreased to 29.54 inches by noon on September 2, and was 29.67 inches at the end of the week.

The mean reading for the week at the level of the sea was 29.76 inches, being 0.11 inch higher than in the preceding week, and 0.29 inch below the average of the week.

Temperature.—The highest temperature in the shade during the week was 69°.5, on September 2. On August 31 the highest temperature in the day was 62°.7. The mean of the seven high day temperatures was 65°.3, being 1°.8 lower than in the preceding week.

The lowest temperature in the shade in the week was 48° on August 31; on September 2 the lowest temperature was 57°.5, and on September 1 was 55°.6. The mean of the seven lowest temperatures was 52°.2.

The greatest range of temperature in one day was 16°.1, on August 28; the smallest was 9°.4 on September 1. The mean of the seven daily ranges was 13°.1, being 2° smaller than in the preceding week, and this was almost wholly due to the lower day temperatures.

The mean daily temperatures were—August 27, 59.°2; on the 28th, 56°.5; on the 29th, 57°; on the 30th, 57°.8; on the 31st, 54°.8; on September 1, 60°.4; and on the 2d, 61°; of these the first five days were below their averages by 3°.1, 3°.7, 3°.1, 2°.2 and 5° respectively, and the last two days above by 1° and 1°.7 respectively.

The mean temperature of the air for the week was 59°.1, being 1°.4 warmer than in the preceding week, yet 2°.1 below the average of the week.

The highest reading of a thermometer with blackened bulb placed in the full rays of the sun, was 128° on August 29. The mean of the seven readings was 103°.

The lowest reading of a minimum thermometer with its bulb on short grass was 43° on the 28th; on the night of September 2 the lowest reading was 52°. The mean of the seven readings was 47°.

Rain.—Rain fell on every day excepting on August 27 and 30, to the amount of 0.45 inch, of which 0.21 fell on August 31.

ENGLAND: *Temperature.*—During the week ending September 2 the highest temperatures were 70° or above at Cambridge, Brighton, and Sunderland, and was 63°.5 at Wolverhampton, 64° at Bolton, and 65°.7 at Nottingham. The general mean was 67°.2.

The lowest temperatures in the week were 42° at Bolton, 42°.6 at Nottingham, and 43°.5 at Bristol; the lowest temperature at Truro was 54°, at Brighton was 50°.3, and at Sheffield was 49°. The general mean was 46°.6.

The greatest ranges of temperature in the week exceeded 23° at Cambridge, Sunderland, and Nottingham; the smallest ranges in the week were 12° at Truro, 17° at Sheffield, and 17°.2 at Liverpool. The general mean and average in the week was 20°.6.

The mean of the seven high day temperatures exceeded 67° at Brighton, Sunderland, and Cambridge, and was 61° or less at Wolverhampton, Liverpool, and Bolton. The general mean was 64°.

The mean of the seven low night temperatures exceeded 53° at Truro, Plymouth, and Brighton; and was less than 49°.5 at Wolverhampton, Bolton, and Sunderland. The general mean was 51°.8.

The mean daily range was greatest—exceeding 14° at Cambridge, Nottingham, and Sunderland; and was smallest at Liverpool 8; Bradford 9°.9, and Truro 10°. The general mean was 12°.3.

The mean temperature of the week was highest at Blackheath, 59°.1, at Cambridge 58°.9, at Truro 58°.8, and Brighton 58°.7; and was lowest at Bolton, 53.°1, at Liverpool 55.°2, at Nottingham 55°.4, and at Bradford 55°.6. The general mean was 56°.6.

Rain.—The heaviest falls were 1.98 inch at Plymouth, 1.97 inch at Bristol, and 1.4 inch at Truro; the lightest falls were 0.38 inch at Cambridge, 0.45 inch at Blackheath and Sunderland. The general mean fall was 0.96 inch. It fell on five or six days in the week.

SCOTLAND: *Temperature.*—During the week ending September 2 the highest temperature was 69°, at Dundee; at Edinburgh the highest was 60°.8. The general mean was 64°.5.

The lowest temperatures in the week were 38° at Paisley and 39° at Dundee; at Greenock the lowest temperature in the week was 45°. The general mean was 42°.3.

The mean temperature for the week was highest at Dundee and Aberdeen, 56°; and was lowest at Paisley, 54°.5, and Edinburgh, 54°.6; the general mean was 55°.3, being 0°.3 lower than last week, but 4° higher than that of the corresponding week of 1881.

Rain.—The largest fall was 2.65 inches, at Greenock, and the smallest was 1.26 inch at Edinburgh. The general mean fall was 1.65 inch.

JAMES GLAISHER, F.R.S.

Obituary.

WE regret to announce the death, on the 4th inst., of GEORGE WARD NORMAN, Esq., of Bromley, Kent, aged eighty-nine; a warm supporter, and Vice-President, of the Gardeners' Royal Benevolent Institution.

Answers to Correspondents.

ALOE DISTANS: *A. G.* The flowering of Aloe distans will depend upon the treatment the plant receives. Plants 2—3 feet high will flower annually if placed full in the sun, potted in a richly-manured soil, and sufficiently watered—not the scanty supply usually given to Aloes—during the growing period. It will grow freely and flower freely under this treatment, and may be trained up the rafters of a greenhouse.

APPLES: *G. W.* Yes; send them to us.

BOOKS: *R. A.* Babington's *Manual of British Botany* (Van Voorst, Paternoster Row); Bentham's *Handbook of the British Flora* (Lovel Reeve & Co., Henrietta Street, Covent Garden); and Hooker's *Student's Flora* (Macmillan & Co., Bedford Street, Covent Garden).

ERRATUM.—At p. 298, for "Gentiana florida," read "Genista florida."

EUCHARIS AMAZONICA, &C.: *Constant Reader.* If your Eucharis amazonica has no foliage they are in a very unsatisfactory state. Keep the bulbs partially dry over winter, and re-pot early in February, using a compost of fibrous loam with a dash of silver-sand and horse-droppings. Put a thin layer of sand under the bulbs when potting; then plunge in a gentle bottom-heat, which may rise as high as from 75° to 85° when the bulbs commence to root. The bulbs must grow and make leaves before they can flower, and we think in their present condition you would do well not to re-pot now, as the season is so far advanced. 2. Pot your Camellias in fibrous peat and silver-sand; drain the pots well, and be careful in applying water to their roots through the winter. Unless the plants are in a very bad state we would advise you to defer potting them until the spring. 3. Yes. You may plant the Maréchal Niel Rose in the same house with the Lapageria; they do very well together, and are in good company with the Camellias.

GRAPES: *A. Kennedy.* The Grapes have been scalded by bright sunshine acting on the berries while they have been bathed in condensed moisture. To prevent its recurrence give air earlier in the morning. The Walnut tree has nothing to do with it.—*W. E.* Your Muscats appear to have been scalded in the same way.

INSECTS: *J. R. M. B.* Your Cyclamen has been bored into and destroyed by the grub of an Otiorhynchus weevil, like that of the common Hazel-nut. Sift the earth, and bake it, or well soak it with strong lime and soot-water, This grub is very omnivorous, as well as the brown beetle which it turns into. *I. O. W.*

MELONS: *W. J.* You have got the too well known Melon disease, for which we know of no cure. There is nothing for it but complete eradication, and a fresh start.

NAMES OF FRUITS: *G. H., Kent.* The fruits you have sent us to name are not half grown or developed. If you really expect us to name them with any degree of certainty you should send better material. You evidently give us credit for far greater knowledge than we lay claim to. One Apple (No. 10), for example, which you send, and which we recognise as Dumelow's Seedling, is not bigger than a Walnut; No. 11 is the same sort, a little larger; No. 1 is Dutch Mignonne, probably; No. 9, Pear Marie Louise. The others may be anything.—*J. Gore.* A very fine specimen of the Magnum Bonum Plum.

NAMES OF PLANTS: *R. Frisby.* Materials insufficient for determination.—*J. L. C.* Impatiens Roylei, probably, but materials insufficient.—*C. E. B.* Sedum altissimum.—*Z. V.* Jasminum officinale.—*J. Perkins & Sons.* 1, Clethra alnifolia; 2, Vaccinium maderense.—*C. M. S.* Salix repens var. incubacea.—*R. W.* Hypericum elodes, and Polygonum cuspidatum. —*G. M., Stranraer.* 1, Pittosporum Tobiri; 2, P. tenuifolium.—*R. A.* Thuia excelsa (Chamæcyparis nutkaensis).—*W. S.* 7, Lotus corniculatus; 8, Ononis spinosa; 9, Melampyrum sylvaticum; 10, Scabiosa succisa; 11, Potentilla Tormentilla; 12, Bidens tripartita.

PEAS: *H. M. B.* No. 1 we cannot distinguish from Ne Plus Ultra; 2 looks like Champion of England, but we cannot say for certain.

TUBEROSES: *J. H. Sharpe.* Get your Tuberoses early in winter, in order to secure good bulbs. You probably fail in getting them to start. Put a little silver-sand under the base of each bulb when potting, and when the bulbs begin to make roots plunge in a gentle warmth, which may be increased as roots are being made. They are somewhat stubborn to start, but, once fairly on the way to grow, their cultivation is simple afterwards. Do not lower the temperature suddenly if you mean planting out.

CATALOGUES RECEIVED.

E. P. DIXON, Hull—Select Bulbous Roots.
JAMES CARTER & Co., High Holborn—Winter and Spring Flowering Roots.
MARTIN & SON, Market Place, Hull—Dutch Bulbous Flower Roots.
DOBIE & MASON, 66, Deansgate, Manchester — Flower Roots.
E. WILSON SERPELL, Plymouth—Dutch Flower Roots.
HOOPER & Co., Covent Garden—Autumn Catalogue of Bulbs.
HOGG & WOOD, Coldstream and Dunse—Dutch Flower Roots.
G. KNIGHT, Bridge Street, Walsall—Dutch Bulbs.
JOHN JEFFRIES & SONS, Cirencester — Bulbs for the Herbaceous Border and Wild Garden.
AUSTIN & M'ASLAN, Glasgow—Bulbs, and Winter and Spring Blooming Plants.
BARR & SON, King Street, Covent Garden—Autumn Catalogue of Bulbs and Plants.

COMMUNICATIONS RECEIVED:—J. R. J.—A F. B—J. J. W.—H. M. B.—W. E.—H. L. & Co.—E. H.—A. B. C.—G. S. C.—D. C. P.—T. B—W. T.—I. O. W.—W. & J. B—W. J. W.—E. B.—Craven.—W. T.—T. G.—R. D.—C. Y. M.—H. K.—Apis & Co.—R. P.—M. T. M.—Another Practical Correspondent.—W. D.—G. H.—W. W. H.—Camjee.—C. D. & Sons.—J. Clark.—H. G. Rchb.—N. E. B.

MARRIED—On August 30, at St. Barnabas, Kensington, WILLIAM NORMAND, eldest son of the late LAWRENCE NEWALL, Esq., of Littleborough, Lancashire, to MARIA ANNA, only daughter of Mr. JOHN LEE, of Warwick Gardens, Kensington.

Markets.

COVENT GARDEN, September 7.

Trade is still very quiet, and we have no alteration in prices to report. *James Webber, Wholesale Apple Market.*

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, per doz.		3 0– 6 0	Horse Radish, bund.	4 0–	
Beans, French, English grown, p. lb.	0 4–		Lettuces, Cabbage, per score	1 6–	
Beet, per doz.	1 0–		Mint, green, bunch	0 4–	
Cabbages, per doz.	1 0–	2 0	Mushrooms, p. baskt.	1 6–	3 0
Carrots, per bunch	0 4–	0 6	Onions, per bushel	4 0–	
Cauliflowers, English, dozen	2 0–	4 0	— Spring, per bun.	0 6–	
Celery, per bundle	1 6–		Parsley, per bunch	0 4–	
Cucumbers, each	0 6–	1 0	Peas, per qt.	1 6–	
Endive, per doz.	2 6–		Radishes, per doz.	1 0–	
Garlic, per lb.	1 0–		Small salading, pun.	0 4–	
Herbs, per bunch	0 2–	0 4	Spinach, per bushel	3 0–	
			Tomatos, per doz.	2 0–	
			Vegt. Marrows, doz.	3 0–	

POTATOS:—Magnum Bonums, 90s. to 100s.; Regents, 80s. to 90s.; Myatt's, 100s. to 110s. per ton.

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d	s. d.
Apples, ½-sieve	3 0–	4 6	Grapes, per lb.	1 0–	3 0
Aubergines, per doz.	4 0–		Lemons, per 100	6 0–	10 0
Currants, Black, per ½-sieve	4 6–	5 6	Melons, each	2 0–	4 0
— Red, per ½-sieve	2 3–	3 3	Peaches, per dozen	2 0–	10 0
Figs, per dozen	2 0–	3 0	Pears, per dozen	1 0–	2 0
Filberts and Cobs, per lb.	0 6–	0 7	Pine-apples, Eng. lb.	3 0–	4 0
			Plums, ½-sieve	5 0–	8 6

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d	s. d.
Aralia Sieboldii, doz.	12 0–	24 0	Foliage Plants, various, each	2 0	10 6
Arbor vitæ (golden), per dozen	6 0–	18 0	Fuchsias, per dozen	4 0–	9 0
— (common), dozen	6 0–	12 0	Genista, per doz.	8 0–	12 0
Balsams, per dozen	3 0–	6 0	Gloxinea, per dozen	12 0–	18 0
Begonias, per doz.	6 0–	12 0	Heliotrope, per doz.	3 0–	6 0
Calceolaria, doz.	4 0–	9 0	Hydrangea, doz.	9 0–	12 0
Cockscombs, dozen	4 0–	6 0	— paniculata, doz.	12 0–	30 0
Cyperus, per dozen	6 0–	12 0	Lilium, in var., doz.	18 0–	42 0
Dracæna terminalis	30 0–	60 0	Marguerite Daisy, per dozen	9 0–	18 0
— viridis, per doz.	12 0–	24 0	Myrtles, per doz.	0 0–	12 0
Euonymus, various, per dozen	6 0–	18 0	Palms in variety, each	2 6–	21 0
Evergreens, in var., per dozen	6 0–	24 0	Pelargoniums, doz.	6 0–	12 0
Ferns, in variety, per dozen	4 0–	18 0	— scarlet, per doz.	2 6–	6 0
Ficus elastica, each	1 6–	7 0	Rhodanthes, doz.	6 0–	12 0
			Solanum per doz.	9 0–	12 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s d.	s. d.
Abutilon, 12 blooms	0 2–	0 4	Pelargoniums, 12 sprays	0 9–	1 0
Arum Lilies, per doz.	4 0–	6 0	— zonal, 12 sprays	0 3–	0 6
Bouvardias, per bun.	0 9–	1 6	Pinks, 12 bunches	2 0–	6 0
Calceolaria, 12 bun.	6 0–	12 0	Primula, double, per bunch	1 0–	1 6
Carnations, 12 bun.	2 0–	6 0	Pyrethrum, 12 bun.	3 0–	9 0
Cornflower, 12 bun.	2 0–	4 0	Rhodanthe, 12 bun.	6 0–	9 0
Eucharis, per doz.	3 0–	6 0	Roses (indoor). doz.	1 0–	3 0
Fuchsias, 12 bunches	6 0–	8 0	— (outdoor). doz.	0 4–	0 9
Gardenias, 12 blms.	3 0–	8 0	— Coloured, doz.	1 0–	2 0
Gladioli, 12 bun.	6 0–	12 0	Stephanotis, 12 spr.	3 0–	6 0
— brenchleyensis, 12 sprays	1 6–	3 0	Stocks, 12 bunches	4 0–	9 0
Heliotropes, 12 sp.	0 6–	1 0	Sunflower, 12 blooms	0 6–	2 0
Lapageria, white, 12 blooms	3 0–	6	Sweet Peas, 12 bun.	2 0–	6 0
— red, 12 blooms	1 0–	3 0	Sweet Sultan, 12 bun.	4 0–	6 0
Lilium various, 12 bl.	3 0–	6 0	Tropæolum, 12 bun.	1 0–	2 0
Marguerites, 12 bun.	4 0–	6 0	White Jasmine, 12 bunches	4 0–	0 0
Mignonette, 12 bun.	1 6–	4 0			
Pansies, 12 bunches	1 0–	3 0			

CORN.

At Mark Lane on Monday the trade was dull throughout, in Wheat more especially so. For the very small amount of good dry English Wheat the previous Monday's value was upheld, but secondary and out-of-condition parcels were 1*s.* to 2*s.* lower, and foreign generally showed 1*s.* decline. Flour met a slow sale at a reduction of 6*d.* per sack. Barley, Beans, and Peas were quoted as unaltered by a slow sale. Maize on the spot steady but quiet. Sales for the first arrival of new St. Petersburg Oats were effected at 17*s.* 6*d.* per quarter. Other Oats met a quiet sale at about last Friday's rates.—On Wednesday the attendance was small, and trade stagnant. Sales in quantity were impracticable, except at lower prices. Flour was dull and drooping. Barley, Beans, and Peas nominally unchanged. Oats were barely supported, and Maize was quiet. Average prices of corn for the week ending Sept. 2:—Wheat, 47*s.* 3*d.*; Barley, 36*s.* 2*d.*; Oats, 23*s.* 6*d.* For the corresponding period last year:—Wheat, 55*s.* 2*d.*; Barley, 32*s.* 10*d.*; Oats, 24*s.* 2*d.*

CATTLE.

At Copenhagen Fields on Monday the cattle supplies included but a small proportion of prime stock, which cleared off with a fairly steady demand. Plain cattle sold very slackly, and in some cases at cheaper rates. All classes of sheep and lambs found a steady market quite up to previous value. English calves upheld their value. Quotations:—Beasts, 4*s.* 4*d.* to 5*s.* 2*d.*, and 5*s.* 6*d.* to 6*s.*; calves, 4*s.* 8*d.* to 6*s.*; sheep, 5*s.* 4*d.* to 6*s.*, and 6*s.* 4*d.* to 7*s.*; lambs, 7*s.* to 8*s.*—Thursday's trade was very quiet, but the general tendency was good. Both beasts and sheep commanded Monday's prices; calves were steady, and pigs sold at previous rates.

HAY.

Tuesday's Whitechapel Market report states that supplies continue large, especially of meadow hay, which is very dull. Quotations:—Clover, sold, first quality, 120*s.* to 145*s.*; inferior, 75*s.* to 90*s.*; new, 90*s.* to 100*s.*; best old meadow hay, 100*s.* to 120*s.*; inferior, 55*s.* to 90*s.*; new, 70*s.* to 95*s.*; and straw, 30*s.* to 42*s.* per load.—On Thursday there was a large supply. Straw was firm and dearer, otherwise the trade was dull and weak.—Cumberland Market quotations:—Superior old meadow hay, 115*s.* to 126*s.*; inferior, 70*s.* to 100*s.*; new, 70*s.* to 95*s.*; superior old Clover, 130*s.* to 145*s.*; inferior, 100*s.* to 114*s.*; and straw, 42*s.* to 48*s.* per load.

POTATOS.

The Borough and Spitalfields Markets reports state that the trade is quiet, but prices about steady, with fair supplies. Quotations:—Kent Regents, 90*s.*; ditto, kidneys, 100*s.*; Essex Regents, 80*s.* to 90*s.*; ditto, Magnum Bonums, 90*s.* to 100*s.*; Lincoln ditto, 90*s.* to 100*s.*; and kidneys, 90*s.* to 100*s.* per ton.

Government Stock.—Consols closed on Monday at 99⅜ to 99⅝ for delivery, and 99⅛ to 99⅜ for the account. Tuesday's record was 99⅛ to 99⅜ for delivery, and 99⅛ to 99⅜ for the account. The closing figures on Wednesday were 99⅜ to 99⅞ for delivery, and 99⅝ to 100 for the account: the same record was posted on Thursday.

DAY, SON & HEWITT,

Inventors and Sole Proprietors of the "Original"

STOCK-BREEDERS' MEDICINE CHESTS,

FOR ALL DISORDERS IN HORSES, CATTLE, CALVES, SHEEP & LAMBS;

AND INVENTORS OF THE

FIRST ANIMAL MEDICINES EVER KNOWN AS "DAY'S."

The No. 2 MEDICINE CHEST contains the following matchless remedies :—

"THE CHEMICAL EXTRACT," for Cuts, Bruises, Sore Udders, and Ewes Lambing.
"THE GASEOUS FLUID," for Colic in Horses, and Scour and Debility in Cattle and Sheep.
"THE RED DRENCH," for Cleansing after Calving and Lambing, Fevers, &c.
"THE RED PASTE BALLS," for Conditioning Horses.
"THE GASEODYNE," for Parturition in Mares, Ewes, &c.
"THE BRONCHOLINE," for Husk, Hoose, or Cough in Sheep or Calves.
"THE ALCOHOLIC ETHER," for Colds and Chills.
"THE CARMINATIVE CHALK," for Diarrhœa in Lambs and Calves.

PRICE OF CHEST, with GUIDE to FARRIERY .. .. £2 16s. 6d.

No. 1 COMPLETE MEDICINE CHEST, £6 6s., Carriage Paid.

USED FOR OVER FORTY YEARS THROUGHOUT THE UNITED KINGDOM AND THE BRITISH COLONIES.

THE KOSSOLIAN SALT OR BLOOD SALT,

FOR HORSES, COWS, OXEN, SHEEP AND CALVES.

Its saline and ferruginous elements prevent languor, exhaustion, want of energy, and loss of appetite. All animals should have an ounce or two of the

KOSSOLIAN OR BLOOD SALT

mixed with their food once or twice a week, from the hunter down to the carriage horse and hack. All young animals, whether colt, calf, or lamb, should have half an ounce of the

KOSSOLIAN OR BLOOD SALT

mixed with their food, for it is a safeguard against contagious diseases, and it is destructive to the parasites in the bronchial tubes, causing that distressing malady the Hoose or Husk. It converts the food, while in the stomach, rapidly into flesh and bone making elements, and gives a firmness to the flesh to resist all poisonous effluvia ; and it also renders all animals capable of enduring with safety the heat of summer, and the cold rains and sleet of winter.

Sold in Boxes, containing one dozen packets, price 12s.

DAY, SON AND HEWITT received a SILVER MEDAL *from the DONCASTER AGRICULTURAL SHOW, JUNE, 1882 ; also*

GOLD MEDAL from the INTERNATIONAL SHOW, CHRISTCHURCH, NEW ZEALAND, MARCH, 1882, for their "ORIGINAL" STOCK-BREEDERS' MEDICINE CHESTS

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ESTABLISHED 1834.

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OR, PERSIAN FOOD FOR INFANTS, INVALIDS, AND CONVALESCENTS (REGISTERED).

It is Highly Nutritious. Its Nutrient and Strengthening Properties are in a Condensed or Concentrated Form. It is most easy of Digestion. It is alike agreeable to young or old. Is a Non-irritating Tonic.

Opinion of the late W. B. O'SHAUGHNESSY, M.D., F.R.S., &c., Bengal Medical Service, late Professor of Chemistry and Materia Medica in the Medical College, Calcutta, E.I.

"*Two Drachms afford a sufficient meal for an Invalid.* Good Salàp Misree, carefully prepared, is in truth one of the *Best Articles* of diet a *Convalescent can use.*"

Testimonial from J. MACPHERSON, Esq., M.A., M.D., &c., 35, Curzon Street, London, W, January 17, 1880.

"Dear Sir,—I have not employed any test of the purity of the Salàp Misree, of which you have sent me a specimen, but I have made a trial of it, and am much pleased with it, as supplying a light, bland, and pleasant form of nutriment. I had not seen it before in this country.

"Yours faithfully, "J. MACPHERSON."

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This is the Manure used to produce the splendid Grapes grown at the Tweed Vineyard, Clovenfords.

Full particulars on application. The Trade supplied.

All Letters to be addressed to THE MANAGER, The Vineyard and Nursery, Garston, near Liverpool.

SPECIAL OFFER.—SILVER SAND, 10*s.* per ton, free on rail Reading. FIBROUS PEAT, COCOA NUT FIBRE REFUSE, LOAM, &c., cheaper than any other house in the trade. Superior RED GRAVEL for Garden Walks, 21*s.* per 5-ton truck (splendid colour and binds well). Cheap through rates to any station. Samples gratis and post-free.—BRINKWORTH AND SONS, Reading, Berks

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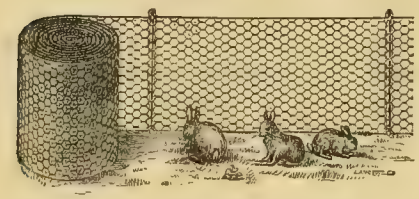
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GISHURSTINE keeps feet dry, softens hard boots, preserves leather, takes a polish. In boxes, 6*d.* and 1*s.* each.—Wholesale by PRICE'S PATENT CANDLE COMPANY (Limited). Retail by Seedsmen and Oilmen. Complaints are made of difficulty in getting Gishurstine. Some leading Nurserymen have put it on their lists, others are requested to do so.

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TANNED NETTING, 2 yards wide, 1½*d.* per yard; 4 yards wide, 3*d.* per yard; 2 yards wide, 10*s.* per 100 yards; 4 yards wide, 20*s.* per 100 yards. NEW TWINE NETTING, 1 inch mesh, 1 yard wide, 2*d.*; 2 yards wide, 4*d.*; 4 yards wide, 8*d.* per yard. HEXAGON GARDEN NETTING, seventy-six meshes to the square inch, 5*d.* per yard. RABBIT NETS. BAT-FOLDING NETS, on Bamboo poles, 20*s.* CLAP NETS for birds, 30*s.* complete.
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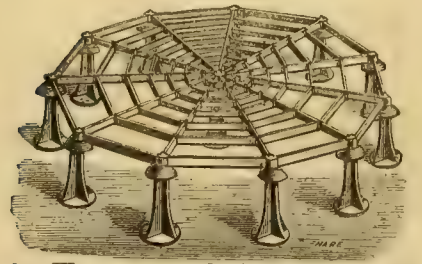
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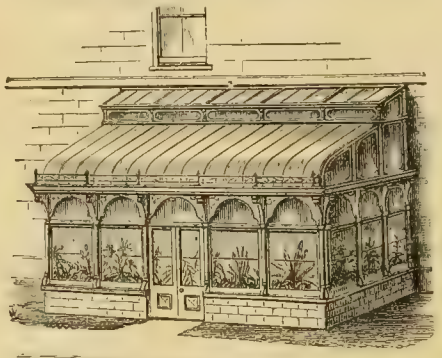
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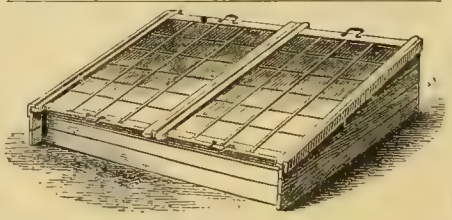
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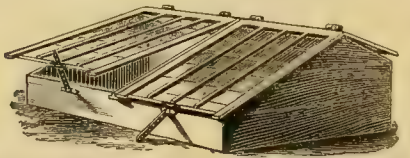
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2-light frame, 8 feet by 6 feet	3	10	0
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The glass is nailed and puttied in. Lights and framing for brick pits at proportionately low prices.
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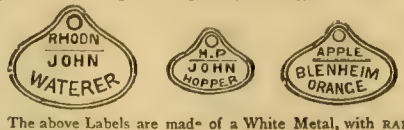
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CONSTRUCTION and GLAZING of CONSERVATORIES,
Economical, Simple, and Durable. No Putty or Perishable Material.
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POTS made expressly for HYACINTHS can be supplied by
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Alarm at the Plyte Frasers. Fraser,—butler,—footman,—with pokers, tongs, and shovels, enter in a tumult.

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By F. C. BURNAND.

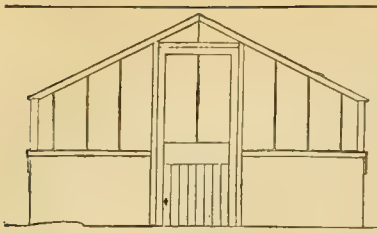
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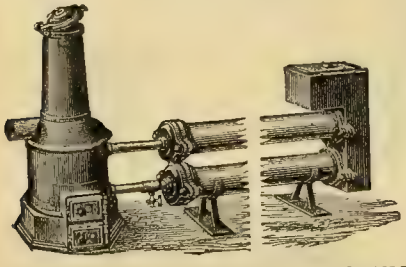
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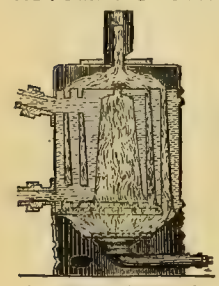
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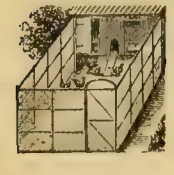
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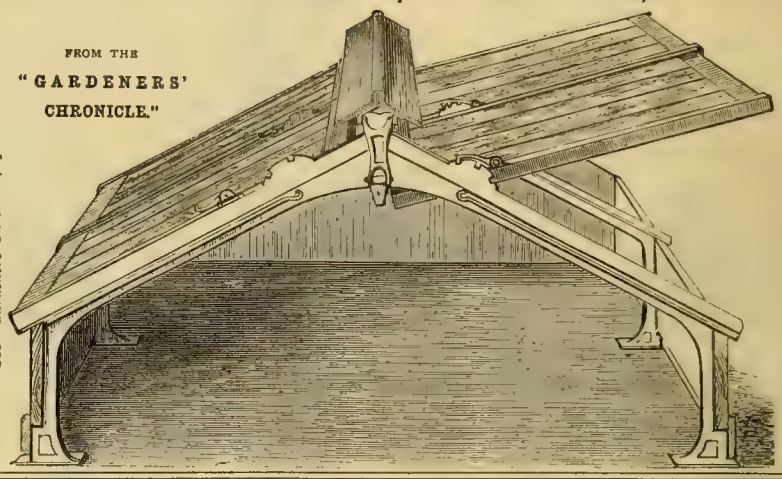
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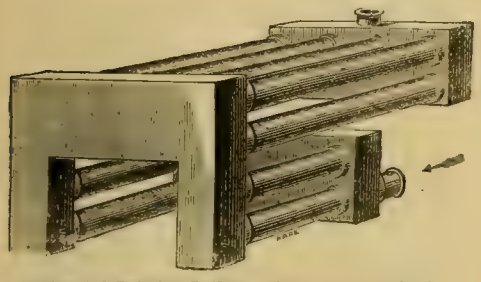
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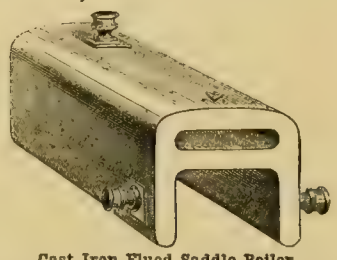
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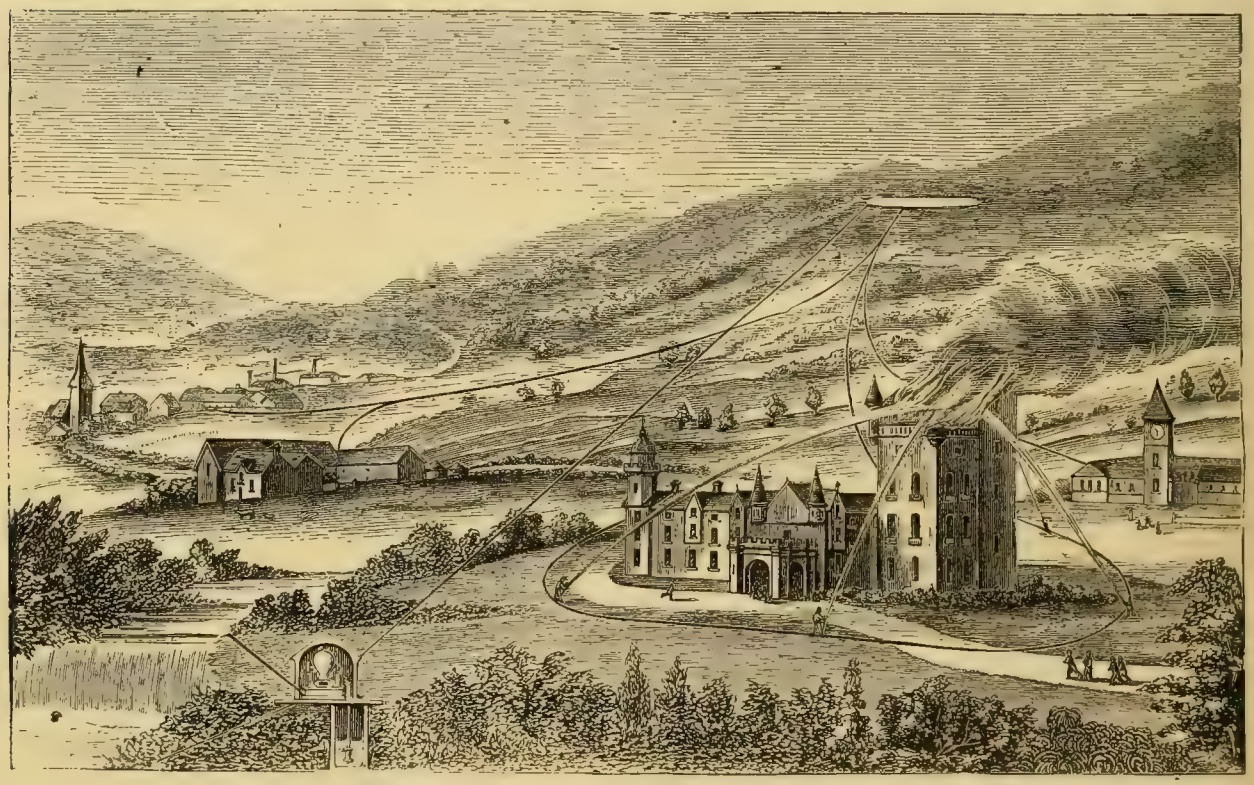
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From the Right Hon. the Earl of GRANARD, *Castle Forbes, March* 1, 1880.—"The Hydraulic Ram erected for me at Castle Forbes has answered perfectly. Considering the very small fall attainable by the nature of the ground, it is a great success, and throws up water to a cistern on the top of the tower 80 feet high. When Mr. Blake first proposed to put it up I doubted the possibility of its succeeding, owing to the nature of the ground; but I have been most agreeably undeceived."

From T. H. SIDEBOTTOM, Esq., *Etherow House, Hadfield, February* 22, 1882.—"Induced by the good report of my cousin, Mr. T. A. Sidebottom, as to the working of the Hydraulic Ram he had from you, I ordered the one you fixed here a year ago, which I am pleased to say has since worked well night and day. Yet the two Rams you fixed at Snow's Hill Manor, Gloucestershire, for my brothers and myself, are I think a still more remarkable example of your success. We had a Ram fixed by a well-known firm, which proved a miserable failure, and which your Rams displaced. They are forcing the water through ¾ of a mile of delivery pipe, a little in excess of the quantity you guaranteed, to an elevation of 350 feet, and without the slightest hitch to the time of the last report from our tenant."

From the Right Hon. the Earl of ROMNEY, 56, *Eaton Place, S.W., June* 12, 1880.—"SIR,—In reply to your inquiry, I have pleasure in stating that the Hydraulic Ram which you erected for me at Gayton, does its work remarkably well, and is a great success. I think the work is especially creditable to you on account of the very small fall of but 3 feet with which you had to deal, and I shall always be glad to recommend you.—Yours faithfully, ROMNEY."

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THE

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With this Number is presented a Double-page Plate of the FLOWER-GARDEN and CONSERVATORY at SYON HOUSE.

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BUDDENBORG BROTHERS, BULB GROWERS, House Bloemswaard, Hillegom, near Haarlem, Holland. Wholesale CATALOGUE now ready, and will be sent, post-free, on application.

5000 Cylamen persicum. 5000

ALL from the finest procurable strains, good plants by post, 2*s.* 6*d.* per dozen; larger, in pots, 3*s.* 6*d.* and 5*s.* per dozen; extra large, 10*s.* per dozen. Now is the time to pot these on to make grand stuff for flowering the coming season.
W. M. CROWE, Boleyn Nursery, Upton, Essex.

THUIA AUREA, T. ELEGANTISSIMA, JUNIPERUS CHINENSIS, THUIA GIGANTEA, T. COMPACTA, fine bushy stuff, 15 to 20 inches high, for Potting, &c., 40*s.* per 100.
W. JACKSON, Blakedown, near Kidderminster.

TO BE SOLD, a Bargain, a splendid plant of ARAUCARIA EXCELSA, about 10 feet in height, which has obtained prizes as a Specimen plant. Also a fine Specimen plant of LATANIA BORBONICA. Apply to
Mr. DUNCAN, The Nurseries, Calne, Wilts.

Dutch, French, and other Flowering Bulbs.

JAMES DICKSON AND SONS' carefully prepared CATALOGUE of their large excellent stock will be sent post-free on application. Early orders are solicited.
Seed and Bulb Warehouse, 108, Eastgate Street, Chester.

Choice Rhododendrons.

ISAAC DAVIES AND SON beg to state that a new LIST of their Sweet-scented and Hardy Hybrid Rhododendrons and Azaleas, &c., is now ready, and will be forwarded post-free to any address on application.
Brook Lane Nursery, Ormskirk.

SINGLE DAHLIAS.—Strong plants, established in pots for winter bloom, can now be supplied. The largest collection in the world may be seen at the Nurseries. Catalogues and every information free.
THOS. S. WARE, Hale Farm Nurseries, Tottenham, London.

6000 Grape Vines.

THE LIVERPOOL HORTICULTURAL COMPANY (JOHN COWAN), Limited, The Vineyard and Nurseries, Garston, near Liverpool, have a splendid stock of VINES, grown from eyes this year, suitable for present planting.
CATALOGUE free. The Trade supplied.
Also a large stock of TEA ROSES.

STANDARD APPLES.—A fine well grown lot to offer on land which must be cleared this season. All leading kinds. Price on application.
WANTED, a few thousands of strong MANETTI STOCKS.
GEORGE SWAILES, Nurseryman and Seedsman, Beverley.

CAULIFLOWER, BRUSSELS SPROUT PLANTS.
VEITCH'S AUTUMN GIANT, 3*s.* 6*d.* per 1000.
BRUSSELS SPROUTS, 3*s.* per 1000.
Packages 3*d.* per 1000 extra. Order of
R. BATH, Crayford; or J. BATH, 34, Wellington Street, Covent Garden, W.C.

SALES BY AUCTION.

Special Trade Sale of Dutch Bulbs.—Monday next.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Mart, Tokenhouse Yard, City, E.C., on MONDAY NEXT, at 11.30 o'Clock precisely, over 800 lots of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, SNOWDROPS, and other ROOTS, from Holland; lotted specially to suit the Trade.

Catalogues at the Mart, and 8, New Broad Street, E.C.

Lee, Kent, S.E. (adjoining the Station)

GREAT ANNUAL SALE, to commence punctually at 11 o'Clock, in consequence of there being 1100 lots.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. B. Maller to SELL by AUCTION, on the Premises, the Burnt Ash Lane Nurseries, Lee, S.E., on TUESDAY, September 19, at 11 o'Clock, without reserve, 20,000 WINTER BLOOMING HEATHS, which for vigorous growth and profusion of flower-buds are unsurpassed in the Trade, comprising 6000 extra fine Erica hyemalis, also Wilmoreana, gracilis, autumnalis, grandinosa, caffra, assurgens, ventricosa, melanthera, colorans, and others; 10,000 ERICA HYEMALIS and others in large or small 60's, particularly promising; 7000 SOLANUMS, well berried; 600 fine ADIANTUM CUNEATUM and GRACILLIMUM; 500 LOMARIA GIBBA, and other choice decorative FERNS; 1000 extra fine CYCLAMEN PERSICUM; 4000 BOUVARDIAS, red and white, including a grand lot of the new double white "Alfred Neuner;" 2000 GENISTAS, GREVILLEA ROBUSTA, several pairs of ARAUCARIA EXCELSA, BOUVARDIA TRIPHYLLA, Maréchal Niel and other dwarf ROSES, English grown CAMELLIAS, AZALEAS, and other PLANTS

May be viewed. Catalogues may be had on the Premises, and of the Auctioneers, 8, New Broad Street, E.C., and Leytonstone.

Lea Bridge Nurseries, Leyton.

TWELFTH ANNUAL SALE.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Fraser to SELL by AUCTION, on the Premises, as above, on WEDNESDAY, September 20, at 11 o'Clock precisely (there being nearly 1100 lots) without reserve, 30 000 remarkably well-grown WINTER BLOOMING HEATHS, including 20,000 hyemalis, 2500 gracilis, 1000 Wilmoreana, and large quantities of Regerminans, grandinosa, persoluta alba, caffra, and others; 3000 EPACRIS, of the choicest kinds; 3000 CYCLAMEN PERSICUM (Fraser's superb strain), 1500 GENISTA FRAGRANS, 1000 SOLANUM CAPSICASTRUM, in berry; 1000 AZALEAS, full of bloom-buds; 500 early-flowering CHRYSANTHEMUMS, 400 double White PRIMULAS, 200 Maréchal Niel ROSES, 10 feet; 300 AMPELOPSIS VEITCHII, LAPAGERIA ALBA and ROSEA, and a quantity of Miscellaneous STOVE and GREENHOUSE PLANTS.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 8, New Broad Street, E.C.

N.B. Messrs. P. AND M. beg to announce that there will be only one Sale this Autumn at these Nurseries, and although the plants are catalogued in larger quantities than usual, it is not on account of their being inferior in quality; on the contrary, this is the best lot ever offered.

Tottenham, N.

GREAT ANNUAL TRADE SALE.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Maller to SELL by AUCTION, without reserve, on the Premises, the Brunswick Nursery, Tottenham, close to White Hart Lane Station, on THURSDAY, September 21, at 11 o'Clock precisely (in consequence of the unusually large number of 1100 lots), 20,000 beautifully grown WINTER BLOOMING HEATHS, abundantly set with flower-buds, including hyemalis, gracilis, caffra, Wilmoreana, and other best kinds; 10,000 remarkably well-berried SOLANUMS, unsurpassed in the Trade; 3000 particularly fine CYCLAMEN, 1000 ACACIAS in variety, 1000 handsome PALMS, 500 well furnished ADIANTUMS, 500 FICUS ELASTICA, a grand lot of 2000 TREE CARNATIONS, best varieties; 4000 BOUVARDIAS, 1000 EUPHORBIA JACQUINIFLORA, 1000 AZALEAS, 1500 GENISTAS, 1000 MYRTLES, 2000 GREVILLEA ROBUSTA, 1000 Double White PRIMULAS, 500 EPIPHYLLUMS, large CAMELLIAS and AZALEAS for cutting from, several thousands of small ERICAS and GENISTAS for growing on, Golden EUONYMUS and CUPRESSUS VIRIDIS in pots, and large quantities of other attractive stock.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 8, New Broad Street, E.C.

Wood Green, N.—Important Trade Sale.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Lordship Nursery, Lordship Lane, Wood Green, N., by order of Mr. J. W. Hurst, on FRIDAY, September 22, at 12 o'Clock, 10,000 DECORATIVE FOLIAGE PLANTS, comprising beautifully grown Palms in variety, Dracænas, well furnished clean grown plants, including the true D. rubra congesta, Cooperi and ferrea grandis; choice Ferns, Adiantum cuneatum, Lomaria gibba, Dicksonia antarctica; fine well set plants of Camellia alba plena and fimbriata, Azaleas, and other stock.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 8, New Broad Street, E.C.

Wood Green, N.—Clearance Sale.—Short Notice.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nursery, Lordship Lane Wood Green, N, on FRIDAY NEXT, September 22, at 4 o'Clock in the afternoon, by order of Mr. Cook, without reserve, the Erections of Four Span-roofed GREENHOUSES (three 60 feet by 10 feet wide, and one 31 feet by 20 feet wide), 1000 feet 4-inch PIPING, Two SADDLE BOILERS, One TUBULAR BOILER; and also the stock of Miscellaneous GREENHOUSE PLANTS.

Catalogues on the Premises, and of the Auctioneers, 8, New Broad Street, E.C.

Stoke Newington, N.—Trade Sale.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Stroud & Sons (in order to make room for other stock) to SELL by AUCTION, on the Premises, the Lordship Park Nursery, Green Lanes, Stoke Newington, N., on TUESDAY, September 26, at 12 o'Clock, 150 ARALIA SIEBOLDI, 3000 ASPLENIUM BULBIFERUM, 1000 GREVILLEA ROBUSTA, 500 DRACÆNAS, 500 PALMS, in variety; 500 well set CAMELLIAS and AZALEAS 1 to 4 feet; 500 YUCCAS, 2000 IVIES, 3000 EUONYMUS, 3000 CLIMBING PLANTS, and other stock; the whole of which are well established in pots, and worthy the attention of the Trade and other extensive buyers.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 8, New Broad Street, E.C.

Maryland Point, Stratford, E.

By order of the Executors of the late Sir Antonio Brady.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, as above, on WEDNESDAY, September 27, a small COLLECTION of CHOICE STOVE and GREENHOUSE PLANTS.

Catalogues on the Premises, and at 8, New Broad Street, E.C.

Acton, W.—Trade Sale.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Reeves to SELL by AUCTION, on the Premises, The Nursery, Acton, N., on WEDNESDAY, September 27, 20 000 FERNS, in great variety; PALMS, CROTONS, FICUS, 2 to 3 feet 6 inches; specimen CAMELLIAS and AZALEAS, BOUVARDIAS and other stock.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 8, New Broad Street, E.C.

Leytonstone.

Re P. E. White.—In Liquidation.

To SMALL CAPITALISTS.—In TWO LOTS.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, at the Mart, E.C., on THURSDAY, September 28, at 2 o'Clock, the BENEFICIAL INTEREST in the LEASES of the commanding Shop in the High Street (which could be used for any other business), and also of the Cottage and Nursery Ground in Temple Street. Held at Low Rentals.

The Stock-in-Trade, Glass Erections, and Utensils will be included in the purchase of the respective lots.

Particulars and Conditions of Sale may be had at the Auctioneers' Offices, 8, New Broad Street, E.C.

Tooting, S.W.—Annual Sale.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, by order of Mr. R. Parker, on the Premises, the Exotic Nursery, Tooting, S.W., on THURSDAY, September 28, at 1 o'Clock, a quantity of STOVE and GREENHOUE PLANTS, in healthy condition; a selection of choice Established ORCHIDS, PALMS, and Exotic FERNS, in variety; SUCCULENTS, and HARDY HERBACEOUS PLANTS; also a capital Exhibition Plant VAN, in excellent condition. An inspection is invited of this well-grown stock, which may be viewed any day prior to the sale.

Catalogues had on the Premises, and of the Auctioneers, 8, New Broad Street, E.C.

Lewisham, S.E.

To the TRADE and PRIVATE GENTLEMEN.

IMPORTANT CLEARANCE SALE, in consequence of the Land and Premises being required by the Local Government Board for the Erection of New Buildings

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, by order of Mr. Biggs, on the Premises, The Nurseries, High Road, and George Lane, Lewisham, S.E., on FRIDAY, September 29, at 12 o'Clock precisely (in consequence of the large number of lots), without reserve, the Indoor Stock-in-Trade, comprising 50,000 FERNS, including 20,000 ADIANTUMS, 10,000 LOMARIA GIBBA, PTERIS, TREE and other FERNS, 2000 BOUVARDIAS, Specimen White CAMELLIAS and AZALEAS, PALMS, ERICAS, GENISTAS, and SOLANUMS in large quantities, 200 EUCHARIS AMAZONICA; also the first portion of the OUTDOOR NURSERY STOCK, consisting of an assortment of EVERGREENS and CONIFERÆ, trained FRUIT TREES, a nearly new PLANT VAN, and SUNDRY EFFECTS.

May be viewed. Catalogues had on the Premises, and of the Auctioneers and Valuers, 8, New Broad Street, E.C., and Leytonstone.

Fulham, Sunbury, and Hampton.

By order of the Executors of Mr. R. A. Osborn, deceased.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL by AUCTION, at the Mart, Tokenhouse Yard, City, E.C., on THURSDAY, October 5, at 2 o'Clock precisely, the following properties:—

FULHAM.—In one or two lots, an attractive FREEHOLD BUILDING ESTATE, known as Osborn's Nursery, situate in New King's Road, having frontages of about 2000 ft. to existing roads, and containing a total area of 4 a. 0 r. 11 p.; also the modern detached brick-built Residence and Seed-shop with Conservatory attached. These premises could be utilised for any other business, and notably that of a Licensed Victualler.

SUNBURY.—The FREEHOLD PROPERTY known as Osborn's Old Nursery, containing an area of 17 a 0 r. 11 p., together with the Goodwill of the Nursery and Seed Business, which was established in the year 1700. There is a detached eight-roomed House, nine newly-erected Greenhouses, fitted and heated upon the most improved principles, ranges of Pits, Stabling, Sheds, and other Out-buildings. The property has Frontages of 1100 feet to two Public Roads, the greater portion of which is particularly adapted for building purposes, without deteriorating the remainder of the land for carrying on the present business.

HAMPTON.—A compact FREEHOLD ESTATE known as Osborn's Nursery, possessing a frontage of 332 feet to Broad Lane, and containing an area of nearly 5 acres. It is now cultivated as a nursery, but is also eligible for building.

Particulars and plans of the several estates are now ready, and may be had at the Mart; of Messrs. WALKER, BELWARD AND WHITFIELD, Solicitors, 5, Southampton Street, Bloomsbury, W.C.; and of the Auctioneers and Surveyors, 8, New Broad Street, E.C., and Leytonstone.

NOTE.—The purchasers will have the option of taking by valuation within 7 days, the whole of the beautifully grown Stock in Trade, but should they not decide to do so, it will be sold by Auction on the Premises, due notice of which will be given.

Sunbury, Middlesex.

By order of the Executors of Mr R. A. Osborn, deceased.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises known as Osborn's Old Nursery, Sunbury, on TUESDAY, October 17, and following day (unless taken by the purchaser of the Freehold Estate at a valuation), the whole of the HARD-WOODED GREENHOUSE PLANTS, including the entire collection of strong short-jointed and well-ripened Vines, the beautifully grown Tea, H.P., and Noisette Roses, the extensive collection of Figs in bearing condition, several hundreds of splendidly grown Camellias and Azaleas abundantly set with buds, Clematis in great variety, and other stock.

May now be viewed, and an inspection is invited.

The first portion of the thriving and well grown OUTDOOR NURSERY STOCK will be sold on TUESDAY, November 14, and following days unless taken by the purchaser of the Estate by valuation. Due announcements will appear.

The Westbourne Nursery, Harrow Road, W.

ANNUAL SALE.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Woodroffe & Sons to SELL by AUCTION, on the Premises, as above, on TUESDAY, October 3, several thousands of STOVE and GREENHOUSE PLANTS, 4000 Genistas, 2000 Red and White Bouvardias, 2000 Double Primulas, 1200 Cyclamen, &c.

Catalogues on the Premises, and of the Auctioneers, 8, New Broad Street, E.C.

Important Sale of Established and Semi-Established ORCHIDS.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from Mr. W. B Freeman to SELL by AUCTION, at the Mart, Tokenhouse Yard, E.C., on FRIDAY, September 29, at 12 o'Clock precisely, a grand lot of ESTABLISHED and SEMI-ESTABLISHED ORCHIDS, comprising Vanda cœrulea, V. teres, Phalænopsis Schilleriana, P. amabilis, Dendrobium Falconeri, D. Farmeri, D. Wardianum, nobile pendula, and others; Oncidium Marshallianum, O. Rogersii, O. Forbesi, Cattleya Eldorado, and other varieties; also 120 lots of CHOICE ESTABLISHED ORCHIDS, being the entire collection of a private gentleman who is giving up their culture.

Catalogues had at the Mart, and 8, New Broad Street, E.C.

Hyacinths, Tulips, Crocuses, Narcissus, Iris, Scillas, Snowdrops, and other Flower Roots from Holland.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY during September, at half-past 12 o'Clock precisely each day, CONSIGNMENTS of DUTCH BULBS, arriving weekly from well known farms in Holland, in large and small lots, to suit all buyers.

On view morning of Sale, and Catalogues had.

Tuesday Next.

IMPORTED ORCHIDS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY, September 19, at half-past 12 o'Clock precisely, by direction of Messrs. Shuttleworth, Carder & Co., a grand lot of BARKERIA SPECTABILIS, B. SKINNERI, CATTLEYA SKINNERI, LYCASTE SKINNERI ODONTOGLOSSUM CRISPUM (ALEXANDRÆ), O. GRANDE, CYPRIPEDIUM INSIGNE AUREUM (true), MASDEVALLIA MACRURA, M. WINNIANA, M. SHUTTLEWORTHII, M. TROCHILUS, M. CHIMÆRA, M. HOUTTEANA, ONCIDIUM ORNITHORKHYNCHUM, O. WENTWORTHIANUM, &c.

The above, in splendid masses, and in the best possible condition, all to be sold without reserve, except Cypripedium insigne aureum, Masdevallia macrura, and M. Winniana.

On view morning of Sale, and Catalogues had.

Thursday Next.

ESTABLISHED ORCHIDS.

MR. J. C. STEVENS will include in his SALE by AUCTION on THURSDAY NEXT, September 21, ESTABLISHED ORCHIDS, consisting of:—

Dendrobium Falconeri	Dendrobium heterocarpum
,, nobile	,, Cambridgeanum
,, heterocarpum	,, Jenkinsi
,, Farmeri	Vanda cœrulea
Vanda teres	Aërides Fieldingii
Cymbidium eburneum	Saccolabium guttatum

and other species, some in flower, by order of Mr. W. B. Freeman.

On view morning of Sale, and Catalogues had.

Auction Rooms and Offices, 38, King Street, Covent Garden, W.C.

Thursday Next.

New Holland DWARF PITCHER PLANT (CEPHALOTUS FOLLICULARIS), one of the most interesting and pretty of the so-called Carnivorous Plants.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, September 21, a consignment of ROOTS in splendid growing condition, just arrived from King George's Sound. This beautiful little plant succeeds well in an ordinary Greenhouse.

On view morning of Sale, and Catalogues had.

Thursday Next.

5000 ODONTOGLOSSUM ALEXANDRÆ.

MR. J. C. STEVENS has been instructed by Mr. F. Sander to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, SEPTEMBER 21, at half-past 12 o'Clock precisely, splendid importations of ODONTOGLOSSUM ALEXANDRÆ, consisting of 5000 plants. Some of the masses are of unusual size and condition; also a grand lot of CATTLEYA DOWIANA, EPIDENDRUM PRISMATOCARPUM, CATTLEYA PUMILA DAYANA, CATTLEYA MAXIMA, LYCASTE SKINNERI, and others.

On view morning of Sale, and Catalogues had.

Fulham Fields.

Growing Crops of SEAKALE and RHUBARB.

To Market Gardeners, Seedsmen, and others.

MR. J. S. GOMME is instructed by Mr. William Bagley of Millshot Farm, Fulham, (land being required for building purposes) to SELL by AUCTION, on the premises known as Botany Bay, Margravine Road, at the rear of the Fulham Union, on TUESDAY, September 26, at 2 for 3 o'Clock in the afternoon, about 5 acres of very superior and well grown SEAKALE, and about 3 acres of Victoria and Albert RHUBARB, in lots to suit the Trade.

May be viewed, and Catalogues obtained at the Offices of the Market Garden Auctioneer and Valuer, 99, Strand.

To Florists, Gardeners, and Others.

Sale of Surplus Stock of Mr. J. Prewitt, Swiss Nursery, St. Peter's Road, West End, Hammersmith, W.

MR. JAMES H. GREEN will SELL by AUCTION, as above, on WEDNESDAY, September 27, at 1 o'Clock precisely, the entire SURPLUS NURSERY STOCK, comprising Camellias, Azaleas, Eucharis, Stephanotis, Anthuriums, Adiantum farlevense (one specimen), a few good Orchids, Ficus elastica, Maréchal Niel Roses (in pots), a strong lot of Chrysanthemums, Maidenhair and other Ferns, Dwarf Roses, Pinks, &c.

On view day prior. Catalogues on the Premises, and of the Auctioneer, 72 and 217, King Street, Hammersmith, and The Parade, Goldhawk Road, W.

Highly Important Sale.

MR. D. MITCHELL will SELL by AUCTION, at Mayfield, Falkirk, on SEPTEMBER 28, 29, and 30, each day at 11 o'Clock forenoon, the entire COLLECTION of PLANTS which belonged to the late Provost Russell, comprising a choice collection of Orchids, Stove and Greenhouse Plants, magnificent Specimen Camellias, Tree and other Ferns. Also the rare and beautiful collection of large and well-grown Hybrid Specimen Rhododendrons, finely set with Flower-buds, and without exception the grandest private collection ever offered to the public. The Conifera are of the rarest and richest description. The Golden and other Yews, in various shapes, are marvels of cultivation: the Golden, Silver, and Green Hollies are models; and from the manner in which the whole of the outside plants have been treated for years they are capable of being removed to any distance with perfect safety.

Catalogues, ready on and after the 12th, may be had from the Auctioneer, D. MITCHELL, 6, Comely Bank, Edinburgh; or THOS. SORLEY, Mayfield Gardens, Falkirk.

Edinburgh, September 6, 1882.

Hook Heath Nursery, near Woking, Surrey.

London and South-Western Railway: nearest stations, Woking and Brookwood.

UNRESERVED SALE OF NURSERY STOCK.

MR. H. W. COPUS has received instructions from Mr. Chapman, who is leaving the neighbourhood, to offer by AUCTION, at a DATE NOT YET FIXED, without reserve, the whole of the well-grown NURSERY STOCK at the above Nursery, comprising Aucubas, Hollies, ditto various, Yews English and Irish, Rhododendrons, Cupressus, Retinosporas, Cedars, Heaths of sorts, Ivies, Berberries of sorts, Laurels common and Portugal, Roses of sorts, Arbor-vitæs, Lilacs, Climbing Plants, Box, &c.

Further particulars will be announced and Catalogues ready in due course, which may be had of the Auctioneer, 16, Friary Street, Guildford, and Woking Station.

Seed Business Wanted.

WANTED, to PURCHASE, an established SEED BUSINESS—Preference would be given to West of, and within 100 miles of London, in a good Market Town. Answers to

G. W. B., *Gardeners Chronicle* Office, W.C.

WANTED TO RENT, a SMALL NURSERY and FLORIST BUSINESS, or a GARDEN with Hothouses, &c. Address, stating terms and particulars, to A. FOWLE, Florist, &c., Herne Bay, Kent.

WANTED TO RENT a GARDEN, for Plant and Flower Growing, or a few acres of Land or Orchard. Cottage. Would rent private garden with glass.

Address, F. T., May's, 159, Piccadilly, London, W.

FOR SALE, a SEED and PLANT BUSINESS in London. Sales about £400 per annum. Could be easily increased. Rent, £50. Price, including all Fixtures and Stock, £100.

M. M., *Gardeners' Chronicle* Office, W.C.

Seed Business.

FOR SALE, by Private Bargain, the SEED BUSINESS carried on by Mr. John Cocker, at 32, Union Street, Aberdeen. The Stock, which is fresh and carefully selected, consists of a general assortment of Garden, Agricultural, and Flower Seeds, and Miscellaneous Garden Implements. The premises are situated in the principal street in the city, and the business connection has hitherto been always regarded as a good one.

Inventories and Valuations of the Stock may be seen in the hands of Messrs. HENDERSON AND CATTANACH, Advocates, 130, Union Street, Aberdeen, who will give further particulars to intending purchasers, and receive written offers for the Stock until September 24.—Aberdeen, Sept. 1, 1882.

To Market Gardeners, Florists, and Fruiterers.

TO BE LET, by Tender, the GARDENS of a park of 30 Acres, situate at Sunbury-on-Thames, including Range of Greenhouses and Forcing Houses, an extensive Vinery, Wall Fruit, Orchard, and Kitchen Garden; the whole forming the gardens of a mansion at present unoccupied. The owner does not bind himself to accept the highest or any other tender.

Apply to WALTER SNELL, Surveyor, 2, Southampton Street, Bloomsbury, W.C.

TO BE LET, on Lease, about 2 Acres of productive NURSERY LAND, with Stabling, Outbuildings and about 13,500 feet super of Glass; also a SHOP if required. About five minutes' from Waltham Station, Great Eastern Railway. Apply to

E. A. H., Queen Anne's Villas, Waltham Cross, N.

DESIGNS Made and Works EXECUTED

In the Arrangement of TERRACES, CONSERVATORIES, FLORAL CORRIDORS, ROOF GARDENS on uninteresting Lead Flats, &c., formed with substantial PULHAMITE KERB for the FLOWER BORDERS, JARDINIERE, &c., in TERRA-COTTA or ARTIFICIAL STONE of various colours.

BALUSTRADES, VASES, PEDESTALS, FIGURES, FOUNTAINS, CONSERVATORY and WINDOW BOXES in great variety, suitable for any style of House.

Various Specimens of KERB or EDGING, PULHAMITE PERMANENT GRAVEL PATHING for GARDEN, TERRACE and other WALKS and FLOORS, to be seen at the Horticultural Company's, Regent Street, W.; at The Orchard, Philip Lane, Tottenham; and at our Brixton Depot there is the greatest variety of the above to be seen. DURABILITY GUARANTEED.

A Photographic Book of over 200 Illustrations, with Sizes and Prices, sent for Inspection on receipt of twelve stamps.

Address—

PULHAM & SON, The Works, Broxbourne.

(Established in 1837.)

PROTHEROE AND MORRIS, HORTICULTURAL, MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 8, New Broad Street, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

8000 **Winter-flowering Carnations.** 8000

TWELVE well-rooted Plants in six best varieties by post, 4s.; per 100, 28s.; larger, in pots, 5s. per dozen, 35s. per 100. See CATALOGUE.

W. M. CROWE, Boleyn Nursery, Upton, Essex.

FOR
EARLY FORCING.

WEBBS'
FLOWERING
BULBS.



FOR PRICES AND FULL PARTICULARS SEE

WEBBS' AUTUMN CATALOGUE,

A most reliable Guide to the

Successful Cultivation of Bulbous Flower Roots.

Gratis and Post-free.

THE QUEEN'S SEEDSMEN,

WORDSLEY, STOURBRIDGE

Ferns a Speciality.

The largest stock in the greatest number of varieties of

EXOTIC AND BRITISH FERNS

In the Trade, suitable for STOVE and GREENHOUSE cultivation, for Outdoor Ferneries, and other purposes. Special LIST free on application. Illustrated CATALOGUE 6*d*.

W. AND J. BIRKENHEAD, Fern Nursery, Sale, near Manchester.

A Double First-class Certificate.

Viz., a First-class Certificate as a Decorative Bedding Rose in 1881, *and a First-class Certificate as a Show Rose in* 1882.

The Royal Horticultural Society have Registered their Award, and this unprecedented success has been achieved by

An English Raised Seedling Rose.

H.P. DUCHESS OF CONNAUGHT (Noble).

CHARLES NOBLE, BAGSHOT.

STRAWBERRIES A SPECIALITY.

Strong Runners from ground, and in small and large pots, of all the leading varieties.

Guaranteed true to name.

LIST OF SORTS AND PRICE

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ALLAMANDA HENDERSONI. — For sale a fine plant, just coming into bloom, clean and healthy; in pot 16 by 16 well trained on cage, 3 by 3.

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WALKER'S PERPETUAL BEARER PEA.—This magnificent Pea has again taken first and second Prizes at the Oxford Show held on the 6th inst., beating all other sorts. The undersigned will be in a position to offer it to the Trade shortly.

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CHIONODOXA LUCILIÆ.—Early spring bulb, a worthy companion to Scilla sibirica, blue flowers with white centre. Large stock ready for sale, per 12, 3*s*; per 100, 12*s*.; per 1000, 100*s*. Discount to the Trade. Bulbs ought to be planted now.

E. H. KRELAGE AND SON, Haarlem, Holland.

10,000 **Ferns.** 10,000

TWELVE best Stove and Greenhouse FERNS, including Pteris in variety, Lomaria gibba, Adiantums, &c., 4*s*. per dozen, 30*s*. per 100. Strong plants by post or in pots. An enormous stock of these, as also in larger sizes. See CATALOGUE.

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DIRECT FROM THE GROWERS.

ANT. ROOZEN AND SON, NURSERYMEN, Overveen, near Haarlem, Holland.

Before ordering Dutch Bulbs, read ANT. ROOZEN AND SON'S CATALOGUE for 1882, which their Agents, Messrs. MERTENS AND CO., 5, Billiter Square, London, E.C., will forward post-free on application.

NEW GOLDEN BEDDING PANSY, KING OF YELLOWS — the largest, freest, and brightest of all golden-yellow Pansies; strong plants, 1*s*. each, 9*s*. per dozen.

PANSY THOS. GRANGER, rich glowing Crimson, 5*s*. per dozen.

PANSY SUNBURST, fine Red, 16*s*. per 100, 3*s*. per dozen.

Fine collection of all leading sorts.

RODGER, McCLELLAND AND CO., Nurserymen, &c. Newry.

AMPELOPSIS VEITCHII.—Upwards of 10,000 of the above, extra fine Plants; also fine stock of AMPELOPSIS SEMPERVIRENS. Are now receiving orders for STANDARD and DWARF ROSES, which are unusually fine this season. Prices on application to

W. B. ROWE (Limited), Barbourne Nurseries, Worcester.

30,000 Tea, Noisette and China Roses, in pots.

WM. WOOD AND SON have much pleasure in drawing special attention to their magnificent and extensive stock of TEA ROSES in pots, also HALF SPECIMEN ROSES in 6-inch pots, for Conservatory Decoration.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

EIGHTY THOUSAND CLEMATIS, in Pots, of all the finest double and single varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12*s*. to 24*s*. per dozen, strong plants.

Descriptive LIST on application.

RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Earliest Roman Hyacinths, Single White.

E. H. KRELAGE AND SON, NURSERYMEN, SEEDSMEN and FLORISTS, Haarlem, Holland, have yet a superior stock of this very scarce article, in three sizes—*a*, 4¾ inches in circumference; *b*, 4¼ to 4¾ inches; *c*, 4 to 4¼ inches.

Prices on application. Please state quantity wanted.

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A. LIETZE, 47, Rua Ouvidor, Rio de Janeiro, begs to offer the following :—

	Ripening in	1000 seeds s. d.	100 seeds s. d.
ACROCOMIA SCLEROCARPA	October	..	8 0
ASTROCARYUM AIRI ..	November	..	10 0
ARECA LUTESCENS ..	January	20 0	..
,, MADAGASC.	June	20 0	..
,, RUBRA	January	10 0	..
COCOS FLEXUOSA	Variably	30 0	..
,, PLUMOSA	Variably	25 0	..
,, WEDDELLIANA ..	December	50 0	..
COPERNICIA CERIFERA ..	February	..	8 0
DESMONCUS SP. RIO ..	August	..	10 0
EUTERPE EDULIS ..	May	..	6 0
GEONOMA GRACILIS ..	February	30 0	..
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PANDANUS UTILIS ..	Variably	15 0	..
SYAGRUS SP. RIO	December	..	10 0

To Planters.

JAMES BIRD offers the undermentioned Forest stuff, price on application :—
LARCH FIR, 3 to 4 feet, and 4 to 5 feet.
SCOTCH FIR, 1½ to 2 feet, and 2 to 3 feet.
SPRUCE FIR, 1½ to 2 feet, 2 to 3 feet, 3 to 4 feet, and 4 to 5 feet
PINUS AUSTRIACA, 1½ to 2 feet.
HAZEL, 2 to 3 feet, and 3 to 4 feet.
The Nurseries, Downham.

Autumn List.

JOHN LAING AND CO.'S New CATALOGUE of Dutch Bulbs, Roses, Fruit Trees, &c. ; also Revised LIST of Tuberous Begonias, has been issued to all Customers. Copies gratis on application. Goods all first quality at moderate rates. Address
JOHN LAING AND CO, Nurseries, Forest Hill, S.E.

FIFTY THOUSAND
DOUBLE YELLOW DAFFODILS.
30,000 Double White NARCISS
30,000 Single Pheasant-eyed NARCISS.
10,000 Orange Phœnix NARCISS (the large Double White Daffodil).
Also Double and Single SNOWDROPS and LILIUM CANDIDUM, fine samples.
Prices on application to
WATKINS AND SIMPSON, Exeter Street, Strand, W.C.
All varieties of English and Dutch Bulbs.

BELGIAN STOCK of FORCING PLANTS of the Ornamental Plant Nursery of Ghent.
AZALEA INDICA and MOLLIS with buds, CAMELLIAS with buds, DEUTZIA GRACILIS, HELLEBORUS NIGRA, SPIRÆA JAPONICA and PALMATA, &c.
CATALOGUE free on application. Send Orders directly to
JULES DE COCK, Nurseryman, Ghent, Belgium.

Lily of the Valley—Convalaria majalis.

E. H. KRELAGE AND SON, NURSERYMEN, SEEDSMEN, and FLORISTS, Haarlem, Holland, have yet for sale a few thousand strong Dutch 3-yr.-old clumps, and an unlimited number of separate cultivated (German system) and divided spikes.
Prices on application. Orders now booked. Delivery end of October.

Forcing Pinks.

SIX of the best varieties in cultivation—Anne Boleyn, Mrs. Moore, Mrs. Pettifer, Newmarket, Ascot, Fimbriata alba—by post, or in 60-pots, 4s. per dozen. Mrs. Linkins, the grand new white variety, 9d. each, 6s. per dozen. These flowers are invaluable for button-holes, and can be bloomed early in any cool house or frame. CATALOGUES free.
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STRAWBERRY PLANTS, HERBACEOUS CALCEOLARIAS, CUTTINGS of SOFT-WOODED PLANTS.
STRAWBERRY PLANTS in 50 of the finest varieties, true to name. Catalogues post-free. Purchaser's selection, per 100, from ground, 3s. 6d. ; in 5-in pots, 25s. ; in 2½-in. pots, 12s. 6d. Our selection, per 100, from ground, 2s. 6d. ; in 5-in. pots, 20s. ; in 2½-in. pots, 10s.
500 plants, our selection, in 20 good varieties, for 21s.
100 plants, our selection, in 40 good varieties, for 5s.
HERBACEOUS CALCEOLARIAS, of a beautiful strain, dwarf, and in good variety of colour, strong seedlings for potting, 1s. 6d. per doz., 10s. per 100 ; also in 2¼-in. pots, 3s. per doz., 20s. per 100.
CUTTINGS of FUCHSIAS, GERANIUMS, HELIOTROPES, LANTANAS, PHLOXES, PENTSTEMONS, SALVIAS, ABUTILONS, COLEUS, PANSIES, our selection, all named, 12 of any of above for 1s. 3d., post-free : plants of any 12 sorts for 2s. 6d.
WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

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ROBERT PARKER begs to announce that his New CATALOGUE is now published, containing Select Descriptive and Priced Lists of Asters, hardy herbaceous Chrysanthemums, summer flowering Delphiniums, Fruit trees, Iris germanica, Pyrethrums, double and single flowered, Phloxes, Potentillas, Pæonies, Pentstemons, &c.
Exotic Nursery, Tooting, Surrey, S.W.

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COLOURED PLATE of CALIFORNIAN LILIES,
faithfully represented.
The Catalogue will be forwarded for 4 stamps, and the 4d. returned in the first purchase of bulbs.
Splendid Collection of all kinds of DUTCH, FRENCH, CAPE, JAPANESE and AMERICAN BULBS, *at exceedingly low prices.*
Delivery carriage free over 20s. value.

Single Dahlias.

HOOPER AND CO. invite inspection of their beautiful collection of these, now in full bloom at their Nurseries, adjoining Twickenham Station, South-Western Railway.
Also specially fine collection of PENTSTEMONS.
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Mary Morris.

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BULBS.

Illustrative Descriptive List free on application.

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SEED MERCHANTS and NURSERYMEN,
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Very great care having been taken in eliminating what, till comparatively lately, was considered good in this most beautiful class, a perusal by all interested is invited of the SELECT LIST contained in our BULB CATALOGUE.

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Our GUINEA BOX of choice Hardy Flower Roots for Outdoor Planting

Contains the following liberal assortment, all in sound picked Bulbs with full instructions for cultivation (case, packing, and carriage free to any railway station in England or Wales) :—

25 HYACINTHS, choice, mixed
200 CROCUS, in fine variety
12 TULIPS, Rex rubrorum
12 TULIPS, La Reine
12 TULIPS, double, mixed
12 TULIPS, single, mixed
12 TULIPS, Parrot, mixed
25 ANEMONES, double, mixed
12 ANEMONES, double, Scarlet
25 ANEMONES, single, mixed
12 POLYANTHUS NARCISSUS, mixed
12 Double White NARCISSUS
12 Pheasant's-eye NARCISSUS
6 CAMPERNELLE JONQUILS
25 RANUNCULI, scarlet Turban
25 RANUNCULI, mixed Turban
50 SNOWDROPS
50 WINTER ACONITES
12 SPANISH IRIS
6 TRITELEIA UNIFLORA
2 LILIES
559 *Roots in all. Double quantity*, 40s. ; *half do*, 12s. 6d.

Other Collections for Greenhouse and Conservatory, Window-boxes, &c., 12s. 6d., 21s., 42s., 63s., *and* 84s.
Beautifully Illustrated CATALOGUE, post-free on application.
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60, BARBICAN, LONDON, E.C.
The Trade alone Supplied.

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NURSERYMAN, GHENT, BELGIUM,
Begs to offer a large quantity of medium-sized and large plants of AZALEA INDICA, covered with buds ; CAMELLIAS, well budded ; SPIRÆA JAPONICA, in very strong clumps ; FICUS ELASTICA, &c. Samples (of not less than 25 plants) may be had on application.

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Having a splendid stock, we offer 100 Stove and Greenhouse Ferns and Selaginellas, nice healthy plants, in 50 species and varieties, for 42s. ; 50 in 50 varieties, 25s. ; 50 in 25 varieties, 21s. ; 25 for 10s. 6d. ; 12 for 4s. or 6s.
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W. AND J. BIRKENHEAD, Fern Nursery, Sale, near Manchester.

The New Rates for Carriage of Small Parcels.

BULBS of ALL DESCRIPTIONS and PLANTS in great variety delivered free at your nearest Railway Station, at the following Prices, *for cash with order only*. New Descriptive CATALOGUE for autumn, 1882, post-free. All the goods of the best quality.

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12 fine HYACINTHS for pots, to name, distinct 6s. ; 50, 24s.
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Bulbs for Bedding.

HYACINTHS, Red, White, or Blue, separate, 50, 11s. 6d. 100, 22s. TULIPS, to name, colours separate, 50, 3s. 6d. ; 100, 6s. 6d. CROCUS, to name, colours separate, 100, 3s. NARCISSUS of sorts, to name, 100, 6s. 6d. SNOWDROPS, double or single, 100, 3s. All other Bulbs delivered free at equally low prices. For list, see new Catalogue.

Spring Flowering Plants.

Strong young plants for present planting of WALLFLOWERS, SWEET WILLIAMS, CANTERBURY BELLS, MYOSOTIS, POLYANTHUS, Single PRIMROSES of fine colours, DAISIES, ARABIS, AUBRIETIAS, DACTYLIS, delivered free at 5s. per 100. Bedding PANSIES and VIOLAS to name, distinct colours, free at 10s. per 100. HERBACEOUS PLANTS, 12 distinct sorts, free at 4s. ; 50 varieties, 15s ; 100 plants in 100 sorts, free at 28s.
Our selection. CATALOGUES post-free.
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NEW ROSES of 1882, in pots.—Vendors' Selection, 30s. per dozen ; Purchaser's, 36s. per dozen. The above comprise all the best English and French-raised Hybrid Perpetuals, Perpetual Polyantha, Teas, Hybrid Teas, and Perpetual Moss.

ROSES of 1881, of above-named classes, 18s. to 24s. per dozen, in pots.

CHOICE ROSES. — Tea-scented, Hybrid Tea, Noisette, China, and Bourbon, 18s. to 24s. per dozen, strong plants in pots.
Descriptive LIST on application.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

JULES DE COCK, NURSERYMAN, Ghent, Belgium, offers to the Trade, FICUS ELASTICA, beautiful plants, cultivated in pots, £4, £5, £6, per 100 ; CYATHEA MEDULLARIS, £4 per 100 ; PTERIS ARGYREA, 25s per 100 ; P. SERRULATA CRISTATA, 25s. per 100 ; ADIANTUM CUNEATUM, 25s. per 100 ; CLIVIA MINIATA, seedlings, one year, best hybridation, 50s. per 100 ; CAMELLIAS, without buds, grafted, with names, best sorts, £3, £4, £5 per 100 ; PALMS in store pots, ARECA LUTESCENS, 12s. per 100 ; COCOS WEDDELLIANA, 40s. per 100 ; CORYPHA AUSTRALIS, 8s. per 100 ; LATANIA BORBONICA, 8s. per 100 ; PHŒNIX RECLINATA, 8s per 100 ; P. TENUIS, 8s. per 100 ; SEAFORTHIA ELEGANS, 10s. per 100. CATALOGUE free on application.

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CAULIFLOWER, BRUSSELS SPROUT PLANTS.
VEITCH'S AUTUMN GIANT, 3s. 6d. per 1000.
BRUSSELS SPROUTS, 3s. per 1000.
Packages 3d. per 1000 extra. Order of
R. BATH, Crayford ; or J. BATH, 34, Wellington Street, Covent Garden, W.C.

GRAPE VINES and ORCHARD HOUSE TREES in POTS. — GRAPE VINES, extra strong, short-jointed and well ripened ; Planting Canes, 3s 6d. to 5s. each ; extra strong Fruiting Canes, 7s. 6d. to 10s. ORCHARD-HOUSE TREES, fruiting in pots, consisting of Peaches, Nectarines, Apricots, Plums, Cherries, Pears, Apples, and Figs. Descriptive Price LIST for 1d. stamp.—RICHARD SMITH AND CO., Nurserymen and Seedsmen, Worcester.

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The best sorts for Fruiting next year.
V. H. DE THURY, SIR JOSEPH PAXTON, PRESIDENT, } Strong plants, all well rooted, in small pots, 10s. per 100, 90s. per 1000.
Also strong plants of the above, from open ground, 2s. 6d. per 100, 20s per 1000. Package free. Extra plants for carriage. Cash from unknown correspondents.
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1882.—A B C Bulb Guide.—1882.

CONTAINING MOST COMPLETE COLLECTIONS of LILIES, NARCISSUS, HYACINTHS, CROCUS, TULIPS, &c. ; a grand Selection of MISCELLANEOUS HARDY BULBS, several Lilies which were awarded First-class Certificates this season.
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TEN THOUSAND ROSES IN POTS.
On own roots and Seedling Briers.
TEA, NOISETTE, CHINA, and HYBRID TEAS, a select LIST of the leading varieties.
5-inch pots (1st selection), fine, bushy, 1½, 2 to 2½ feet.
5-inch pots (2d selection), fine, bushy, 1, 1½ to 2 feet.
7-inch pots, suitable for forcing.
CLIMBING ROSES, 5 to 7 inch pots, 4, 5, 6 to 8 feet.
Second to none in quality.
GEO. JACKMAN AND SON, Woking Nursery, Surrey.

The New Zonals and Fuchsias of 1881-2.

RICHARD PANNETT, NURSERYMAN, Chailey, Sussex, will send 1 doz. of each, in good plants, for 12s. ; ditto of 1880 for 7s. Cuttings half price.
Cuttings, to include new sorts of 1880 and older, 10s. per 100 varieties.
Descriptive CATALOGUES of the best in cultivation post-free on application.

DOWNIE AND LAIRD beg to intimate that their splendid collections of PHLOXES, PENTSTEMONS, ANTIRRHINUMS, DAHLIAS, &c, are now in full flower, and may be seen any day (Sunday excepted) at their Pinkhill Nurseries, near Edinburgh.

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GEO. WILSON, Kilmeny, Hawick, N.B.

5000 Snowdrops	1000 Mixed Early Tulips
1000 Yellow Crocus	100 Mixed Hyacinths
1000 Blue Crocus	100 White Aconite
1000 White Crocus	50 Assorted Lilies
1000 Striped Crocus	12 Tritonia, sorts
1000 White Single Narcissus	100 Mixed Double Ranunculus
1000 White Double Narcissus	100 Scarlet Turban Ranunculus
1000 Yellow Daffodils	12 Schizostylis coccinea

TO THE TRADE.

HURST & SON

Have just received a Consignment of fine New Seeds of

ARAUCARIA IMBRICATA and ARECA BAUERI (Seaforthia robusta),

Which they are Offering to the Trade.

Price on application to

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Tuberous Begonias.

JOHN LAING AND CO.'S Gold Medal Collection is unrivalled. 100,000 now in cultivation are producing a magnificent floral display. Orders executed with blooming plants.

Prices, 12s. to 60s. per dozen.

CATALOGUES on application. Address

JOHN LAING AND CO, Forest Hill, S.E.

SPECIAL CHEAP LIST on application.

10,000 young PALMS, various.
20,000 FERNS, in thirty varieties.
2,000 ARALIA SIEBOLDII.
5,000 PRIMULIAS, splendid strain.

E. DENSON AND CO., Fern Nursery, Brockley, S.E.

Come and See.

The whole family of DAHLIAS are now in splendid condition, and it will at once be seen that Mr. Moore's Gracilis section stands pre-eminent for garden decoration.

Our Autumn Catalogue is now ready, and sent post-free. To all lovers of flowers it will be found indispensable.

H. CANNELL & SONS.

THE HOME FOR FLOWERS SWANLEY KENT.

TO AUTUMN PLANTERS.

The Subscribers invite Inspection of their Stock of

FOREST AND ORNAMENTAL TREES,

SHRUBS, ROSES,

RHODODENDRONS, FRUIT TREES, VINES, &c.,

WHICH IS ONE OF THE MOST COMPLETE IN EUROPE,

HARDY, HEALTHY, and WELL ROOTED.

Samples and Prices sent free on application, and Special Freights furnished to all parts of the Kingdom. Catalogues free by Post.

LITTLE & BALLANTYNE,

NURSERYMEN AND SEEDSMEN TO THE QUEEN,

CARLISLE.—Established 1812.

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IMPORTED ORCHIDS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY, September 19, at half-past 12 o'Clock precisely, by direction of Messrs. SHUTTLEWORH, CARDER & Co., a grand lot of BARKERIA SPECTABILIS, B. SKINNERI, CATTLEYA SKINNERI, LYCASTE SKINNERI, ODONTOGLOSSUM CRISPUM (ALEXANDRÆ), O. GRANDE, CYPRIPEDIUM INSIGNE AUREUM (true), MASDEVALLIA MACRURA, M. WINNIANA, M. SHUTTLEWORTHII, M. TROCHILUS, M. CHIMÆRA, M. HOUTTEANA, ONCIDIUM ORNITHORRHYNCHUM, O. WENTWORTHIANUM, &c.

The above, in splendid masses, and in the best possible condition, *all to be Sold without reserve*, except Cypripedium insigne aureum, Masdevallia macrura, and M. Winniana.

On view morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

REGISTERED DESIGNS.



"The Chatsworth."



"The Balmoral."

The above are drawn from Photographs of Conservatories erected upon their

SHUTTER-BAR SYSTEM of GLAZING

BY

ARTHUR DASHWOOD & CO.

HORTICULTURAL BUILDERS

AND

HOT-WATER ENGINEERS,

who, having been entrusted with the erection the extensive series of HORTICULTURAL BUILDINGS in the beautiful Grounds of Forest Lodge, have great satisfaction in printing the following letter received from J. FREEMAN, Esq.:—

"FOREST LODGE, FARNBOROUGH, HANTS,
"August 1, 1882.

"DEAR SIRS,

"Now that sufficient time has elapsed since the completion of my Greenhouses built by you, to make me appreciate your System of Glazing, I have much pleasure in stating that I am perfectly satisfied with the whole work done; and, to show how strong the buildings are, they resisted the severe gales we had last autumn and this spring. The Houses, which consist of over *thirty-four thousand* (34,000) square feet of glass, did not have a single pane broken during the gale of October 14, 1881. The Heating has been well carried out, and has given me great satisfaction in its working, which consists of 1¾ mile of 4-inch piping. The Pulsometer you have erected works also well; in fact I am very pleased with the large outlay I have made, and shall be glad to testify to your good workmanship to anybody who may be desirous of giving you an order. You are also at liberty to use the above.

"Yours faithfully,

"J. FREEMAN.

"Messrs. ARTHUR DASHWOOD & CO.,
"75, Mark Lane, London, E.C.

Plans and Estimates free on application for Small or Large Greenhouses.

The Sycamore Horticultural Works,

WIMBLEDON,

Adjoining the All England Croquet Grounds.

London Office—75, MARK LANE, E.C.

ILLUSTRATED CATALOGUE POST-FREE.

DUTCH FLOWER ROOTS.

JAMES VEITCH & SONS,

Royal Exotic Nursery, Chelsea, S.W.

HYACINTHS,
TULIPS, CROCUS,

And other Bulbs of superior quality.



EARLY WHITE ROMAN HYACINTHS.

25s. per 100, 3s 6d. per dozen.

CHOICE EXHIBITION HYACINTHS.

Selected from J V. & Sons' magnificent prize groups.

12 FINEST VARIETIES .. .. 18s.
18 ,, ,, ... 27s.
24 ,, ,, ... 36s.

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Royal Horticultural Society's Exhibition, March 28, 1882.

The *Journal of Horticulture*, March 30, 1882 —"Messrs. J. Veitch & Sons had a magnificent display of Hyacinths, the spikes being very massive, the bells large, and the colours very clear and rich. The extraordinary quality of the plants attracted much admiration from the visitors. . . . A Silver-gilt Flora Medal was deservedly awarded for this handsome collection."

CHOICE NAMED HYACINTHS.

J. V. & Sons' Selections, 8s., 10s., and 12s. per dozen.

HYACINTHS FOR BEDDING.

In distinct shades of colour, per 100, 30s.; per dozen, 4s.

EARLY NARCISSUS.

DOUBLE ROMAN .. .. per dozen, 2s. 6d.
PAPER WHITE .. .. ,, 2s. 0d.

CHOICE TULIPS FOR EXHIBITION.

Veitch's Selection of the twelve best Varieties.

Six of each for .. .. 12s. 6d.
Twelve of each for .. .. 25s. 0d.

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THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 16, 1882.

SYON HOUSE.

AS a private garden Syon is one of the oldest in England, and its history up to the present day is among the most brilliant on record as regards practical horticulture, to say nothing of the interest attaching to the large and choice collection of rare trees there to be found. The present house stands on the site of an old monastery which was abolished by Henry VIII. in 1539. In 1547 the corpse of Henry VIII. laid one night at Syon, on its way from Westminster to Windsor, to be interred. The mansion was confiscated to the Crown in 1552, in the reign of Edward VI., by whom it was granted to his uncle, the Lord Protector Somerset. On his fall it reverted to the Crown, and was made over to John, Duke of Northumberland, and when that nobleman was beheaded the property again came into the possession of the Crown. In the reign of Mary it became again a religious institution. In 1604, Syon House and manor of Isleworth were granted by James I. to Henry Percy, ninth Earl of Northumberland. It was, however, about the year 1748 that the greatest improvements were carried out in the grounds by Sir Hugh Smithson, son-in-law of Algernon, Earl of Hertford, and afterwards Duke of Northumberland.

The pleasure-grounds consist of about 63 acres, and were laid out by "Capability Brown." The gate at the main entrance, about a quarter of a mile from Brentford, was designed by Robert Adam. The trees that first catch the eye after entering the grounds are Ash, Beech and Elms, old specimens, but still healthy and bearing good leafage. The drive curves sharply to the bridge spanning the lake in the park which sweeps away towards the Thames, and is thickly covered with Water Lilies of various kinds. At Syon there is a massive grandeur in the proportions of the trees, and if the view is somewhat circumscribed and obscured, there is the advantage of clearly defined lines formed of Limes and Oak in the direction of the mansion, and of individual specimens or groups of trees which, even on a hazy day, cannot escape notice. At a few yards from the bridge stands a noble Oak, and as one looks over the green pasture other notable trees are perceived, for at Syon the park has not been converted into a wood, but the general outline of every specimen or group may be scanned from a distance. The trees by the avenue are planted 20 yards from the verge, leaving a broad margin of green, which improves and enlarges the view towards the mansion, of which the best glimpse from this side is obtained from the centre of the bridge crossing the lake. Before the dressed grounds are reached a second drive is crossed, running at right angles with the avenue. This is the road from Brentford to Isleworth. From this point there is a full view of the west front and lawn, flanked by high belts of trees upon the north and south sides, and with a variety of underwood planted thickly beneath them. There are two trees upon this lawn that we must notice in

particular, one is a Cedar of Lebanon, and the other a specimen of Amelanchier Botryapium (the snowy Mespilus of North America).

The house is built in a quadrangular form, of brick faced with Bath stone, with a square embattled tower at each angle. In the centre is enclosed an area about 80 feet square, which was originally intended as a court of communication, but has since been laid out as a flower garden. Leaving the west lawn by a door at the lower end of the southern boundary a tour may be made through the grounds in the direction of the rosery. Here are clumps of Rhododendrons intermixed with Ferns, having the appearance of a hardy fernery, and specimens of Negundo fraxinifolia, Planes, and the Highclere Holly, Euonymus latifolius (the Spindle tree), and Ilex dipyrena.. The trees and shrubs are numerous and rare, tall Elms or Ash shoot up from a groundwork of flowering trees and shrubs, and various shaped masses are planted with shrubs remarkable for distinct leafage or habit. In fact, the outlines of the shrub-borders and beds are designed to harmonise and correspond with the positions of the large ornamental trees, among the latter of which may be mentioned fine specimens of Juglans nigra (the Black Walnut), the common Chestnut with a clean stem of over 40 feet, Cedrus Deodara, clumps of Hollies and Portugal Laurels, the Judas tree (Cercis siliquastrum), Pyrus spectabilis or the Chinese Crab, the lovely-flowered Stuartia virginica from North America, Arbutus Andrachne with its richly coloured bark, a specimen of Thuia aurea in pyramidal form, bushes and groups of Polygonum cuspidatum, Acer Negundo var., and Calycanthus floridus (the Allspice tree from Carolina). The shrubs are worked in amongst the taller-growing forms either in irregular outline in groups, or as single specimens, as required to create effect. Other noticeable subjects are Rhus glabra (the scarlet Sumach), Robinia Pseud-Acacia, always pretty in shrub borders; Halesia tetraptera (the Snowdrop tree), Pinus macrocarpa, and other trees and shrubs.

At the entrance to the rosery there is a good sample of the Cork Oak (Quercus Suber), near the oval fish-pond, and spreading specimens of the English Yew, in addition to beds of Roses in vigorous health. Beyond the rosery a boat-house is observable upon the brink of the Thames, and from this point the grounds may be traversed in the direction of the south side of the house. But what a change of scene, and what variety of trees and plants! Honeysuckles creep over green sloping banks, or the summit of a mound is clothed with the golden flowered St. John's Wort, Hypericum calycinum; or a sweet recess in the shrub border is furnished with the deepest of green, and overhung by the drooping or spreading branches of ornamental trees, with a frontage of flowering shrubs or plants.

The shrubberies are characterised by bold sweeps rather than formal outlines, and in front of them are placed clumps or single specimens of plants which supply those varied tints that are so striking in spring and autumn. A very beautiful object at this season is Pavia macrostachya, a Chestnut-like tree, from North America.

But the "Pine-ground" is in view, and its trees are so wonderfully fine that all attention is concentrated upon them for the moment.

The landscape is rich in foliage and other attractions. Let us, however, notice the trees—the Quercus pseudo-suber (the false Cork Oak), the Cluster Pine (Pinus Pinaster), and the giant Cedar of Lebanon, over 80 feet high, 15 feet in girth at 2½ feet from the ground, and having a spread of branches of something like 84 feet. The rows of branches overlap each other, the lower set brushing the green carpet beneath them, and looking majestic in the extreme. Now may be seen a half-moon-shaped figure of the golden St. John's Wort, a specimen of the flat-headed Yew, Taxus adpressa; and behind them a tall specimen of Taxodium sempervirens. At the south front are steps leading to the several towers at the angles of the building, and from this point there is a view over the pleasure-grounds at Kew, which are charmingly wooded with bold-leaved trees. The east or colonnade front is of a different character, the trees in its vicinity being remarkable both for age and size. No wonder, then, that the walk through this part of the grounds leading to the garden is called the Duke's Walk. There are large Limes near to the house, and an ancient Cedar tree, propped up, whose girth is between 70 and 80 feet, its supports being clothed with Ivies and Clematis.

Turning to the left, and descending a winding slope, nearly arched over by trees, and margined by rocks, planted with Ferns, Ivies, &c., we enter the flower garden, a sweet little valley, enriched with flowers, and almost enclosed with banks of flowering trees and shrubs. The first view of the garden is, unlike that of most gardens, by no means the prettiest. A large circular fountain is seen from the entrance surrounded by a bright gravel walk, and a row of flower beds laid out in grass upon either side. A straight walk cuts the garden in two, and communicates with the middle wing of the large conservatory. The nature of the ground, therefore, necessitates that the design of the garden shall be simple. There are two large plots resembling triangles in the centre of the garden, and two small plots within the wings of the conservatory. These are simply laid out in beds planted with a collection of fine-foliaged and flowering plants. The border nearest to the conservatory is gay with hardy Fuchsias, Tritomas, white Phloxes, and Bocconia cordata, and the banks surrounding the garden with Magnolia conspicua, Gingkgo adiantifolia pendula, Cerasus sylvestris flore-pleno, and other flowering trees and shrubs. A pretty feature here is the common Ampelopsis climbing up some old Scotch Firs, which looks very pretty in autumn when the leaves are changing or have changed to crimson or coppery-red. But the spring effects are said to be very much finer.

The conservatory, shown in our supplementary plate, is 380 feet in length, and is crescentic in outline with a central dome and two wings, with a pavilion at either end. It was designed by Mr. Fowler. The central wing is 100 feet long, and the dome (or cupola) 65 feet high. The building is constructed of Bath stone, with iron roofs, columns, and arches. The whole of the front is glazed with plate-glass, as well as a portion of the roof.

Entering the building by the eastern pavilion the plants that struck us most were fine Myrtles, Camellias, Araucaria excelsa, a pair of tall Dracæna australis, and the Japan Loquat (Eriobotrya japonica). The greenhouse or cool portion of the range is constructed after the corridor fashion, and is ornamented with flowering Tacsonias and other creepers, and handsomely arranged with Fuchsias, Achimenes, Tuberoses, Begonias, Coleus, and Liliums.

The next division is also filled with cool or intermediate subjects, consisting of Encephalartos, Dracænas, Palms of sorts, Ferns, and ornamental-leaved Begonias. The centre of the conservatory is laid out in beds and walks, and the plants in these beds, like the trees out-of-doors, are extraordinary specimens for a private garden. The great extent of the place naturally prohibits anything like an exhaustive account, but we must mention a few of the specimens. A plant of Corypha australis grew so high that its top had to be cut off, and the stem is now clothed with Monstera deliciosa, bearing five fruits.

Specimens of Cyperus alternifolius, grown in pots, are from 9 to 12 feet high—the largest we ever remember seeing or hearing of as pot plants. Sideroxylon inerme (the Iron-wood tree), from the Cape of Good Hope, is a remarkable specimen, as also are the Laurel-leaved Cocculus (Cocculus laurifolius) from the East Indies, Musa Ensete, and M. paradisiaca. Cereus hexagonus (the six-sided Cereus), from Surinam, is over 60 feet high; and Caryota Cummingii, Latania borbonica, and the Screw Pine (Pandanus utilis) do duty underneath as a suitable groundwork to the giants above them. The pillars are clothed with flowering Begonias, and by way of contrast a specimen of Aspidistra acaule, of Palm, or of Fern, is dropped at intervals, giving a tropical and natural effect of the most picturesque character. The Date Palm in the centre of the house (see illustration at p. 369) is an extraordinary specimen, 65 feet high, and 4 feet in diameter, with a dense cushion-like mass of roots protruding from the stem some distance above the base, where there is a similar outgrowth of roots, giving the tree a most singular appearance.

Next to this the specimens of Bambusa arundinacea are the most remarkable; these grow upon an average about 10 inches a day during the season, and after reaching the top of the house, force their way through the glass a further distance of several feet. They are, of course, killed back with the frost, and the glass is then repaired. The other specimens most worthy of notice are Arenga saccharifera, Encephalartos Caffra (the Caffir Bread tree from South Africa), a tall tree of Eugenia pimenta (the Allspice tree), Psidium chinense, Raphis flabelliformis, Elæodendron australis (the Olive-wood tree from New South Wales), Brosimum macrocarpum (the Bread-nut tree, from South America), Phœnix farinifera (the small Date Palm), and Ficus bengalensis (the Bengal Fig). The Palms in tubs have massive leaves, and the stems of tall-growing plants are furnished with Ferns or mosses, giving the collection a peculiarly natural appearance. The west wing of the building corresponds with the east one already noticed, and we need not, therefore, refer to it further beyond stating that the plants in the different divisions are well cultivated, and that the creepers are rare, interesting, and beautiful.

Again resuming our tour through the grounds, the first object that arrests attention is the oldest Mulberry tree in England, which was introduced from Persia in 1548. The Mulberries are said to have been planted and in bearing at Syon before the dissolution of the monastery. The collection of trees in this portion of the grounds is not only rare, but their proportions are believed to be unequalled in the country. Small or medium-sized trees are to be found here and there, and the names may sound familiar to some ears from reading trade catalogues; but when we notice the size of the trees their appearance grows more and more interesting. American Liquidambars over 80 feet high, and specimens of the deciduous Cypress, Taxodium distichum, from 98 to 104 feet high and from 12 to 15 feet in circumference, are something more than ordinary measurements. Some specimens of the last-named species throw up from their roots those projecting knobs or knees which form so marked a peculiarity of this species, and which are made use of in Florida, it is said, as bee-hives. At Sion they protrude through the grass in numbers at a considerable distance from the base of the tree, and are of all sizes, from a mere knob the size of an apple to a conical projection 2 feet in height (see fig. 60, p. 360). The Cretan Maple is 45 feet high, Catalpa syringæfolia, 30 feet; Populus nigra, 114 feet; Alnus glutinosa laciniata, 76 feet; Virgilia lutea, 60 feet; and Sophora japonica, 70 feet. Pavia flava (the Buck's-eye tree) is noticed near to or in the Magnolia circle, and Tulip trees and the Kentucky Coffee tree (Gymnocladus canadensis) are also uncommon specimens, as much for their health and vigour as for their age. Oreodaphne californica is said to be very rare, and the leaves emit a peculiarly sickly odour if squeezed between the hands. It was killed on a wall at Kew during the past severe winters. The lake in the pleasure grounds is very pretty as viewed from the bridge which spans it; its margin is planted with Bulrushes and Epilobium hirsutum, one of the best of flowering swamp plants. It is overhung by weeping trees, and in its vicinity are the following trees of various ages and sizes:—Fraxinus heterophylla, Diospyros Lotus (the European Date), and a very uncommon tree, the cut-leaved Alder, evergreen Oaks, the Cork Oak, and duplicates of many of those already mentioned.

Those who have visited Syon will remember the locality of the "Flora column," and the noble trees in that part of the grounds. The finest are Quercus Ægilops (the Valonian Oak), Populus nigra (the Black Poplar), American Elms, Pavia macrostachya, the Black Walnut, with its beautiful cut leaves, the Judas tree, the Marsh Oak (Quercus palustris), and the Nettle tree (Celtis occidentalis). Hollies do very well at Syon, and a large group or bush of them is indispensable among so many tall growing trees. A very ornamental tree is Pterocarya



THE FLOWER GARDEN AND CONSERVATORY AT SYON HOUSE.

caucasica, having pinnate leaves like the Black Walnut, but of the two the prettiest, and good to plant by the margin of a lake. The true Service tree (Pyrus domestica) may be seen at Syon, a handsome specimen, having pinnated leaves and serrated leaflets, and easily distinguished from other varieties of the Pyrus family.

The walled-in garden is about 4 acres in extent, the south wall being covered in with glass. The principal forcing houses are in eleven divisions, consisting of vineries, Peach-houses, Rose-house, Fig-house, Melon-house, &c. Mr. Woodbridge is so well known as one of the best cultivators of the day, as well as being a judge of the highest repute in his department, that we need not dwell at any length on the excellence of the crops grown under his charge, and the healthy appearance of the Vines, trees, and plants throughout all the fruit departments. The Grapes upon young Muscat Vines are examples of the highest cultural order, and the prolific condition of the Fig trees as well as the quality of the Figs is something remarkable.

Outside the garden wall are several ranges of plant-houses, forcing-pits, and all the details requisite for conducting forcing operations on a large scale, arranged in methodical order and stocked throughout with useful plants, fruits, or vegetables. In the cool range of plant-houses there is a good display of flowers, and the plant-stoves, ferneries and Orchid-houses are model structures for cultural purposes,and kept in excellent order. Orchids, and indeed the collections of all kinds, are clean, healthy, and thriving. Over 3000 Strawberries are grown in pots for forcing, and a very fine stock they look. The double system of cropping is carried out in the case of vegetable growing from want of more space, and fruit trees of all kinds out-of-doors are healthy, but like most others rather scantily cropped this season. Asparagus and such-like crops are grown and forced in a rough garden at some distance off, and the stock of furnishing plants and Ferns for cutting is grown in the botanic garden, a short walk from the kitchen garden. The small Ferns, mixed foliage plants, and devices for table-work are numerous and interesting to the visitor, a remark applicable indeed to every branch of this extensive, orderly, and well-managed garden.

In order not unduly to lengthen this general notice of one of the finest establishments of its class, we have omitted numerous points of detail which will be more conveniently treated of in detached paragraphs hereafter.



Fig. 60.—Taxodium distichum at Syon. (see p. 360.)

New Garden Plants.

DENDROBIUM DEAREI, *n. sp.**

This belongs apparently to the small group of Dendrobium radians and D. sculptum from the general shape of the flowers, most particularly of the lip. The flower is nearly equal, or even quite equal, in lately received specimens to those of Dendrobium fundibulum, white with some yellow at the base of the lip. The chin is extinguisher-shaped, about half the length of the stalked ovary. The ovary is most remarkably winged, and the sepals, too, are strongly keeled over their triangular bodies. The petals are nearly equal to the lip, oblong obtuse-angled. Lip oblong, emarginate, crenulate at the top, anterior margin with a blunt angle before each side of the base, without any asperities. Column much dilated at the base. I originally had a petal and a couple of dried flowers from Colonel Deare. Then Messrs. H. Low & Co. sent me a fine bushy plant and four flowers. The stems at hand are a span high, multisulcate, like those of a strong Dendrobium revolutum. Racemes numerous (six to nine on one stem !), one showing scars of nine flowers ! Thus it ought to be a delightful thing for lovers of Dendrobes. Leaves oblong ligulate, blunt, scarcely 2 inches long.—Fine wild specimens kindly sent by Mr. Harry Veitch show that the leaves attain much greater length than they were seen to be in Colonel Deare's and Mr. Low's sketches and specimens. The collector of Messrs. Veitch writes :—The bulbs were usually 1—1½ feet high, and even reaching 2½ feet. Flower racemes of 8—18 blooms, blooming on young and old bulbs. Size of flowers equalling that of D. Jamesianum. *H. G. Rchb. f.*

* *Dendrobium Dearei*, n. sp.—Aff. D. sculpto et D. radianti; caule valido spithamæo multisulcato polyphyllo; foliis oblongo-ligulatis apice emarginatis coriaceis; racemis plurifloris numerosis; ovariis pedicellatis tripteris; sepalis triangulo acuminatis carinatis; tepalis oblongo rhombeis obtusis; mento extinctoriiformi ovarium pedicellatum dimidium æquante seu excedente; labello flabellato antice obtuso emarginato crenulato ante basin utrinque obtusangulo. Flores speciosi albi disci basi sulphureo. *H. G. Rchb. f.*

THE ROSE IN 1882.

Now "the hurly-burly's done"—now "the battle's lost and won;" and we who have taken part in the contest—who have been hurried along in the excitement of the struggle—have leisure to sit down and survey our mistakes and our successful ventures, have to tell how we led a forlorn hope and secured an entrance by a dashing effort into the breach, or how, in the "pomp and panoply of war," we brought our battalions to the charge, to disgustedly find out that our neighbour, whom we had looked upon as a "duffer," had completely outmanœuvred us, and left us "nowhere," looking on at a distance, as, with streaming banners, he marched to victory. Such is the fortune of war, and he ought only to engage in the strife who can bear victory with modesty, and defeat without recrimination. The French never suffer a defeat without saying "*Nous sommes trahis;*" and there are some exhibitors who can never recognise their being out of the race without finding fault with somebody—mostly the judges—and attributing their want of success to any cause but the right one—the inferiority of their flowers.

Well, the trees and bushes are put away, the cards returned to their drawers, and the lists are being scanned as to what to order for the ensuing season, and notes made as to Roses to be rejected and replaced by better sorts; and here let me say, what a boon to all intending exhibitors is the new catalogue of the National Rose Society, the result of arduous and long-continued labours. There are set down by the best judges both in our own country and on the Continent the names and characteristics of the best hybrid perpetual and Tea Roses in growth; and as we like to know everything about things we value, curiosity is gratified by finding the name of the raiser, time sent out, and a number of other particulars. Roses which are too much alike will be found bracketed together, and everything has been done to give a faithful guide to all who may like enter the tented field, while, by avoiding those few that are described as "best on maidens," which implies a delicacy of constitution, the lover of the Rose who is not an exhibitor may find a clue to what will best make the garden gay.

And now, as the exhibitor looks back on the past season, he puts to himself the question—What new Roses have I seen that are to replace the old ones?—can I fix upon any that have with regal authority said "You must give me a place in your garden?" I, running over a number of exhibitions and a number of stands of new Roses, must advisedly say that I have seen none. The Roses of last autumn have been conspicuous by their absence. No Etoile de Legove has been shown; this I believe to be in its favour, for it indicates that those who have seen it are so satisfied with its excellence that they have been unwilling to sacrifice the smallest chance of propagating it. This may give an idea as to what a Rose has to go through, and consequently if a bloom is shown it may be supposed how difficult it is to judge concerning it, at any rate to condemn it. One Rose nurseryman had in a dozen of it last autumn, but has now 1500 plants ready to send out. If a Rose stands all this, and is shown in anything like good form, there can be no question, I think, as to its excellence. The only other foreign Roses of 1881 that have been shown in anything like good condition were Roseriste Jacobs. It was well shown at one or two places, and had the appearance of being a vigorous Xavier Olibo; if so it would be a great gain to have something like that grand flower, but with a better constitution. Madame Isaac Pereire, which has Bourbon blood in it, so much so as to be called a hybrid Bourbon Souvenir de Madame Alfred Vey. But they were none of them such good Roses as to cause one to say, This is a grand addition to our Roses.

It is extremely difficult, in speaking of English Roses

to know which are really such. The custom of buying Roses in France and then sending them out here with an English name attached to them, without the slightest indication of their origin, is, to say the very least, misleading. Some of the French Rose growers cry out at this, and go so far as to say we have never raised a Rose in this country and never shall; this, however, is like a good many of the evil doings ascribed to perfidious Albion, although the practice I have alluded to gives, no doubt, the groundwork on which it is founded. This is not confined to the Rose, for it is no indication when a thing has been sent out by any person that it was raised by him, but it is more misleading in the Rose than in any other flower. Nor can I understand the *rationale* of it; no possible glory can be connected with sending out a Rose under false colours. Of the Roses sent out by English growers few have made a very decided hit; perhaps the best is Mrs. Jowitt, sent out by Mr. Cranston. It is a vigorous-growing Rose, of good form and character; indeed the best box of it I have seen was staged next to a box of Alfred Colomb, and it was very difficult to distinguish them. If with the character it retains, as I believe it will, a vigorous growth, it will be a grand acquisition. Of Mr. George Paul's two Roses, George Baker and Brightness of Cheshunt, one can only say that the former is very like Dupuy Jamain; whether it will be better than that fine flower remains to be seen. Brightness of Cheshunt will not be, I fancy, anything but a garden Rose, unless, as is often the case with Mr. George Paul's Roses, it improves. Of Mr. William Paul's Roses, Lady Sheffield, a bright and pleasing shade of pink, is likely to prove useful, but as yet it cannot be said to have established itself very firmly.

Without running at all into sentiment, and that everlasting twaddle which seems to some minds to be inseparable to anything about the Rose, one cannot look back on another season without wondering at the immense enthusiasm excited by this universal favourite. Of what other flower can it be said that there are at least twenty exhibitions held in its honour?—while in many others it forms the main attraction of the exhibition. What other flower can tell of as many growers and exhibitors? Thus, I am informed that at the exhibition at South Kensington there were upwards of four hundred entries sent in by more than one hundred exhibitors, of whom more than sixty were prizetakers; and yet withal I do not think that we have as yet seen its full development, for I cannot think that we can call the last season a thoroughly good Rose year. The cold weather in June checked the growth and held the buds in check for a long time. Where high cultivation is carried out, as with the Rose, and the trees are full of sap, then a check such as they experienced is the more injurious to them. No thoroughly good place has been found for a metropolitan exhibition: the dirty, shabby arcades at South Kensington, the torn and faded baize and the complete *déshabille* character of the whole *entourage* were not fit accompaniments for such an exhibition; and it is to be sincerely desired that if the National Rose Society should go there again, something may be done more worthy of the Royal Horticultural Society and of the Rose.

Those who have frequented Rose shows for some years must have been pleasantly surprised at the great increase of Tea Roses at all the exhibitions; the truth is, that what with the introduction of a hardier race, and the recognition of the fact that they can be grown in the southern counties quite as easily as hybrid perpetuals, many persons who had been frightened at them before now grow them successfully; and their refinement of character, and the fact that they are thoroughly perpetual, giving as fine blooms in September as they do in June, and with the utmost profusion, ought to ensure them a widely extended patronage.

No better way has been devised for showing the Rose than in stands on green moss, and when other plans have been attempted they have been used for a little while, and then been put on one side. People wish to see the Rose individually, and there is no plan so well adapted for that purpose as that which has now existed for nearly half a century.

Nor are the English Rose growers very likely to give us much this autumn for although one or two certificates have been awarded, yet the exhibitors have not on further trial thought them worthy of being sent out; the Gold Medal of the National Rose Society for a new Rose has not been awarded, although several flowers have been shown for it, but it was I believe felt that it should not be given except to something of real excellence. Mr. Bennett has exhibited Her Majesty, of which I think well; it is a large light Rose somewhat of the Captain Christy type. Mr. Frettingham exhibited some seedlings at Darlington, but there was nothing remarkable in them. Mr. W. Paul has exhibited a light Rose, Queen of Queens, of which he thinks more highly than others do apparently, for although submitted to the Floral Committee of the Royal Horticultural Society and to the National Rose Society, it has not been awarded a certificate. If I am informed rightly, it is of French origin, and was raised by Robert Morren. I gather from the reports which I have received from those who have visited the Rose gardens in France that there is nothing of especial interest there, indeed when one thinks over the some 200 Roses that have been sent out from the Continent since 1879, there are really only two or three that can be considered real additions to our lists. A. K. Williams and Gabriel Luizet are of older introduction—1877: this is but a "small piece of bread for such an intolerable quantity of sack," and ought to make us cautious in reading announcements of novelties, but the desire for having something new encourages raisers to feed the desire, and even although failure is the result yet still hope springs up of something that is yet to excel our *prima donna* at the present. *Wild Rose.*

FRUIT NOTES.

LATE GRAPES AND VINES.—The season has been so cold and sunless that late Grapes and Vines will need some artificial assistance to colour and ripen them up properly, and unless this be done the one will not keep or be good in flavour, and the other will not be in condition for showing fruit again next year, as much of the fertility of the Vine depends on the maturity and state of the wood. If unripe it will be soft and pithy and the buds will not plump and harden, and the young shoots made under such circumstances when the time arrives for them to put forth are almost sure to be barren, or, if not actually barren, the shows they make are a mixture of bunches and tendrils that curl and twist in a way provoking to see. To prevent this unsatisfactory state of things fires should be started at once, but these must be managed with great care, and air given at the same time, or much harm will result. The reason of this is, that when there is warmth in the heating apparatus, aqueous vapours are drawn out from the internal border or floor of the house, which vapours rise, and as a natural result condense on any cold surface, and this is why it is that bunches of Grapes become steamed over during early morning if the house they are in remains closed. Although it is highly important that air should be on during the ripening stage of Grapes when heat is applied, it is not much that is required, but only just a "crack" or "chink," as gardeners term it, on the back and front ventilators, as that is sufficient when there is heat in the pipes to keep the atmosphere steadily in motion and drive out all damp. With a dry buoyant air, the ripening process of both fruit and wood goes on slowly but surely, and the crude watery juice in Grapes is dispelled or gradually converted into saccharine matter, without which Grapes are of very inferior quality and will not keep; but drive the water out and the sugar in, and they will then hang almost as long as one likes. The time to fire is during the night and cold dull days, as with sun and a clear sky artificial heat is not needed, indeed it does considerable harm by exhausting and distressing the Vines. In their anxiety to ripen Vines, I have known young gardeners reduce the foliage, which is the greatest mistake possible, unless the foliage happens to be that of aftergrowth or laterals, as every new leaf is of consequence, and all are wanted to elaborate the sap and build up the wood. Laterals are an evil, and should never be allowed to form, as they not only interfere with the principal leaves by crowding and overshadowing them, but they rob the buds at the base, which, when there are laterals, are small and flat, whereas without them they stand out prominent and bold, like those of a Chestnut in spring. As regards the colouring of Grapes, it is singular that what suits black, is against the finishing of white, as with the former the shade and shelter of the foliage is necessary, but to think of perfecting Muscats under a canopy of leaves is quite out of the question. To get that rich, golden tint in the skin they must have sun and light, which, acting together, gradually change the green tinge into one of fine amber, and at the same time impregnate the berries with that delicious musky aroma. The way then to manage Muscats after they have passed a certain stage—that is, when they are fully swelled—is to draw the leaves carefully aside so as to expose the bunches, and the beneficial effect of so doing will soon be seen in the changing appearance of the skins as compared with others less favoured. *J. Sheppard.*

APPLE, HAWTHORNDEN.—As showing the remarkable productiveness of this excellent variety, we have lately been favoured by Messrs. James Veitch & Sons with a specimen branch, with the fruits attached, from their Southfield Nursery, Fulham. The sample can only be characterised as a large cluster of fruits, closely packed together, and big enough to fill a medium-sized basket. This is not the only sample of the kind we saw in the nursery a short time ago, and we should think if Apples bear so well in one place they ought to do so in another, soil and other conditions being favourable.

FLOWERS IN SEASON.

CALCEOLARIA AMPLEXICAULIS.—When one meets with an old friend after an absence of several years the meeting is generally characterised by some little display of feeling, so in like manner with flowers, one can recognise an old friend a long way off and is pleased to meet with it. We recognised this fine old variety of Calceolaria in the grounds at the Crystal Palace a few days ago at a distance, and once more cultivated a closer acquaintance, which revealed the fact that time has not altered its many fine qualities for massing in the flower garden. Many years ago it used to be largely grown in Scotland, as it still is in Wales, and but very few examples of it are seen in England, and this we cannot help thinking is to be regretted, considering that it makes an autumn bed of the most pleasing character. The colour is canary-yellow or straw-coloured, and owing to the fact that it is a late flowerer it is especially adapted for autumn bedding.

BEGONIA FUCHSIOIDES.—We have often drawn attention to the extreme beauty and usefulnes of this fine old plant, but have seldom seen it in better form than we did lately, covering a circular trellis 20 feet high, in a pleasing and natural-like manner with leaves and flowers, the latter drooping as they are wont to do when not too tightly fastened, and looking bright, graceful, and effective.

BEGONIA ASCOTENSIS.—Still another character to be chronicled in favour of this most serviceable Begonia. As seen in the flower garden at Witley Court about a year ago, we thought we saw it in its best dress, as no doubt we did, as far as outdoor cultivation is concerned, but as a pot plant or wall creeper it is likely to be still more extensively used by gardeners. Grown near to the glass, and under the full influence of sun and light, the colour is red, but cultivated under partial shade, as in a conservatory, the flowers change to a most beautiful light shade of pink—indeed, so light that one could hardly believe it to be the same plant. It promises to make a close rival as a creeper to B. fuchsioides, and will grow nearly as high, if liberally treated at the roots.

PASSIFLORA CŒRULEA.—There is no portion of our glass structures more neglected or that looks more naked than the glass partitions dividing ranges of houses into compartments, nor does there appear to be much effort made to clothe them as they might be. It is not practicable in all cases to cultivate delicate creepers in such situations, but we can vouch for it that the above plant will grow and flower well, and look fresh at all seasons of the year.

COREOPSIS LANCEOLATA.—One of the best and showiest of herbaceous plants for border decoration from early summer to late in the autumn. In a rich deep border it is almost a perpetual bloomer until cut down by frost, and its bright golden-yellow blossoms are more effective just now than at the beginning of the year, when there are more flowers of a similar shade of colour in flower gardens and borders. We lately saw it in perfection in Mr. Wolley Dod's garden.

SCABIOSA CAUCASICA.—When seasons are unfavourable to the development of colour in foliage plants and people keep on grumbling from day to day, they do not always see that what may be injurious in one respect

may do good in another. Is not this the case at present? It is true foliage plants in general have not even once assumed their brightest tints, but we are in some degree compensated for this in the second flowering of many herbaceous and border plants. We saw the above plant beautifully in flower a few days ago in the new herbaceous border at Hampton Court Palace, its charming blue or mauve flowers having a peculiar richness about them which is only seen when the plants are in the highest state of cultivation.

Globba atrosanguinea. — This pretty stove plant, nice examples of which are flowering freely at Kew, is a recent addition to European gardens. It was introduced from Borneo by Messrs. Veitch through their collector, Mr. Burbidge. It grows about 1 or 1½ foot in height, has slender stems, and dark green leaves. The large flowerless bracts, the rachis and branches, as well as the calyces, are a bright red, the corolla being pale yellow. A good figure of this interesting species is given in a recent number of the *Botanical Magazine*.

HARDY ORCHIDS.

In the great Orchidaceous family there are species of very varied habit and requirement. While the larger portion are indigenous to the warmer parts of the globe, epiphytal as well as terrestrial in their disposition, there is also a large number of species found in warm and cool temperate regions that are almost exclusively terrestrial. Some few occur in sub-arctic regions. A goodly number of species, including several genera of peculiar interest structurally, are found in Britain, some of them being fairly showy plants; while in middle and southern Europe many occur even more handsome and well worth our attention as cultivators. The genera Orchis and Ophrys are in this respect particularly rich, affording many species which, with liberal culture, are very showy. The genus Cypripedium, too, gives us many kinds which are perfectly hardy in this country, and some of them can vie with their exotic congeners for the laurels of beauty. Take for instance the North American C. spectabile, what have we among exotic Cypripedia to surpass it in beauty? and in the blood-stained Siberian C. guttatum, we have another plant, at once distinctive in coloration and decidedly showy. Again, the great cool regions of the western hemisphere yield a very large number of lovely species, the majority of which have never been grown in this country. Many of them have been introduced again and again, but they have never received the attention which they merit. The late Mr. Joad, of Wimbledon, had a collection of hardy and temperate Orchids which was very rich, as he not only purchased all he could secure, but himself largely collected the South European kinds, and made a special effort to cultivate them successfully. I frequently saw at Oakfield beautiful little masses of scarce species, but seldom seen under similar circumstances.

A very large number of introduced species is quite capable of withstanding the low temperature which we experience in this country, and yet we frequently lose them after the winter. The cause of this in many instances is to be sought, not in the rigour of our winters, but in the prevalence of moisture during the fall and winter when the plant is in an inactive state, while the absence of a protecting layer of snow, and the alternations of cold, moisture, and comparative warmth, are all, in their turn, injurious. Consequently, they are placed under circumstances dissimilar to those under which they exist in their natural homes. Hence the importance of providing for many of our choice introduced plants some protection in a dormant state from the excessive amount of moisture we almost invariably get in this country, and in the case of Orchids which can endure a much lower degree of temperature than they are likely to experience with us, the slightest protection to ensure dryness at the root would be sufficient to guarantee the security of many through the winter which are so frequently lost.

It would certainly not be at all a difficult matter with the present facilities for obtaining plants from the various parts of the globe to make up a collection of 150 species and varieties which could, with the methods of cultivation described below, be treated successfully, and at a nominal cost in comparison to that of an equal number of tender species, without taking into consideration the difference in the after-expenses incurred by their continued cultivation! The cultural remarks below are strictly practicable, and with such treatment as recommended a large number may be grown to perfection. A cold pit or frame is a valuable adjunct even where a good bed is prepared, and in places where it is desirable to cultivate them in pots a frame is more particulary necessary as the result is much more encouraging.

Cultivation in Beds.—In the successful cultivation of these plants, three essential or primary points must be recognised—viz., position, drainage, and soil. With regard to the former, that should be one that is shaded during the greater part of the day, either naturally or artificially, the early morning and evening sun being rather more beneficial than otherwise. Shade afforded by shrubs or trees is much preferable to that of a wall; a cool damp bank under trees is just the place to suit them, with necessary modifications in the preparation of suitable soil, with a bed at the base for the kinds which require more moisture. As to drainage, this is of great importance, and should be perfect, so as to keep the soil in a pure and sweet condition; and to prevent anything like stagnant and superfluous moisture from accumulating about the base of the plants. The kind of soil employed in the preparation of the bed is a primary matter of importance. There is need for two distinct mixtures of soil in making the bed for the requirements of the various species intended for cultivation. The first should be composed of peat, leaf-soil, and sand, in equal parts, with an addition of charcoal broken up finely, for such as the Cypripedia and others, while the other should be a mixture of peat, loam, leaf-soil, and fine pieces of chalk or old mortar rubbish in equal parts, with some coarse sand added, for such as the Orchises, Ophrys, &c. The depth of the soil should be from 12 to 18 inches above the drainage, so as to allow plenty of room for the free-rooting kinds like the Cypripediums. The species described below preferring the loamy compost will be marked with an asterisk (*), while those requiring some protection during the dormant state from excessive wet are marked thus (†).

Cultivation in Frames.—This method we can heartily recommend, as, to say the least, it is a great provision against probable loss of the rarer and more delicate kinds. In all cases where practicable the system of frame cultivation should be adopted as well as that of cultivating them in a bed outside, as then the more hardy and vigorous kinds could be grown outside, while those of the more delicate constitution could find a home in the frame. There are two modes of frame cultivation, both of which are commendable. A bed may be formed similar to the one outside, in which the desired species can be planted, or they may be grown in pots, which is a most interesting method. For this purpose, pots varying in size according to the requirements of each particular kind must be employed. The 48 and 32-sized pots are very useful and well adapted for most of them, until large specimens are formed, when corresponding provision must be made for them. In all cases the pots should be thoroughly cleansed and well drained, with not less than 2 inches in depth of crocks in the 48-sized pots, and more in proportion to the size of the pots, which should be covered with moss or coarse pieces of peat. A compost similar to that employed in the beds should be used in potting, according to the species. The plants should not be potted very firmly, especially those not requiring the loamy compost; those delighting in the latter may be more firmly potted, as they are usually found in positions where the soil is close and firm. They should be annually repotted in spring before active growth commences, after which, to give them a cleanly and fresh appearance, the surface of the soil should be covered with active sphagnum moss, when the pots should be placed upon other inverted pots in the frame. If the bottom of the frame is covered with moss, it will be beneficial, as it will constantly furnish a moist and cool atmosphere. Constant ventilation is necessary, and is best obtained by tilting the lower part of the lights, and in shady weather, or during the night, the lights may be removed entirely, providing the plants do not receive a superfluous amount of moisture, as during activity free ventilation will be most advantageous in promoting sturdy growth, and as a means of lengthening the flowering period. With regard to watering, which must not be neglected, more especially during the growing season, with good drainage they may receive a copious supply without injury, but while in a dormant condition, only sufficient to keep the roots in a moist state will be necessary, as the baking process, which is often resorted to with plants at rest, would in this case be most injurious. A choice selection of the rarer hardy Ferns might be associated with them, and would give additional charms to the frame. The same rule holds good with regard to shade in the case of the frame as advised for the position of the bed: if it is in a naturally shady position, so much the better, if not, artificial shading must be provided during sunshine, by means of tiffany, &c. In my next I will give an enumeration of the most desirable species for cultivation. *Orchidophile.*

(*To be continued.*)

FORESTRY.

Thinning Oak and Ash.—Under this heading my former communications have only been applicable to Pine and Fir plantations, and I desire now to say a few words upon the thinning of hard woods. One primary consideration in thinning all kinds and descriptions of trees, is to do the work so that no sudden or severe check is inflicted upon the remaining crop. With even the most skilful and careful practice possible it is probably beyond our power entirely to obviate incurring some evil influence, less or more, therefore the utmost that can be done is to minimise the injury. With some species of trees, as the Ash, interruption or stagnation of growth is absolutely ruinous, while with the Oak (for many purposes) it is immaterial whether it grows fast or slow, how many interruptions it may encounter, or whether the growth is uniformly continuous or periodical and fitful. The Oak is probably the most accommodating of all hard-wooded trees, and its value is comparatively little depreciated by artificial treatment such as pruning, injudicious thinning, thick or thin planting, &c.; while the Ash, on the other hand, is of all forest trees the most easily influenced, either favourably or adversely, whether by soil, situation, thinning, pruning or other treatment. It is somewhat remarkable that so comparatively little is said about the growth and culture of the Ash, for it is matter of fact almost beyond dispute that there is more loss to proprietors occasioned through mismanagement of that tree than any other forest product. Not only do the general public, but even many of those less or more concerned in the culture of the Ash, believe it to be amongst the most profitable of forest trees, and never once think of what it costs the proprietor to grow and bring it to maturity or of the immense amount of waste and worthless wood in a tree compared with the good and valuable part of it. Ash, unless clean grown and tough in quality, is of no practical value for the ordinary purposes to which that wood is applied, namely, hard wood for tools and implements of husbandry. Now the task to which the forester has to set himself is to grow the tree with a proper stem clear of branches, and at the same time with sufficient branches in the top part to promote rapid continuous growth, and this is greatly influenced by means of thinning. In order to grow Ash properly for the purposes for which it is best adapted, it should be planted upon strong loam or clay soil overlying rock, and the situation should be rather sheltered than exposed. It should also be grown in masses by itself and not mixed with other trees, except such as Oak, Elm, and Spanish Chestnut. It should not be grown amongst Pines or Firs, and while not severely exposed yet it should always have a current of air passing freely through its groups. In marking for thinning an Ash or any hard-wood plantation, it should be done in the summer season while the leaves are on, and not in winter. The position of every individual tree, its connection with others, and the shade and general influence each tree is exercising upon another, are better seen and more easily remembered by attention when in full leaf than at any other time. While the marking should be done in summer, the cutting for industrial purposes should be done in winter, or if any special month is to be preferred it should be that of February. The wood of the Ash, like that of the Spanish Chestnut and Larch, is good and useful at a very early age, and therefore all the more deserves early attention. Perhaps the best and safest rule for thinning Ash plantations is to regulate the distance so that the tree uniformly in its early stages of growth

maintains as many inches in girth as it rises feet in height. These proportions should be maintained till the stem is as tall as it is intended to be, which is usually from 12 to 20 feet. After that height is attained every tree should have ample room for the spread of its branches, so that the annual deposits of wood, or rings as they are commonly termed, may rather annually increase than diminish in thickness. Herein is it where the success or failure in the growth of Ash principally lies, and on this it depends mainly whether the tree will prove a success or a failure, gain or loss. The bud of the Ash tree, whether young or old, is usually sound and healthy, and it is a rare circumstance to find an abortive one. The tree, being also late in foliating, escapes early frosts, which earlier leafing trees often suffer by. The leaf, too, except when newly expanded, is very hardy, and seldom suffers by frost or cold winds, as those of more tender trees often do. The bark of the Ash is liable to various forms of disease, which it is most liable to when young; indeed, except from physical injuries, it is very rare that old and advanced trees contract any bark diseases. The bark of the sapling and young tree is smooth and glassy to the touch, as every birdnester can testify to from experience in climbing, and while at that stage of growth it is, as already said, liable to many forms of disease and attacks of insects; yet when older, and the bark assumes its secondary form and condition, it is safe and secure against all such. Some trees with ulcerated bark (as the Larch) will heal and the tree recover, but not so with the Ash, the ulcers or running sores of which seldom or never heal up; and thus far the best thing to do when such blisters are discovered in a tree is to cut it down that more room may be given to those near it.

Nothing connected with the management of Ash plantations is of greater importance than carefully watching when the trees are ready to cut. If not cut at the proper stage of ripeness and perfection the loss to the proprietor may be, and often is, almost incalculable. I know an Ash plantation of which I at one time had charge where the wood of the trees at sixty years old was almost as tough as whalebone, and the same trees, or more properly speaking the trees in the same plantation, after standing for a period of seventy to seventy-five years, were almost worthless when toughness (for which they were formerly famed) was required. Indeed, the trees that at sixty years old were readily sold at 20*s.* each were not saleable at seventy-five years old at 5*s.* each, the wood during these ten or fifteen years having become quite short and brittle in the grain. *C. Y. Michie, Cullen House, Cullen, Aug.* 29.

A SUBSTITUTE FOR THE LARCH.—Your readers are to be congratulated on having the opinion of Mr. Fowler on this head. There is no one, probably, who from experience and successful cultivation is more able to speak with emphasis. To say that the Larch is doomed as a forest tree is at least untimely. In many places, *e.g.*, in this neighbourhood, in a heavy soil on the chalk, they are quite sound. I quite agree with Mr. Fowler that the tendency to disease has not increased of late years, and that the Larch should still be planted to a limited extent. My chief object in writing is to join in recommending Pinus Laricio as a substitute where the Larch are diseased. Many years ago I had to think of a substitute, and chose Pinus Laricio, and the result as regards rapid growth, freedom from insect pests, and disease, was satisfactory in the highest degree. The only doubtful point is the quality of the timber. The late James MacNab told me I need have no doubts in this respect, and as Mr. Fowler points out, we have ample proof of the excellent quality of the timber from the extensive forests of it that have been and are now being formed abroad. At the same time I experimented on the same large scale with Abies Douglasii, and I can re-echo Mr. Fowler's closing sentence that "it is less promising than P. Laricio on account of the limited range in which it grows freely." Where it does grow freely it certainly ought to be planted on a large scale, and your correspondents might do good service in pointing out localities where it thrives. As regards Abies nobilis I cannot speak in the same favourable terms as Mr. Fowler, although from its success in the Highlands he educes very valid reasons for its extensive planting. In this neighbourhood, where Douglasii does well, we can hardly get nobilis to live. Here, again, is a question that well merits an inquiry, and it would be interesting to have the opinion of some of our Highland friends. Mr. Fowler concludes with calling attention to Thuia Lobbii—and deservedly most certainly. In a strong soil I am confident it will succeed. It is an exceedingly rapid grower, more so even than Pinus Laricio, and if only the timber is good, it will be one of the most valuable trees we have. Its noble appearance and regular pyramidal growth make it one of the most desirable trees for planting in clumps in parks. I do not remember to have seen it planted to any very extensive scale, but here out of, I should think, thirty specimens of it, there is not a sickly or badly-grown tree. There yet remain two Conifers which I am somewhat surprised Mr. Fowler has not mentioned, viz., Taxodium sempervirens, and the new Japan Larch—Larix leptolepis. If Mr. Fowler could give me a visit I could show him almost a wood of Taxodiums all apparently trying to ontvie one another in growth. As regards the quality of the timber I must confess ignorance, nor have I any book for reference on the subject. The bark is of a peculiarly soft nature but of considerable thickness, and the stem is thicker in proportion to the height than any other Conifer I know. One tree here, 52 feet high, has a girth of 7 feet 2 inches at a height of 3 feet from the base. Some of the branches are longer than those below, and give the eye a welcome change from the regular growth of the Thuias, Wellingtonias, &c. Larix leptolepis is a comparatively new introduction; the leaves are fully an inch longer than those of the common Larch, and the bark, as the name denotes, is of a thin and shiny nature, which assumes in the winter a reddish hue. In Messrs. Veitch's trade list the height is stated to be from 30—40 feet. This I can hardly believe, as the growth is as rapid as that of the old Larch, this year's leader on one of the trees being 2 feet 8 inches. It is perfectly hardy, not one of the twenty-four trees I have of it being affected in the slightest degree by the severe winters we have had of late. My trees were raised from layers, as Mr. Standish, who distributed it, was not able to procure any supply of seed; but here it is seeding in quantity. There is a probability that, not being a native, it will be free from disease; if the height, however, does not exceed 40 feet there is no use of thinking any more on the subject. Perhaps you can add, Mr. Editor, whether the height mentioned is the true one and well authenticated. *William Carmichael, Nowton, Bury St. Edmunds.* [The height is given on the authority of the late Mr. John Veitch, who saw it growing wild in Japan. ED.]

POTATOS AT THE COTTAGE FARM, SULHAMSTEAD.

IT must not be supposed because Mr. Robert Fenn does not use his pen so assiduously as he formerly did, that his old ardour in the cause of Potato improvement and culture has in any way cooled. Nothing of the kind. In his new and congenial home at the Cottage Farm at Sulhamstead, he is still engaged in the work in which he has proved so conspicuously successful, and of his last batch of seedlings it may be said with truth that some are surpassingly fine.

In addition to Potato raising Mr. Fenn carries out every year a trial of some of the newer varieties, that he may compare their merits with his own productions. The digging-fork was brought into requisition in our presence, and the following of Mr. Fenn's raising were examined:—Early Border, round white, with Ashleaf foliage, a cross between Willand and Bountiful, one of the best early round varieties, a good cropper, handsome clean sample and fine quality. Reading Russet, a flattish round with a russety-red skin; the product of a cross between Bountiful and Late Rose; a good show Potato of fine quality and likely to be very useful: in two or three cases where it has been seen on the exhibition table this season it has had a rough appearance, as if the season did not suit it, but localities materially affect the symmetry and appearance of Potatos. Prizetaker is a very fine and handsome pink kidney of the finest quality on the table, but in common with some other sorts it is inclined to come small this season; like the preceding, it came from a cross between Bountiful and Late Rose, and it has erect foliage of medium height. This has proved one of the very best new Potatos of the year. Fiftyfold, a variety producing longish white tubers of a roundish shape, though some incline to take the kidney form; it came from the same cross, but a definite judgment on its merits must be reserved for another season, as it has come coarse in appearance and ill-shaped this season. Early Regent, a round white Potato with medium haulm, a good cropper, fine quality, and likely to prove a very useful market variety; in several parts of the country we have excellent accounts of this Potato. The foregoing have all been distributed this year by Messrs. Sutton & Sons, of Reading.

Of new varieties not yet distributed we much liked the appearance of an early white kidney from Willand crossed with Bountiful, and named for the nonce Sulhamstead Abbots. Mr. Fenn regards this as superior to any of the Ashleaf types; a great cropper, very handsome, first early, and very productive. No. 5, a golden-leaved variety, obtained from Snowflake crossed with a seedling; white kidney, fine quality, the foliage handsomely spotted and blotched with gold, which makes it quite attractive when growing. No. 6, coloured kidney, pink skin, flattish in shape, white flesh, mealy, delicate flavour and a good cropper. No. 17-1, from Snowflake, and a seedling, a new or improved Bountiful, fine in colour; very handsome and most promising. No. 17-2, provisionally named English Ruby, higher coloured than the American variety, a very fine skinned variety of good quality. No. 7, Lady Truscott, also from Snowflake, and a seedling, flattish round, handsome and of fine quality. No. 8 is a coloured sport from Rector of Woodstock, and is likely to make a pretty show variety, having all the good qualities of Rector, with the addition of a handsome blotched appearance. No. 9 has been named Antagonist, and it promises to make an excellent late kidney and a most useful main crop variety.

Generally, at Sulhamstead the crops are small, owing to the foliage having died down before the tubers were fully matured; but they are all free from disease. Some of Mr. Fenn's seedlings, sent to Chiswick for trial this season in connection with the competition for seedlings at the forthcoming annual show of Potatos at the Crystal Palace, have been found very promising indeed, and will probably be seen to advantage at Sydenham on September 20. *R. D.*

Florists' Flowers.

THE GLADIOLUS.—Where it is intended to save seeds of these the flowers should be set by this time, else the weather will be too cold to ripen them well. The seed-pods that are near the ripening stage should be watched, and as soon as they open it is best to gather them to save the seeds from being scattered. Place each sort separately in a small box—a shallow cardboard one is as good as anything. It is best to place them in an airy room, where they will soon dry, and be ready to be done up in neat paper parcels with the labels attached. As the best seedlings come into flower they should be marked for growing again; it is also a good plan to stir the ground between the rows to facilitate the ripening of the bulbs. Another thing of considerable importance is the preparation of the ground. I have always found that where the beds were prepared by trenching and manuring in September the bulbs succeeded much better the following season. Trench the ground as deep as it is possible to do it without getting into bad soil, and work in plenty of good manure during the operation; and the more the surface is forked over in fine weather between now and planting time the better.

THE HOLLYHOCK.—Whenever cuttings can be obtained they should still be taken off and be potted in small pots, plunging afterwards in bottom-heat; it must be a mild bottom-heat, and without any steam, although sufficient moisture evaporating from the plunging material to cause the dew to gather in small globules round the edges of the leaves is beneficial. Where it is intended to save seeds, it is necessary to remove the decaying flowers, to prevent their doing any injury to the pods; watch the pods also for a maggot that eats into them; it will eat holes through the centre of every seed in a pod, destroying them all. When the seeds are ripe, they must be saved and dried, the same as the Gladioli. If seeds are not wanted, cut the stems down to within 18 inches or 2 feet of the ground, cuttings will then push freely from the base, and also from the stem. I may say

that if the seeds are sown as soon as ripe, the plants will flower well the following season.

PANSIES.—If cuttings have not yet been put in, see to it at once, as it is now getting late to get a good display of them in the spring. If the plants raised from cuttings inserted early in August are ready, they may be at once planted out in their flowering quarters. See p. 154 for further instructions.

PINKS.—These should also be planted out into their flowering quarters at once, so that they may become well established before the cold weather sets in. The Pink likes a rich light soil to grow in, and if it is well worked, so that it is in a nice loose friable state, the plants will be sure to do well. The preparation of the beds as described by some of the old growers for exhibition may have been unnecessary in part, but they grew large, well-laced blooms. Mr. Baker, of Woolwich, writing twenty-five years ago, says:—"My beds are prepared as follows:—Trench several times at least 2 feet deep, then throw out the top at least 6 inches, and in its place put 3 inches of cowdung; fork this in slightly, so as to incorporate it with the mould; fill on this to the requisite height with a compost as follows:—one part rotten cowdung, one part stiff loam, and one part garden mould, with a sprinkling of sharp grit."

POLYANTHUSES.—We repot our plants early in August, and by this time they are well established in their blooming pots. Instructions have been previously given as to the size of pots to use and the right compost to pot them in. If the potting is not already done it should be seen to at once. Red-spider and also greenfly is troublesome; see that it is removed by dipping the leaves in tobacco and soapy water. They should also be placed in a shady position at least for a month longer, when they may be removed into a more open, sunny place. *J. Douglas, Loxford, Ilford.*

LIST OF GARDEN ORCHIDS.

(CIRRHOPETALUM: *Continued from p. 172.*)

14. CIRRHOPETALUM MEDUSÆ, Lindl., *Bot. Reg.* 1842, t. 12; De Vr., *Ill. d'Orch.*, t. 12, fig. 2; *Belg. Hort.*, viii., p. 38, with a woodcut; *Bot. Mag.*, t. 4977. *Bulbophyllum Medusæ*, Rchb. f., *Walp. Ann.*, vi., p. 262; *Gard. Chron.* 1842, p. 223.—Singapore. Imported by Loddiges. A very singular plant, having brownish-yellow red-spotted flowers in dense heads, with the lateral sepals prolonged into thread-like tails, 3—4 inches long. Hort. Kew.

15. C. NUTANS, Lindl., *Bot. Reg.* 1839, Misc., n. 118; *Bot. Mag.*, t. 4418. *Bulbophyllum nutans*, Rchb. f., *Walp. Ann.*, vi., p. 260.—Manilla. Imported by Messrs. Loddiges through Mr. Cuming. Flowers straw-coloured, in dense nodding umbels.

16. C. PAHUDI, De Vr., *Ill. d'Orch.*, t. 11; Oudem., *Nederl. Plantentuin* 1866, t. 4 and 5; *Gard. Chron.* 1867, p. 75. *Bulbophyllum Pahudi*, Rchb. f., *Walp. Ann.*, vi., p. 264; *Fl. des Serres*, t. 2268—9.—Java. Discovered by Teijsmann. Pseudobulbs and leaves very large for the genus. Flowers large, showy purple and salmon, subumbellate; sepals with very long slender tails.

17. C. PICTURATUM, Lodd., *Bot. Reg.* 1840, Misc., n. 106; *Bot. Reg.* 1843, under t. 49; Hart., *Parad. Vindob.* fasc. 15. *Bulbophyllum picturatum*, Rchb. f., *Walp. Ann.*, vi., p. 262.—India. Imported by Messrs. Loddiges. Flowers purple, in flat umbels. Hort. Kew.

18. C. PUTIDUM, Teijsm. et Binnend; *Bat. Nat. Tijdschr.*, xxiv., reprint, p. 7.—Sumatra. Cultivated at Buitenzorg in 1866.

19. C. RETUSIUSCULUM; *Bulbophyllum* (*Cirrhopetalum*) *retusiusculum*, Rchb. f., *Gard. Chron.* 1869, p. 1182.—Moulmein. Collected by Colonel Benson, and cultivated by Messrs. Veitch. Near C. auratum.

20. C. STRAMINEUM, Teijsm. et Binnend, *Bat. Nat. Tijdschr.*, xxiv., reprint, p. 6.—Sumatra. Cultivated at Buitenzorg in 1866.

21. C. THOUARSII, Lindl., *Gen. and Sp. Orch. Pl.*, p. 58; *Bot. Reg.* 1838, t. 11; *Bot. Mag.*, t. 4237. *Bulbophyllum longiflorum*, Thouars, *Orch. Afr.*, t. 98; *Walp. Ann.*, vi., p. 260, and several other synonyms.—This species has a wide range in the Mascarene Islands, Java, Philippine, and Society Islands. A pretty species, with tawny, purple and yellow flowers in one-sided umbels.

22. C. TRIPUDIANS, Parish and Rchb. f., *Gard. Chron.*, n.s., v., p. 816.—Birma. Introduced by the Rev. Mr. Parish, and flowered by Mr. J. T. Barber in 1876. Flowers golden-yellow.

23. C. VAGINATUM, Lindl., *Gen. and Sp. Orch. Pl.*, p 59; *Bot. Reg.* 1842, under t. 12.—Singapore. Cultivated by Loddiges. Allied to C. Medusæ, differing in its flowers being fringed and not speckled with pink.

27. MEGACLINIUM, Lindl., *Bot. Reg.*, t. 989; *Gen. and Sp. Orch. Pl.*, p. 47.—Flowers borne in a single row along the middle on each side of a broad, flat scape. About ten species inhabiting tropical and subtropical South Africa. The singular flattened scape is a good distinguishing mark of this genus.

1. M. BUFO, Lindl., *Bot. Reg.* 1841, Misc., n. 42; *Gard. Chron.* 1841, p. 318, with a woodcut. *Bulbophyllum bufo*, Rchb. f., *Walp. Ann.*, vi., p. 258.—Sierra Leone. Cultivated by Loddiges in 1841. A very curious Orchid, of which Lindley says: "Let the reader imagine a green snake to be pressed flat like a dried flower, and then to have a row of toads, or some such speckled reptiles, drawn up along the middle in single file, their backs set up, their forelegs sprawling right and left, and their mouths wide open, with a large purple tongue wagging about convulsively; and a pretty considerable approach will be gained to an idea of this plant."

2. M. COLUBRINUM, Rchb. f., *Bonplandia*, iii., p. 223. *Bulbophyllum colubrinum*, Rchb. f., *Walp. Ann.*, vi., p. 257.—Native country unrecorded. Cultivated by Messrs. Booth, of Flobeck, near Hamburgh, about 1855.

3. M. FALCATUM, Lindl., *Bot. Reg.*, t. 989. *Bulbophyllum falcatum*, Rchb. f., *Walp. Ann.*, vi., p. 258.—Sierra Leone. Sent to the Horticultural Society of London by Mr. G. Don. Fleshy scape purple; flowers yellowish.

4. M. MAXIMUM, Lindl., *Bot. Reg.*, t. 1959; *Bot. Mag.*, t. 4028. *M. flaccidum*, Hook., *Cont. Orch. Pl.*, t. 3. *Bulbophyllum maximum*, Rchb. f., *Walp. Ann.*, vi., p. 259.—Sierra Leone. Discovered by Smeathmann, and subsequently sent to Messrs. Loddiges, who cultivated it in 1836. Scape a foot or more high, green; flowers yellow, spotted with red.

5. M. MELANORHACHIS, Rchb. f., *Gard. Chron.*, n.s., iv., p. 162. *Bulbophyllum melanorhachis*, Rchb. f., in the same place.—West Tropical Africa. Introduced by Mr. Bull. "A botanic gem."

6. M. OXYPTERUM, Lindl., *Bot. Reg.* 1839, Misc., n. 10. *Bulbophyllum oxypterum*, Rchb. f., *Walp. Ann.*, vi., p. 258.—Sierra Leone. A fine species, near M. maximum, from which its sharply angled pseudobulbs at once distinguish it. Cultivated by Messrs. Loddiges.

7. M. PURPURATUM, Lindl., *Journ. Linn. Soc.*, vi., p. 128; *Gard. Chron.* 1873, p. 1079; *Bot. Mag.*, t. 5936.—Western Tropical Africa. First collected by Baxter at the mouth of the Nun River. The least ornamental of the cultivated species. Hort. Kew.

8. M. VELUTINUM, Lindl., *Bot. Reg.* 1847, under t. 32. *Bulbophyllum velutinum*, Rchb. f., *Walp. Ann.*, vi., p. 258.—Cape Coast Castle. Imported and cultivated by Messrs. Loddiges. Nearly related to M. falcatum, from which its lateral sepals, velvety inside, distinguish it.

W. B. Hemsley.

(*To be continued.*)

FORD NURSERY.

ON the London Road, and within two miles of the ancient and picturesque city of Salisbury, is Ford Nursery, the property of Messrs. Cross & Steer. This establishment, together with the spacious and well-appointed seed and cut flower business at 8, Canal, Salisbury, and a couple of pieces of nursery ground in the immediate vicinity of the city, has been founded within the last few years by the senior partner of the firm. For many years previous to his going into business Mr. Cross occupied the position of gardener-in-chief to the Hon. Louisa Lady Ashburton, Melchet Court, Romsey, and in connection with which place he was well known as a successful cultivator and exhibitor of plants, more especially Orchids. That he has not lost his skill the condition of the young stock now to be seen in the glass department at Ford will amply testify. Of course a business so recently put in motion as the one under notice must be considered as still in its infancy; but, judging from the manner in which it has developed itself in that short period, it is destined ere long to attain to large dimensions; and as an instance of this it may be stated that Messrs. Cross & Steer contemplate adding to the number of their glasshouses, as they find their present range—which is a light well-heated and ventilated structure, erected on what is known as the "dry putty principle," and well fitted up with stages and suspension shelves—inadequate to the increasing requirements of their business.

The objects that attracted my attention most in my stroll through the houses some time since were the nice young plants of Anthurium Scherzerianum in variety and quantity, and amongst them one named Palmeri, characterised by the rich colour, flatness and size of spathe, which on the original plant attained a length of 7 inches. Of Orchids there is a nice lot of imported bulbs in 3-inch pots breaking profusely in a cool temperature house. These include the following varieties amongst others:—Masdevallia Houtteana, M. chimæra, M. Harryana, Odontoglossums in variety, Cattleyas, Cœlogynes, Cypripediums (including Spicerianum), and Disa grandiflora growing like a weed. Whilst referring to the Orchids, which look very healthy, it may not be uninteresting to Orchid growers to state that last year Messrs. Cross & Steer exposed some of their plants to the full influence of the sun, and that, too, under an almost uninterrupted sheet of glass, and with, Mr. Cross avers, considerable benefit to the plants. As facts speak for themselves, my attention was directed to a plant of Oncidium aurosum imported four years since, and to the difference between the size of the imported bulb and of that of those made the two following years in the shade and of the one made last year under the direct rays of the sun—that is to say, without any shading having been applied to the glass during bright sunshine. The difference is very marked, and is worthy of consideration, as the result will show—viz., that while the bulbs made the second and third year after importation are little more than half the size of the imported bulb, the latter and the one made last year under the conditions already related are, to all appearance, identical in size.

In the furnishing department, amongst other good things, I noticed a few plants of Grevillea Manglesii, which, owing to the pretty foliage, white flowers, and graceful habit, ought to find a place in every greenhouse, especially where the furnishing of inner halls, &c., is a matter of consideration.

In the same house I noticed a new Fuchsia "hybrid perpetual"—a cross between Fulgens and Rose of Castille, which partakes strongly of both parents, and, as its name implies, is said to be continually in flower, and on this account is deserving of passing notice; as also are the following varieties of tree Carnations—viz., Grenadier, Scarlet, white Fimbriata (which are said to be two good winter-flowering varieties), and outside and in front of this house, planted in rows a goodly distance apart, is a large and well-grown batch of plants of The Governor—a variety of the Souvenir de la Malmaison type, and introduced to commerce last autumn by Messrs. Cross & Steer.

In passing through the frame-ground to have a peep at the stock of standard and dwarf Rose trees, I noticed large quantities and varieties of annuals nearly ready for transmission to various parts of the country. All the ranks of Roses, which were making a kindly growth and in good condition, are heavily mulched with manure from the cowyard; and to the combined influence of this and the good soil may be attributed the fine condition of the trees. Dahlias and Gladioli are also somewhat largely grown at Ford, and respecting which my notes would be incomplete without reference being made to a batch of the golden-leaved variety of Lysimachia Nummularia, a pretty rock plant. *Visitor.*

The Poultry Yard.

FOWLS MOULTING.—The period of moulting depends a good deal on age and weather. Birds which were not hatched until late last year will not moult until late this year; and very old birds are generally longer in casting their feathers than ordinary early ones. All do not moult at the same time, and fowls are differently affected by it. Some become naked in a very few days, others keep dropping their feathers for weeks; some appear sick and in bad health while in moult, hardly taking any food; and some hens stop laying whilst others continue quite fresh and brisk, and frequently lay on. The condition of the fowl previous to moult has a good deal to do with this variation, and cold wet weather—especially in the case of all crested fowls—is very trying to them in the time of moult. In dry, hot, sunny weather they get over it in half the time, and in much better condition, than in wet and cold.

This season has not been a very favourable one for moulting. It has been too wet, cold, and sunless; and, to make up for this, special attention should be given to feeding. When new feathers are being formed a great deal of sap is being drained into them, and good feeding must be given to supply this; but in cold seasons, and warm dry ones, the treatment ought to be different.

When our fowls are moulting in hot dry weather we give them unlimited quantities of Lettuce and green food, and it is astonishing how cool and healthy

this makes them ; but in wet seasons Lettuce are very apt to bring on diarrhœa, and drier food should be given them. This season the staple food for our fowls when moulting has been Indian Corn. This grain is very fattening and over-heating when given in large quantities to fowls in the ordinary course of feeding, but when moulting in a cold season it suits them admirably, and should be generally used. Soft food should only be given them in the morning, and then it should be warm. Spices are too irritating, but barley meal mixed up with ale is good. This may appear to some as extravagant fare, but for choice valuable birds it is not so. For ordinary stock warm water may take the place of the ale ; and if any are observed to be unusually bad during the moult some of Walton's Tonic Paste should be given them every other day. A piece about the size of a Filbert is sufficient ; it may be made into a little ball, and be put down their throats.

Quickly developed feathers, and an even moult, are most desirable in the case of show fowls, and the quicker and better all fowls are got through it the sooner will they come to lay well again, and be profitable. A comfortable roosting-place is another great help to a satisfactory result ; and this, with good feeding, will bring the oldest and most delicate fowls successfully through the moult.

THINNING OUT.—Great attention should now be given to this in all yards where the most has to be made of poultry. Spring-hatched chickens are now well up in size, and require much food and space, but to supply inferior birds with either of those to the detriment of the best is unprofitable. Further, the "weeds of the yard" are often the most contentious, and do a great deal of harm to the choicest specimens. All such should now be cleared out of the yards ; sometimes they may be sent to an adjoining farm, to run in the fields, and become useful for the table by-and-bye, and this is a very good way of disposing of them ; but those who have no means of the kind should shut their inferior birds up in a run by themselves, and fatten them up for the table as soon as possible. Those who keep good classes of fowls for exhibition find this pay better than any other plan, and the rule applies to all fowls. The first batch we cleared from our yard this season were all those deficient in true colours ; then those not perfect in feet and combs were removed ; and probably there may still be a few more to go, as we are most particular in reserving nothing but the soundest of birds for breeding stock. Breeding a good many and killing a good many is a sure way of becoming the owner of a high-class stock. Selection, and not collection, is a rule never out of our mind or practice at this season.

LATE CHICKENS.—Those which were not hatched until June or July will be still quite small compared with the March and April ones, and if both lots are allowed to run together the small ones will fare badly. The large ones are generally very cruel to them, and deprive them of much of their food ; in fact, the small ones have but a poor time of it, and if it is wished that they should do any good they must be kept by themselves. We like a batch of late chickens ; they come out in grand feather and condition late the following spring or summer, when the earlier ones are disfigured in moulting ; but we never bring up our late ones with the early ones at this season ; they are packed off to some of the farms on the estate, where they can have abundance of grain from the newly-mown fields, and probably we may not see them until the spring, when we shall select any which may suit any purpose we may have in view, and give the farmer the remainder for his trouble. Were we situated as many are, that an arrangement of this kind could not be carried out, we would give our late chickens a run to themselves, and we would strongly advise others to do the same if the quick and perfect development of their entire stock is desired.

SULPHUR FOR FOWLS.—When young birds which have been growing fast are gaining maturity, or old ones require bracing up, powerful tonics are not satisfactory in their permanent effects. They may purge, and redden the combs for a time, but a relapse—or, more properly speaking, a collapse—will occur that no poultry-keeper will relish ; but, to avoid this and benefit the fowls, I would recommend the use of sulphur. We have used it for our fowls for some years with the very best results. About one teaspoonful is allowed for every dozen. It is mixed with their meal in the morning, and is given twice or three times at this season, and at other times when we see it is wanted.

DUST BATHS.—A dust-bath is enjoyed by fowls at all times, but more particularly when they are changing their plumage, and access to it should be available to all. A dusting-shed should be in every yard. It may be a few feet square, according to the number of birds, with no sides, but a good waterproof roof. A heap of dry ashes should be put under this, and it will soon be seen how much the fowls appreciate it. No fowls will thrive if covered with insects, and the dust-bath alone will keep them away. Dry ashes should be used ; wet material is no good. *Henwife.*

UPCOTT HOUSE,

THE seat of Colonel Harding, is about three miles from Barnstaple, and is justly celebrated for its pinetum, acknowledged to be the finest in North Devon. The situation is a high one, but the collection is well protected by thick plantations of Beech and other trees, and the margins of the boundary borders are planted with low flowering shrubs and hardy Ferns. Conspicuous among the collection are Turkey and Ilex Oaks of remarkable size, but of course the choicer kinds of Pines are the most noteworthy. These consist of Abies nobilis (from North California) over 60 feet high, large specimens of Abies Webbiana, Cryptomeria japonica, Thuyopsis borealis, Cupressus Lambertiana (a rapid grower everywhere in Devonshire), and a specimen of Pinus insignis, planted in 1845, which measured 11 feet in circumference several years ago. The man is still alive who planted this tree when it was only 2½ feet high. Specimens of Picea Morinda are from 50 to 60 feet high, and beautifully feathered and proportioned. Others consist of Abies Webbiana syn. spectabilis, large specimens of the Hemlock Spruce (Tsuga canadensis), Abies Nordmanniana over 60 feet high, tall Cryptomerias, Cedars of Lebanon the glaucous variety, Tsuga Mertensiana syn. Williamsoni ; and among these are dispersed specimens of the deciduous Magnolia (M. conspicua), large Tulip trees (Liriodendron tulipifera), and clumps of Berberis of sorts, which give lively spring effects, and are remarkably pretty during the flowering season.

This dotting about of the choicer kinds of flowering trees among the Pines is not without its advantages at any season of the year, inasmuch as the large leaves of the Magnolias and Tulip trees give that desirable change without which a pinetum becomes monotonous to the eye, however handsome the trees may be in form, or however fine their development. A specimen that looks both pretty and distinct is Tsuga Pattoni, from Upper California, which has silvery foliage ; next to which are Cedrus atlantica from Algeria and Mount Atlas, Retinosporas of sorts, Cupressus Goveniana, and Fitzroya patagonica, a drooping Conifer which is extremely pretty in habit. One specimen of Thuyopsis dolabrata is said to be the finest in the country, but this statement cannot be endorsed, as we know of specimens at Arlington Court, only a few miles from Upcott, equally good. Cryptomeria elegans also succeeds well, and gives variety of colour, although the shaded positions which some of the plants occupy is not exactly appropriate. This beautiful Japanese Conifer we have seen of singularly high colour where it enjoys shelter, and at the same time plenty of light and sunshine, without which its true colour is never fully developed. It should be planted in a rich, open, mellow, well-drained loam, such as seen in the Stour Valley, in Dorsetshire, where it grows rapidly and colours to perfection.

At Upcott there is about 2 feet in depth of rich natural soil—a free loam, rather gritty at the bottom—probably not so rich as that above referred to, but closely allied to it in general character, and especially as to natural drainage. Abies cephalonica grows luxuriantly, as do also many others, including large specimens of A. Pinsapo, the low-growing Taxus adpressa stricta, and others of the same habit. There is another branch at some distance off, which is locally called the Eastern Pinetum, where specimens of the following are among the best :—Pinus excelsa, Picea Menziesi, Abies Nordmanniana, Picea Alcockiana, P. polita, the Albert Spruce (Abies Albertana), Abies bracteata (from the Columbia River), Douglas Firs, and Pinus maritima (from Mount Etna and the Mediterranean).

Leaving the pinetum, we proceed to the Rook Seat, a kind of arbour, or summer-house, upon the west side of the mansion, commanding extensive views of the surrounding country. There is Barnstaple Bridge, which spans the Taw, in the distance, and the rising heights of the Cotton Hills, the peaks of which are of such varied form, and present such rich surfaces to the distant spectator of green slopes and valleys, woods and plantations, and little groups of low-growing trees barely recognisable in the distance. In the opposite direction there is the broad Atlantic, into which the Taw empties itself. There is the light-house near Hartland Point, Clovelly, Westward Ho! Northam, and the little village of Appledore, which stands on the south bank of the bay, where the Taw joins the Torridge.

But we need not dwell upon the distant beauties of the landscape, for close around us are scenes and sights equally, if not more, picturesque — of sloping lawns and meadows, and huge trees spreading their branches over underwood composed of flowering shrubs or greensward, such as is only seen in Devonshire in rich mellow pastures close to a lake or river, where the grass is refreshed by passing vapours, and vegetation generally stimulated and enriched. We notice many things of interest in the woods and plantations, and the long borders of hardy flowers contain many plants that are but imperfectly known to the present race of gardeners. The gardens are of the usual size, in two divisions, and in them may be seen good cultural examples of many kinds of fruits, vegetables, and plants, in the cultivation of which Mr. Bray, the gardener, is very successful. But, as was observed at the commencement, it is the pinetum which is the great attraction at Upcott, and it is in arboriculture that Colonel Harding takes the greatest delight.

TUBEROUS-ROOTED BEGONIAS.

THOSE who grow Begonias from seed should take care to sow nothing but what is good in so far as good seed can be procured ; and they should be sown as early as possible in January, in a gentle heat, in an ordinary propagating pit. The seed soon germinates, and the great advantage of early sowing is that a batch of the forwardest plants can be had in bloom early in June, or even earlier, if they are properly attended to. As some of the plants are more robust in growth than others, so the seedlings will come according to constitution—the more robust first, the weaker ones later. As soon as the forwardest plants can be handled they should be pricked off into stove pots, and room is thus made for the development of the remaining seedlings. To pot off singly into small pots is the next process, and finally into 48-sized pots to flower ; for this size will be found quite large enough for blooming the first year, and it is not difficult to have by July plants 12 inches and more in height, and as wide through, with foliage of a bushy character, and producing a large number of flowers ; indeed, by August capital exhibition specimens can be had, and all of a very pleasing character. But it is a question of attention, and with proper attention wonders can be done with plants.

The wonderful development of tuberous-rooted Begonias from seed in a short time is now being abundantly illustrated at Messrs. Sutton & Sons' Portland Nurseries at Reading. There are two batches of plants in flower ; one is a very large number of selected seedlings left over from last year, and now being grown on for seed ; the other is the forwardest of the seedlings raised this year.

In the case of the former batch the varieties are in many instances so very fine as to deserve naming, but it is only types of conspicuous individual character that are selected for this purpose by Messrs. Sutton & Sons. As a matter of course there are striking shades of crimson and scarlet, but in the rose-coloured, magenta, pink, and flesh-coloured flowers, there are some surprisingly pretty shades. And especially does this hold good of the orange-and-yellow flowered types. Truly the blood of B. Pearcei was, in the earlier stages of fertilisation, used to some purpose ! Shades of buff, orange-buff, and orange-red, are particularly good, while of very deep orange and clear golden flowers there are fine and bold types. There is a much larger proportion of these colours than is usually seen in batches of seedling Begonias. Plants in 48-sized pots have a remarkable development—really very fine plants indeed, considering they are only six or seven months from seed, and remark-

ably bushy in growth. A variety named Reading Purity is deserving of mention; the flowers open creamy white, and become almost pure white with age; the foliage is finely veined. This is a most desirable plant for conservatory and greenhouse decoration.

There can be seen among the seedlings plant some with a decidedly dwarf and stocky growth—indeed, appearing as if they would form a strain almost as stocky in growth as a Cyclamen. Whether this will be an advantage or not remains to be seen, but compact and dwarf types of plants appear to be acceptable generally, as they are invariably welcomed with acclamation.

Begonias are being bedded-out almost as freely as Pelargoniums. It is obvious that seedlings are best adapted for this purpose, and a dwarf compact strain will be found acceptable as an edging to later-growing types. All who have bedded-out tuberous-rooted Begonias speak in the highest praise of their useful floral service. *R. D.*

Plants and their Culture.

GREENHOUSE PLANTS, &c.—The stock of Solanums of the Capsicastrum section that are grown in the open border should now have a good crop of berries on them. Where this is the case, the plants should be kept constantly pinched, to induce the same to perfect their crop more quickly. In another week or so it will be well to make preparations for potting them up. After this they should be kept somewhat close for a few weeks, till they are rooting freely. Those that have been in pots all the summer will require abundance of water, to preserve the foliage in a healthy state, to which also occasional doses of liquid-manure will be beneficial. Bouvardias grown in an open border during the summer will thrive exceedingly well if they can be transferred to a Melon-pit from which the crop has been cut. Plant them in the soil from which this crop was taken. In this way I have grown mine for two seasons, and have been well satisfied with the results. The plants thus treated will (if they can soon have the benefit of such a place) throw out abundance of lateral growth, with a corresponding larger amount of flower. Deutzias and Spiræas intended for next season's forcing ought to be potted up also as quickly as possible. Salvias should be treated likewise, or a too robust growth will be made during the next few weeks. Grow the stock of Primula sinensis and also Cinerarias as sturdy as possible, keeping them well aired at all times. The double Primulas should be housed as soon as room can be found for them. See that the stock of hardwooded greenhouse plants continues to have the benefit of all the sunshine possible. The fine weather we had lately was of great benefit to all these towards perfecting their growth for another season. Continue to watch closely for any indications of mildew, and apply sulphur as soon as signs of this fungus are detected. The latest flowering Cape Heaths that are now in beauty will last the longer if they can be housed.

BULBOUS PLANTS, &c.—The annual autumn orders for these essential adjuncts to almost every establishment will now be occupying attention. Of miscellaneous bulbs Urceolina aurea is well worthy of more general cultivation, and in making out the lists it should be given a trial. I have succeded well with it when grown under similar treatment as that accorded to the Pancratiums of the stove section. A strong bulb will, when well established, throw up offsets in a similar manner, and should then be treated as recommended in the last Calendar for Pancratiums (p. 303, Sept. 2) when in growth. It will, however, lose its leaves just previous to its flowering-spike being thrown up. For spring bloom in pots Anthericum liliastrum should also be tried, allowing it to come on in a cold frame. It is of good habit, with broad grassy leaves and sweet-scented flowers. Under the same treatment the comparatively new but perfectly hardy Chionodoxa Luciliæ may be safely grown. This beautiful bulbous plant bids fair to outdo Scilla sibirica; for pots it is certainly the best of the two. When it goes out of flower do not remove the flower-spikes if there is any indication of the seed-pods being perfected. It can be easily raised from seed, and will thereby be grown in abundance when better known. Triteleia uniflora is another useful pot bulb, and comes in most serviceably where a lot of conservatory furnishing has to be done. The Oxalis are also valuable for this purpose, lasting a long time in perfection. Schizostylis coccinea ought to be well enough known by this time, and not require to be recommended; yet its value is not appreciated as it deserves to be. The duration of its individual blossoms as well as the valuable property it has of opening the hitherto unexpanded flowers after being severed from the plant, renders it of essential service to the decorator during the early winter months. The main part of such as Hyacinths, Tulips, and Narcissus should be potted as soon as received, unless only a very late bloom is the aim. By potting thus early a better chance is given for them to become well rooted before being taken out of the plunging material, which should be Cocoa-nut refuse if to hand. This is better than ashes, though the latter are much used; they are not, however, so safe through the ash-pit often being the recipient of many noxious ingredients. Keep watch on all Liliums that have gone out of flower; if they can have the protection of a pit so much the better. Thus treated they will not be so likely to benome sodden; not that they should be kept quite dry—a medium course of treatment will be found the best. I have potted a stock of L. auratum during October, after being cut down, and was well satisfied with the results. Those I thus treated were shifted on into larger sized pots; at the time when they were potted the roots were quite active, and readily took hold of the new soil. The great mistake that is often made with these and other bulbous plants during the winter is to consign them to some out-of-the-way corner till the following spring, allowing them in the meanwhile to take their chance. *James Hudson, Gunnersbury House.*

The Kitchen Garden.

ADVANTAGE will have been taken of the few fine days which we have lately had to ply the Dutch hoe freely, not only with a view to destroying small weeds, but also for the purpose of stirring the soil between the rows of Spinach, Onions, Lettuce, Endive, and other crops, which will accelerate growth in the plants. The transplanting from the seed-beds of Cauliflowers and Lettuce plants resulting from seed sown the third week in August, will require special attention next week, as they will then be large enough for putting in their winter quarters in pits, frames, and hand-glasses, where the plants can be protected from the effects of frosts and heavy rains, inasmuch as they suffer nearly, if not quite as much, from a super-abundance of the latter as from a few degrees of the former.

CAULIFLOWERS.—Prick out the first batch of these into hand-glasses placed in rows 2 feet apart every way, so that there is room between the glasses in the row for the top of each glass to be placed when not required over the light: for this purpose four bricks should be placed in position for the covers to rest upon. Previous to putting the plants in the hand-glasses, a surface-dressing of wood-ashes should be put on as a means of preserving the roots and leaves of the plants from the ravages of insects. We put from six to nine plants into each hand-glass, which are in two sizes—18 inches and 22 inches square respectively; and we thin out the plants to three and five in February and March next, lifting them carefully with the soil adhering to the roots of the individual plants, which are then transplanted in a suitable situation. In order to obtain and preserve a sturdy growth in the plants, the top lights must be left off the glasses and only be replaced on the approach of frost or during heavy rains. The plants in glasses which I am now referring to will occupy a piece of ground adjoining the recently planted Cabbages, and which has been deeply trenched and liberally manured. The plants thus treated, together with a few hundred plants wintered in 3-inch pots, will supply our earliest Cauliflowers in May next, and to which those plants raised from seed at the same time as those in glasses, and subsequently pricked out in a pit or frame 5 or 6 inches apart every way, and transplanted in the spring, will make a succession. These plants, like those in the hand-glasses, should have the sashes and shutters left entirely off in the absence of frost, heavy rains, or snow, the object to be attained in each case being identical—a sturdy growth. Failing the above accommodation, a sufficient number of plants may be wintered in an improvised frame fixed in a warm corner and protected during frosty nights with hurdles to which mats have been fixed, the whole to be covered with dry Fern in the event of severe frost.

Another important subject, and also one that requires some consideration as to the best means of wintering it, is Lettuce. The plants (the seeds of which were sown the same time as the Cauliflower seed) will be ready for pricking out in pits, frames, and warm borders by the middle or end of next week. These may be grown in the same way and under the same conditions as those recommended for Cauliflower plants in glasses (only a greater number of plants may be wintered in the individual lights), pits, &c. The plants for early spring work we winter in pits, over which we can put the sashes when necessary, and plant in rows 6 inches apart and nearly the same distance between the plants in the rows, in light soil, and within 6 or 9 inches of the glass. In addition to these we winter a number—a great number—of plants in a shallow frame with wooden shutters and Fern, as a means of protection from frost when necessary; and also in warm dry borders, with 6 inches between the rows, and 3 inches in the rows, we make our last planting, covered lightly on the advent of frost with Fern, which in the event of severe weather is increased, and again removed and replaced in accordance with the nature of the weather. In February and March next every other row of these plants will be carefully lifted and transplanted in warm situations, and the plants in the rows will be thinned out to the proper distance in the rows (12 inches) as they are required for use, and if necessary for transplanting. Before pricking out the young Lettuce plants and finally transplanting them we make it a rule to surface-dress the ground with new dry soot, which with the rake is slightly incorporated with the soil. This, as I have stated in a former Calendar, I find from many years' experience of its use, serves not only as an antidote against the attacks of insects but also as a fertiliser of the soil.

FRENCH BEANS AND SCARLET RUNNERS.—Good gatherings of these should be made before they get nipped with the frost and be spread out on a shelf in a cool room—the Apple-room, in which, unfortunately, there will be plenty of space this season, will be a very suitable place. In this way Beans may be had nice and fresh for three weeks or a month after the plants have been killed by frost. Thin out plants of Lamb's Lettuce to about 4 inches in the row, and, if necessary, extend the crop by transplanting some of the thinnings. The recent fine weather will have allowed the earthing-up of Celery, and late plantings of Broccolis, Savoys, and Leeks to be proceeded with.

FRAME GROUND.—On the approach of frost it will be necessary to lift all the full and half grown Lettuce plants and lay them in by the heels for present use, but not too closely together, lest they should become too damp, and rot in consequence. Make a sowing of Wood's Frame Radish forthwith, and as soon as the plants appear through the ground, remove the lights daily. All subjects in this department will require abundance of air during favourable weather.

Peaches and Nectarines.

IF we have a continuation of the beautiful sunny weather we have had during the past week, the trees in early succession and late houses will require liberal supplies of water at the roots. Any trees in the early and second early houses that require root-pruning, or any that it is desirable to move, should be attended to immediately, so that the roots may lay hold of the new material which may be given them before they lose their leaves. I always use a mixture for the purpose composed of fresh green turf, wood-ashes, and old mortar rubble; and if any of the trees are at all weak from over-cropping or other causes, I add a few ½-inch raw bones. Trees in succession and late houses will now only need syringing once daily, which must be discontinued altogether in late houses. When the fruit begins to ripen, and as the trees become cleared of fruit, give them a thorough washing with syringe-engine or hose, and take out all useless wood according to directions given in former Calendars. *J. Wallis, Keele Gardens.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Sept 18	Sale of Bulbs, at Stevens' Rooms. Sale of Bulbs, at the Mart, by Messrs. Protheroe & Morris
TUESDAY,	Sept. 19	Sale of Imported Orchids, at Stevens' Rooms Sale of Plants, at Mr. B. Maller's Nursery, Lee, Kent, by Messrs. Protheroe & Morris
WEDNESDAY,	Sept. 20	International Potato Show, at the Crystal Palace (two days) Autumn Show, at Aberdeen. Sale of Dutch Bulbs, at Stevens' Rooms. Sale of Plants, at Fraser's Nursery, Leyton, Essex, by Messrs Protheroe & Morris.
THURSDAY,	Sept. 21	Sale of Imported and other Orchids, at Stevens' Rooms. Sale of Plants, at Mr. J. Maller's Nursery, Tottenham, by Messrs. Protheroe & Morris. Sale of Miscellaneous Articles, at Stevens' Rooms.
FRIDAY,	Sept. 22	Sale of Plants, at Hurst's Nursery, Wood Green, by Messrs. Protheroe & Morris. Sale of Plants, at Cook's Nursery, Wood Green, London, by Messrs. Protheroe & Morris.
SATURDAY,	Sept. 23	Sale of Dutch Bulbs, at Stevens' Rooms.

EDINBURGH has this week been again doing high honour to Flora and Pomona by the holding of another of those great autumn displays of fruit, flowers, and vegetables which seem to be taken up by our Northern friends with great spirit, and which go by the title of international, although to speak literally they are purely friendly contests amongst the gardeners of the United Kingdom. The Royal Caledonian Horticultural Society, under whose auspices this great exhibition has been held, deserves the gratitude of all gardeners for its spirited policy and for its liberal schedule of prizes, amounting to over £1000, provided for competition. It is extremely gratifying to be able to record that the response was of a corresponding nature, no less than 2000 entries for exhibition being received, which occupied the whole of the large space available for the display. Edinburgh is specially well provided with a building for the holding of large displays of this sort, as the new Waverley Market in Princes Street is superior to anything of the sort in this country.

A series of low, flat stages or tables was placed from end to end of the building, on which the exhibits were staged, the first being occupied with plants and flowers, the next with fruit, &c., all of the various exhibits being thus thoroughly well displayed and brought under the notice of the visitors—these long, straight lines, however, presented a most formal and stiff appearance. How much better the plants would have looked, for example, if they had been arranged in groups on the ground in an artistic manner, and it might have easily been done in the vast area of space at command. The plants would have looked better, and height and general appearance would have been added to the building—the one fault it may be said to possess being the flatness of the roof.

The exhibition, which was opened on Wednesday last by the Lord Provost, may, on the whole, however, be pronounced a success financially, as well as in other respects, though on Thursday the fine weather of the previous day was succeeded by cold rain. It is considered to have been the largest that has ever been held in the North, and probably the finest; although there was not any startling productions to notice, the general character was good. Fruit was, of course, the great feature, occupying the lion's share of attention, and the display was of a highly meritorious character and very extensive. Grapes, which in the North always form a special feature, were represented by over 1000 bunches, and were of fair average merit, but by no means equal to those shown by Mr. JOHNSTON, of Glamis, and others, on previous occasions. There were certainly few coarse examples present; but a great majority of them were what is termed badly staged, numbers of decayed and small berries being present in some of the finest examples. These we were glad to notice were passed over by the judges. The better quality Grapes such as the Black Hamburgh, were very poorly represented. The unquestionable champion of the day in the fruit classes was Mr. MCINDOE, gardener to Sir J. PEASE, Bart., Hutton Hall, Yorkshire, who not only was awarded two of the Veitch Memorial Medals for his beautiful examples of Gros Guillaume Grapes and his collection of twelve varieties of fruit, but received numerous 1st prizes. Golden Queen Grape it may be remarked was largely shown, and in better condition than we have ever seen it. The pot Vines from Messrs. LANE, Berkhamstead, were extraordinary examples of high cultivation, and excited great admiration.

Hardy fruit was not so well represented as could have been desired; the season in Scotland has not been favourable to its production. Messrs. VEITCH & SONS, of Chelsea, sent no fewer than 150 varieties of Apples and Pears from their nurseries at Fulham; and Messrs. CHEAL & SONS, of Crawley, an excellent assortment of the same. Mr. MUIR, Margam, South Wales, sent a charming collection of Oranges and Lemons, dressed with flowers, which proved very interesting.

The display of plants was chiefly confined to the contribution from the chief Edinburgh nurserymen, Messrs. IRELAND & THOMSON staging many fine plants, and being awarded many prizes. A very fine and interesting group of Nepenthes, Sarracenias, and other plants, came from the Royal Botanic Gardens: Mr. B. S. WILLIAMS, of Holloway, represented London nurserymen with a very large and excellent group of plants. The Conifers of the Lawson Seed Company deserve special mention. Seldom have we seen a finer or more representative group. Crotons and Dracænas were well shown; a specimen Orchid, Macranthera coccinea, with four large spikes of its beautiful scarlet flowers, from Mr. D. PATON, gardener to Mrs. TAIT, Malling—the finest plant of its kind ever seen—attracted much attention; but amongst professional plant growers the stove and greenhouse plants from Mr. LETTS, gardener to the Earl of ZETLAND, Yorkshire, were considered of the highest merit. A Gleichenia was a perfect marvel of high cultivation. Cut flowers, Dahlias, Gladioli, &c., were well displayed. Vegetables were very largely shown, and of remarkably good quality. Leeks struck us as being very prominent, and remarkably well grown—Potatos not quite equal to those we are accustomed to see in the South. Further details will be found in our report on a subsequent page.

—— INTERNATIONAL HORTICULTURAL EXHIBITION AND CONGRESS AT ST. PETERSBURG. — The Imperial Horticultural Society of Russia, to commemorate the twenty-fifth anniversary of its foundation, proposes to organise, from the 17th to the 28th of May next ensuing, a special exhibition, and a Congress of Botanists and Horticulturists. Exhibitors of all nations, and members of Congress from all countries, are invited to participate, and should address themselves to Dr. REGEL, the Director of the Imperial Botanic Garden, for further particulars. Further particulars will be announced later on.

—— INTERNATIONAL POTATO EXHIBITION.— This Exhibition, to be held in the Crystal Palace, Sydenham, on Wednesday and Thursday next, will be opened by the Lord Mayor and Sheriffs at 1 P.M. on Wednesday. The luncheon will follow immediately after the ceremony of the opening. In order that things may go smoothly, judging will begin punctually at 11 A.M.

—— HARDY PLANTS AT CHISWICK. — Both in the borders and in the rockwork there are now some subjects in flower of a very useful character. There is Helenium pumilum, with its large yellow composite flowers and greenish-yellow centre. H. autumnale is not quite so deep in colour, but has better formed flowers. Both are very fine and effective hardy perennials, growing from 2 to 3 feet in height, and flowering with remarkable freedom, well deserve a place in the mixed border. Chrysanthemum lacustre is also deserving of high praise, for it is a noble perennial growing to the height of 2½ feet, and is very free and fine; the flowers white, with a conspicuous yellow centre. No border of hardy flowers is complete if this fine plant is not included in it. Senecio pulcher is very fine, and it appears to be quite at home in the loam at Chiswick. It has made a strong growth, and thrown up giant flower-stems surmounted with large bright pale purple flowers. Statice latifolia is also very free and fine, quite a large mass of sprays of lilac flowers being produced from robust-growing plants. It is a conspicuous feature on a border, and it is a good thing to cut from, the flowers being everlasting in their character. A variegated variety of Salvia officinalis is remarkably effective, the foliage being handsomely variegated with red and white, and it grows in the form of nice symmetrical tufts. Ononis rotundifolius is a charming subject, bearing purplish-magenta Pea-shaped flowers in pairs or threes, of good shape, and very pretty. This is a somewhat shrubby species, easily distinguished by its roundish leaflets. Phygelius capensis is very fine; strong plants are throwing up bold spikes of flowers; and Chelone barbata should be mentioned in association with it. Both are very fine and showy perennials. On the rockwork Œnothera speciosa is a striking form; it is known as the Tall White Evening Primrose; the flowers are white, changing to pale rose with age, and they are borne on lengthened spikes. It is an erect growing form, and is seen to good advantage on the rockwork. There are also good tufts of Œ. taraxacifolia, which opens its large white flowers just as the shades of evening are being thrown across the scene. Edraianthus candidus is the representative of a genus allied to the Campanulas, and this species is of dwarf growth, and throws up strong stiff flower-stalks surmounted with eight or nine purple-coloured Campanula-like flowers. It is a very pretty subject for rockwork. Gaillardia hybrida splendida is really very fine indeed. A grand bush of it is laden with large and extremely attractive flowers half orange-red and half gold. It is one of the best of this fine group of perennials. Matricaria inodora flore-plena is an excellent plant for rockwork, and bushes of comparatively small size are laden with hundreds of double white flowers of snowy purity. A better subject to grow for cutting from can hardly be imagined. Dianthus Seguieri is a late-flowering form, very free indeed, the flowers of a rosy magenta colour, and it is a plant that does well to cover the summits of rockwork. In a little nook at the base of the rockwork Cyclamen hederæfolium and its white variety are in full bloom, and very pretty they are. But many autumn and spring-flowering plants—owing, doubtless, to the moist character of the early summer, followed by warm dry weather—are blooming on the rockwork by anticipation, especially the Primrose family. Primula rosea is blooming quite freely. Anemone japonica hybrida, and japonica alba, are in rare form; both very fine and showy. Rudbeckia Newmanni is used by Mr. BARRON as an edging to a bed of tall plants; in this relation it is very effective indeed, as the plants throw a large number of golden-coloured flowers with a dark disc. It also is a very fine and showy perennial.

—— INGA SEED.—On p. 306 of this volume we stated that the seed sold under the above name appeared to be that of the common Lapsana communis; but our correspondent having obligingly sent us a living plant raised from the Inga seed, we are enabled to correct this unfortunate error, since the plant yielding the so-called Inga seed turns out to be Guizotia abyssinica, the seed of which—or, to speak more correctly, the fruit—closely resembles that of Lapsana communis, though the two plants are extremely different. Guizotia abyssinica, or G. oleifera as it is also called, is a native of Abyssinia, where it is cultivated for the sake of the oil obtained from the seed; and in India, under the various names of Ramtil, Ramtilla, Kalatill, &c., it is also extensively cultivated for the oil; but it appears exceedingly doubtful if it is likewise a native of India. DRURY, in his *Useful Plants of India*, p. 244, gives the following account of it:—"Commonly cultivated in Mysore and the Deccan" [and also abundantly in Bengal] "for the sake of the oil yielded by the seeds. The Ramtil oil is sweet-tasted, and is used for the same purposes as the Gingely oil, though an inferior oil." [Gingely oil is obtained from the seeds of Sesa-


ARTHUR E. SMITH Sc.

mum indicum, and is eaten by the natives and used medicinally.] "The oil expressed from the larger seeds is the common lamp-oil of Upper India, and is very cheap. In Mysore the seed is sown in July or August, after the first heavy rains, the fields being simply ploughed, neither weeding nor manure being required. In three months from the sowing the crop is cut, and after being placed in the sun for a few days, the seeds are threshed out with a stick. The produce is about 2 bushels per acre." Guizotia abyssinica is figured in the *Botanical Magazine*, at t. 1017, as Verbesina sativa.

—— RADISHES IN WINTER.—To have a supply of Radishes crisp and palatable about mid-winter, a sowing should be made in a pit or frame towards the middle of the present month. We would recommend the red and white Turnip-rooted varieties for the purpose. The seeds should be sown on rich vegetable mould, and but scantily covered with a compost of the same character. A good way of doing this evenly is to run the mould through a sieve, and in late localities the lights might be put on the pit or frame to hasten germination. Generally speaking it will not be necessary to do this, but allow the seeds to germinate and come forward in a natural way, which they will do without any trouble, except in case of a cold sunless autumn. A late crop of this kind is more valued than any other, and where there is the means of protection the supply may be prolonged until far on in the winter.

—— POINSETTIAS LOSING LEAVES.—There are no more beautiful objects in our plant-houses in winter than the Poinsettia. Its presence creates a lively tone among the dullest-looking plant collections. It makes a room cheerful, the dinner-table attractive—in short it is pretty anywhere, but the plants must have leaves down to the base of the stem. Those who grow Poinsettias on the old-fashioned principle (which we do not recommend) are in the habit of turning them out into cold pits about June, and leaving them there until late in the autumn—too late to be good for them sometimes. Observe a plant losing or having lost its leaves, turn it out of its pot and you will find that many of the young roots are dying or dead of cold and wet. We do not say that this is the only cause of Poinsettias losing their leaves, but it is one of the chief reasons, and the hint may be serviceable, at least to those who are not above acting upon a word of advice.

—— NEW POTATOS AT CHRISTMAS.—At no other period of the year is a vegetable luxury of any kind more welcome than at Christmas. All rejoice at that festive season, and country families are by no means oblivious to any little effort that is made by way of anticipating the extra requirements of that particular time. Those who would have new Potatos at Christmas, or afterwards, should therefore plant the sets immediately in small pots, and bring them forward gradually, placing the pots in a position where they will have plenty of sun and light immediately they have made growths from 2 to 3 inches in length. One batch should be grown in pots from 8 to 10 inches in diameter, and a second batch planted out of the small pots into a forcing-pit with a due south aspect, which would give a good succession. It is important at this season to avoid anything like vigorous growth; they must rather be curtailed in regard to food if they are to tuber early. It is well also not to use much depth of soil in the beds when the sets, or rather plants, are turned out of their pots, and let the soil be on the dry side, light and mellow. Preference should be given to a pit having a slight bottom-heat from hot-water pipes. With this accommodation an equable temperature may be maintained, and, given a favourable autumn and ordinary attention in other respects, a very good and highly-prized crop may be secured. Mona's Pride, or Veitch's Ashleaf ("true"), are the two best sorts to grow either late or early in the year.

—— INTERNATIONAL FLOWER SHOW AT LILLE.—Some years ago there died at Lille a famous amateur, M. RAMEAU, who by his will left the town a sum of money amounting to about £40,000, on condition that a place for holding flower shows should be built, and that a horticultural society should have its headquarters in the said building. The place chosen is a square, in the centre of which was built the Palais-Rameau, a structure well arranged to accommodate a show. It contains a large entrance vestibule, with offices right and left, then an immense hall, with a gallery all round, and at the furthest end is a kind of winter garden. The place is built with stone, and covered with glass. On the left of the garden in front of the Palace stands the house of M. JADOUL, the gardener of the town of Lille. When the palace was finished a new society was established especially through the energy of M. A. VAN DEN HEEDE, the nurseryman, of Lille. This society took the title of Société Regionale d'Horticulture du Nord de la France, and according to M. RAMEAU's will it took its abode in the Palais Rameau. Though a very young society, it is one of the most energetic in France, and it was decided to hold an international show. This was opened a fortnight ago, and proved a great success. The exhibitors were numerous, and the exhibits of a quality above the average. The Grand Prix d'Honneur for amateurs fell to M. D. BRUYÈRE, of Lille, who had numerous lots of stove plants and others, but his most striking exhibit was a collection of Coleus, about fifty plants, of a most extraordinary growth; the leaves were enormous, the largest measuring 9½ inches in width and 11½ in length, while the smallest were 8 by 10 inches. The varieties were all good, and the plants remarkably healthy. The 2d prize was awarded to M. DE LÉAU, amateur, of Douai, who had also some very good collections. Amongst the nurserymen we noticed, as holders of the Grand Prix, Messieurs. SÉRAPHIN VAN DEN HEEDE, of 55, Faubourg de Roubaix, Lille, who had numerous exhibits of stove plants, foliage plants, &c., also Orchids and cut flowers arranged as bouquets, &c. The 2d prize was awarded to M. DELESALLE, nurseryman, of Thumenil, near Lille. The new Société Continentale (formerly LINDEN) had a very fine group, not for competition. All the plants were good and well grown. We noted especially Heliconia aureo-striata, Dieffenbachia Bausei, Rhopala corcovadensis, Dracæna Lindeni and Goldieana, Crotons Baronne James de Rothschild, Van Houttei, Queen Victoria, Williamsi; Anthurium Veitchii, &c. M. PYNAERT, of Ghent, showed a splendid group of well grown Dracænas, including the latest novelties. M. JACOB-MAKOY, of Liège, had some good new plants especially the Aphelandra margaritacea. M. DALLIÈRE and M. DESBOIS, also from Ghent, showed, the former new plants and Crotons, and the latter only new plants. The above were the most noteworthy exhibits. The arrangements of the garden inside the hall were well made by M. ARAMBOURON, landscape gardener, of Lille. From the gallery a very good view was obtained of the whole exhibition.

—— STRAWBERRIES IN WINTER. — Wherever Strawberries are forced in anything like quantity in the spring there will now be an abundant stock to pick from for winter forcing. Even those who made no arrangement for growing Strawberries in winter can hardly go astray for material during the present month if the forced stock was planted at any time last spring or early in the summer. The best time to lift the plants is just when the flower trusses are formed and beginning to open. The check they receive in lifting (if the work is carefully performed) is hardly perceptible. The plants are best lifted after two or three dry days, and the old ball should be retained intact. The soil will of course fall away from the new roots formed since last spring; but this is a matter of but little importance. It is, however, advisable to pot the plants immediately after being lifted, and to have a pit or frame cleared ready to receive them, and also the requisite number of pots clean washed and crocked (one large crock will be sufficient to put in each pot) ready to proceed with potting. The pit should have a due south aspect. In potting the plants select pots about an inch larger than the ball, which will be a good allowance for the young roots, and use rather fine rich soil for potting as the simplest and most effectual plan of getting the new soil of the same firmness as the old ball, and water the plants when they are set in into their new quarters. If there is strong sunshine, shade for a few hours in the middle of each day, leaving top air on the pit or frame. Should the plants appear to suffer a little dew them overhead through a fine syringe in time for the leaves to get dry before night. In a short time the plants will have recovered themselves, and may be fully exposed through the day, and gradually worked indoors as they come into full flower. The cold damp weather of autumn is unfavourable to the setting process; therefore, remove the stock to an airy structure near the glass, where a temperature of from 50° to 60° can be maintained at night. This can be accomplished as occasion demands, and if it is thought best to leave a portion of the plants in an unheated pit or frame, endeavour to close in with a dry atmosphere every evening. In autumn Strawberry growing the progress is but slow, the same plants continuing to flower and fruit for weeks together, therefore no thinning of the flowers should be done unless there is some very special reason for doing it. Winter cultivation of the Strawberry, or winter forcing if the term sounds better, only differs from spring forcing in one material respect, and that is, that a dry atmosphere must be maintained in all stages of growth, if the best results are to be obtained, and the fruits are to possess anything like their proper flavour.

—— FEEDING CHRYSANTHEMUMS. — Now that Chrysanthemums have set their buds, and are fast swelling them up, a good deal of attention will be necessary in the case of plants that are grown for exhibition flowers. To many it might appear superfluous even to mention the watering of the plants; but from long experience one knows how difficult it is to put old heads on young shoulders, and how often plants are really dry when they appear to be wet. Such weather as we are having at present is very likely to deceive beginners. Chrysanthemums are so abundantly furnished with roots that they very soon absorb an ordinary supply of water, and when the weather is showery, as it is at present, the surface of the soil in the pots may appear to the junior to be moist enough, as probably it is, but a little lower down it may be dust dry. Hence the necessity for a word of caution. Those who grow flowers for exhibition either have capable men, or they undertake the supervision of the watering themselves. We should see many more fine flowers for ordinary purposes of decoration if this matter were better attended to. About mid-day it is a good plan to go round the collection and tap a few of the pots as you pass them, which is a hint to the man in charge that it is as well to be on the alert. It is better for the plants and better for the man, too, to be taught that method and judgment are necessary in plant growing. But as regards the feeding of Chrysanthemums now is the time to work for substance and size of petal. Give plenty of liquid manure-water regularly—not necessarily the same every day—rather vary the plant's food, and above all things make certain that each ball is moist down to the crocks. The majority of growers top-dress their plants, and if liquid-manure is given a few times in a strong state without being run through a fine sieve a coating is formed upon the surface of the soil which prevents the water from passing as freely through the ball as it should do. It is important to see to this and to maintain a healthy surface by keeping it covered with horse-droppings rubbed down fine, in which myriads of healthy rootlets may be found ready to imbibe large supplies of those nutritious liquids which do so much towards producing those charming finely shaped flowers which are the pride of our conservatories every autumn.

—— THE CONVERSION OF CHURCHYARDS INTO GARDENS.—From what appears to be going on at present in certain crowded districts of the metropolis, it would seem that we are on the eve of a great reformation as regards the future of many of our old graveyards, and the change cannot be said to have come a moment too soon. Many of them have not been used as places of interment for a number of years, and the neglected and dilapidated state in which they have been allowed to exist is hardly creditable to our boasted civilisation. The graveyard at the churchyard of St. Mary Magdalene, Bermondsey, may be taken as one of the worst examples. The walks are overrun with weeds, and the tops of some of the tombs broken, and in some instances forming receptacles for rubbish—a state of affairs that cannot be remedied too early. Moreover—and apart from any religious sentiment whatever—the breathing-room afforded to the crowded inhabitants of such a district, by converting the graveyard into a healthy open garden, must be a great boon. Mr. B. MALLER, of the Burnt Ash Nursery, Lee, is carrying out such a work at the church of St. John's, Horsleydown, where as many as from 1000 to 1200 people avail themselves of the privilege of spending the Sunday evening, enjoying the purer air and the

groups of flowers and shrubs which, considering the locality, are wonderfully good, fresh, and, in some instances, even attractive. Indeed, its simple garden-like appearance, and the respectful order that seems to reign supreme, is highly creditable to the management as well as to the residents of the district. Mr. MALLER advocates plenty of walks as a likely way of keeping the crowds of visitors from treading upon the grass and thus spoiling its appearance. The walks are made of asphalte, and are liberally drained, the surface portion being largely composed of spar, which gives it a bright and cheerful appearance. It may here be stated that the nearest breathing space to the district (outside the narrow streets and crowded alleys) is Bermondsey Park, which is from 1½—2 miles off. At St. Mary Magdalene the walks, beds, and borders are being laid out in a simple but effective way, and in harmony with the surface formation and outline of the ground. The removal of the tombstones is a heavy item of labour. These are placed against the walls of the churchyard, so that the inscriptions may be easily read, and a few of the historical vaults are allowed to remain as they are, with such trifling alterations as are necessary to bring the surface levels into harmony with each other. Entering the churchyard from Bermondsey Street, a walk sweeps almost diagonally to a circle, which may be called the central figure of the ground, and around which (at some distance off) there is a row of good-sized fairly healthy trees. This walk is to be bordered by a row of Planes upon either side, and the plan shows a belt of shrubs running all the way by the side of Abbey Street, with an entrance at each end. There will be a neat group of flower beds at the corner near to Bermondsey Street, and other beds of flowers and shrubs will be worked in between the walks, which, it should be mentioned, are of a simple and natural looking character, without any abrupt turns or angles. Along the mortuary or east side the intended arrangement of shrubs will have a good effect, and the appearance of the whole will be vastly improved through the kindness of the Rector, who has given a plot of ground in front of the Rectory to form a portion of the ground without any stipulation except that it is not to be cut up with walks. There is a curving path from the church dividing this plot from the rest of the ground, which also communicates with the centre. The existing trees are to remain as they stand; indeed, the principle of management seems to be to make a healthy breathing space for an overcrowded district with as little change as possible, and in consonance with the general wishes and approval of the people. When the alteration is completed it is calculated there will be seat accommodation for over 500 people.

—— VEITCH'S MANUAL OF CONIFERS. — We have received an Italian version of this useful book, executed by Sig. SADA of Milan. We congratulate Messrs. VEITCH on the success of their enterprise as manifested by this translation.

—— RUDBECKIA NEWMANI. — Notwithstanding wind and wet, with which gardens have been visited so frequently of late, Rudbeckia Newmani is looking its best, which shows what a valuable thing it is in borders, where its rich, bright yellow flowers, with their black discs, may be seen from afar. Like most of the Composites, it will grow in almost any kind of soil, but does best in that which is rich and deep, where it spreads rapidly, and sends up, during early autumn, a great number of blossoms. As single Dahlias are likely to be much grown, this Rudbeckia would form a most telling edging to a large bed of scarlet, as it is dwarf and compact in habit, and lasts long in bloom.

—— THE SEED HARVEST OF 1882.—Messrs. CARTER and Co. report the probable output of the seed crop of the present season, the result in many cases of personal observation, as follows :—

RED CLOVER.—The English crop will be better than last year, both in quantity and quality. Of German and French reds the crop is also expected to be fairly good. Our reports from America on the other hand are very unsatisfactory, the prospects being very poor. It must be remembered, however, that the stocks generally of red Clover held over are unimportant, so that values will be firm on that account.

ALSIKE AND WHITE CLOVERS.—Of Alsike Clover some very good samples of English seed have reached us. We have also handled a few samples of English white of fine quality; the quantity of the latter will be limited. Of Swedish and German Alsikes the crop is reported to be very moderate and the quality below the average. Of German white Clover we have received a few samples, for which last season's full values were demanded. We are of opinion however that this seed will be better both in quantity and quality than last year, and we expect easier prices in consequence.

COW-GRASS.—The English Cow-grass crop is very limited in quantity, and we anticipate that last year's prices will be fully maintained. Of German and American Cow-grass there is promised to be a fairly plentiful crop, but the quality of this will not bear comparison with the English seed.

ITALIAN RYE-GRASS.—Very favourable reports reach us from the home districts, and the French crop is reported to be also an abundant one. There was no seed, however, carried over, so that prices will be firm, at any rate for some time to come.

TIMOTHY.—It is too early at present to give reliable information.

CRESTED DOGSTAIL.—This is a much better crop than last year, and we have already secured some very fine samples.

LUCERNE.—This is expected to be a fair average crop.

TREFOIL.—Crop light, quality variable.

BROAD-LEAVED ENGLISH RAPE.—Good average, quality very good.

PERENNIAL RYE-GRASS.—The crop of this article is a good average one, but as there was no 1881 seed carried over, prices at present are very firm.

SWEET VERNAL, FOXTAIL, POAS, FESCUES, and other natural grasses are short in fine qualities; considerably higher prices than last year's values are readily obtained.

SWEDES AND TURNIPS.—These have come in very satisfactory, notwithstanding the inclement season that we thought at one time would prejudice the crop.

It will be seen from the above report that the seed harvest of 1882 is generally satisfactory, and in almost every respect superior to that of its predecessor.

—— PUBLICATIONS RECEIVED. — *Artificial Manures*, by M. GEORGES VILLE; translated and edited by W. CROOKES, F.R.S. 2d edition (LONGMANS).

—— COVENT GARDEN SPORTS.—A cricket match was played at Battersea Park, on Friday, Sept. 8, between the merchants of the north and south of the Centre Row, Covent Garden, respectively, when the north won by an innings and 135 runs. Mr. H. BUCK played a fine not out innings of 129.

—— THE WEATHER.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending Sept. 11, issued by the Meteorological Office, London :—The weather has been much finer than of late, and, except on the 5th and during the last two days, scarcely any rain has fallen. The temperature has been below the mean in all districts, the deficit in the "Midland Counties" being as much as 4°. The maximum readings ranged from 65° in "England N.W." and "Ireland S.," to 70° over southern and central England, and to 71° in the east of Scotland; while the minima, which occurred in some places on the 7th, and in others on the 11th, were as low as 35° in the north of Ireland and eastern and central England, and ranged from 37° to 39° elsewhere. The rainfall has been considerably less than the mean in all districts. Bright sunshine shows a great increase in duration in all parts of the kingdom, the percentages varying from 39 in "England N.W." to 56 in "Scotland E.," and to 59 in "England S.W." Depressions observed :—At the commencement of the period an area of high pressure lay over France and the south of England, while a depression was shown near the Shetlands, and a small subsidiary disturbance over the St. George's Channel. These conditions soon changed, and by 8 A.M. on the 7th a well-defined anti-cyclone had advanced from the westward, and until the afternoon of the 9th covered nearly the whole of Ireland and England. The south-westerly winds which had previously prevailed consequently gave way to light easterly breezes in the south-east and south, variable southerly airs in the west, and westerly breezes in the north. After this date, however, the area of high pressure moved away in a north-easterly direction, and a depression reached the north-west of Scotland from the Atlantic, the wind returning to the south-westward.

GARDENING APPOINTMENTS.—Mr. T. RORKE, who for twenty-five years was Gardener to Mrs. WHITE, of Killakee, Co. Dublin, is now Steward and Gardener to M. P. D'ARCY, Esq., Kilcroney House, Bray, Co. Wicklow.—We are requested to state, with reference to an announcement made in this column last week, that Mr. LEWIS JORDAN never was Gardener at Norman Court.

Notices of Books.

Elementary Botany, Theoretical and Practical; *a Text-Book, designed primarily for Students of Science Classes connected with the Science and Art Department of the Committee of Council on Education.* By Henry Edmonds, B.Sc. Lond. Longmans.

In turning over the pages of this little volume it becomes evident that the author, while a careful compiler, is not well acquainted with botanical literature beyond certain favourite text-books—and not many of them, but from which he has condensed his information. So little does he seem to have consulted original memoirs that we find him attributing to a well known and successful teacher details that have been the round of all the text-books for many years. The purport of the work is set forth in the title, and is further illustrated by the questions for "examination" which are appended. The happily growing tendency of examiners to rely more upon practical evidence of a student's familiarity with his subject, and less upon the result of written examinations—for which, by the aid of such works as this, a pupil may "cram" his information—will, we trust, render the production of such works, however well done, less and less frequent.

The Field Naturalist is the title of a small monthly periodical, published at Manchester by Abel Heywood, and whose assumed scope is indicated by the title. The articles are pleasant reading, though some of them, such as that on aboriginal book-keeping, are scarcely in harmony with the title.

Home Correspondence.

A Discriminating Fungus.—In a recently published list of the fungi of West Cornwall a paragraph is set apart for a description of the common cellar fungus—Zasmidium cellare. After describing the presence of this fungus in the London Docks the account concludes by saying :—"Sometimes it pays its unwelcome visits to country cellars, but only where good old wine is kept." Here we seem to have a very knowing old fungus, with an acquired and aristocratic taste for "good old wine" only. No South African sherry, British port, Tarragona or Prime Gooseberry will suit this refined old epicure; possibly he confines his attention in Cornwall to "Comet port" and "Château Yquem." The above may be true of the Cornish Zasmidium, but he certainly has a poor relation round London who is content with the publican's mystic "fourpenny;" in fact, to such straits is this plebeian London Zasmidium driven that he sometimes hangs out in the subterranean London dairies, and contemplates the mixture of the minimum of milk with the maximum of water. Publicans court the presence of the Zasmidium, and when the dusty fungus is backward in coming forward the London publican cunningly manufactures a spurious Zasmidium out of old spiders' webs, dirt, and saw-dust. This artificial fungus is then dexterously twisted round the necks of a few bottles supposed to contain port, and placed in the publican's window as a proof of the age and superb quality of the wine. Some outcast signs of the Zasmidium family hang about the roofs of sewers. There are vulgar as well as refined members of even the fungus tribe. *W. G. S.*

Gladiolus : Deep *v.* Shallow Planting.—Much has been written from time to time in regard to the cultivation of the Gladiolus, but I do not remember having seen any remarks made as to the most advantageous depth at which to plant the corms. Judging from a very limited test I have myself made, I am induced to believe that this consideration has a greater bearing on the subject than at first sight appears. The French and Italian Corn Flags seem to hold their own in the certainly not over deeply cultivated corn fields of their native country. And this being so, it must be inferred that the corms of such are often ploughed indiscriminately down to a greater depth below the surface than the general cultivator would deem desirable, even in the case of the much stronger varieties now in cultivation; yet they come forth and maintain their place effectually. But this is not the only reason, for does not the manner in which the

young growing blade issues from the parent corm, and more especially does not the manner in which the young corms form upon their parent corms, seem to express the fact that Nature favours deep planting? Yet again, although the Crocus forms its annual corms upon the tops of the old ones, yet it annually sinks deeper and deeper into the soil, so do the original species of these Gladioli secure a deep foundation. We are aware that wind and windstorms beat down the growths of those hardier border species, they do not, nevertheless, break or snap off, owing to this deep burying of the corms in the same way as do modern shallow planted kinds, which always require stakes. As therefore, in Nature, no stakes are accorded and no means have been afforded these plants of attaching themselves to surrounding vegetation, it is obvious that their protection consists in being so deeply seated as to receive natural support such as I suggest. By planting the corms 6 inches deep in good prepared soil, better results may therefore be anticipated than by any system of shallow planting. Especially desirable is it to plant deeply in all light and sandy soils, though I have no doubt that in any soil benefit would accrue by the simple hint thus thrown out. *William Earley, Ilford.*

Seedling Grapes.—I send by this post a few Grapes, which afford are a curious example of variation from seed. The Grapes, which are very sweet, with a pronounced Frontignan flavour, are, I believe, the produce of seed from the Muscat Hamburgh or Black Muscat. Although the fruit differs so widely from the parent, the plant is almost identical in foliage; I do not, therefore, think it is a changeling. It is not always easy to ensure accuracy as to the origin of seedlings, but in this case I do not think there is room for doubt. The Grapes, being white and apparently free from the evil habit of shanking, show a wide divergence, or possibly a return to the original source of the Muscat Hamburgh. *T. Francis Rivers, Sawbridgeworth.* [The Grapes in question are small, globular, amber-coloured, sweet-flavoured like the Chasselas. ED.]

"Horticultural Buildings."—In travelling about the country I have met with numerous gardeners who have expressed a desire to purchase my book on "Horticultural Buildings," but could not afford to do so, the published price being 10*s.* 6*d.* Actuated by a desire to assist the fraternity as much as I can, I beg to intimate that I have set apart and placed at the disposal of any *bonâ fide* gardeners who may choose to apply to me 100 copies of the above work at 3*s.* each, which is under cost price. Any application by post must be accompanied by 7*d.* extra to pay the postage of the book. *F. A. Fawkes, Mansion House Buildings, Queen Victoria Street, London.*

Exhibition Potatos.—I am disposed to think thet if "G. B. G." visits the great Potato exhibition to be held at the Crystal Palace next week he will feel bound to recant his somewhat hastily expressed opinion as to the lack of table quality in what he calls new varieties of Potatos, though still further dubbed by him exhibition varieties. The very popular International Kidney is not first-rate. No one has claimed such a position for it, but it is one of the heaviest cropping kinds we have, and is perhaps the handsomest of its section. It resists disease as much as most other kinds do, and certainly far more than the Lapstone does. But even if not of the high table quality we all desire it has proved not only a capital progenitor of other kinds inheriting its properties added to better quality, but it has also served to teach Potato growers and exhibitors something as to form, beauty, and what should be the best ideal of a handsome tuber. Its influence is being found in all Potato shows. The Vicar of Laleham, too, comes under "G. B. G.'s" censure, although curiously enough opinions differ very much as to the table quality of that fine and justly popular Potato, according as it is grown on suitable soil or otherwise, is not too big, and is kept over to be what it really is—a late winter variety. This, too, is proving a splendid progenitor to fine cropping kinds that have quality of the highest excellence, and of which perhaps "G. B. G." will know more if he will wait for a year or two. But let me say at once that in new varieties, such as Cosmopolitan, Prizetaker, Early Regent, Fiftyfold, to mention but a few of those introduced this year, are some not only exceedingly handsome, and which will certainly take high places on the show table, but which will also possess quality that is second to no other kinds, however old. At the Crystal Palace, besides the two kinds "G. B. G." deprecates he will see foremost on the show-tables Magnum Bonum, Woodstock Kidney, Advance, Bountiful, American Purple, Defiance, Beauty of Hebron, Bedfont Prolific, Reading Hero, White Emperor, Grampian, Radstock Beauty, and Matchless, to name only a few of those kinds of comparatively recent introduction, all of capital table quality if grown in soil fit to produce healthy and good tubers, and not, as is so often done by gardeners, literally in dung beds. If "G. B. G." were as well acquainted with the work that is being done in connection with, and perhaps behind the exhibition, which doubtless is to him the chief offender, he would understand better than he now does how anxious the promoters of that show are to secure the admission of new kinds that are of good table quality, and have allied good cropping qualities. This year some fifty or more seedlings have come before the notice of the executive committee, of which all the most promising have been cooked and tasted; and the results of that testing, carried out, as it has been, with exceeding care and impartiality, will soon be made public. Critics of a certain class give raisers, who have to bear much adverse discouragement, but little help. I may well tell our present critic that he, rather than growl, should try and raise better kinds than are now being turned out if he can. We have not many who have fully devoted themselves systematically to this work, but these few will, I think, in a few years, almost revolutionise our present Potato stocks, and make it hard for American kinds, unless of special excellence, to hold their own. In spite of "G. B. G." Potato exhibitions will continue, and will increase till, in time, I trust, we should not find a bad Potato in the kingdom. *A. D.*

Lagerströmia indica.—I lately saw a favourable notice of Lagerströmia indica as a nice flowering stove plant. The ordinary form grows to such large dimensions here that I fear it must be against its cultivation at home. But we cultivate here a pretty white variety, which is not only very floriferous, even precociously floriferous, but also comparatively dwarf habited; all of which, besides its being a pretty contrast to the pinky-purple of the species, ought, I think, to commend it to cultivators at home. *Geo. Syme, Jamaica.*

Burr Knot Apple.—This somewhat curious old variety is very common in some parts of Pembrokeshire, where it goes under the name "Pitcher." "Pitcher" in the vernacular signifies a Willow cutting, 2 or 3 feet long, or a Thorn which has been grubbed up and cut to the same length, and used to repair a hedge. The name "Pitcher" Apple therefore signifies that it may be propagated by cuttings. It is a very inferior variety, but was, no doubt, useful in its day before the science of grafting was so well understood as it is now. It is now, however, fast dying out, as it is not a very long-lived variety, and I find that it has a great tendency to develope canker in the burrs. I do not recollect seeing a good-sized tree of it. *G. B. G.*

Mulching.—The great benefit accruing from this practice can scarcely be over-rated, as not only does it prevent red-spider from attacking the leaves of Vines and Peach trees, but it keeps Peas and Beans and other vegetables growing and bearing when they would otherwise fail. To water without it is next to useless, as the washing the ground receives causes it to crack open and let in air, and not only that, but roots are attracted to the surface, where they quickly suffer and die, whereas when shaded by a mulching the feeders multiply at a rapid rate, and they remain healthy and full of life and activity under the covering. For Vine borders nothing is better than very short stable manure, which lies light, and though not over-rich the Vines may be fed in another way by giving them plenty of sewage. This is always better than laying on close solid matter, such as cow-dung, which, after it becomes caked together, is nearly impervious to air, and air is essential to the soil of a Vine border to maintain the roots in good health. To break up the surface and dig manure into their borders, as some do, is a great mistake, and all that should be done is just to hoe the surface with a hoe to destroy weeds, and then pop on the mulching at once. If this be carried out and a thorough soaking given when Vines are growing and swelling a crop the effect may be seen at once by the rapid increase in the size of the berries, and the same with Peaches and Nectarines or young Apples and Pears, which without help when taxed with a crop, often look very much distressed with their loads. The way we manage with trees of these is to form shallow basin-like receptacles around them by drawing away the soil with a hoe, and leaving it in a ridge, inside which space is filled with rather long half-rotten manure. On this we throw or pour the water or sewage, which soaks in at once and finds its way deep down into the earth, instead of being drawn out again and absorbed in the atmosphere. This is sure to occur where mulching is not applied, as the aqueous matter from the exposed earth during sunny days is something enormous. Peas and Scarlet Runners will hardly live and set flowers when we get dry hot summers if left to themselves, but give them a heavy mulching along each side of the row, and it is quite pleasant to see how fresh and comfortable they look. Another crop that pays well for mulching is Celery, which in dry hot seasons seldom if ever does well without it. Tomatos, again, are greatly benefited by its help, as they set with more freedom and bear the finest of fruit. For Roses mulching is indispensable, and by its aid fine blooms may be grown, and the budding season prolonged to a very late period, as the bark of the stocks will continue to run. For flower-beds and to scatter among shrubs, the grass mowings from lawns answers well, and to distribute them there is to turn them to a very useful account. *J. Sheppard.*

Horticultural Directories.—I have just received an application from an office from which one of the horticultural Directories is issued to furnish local information as to horticultural changes in my locality. I cannot say that I am deeply interested in the matter, whilst the existing trade arrangements continue. Mr. W. Snooks, gardener to Obadiah Spriggs, Esq., The Pyramids, Blankshire, and hundreds of other men as unimportant in the gardening world in these directorial pages, find publicity and a sort of paper immortality. The men of the highest talent and ability who are heading departments, managers, foremen in our trade establishments, are quietly snubbed. If these Directories are to have any horticultural value they should give every man his due. As an illustration of this let me mention that one of the most famous Orchid growers in the kingdom, because he happens not to be his employer's almost unknown head-gardener, gets no notice. One directory, if not another, gives a list of private gardens thrice repeated. Once is quite enough if properly done, and room would then be left for far more useful and instructive information. *One left Out.* [Both the Directories need thorough revision, as we find from daily experience. ED.]

The Onion Fungus.—What is the name and nature of the fungus that is this year so largely affecting our Onion crops? Indeed, I am not sure whether I ought not to write of fungus in the plural sense, for I find ample evidence of two distinctive forms—one producing dark brown spots or blotches much like those seen on diseased Potato leaves, and the other a common form of white mould or mildew. It is desirable to ascertain whether the mould is but the corollary of the spot-fungus—the inevitable parasite of disease—or whether it is a primary agent of disease. I find the mildew to be very general this season, having seen it at wide intervals, and in crops grown under very diverse conditions. Still further, although the autumn-sown kinds seem to have matured too early to have materially suffered, yet of spring-sown crops, those most near to ripening would seem to be, as in the case with Potatos, the first to suffer even when growing close beside others that are later. I have seen excessive rainfall credited with the cause of the fungus; but it is a curious fact that its development, so far from being checked, seems to have been even more rapid since we have had dry weather. Cold nights may have promoted it. Great variations of temperature may have helped it; but we have had far moister seasons than the present one has been, and yet had no fungus. I think that the effect upon the autumn-sown Onions has not been very harmful, because I have seen plenty of very fine bulbs about; and here I have pulled very fine ones of the Trebons, of which a dozen weighed 14 lb., large enough for any purpose. Picklers, too, have not suffered, because large enough ere the fungus appeared. Neither do I find any harm yet been done to the hard stems of seed Onions. It is the stock bulbs produced from spring-sown seed that will suffer most in size, but I don't see that they are otherwise injuriously affected. *A. D.* [Several "moulds" affect Onions, the commonest is a species of Peronospora, or allied genus, like that which affects the Potato. ED.]

The Apiary.

THE waggish Bishop's practical, and by no means unkindly advice to the poorer of the clergy, to keep bees, would have stood the cloth in poor stead this year, for honey is by no means abundant—although bees, the producers, or rather collectors of this delicious product are abundant enough; indeed we have had a very long brood season, swarms having turned out unusually early, as witness my own here in April 7, whilst I learnt since of one quite three weeks earlier in Hampshire. Still though we are now in the cool, and for bees late month of September, they are busy feeding, and are collecting and carrying in pollen found in abundance somewhere, just as though it were the month of April. It is just possible that the hive populations have been increasing at a more rapid rate than has the food upon which they must exist. The conditions may have been favourable to the creation of insects, but have been eminently unfavourable to the production of honey.

Not only has this been the case, but the stores obtained early in the season, when warmth prevailed, have already been poached upon, so that those who have looked to their supers for a good store for themselves, have found nothing but comb cleaned and empty. To this disappointment must be added the necessity of feeding at once all stocks that are light, for it is desirable, both for the promoting of heat and for a winter store of food, that empty cells should be filled with the sweet nectar as soon as possible. Having had this season a perfect wealth of flowers, it seems strange that honey should be so scarce; but doubtless we have in the first place not had sufficient heat to develope the sweet secretion in flowers, and in the second the too often cold, stormy and changeful weather has hindered the bees in their work. Apiarians must exercise judgment and patience for yet another year. *A. D.*

Reports of Societies.

Royal Caledonian Horticultural: *Sept.* 13 *and* 14.—The great International Fruit and Flower Show, which was opened under most favourable conditions as regards the weather on Wednesday morning and closed on Thursday night, was undoubtedly the finest that has ever been held in Edinburgh, and should prove besides a great success financially. Those who remember the former "Internationals" held in the Music Hall, and who need not be told of the crush that used to take place on show days, must have been, as we were, most agreeably surprised at the extent of covered-in space now available for holding the Society's shows, and the ready adaptability of the place for such a purpose. The Waverley Market is a covered-in area of about 1½ acre, and by reason of its central position, and perhaps more to the easy way in which it can be cleared at short notice, it is without exception one of the very best buildings in which to hold a flower show that we know of. It is well glazed and lighted, and by a judicious arrangement of the tables, &c., allows of an abundance of room for promenading—an advantage always to be coveted, and doubly so in bad weather.

On Tuesday morning, till 10 A.M., the market was used for its ordinary purposes, and was cleared out and made ready for the reception of exhibits by 2 o'clock in the afternoon, when staging was commenced under the superintendence of a sub-committee, most of the plants and all the fruits being placed on long tables about 2 feet high in the body of the market, and the vegetables under the galleries on two sides of the building. This important part of the exhibition was entrusted to Messrs. Mackenzie & Moncure. Of purely plant shows we have seen better and more extensive ones; but there were many specimens shown here that it would be hard to surpass—the grand Crotons shown by Mr. Letts, gr. to the Earl of Zetland, for instance—and among the multitude of small stuff always available at autumn shows there was a marked absence of anything really poor. Cut flowers, too, though weaker than we could have expected in some departments, were nevertheless a very attractive feature.

The show of fruit was, of course, the prime feature, and a remarkably good show it was—weak perhaps as regards Pines, and not so strong as usual in hardy fruits as would have been desirable. There was nevertheless enough to satisfy all, and of Grapes a truly grand show, both as regards numbers and quality; indeed on the latter point we do not remember having seen at a show of any proportions above the ordinary so little that left room for adverse criticism. The weakest places were to be found in the Black Hamburgh classes, but the Muscats were extremely fine all through. To the surprise of many, but not of those who know anything of the ability as a grower of the man, the leading exhibitor in this department was Mr. McIndoe, gr. to Sir J. W. Pease, Hutton Hall, Guisborough, who literally carried all before him, taking 1st prizes in the more important classes, and securing two out of the three Veitch Memorial prizes offered for competition.

The judges commenced their duties at 6 A.M. on Wednesday, and in a couple of hours their labours were almost completed. At 9 A.M. gardeners and their assistants—a goodly muster—were admitted at a cheap rate. At 11 A.M. the show was thrown open to the general public after a brief speech from the Lord Provost.

FRUITS.

Grapes.—These being the leading feature, we give them the post of honour in this report. The valuable prizes offered for the best six sorts, two bunches of each, brought out a dozen competitors, whose united contributions made a fine show of themselves. The 1st prize was taken by Mr. McIndoe, with a splendid lot of fruit—fine, large, evenly-matched bunches, with berries well swelled, and well coloured for their size, and averaging between 7 and 8 lb. each, of Barbarossa, Trebbiano, Mrs. Pince's Black Muscat, Golden Champion, Black Hamburgh, and Gros Colmar. A very good 2d was Mr. Hunter, gr. to the Earl of Durham, Lambton Castle, who put up large and good bunches of Trebbiano, Black Alicante, Gros Colmar, Muscat of Alexandria, and Golden Champion. The 3d prize went to a new exhibitor, Mr. A. Kirk, gr. to J. Thomson Paton, Esq., Norwood, whose half dozen well-finished and pretty bunches, averaging from 3—4 lb. each, were admired as much as any in the show, their fine table quality being undeniable. The sorts were Black Hamburgh, Duke of Buccleuch, Alnwick Seedling, Muscat Hamburgh, Muscat of Alexandria, and Gros Colmar. Well deserving of commendation in the same class were the exhibits of Mr. Johnston, gr. to the Earl of Strathmore, Glamis Castle; Mr. Hammond, gr. to Sir Wilfrid Lawson, M.P., Brayton, Carlisle; Mr. McKelvie, gr. to the Dowager Duchess of Roxburgh, Broxmouth Park, Dunbar; and Mr. Austin, gr. to Sir Greville Smythe, Ashton Court, Bristol. For the same number of varieties, one bunch of each, Mr. Hunter took the lead among ten competitors, showing remarkably good samples of Black Alicante, Trebbiano, Gros Colmar, Mrs. Pearson (in very fine condition), Barbarossa, and Muscat of Alexandria. Here Mr. Kirk got a step higher in the prize list with neat, compact, and thoroughly finished samples of Black Hamburgh, Muscat of Alexandria, Alnwick Seedling, Duke of Buccleuch, and Muscat Hamburgh; next to him coming Mr. McKelvie with larger but not so even or so well-finished bunches of Muscat of Alexandria, Raisin de Calabre, Gros Colmar, Black Prince, &c. Mr. D. Murray, gr., Culzean Castle, Maybole; Mr. Roberts, gr. to the Baroness Rothschild, Gunnersbury; Mr. Goodacre, gr. to the Earl of Harrington, Elvaston Castle; and Mr. Lees, gr. to the Marquis of Downshire, also exhibited well. With four bunches Mr. Elphinston, gr. to E. Mundy, Esq., Shipley Hall, Derby, came in 1st, showing a very pretty lot, consisting of Madresfield Court, Muscat of Alexandria, Golden Queen, and Gros Colmar, all highly finished. Mr. D. Dickson, gr. to J. Whyte Melville, Esq., St. Andrew's, came in a good 2d, with bunches evenly matched and well ripened of Black Hamburgh, Muscat of Alexandria, Gros Colmar, and Golden Queen; and Mr. Roberts, gr. to Lady Emily Howard, Charleville, Tullamore, was 3d. The class for two bunches of Black Hamburghs was not a good one, though there were ten competitors, but the quality was very good in the winning samples contributed by Mr. McIndoe and Mr. McIntyre, gr. to C. Tennant, Esq., The Glen, Innerleithen. The Muscat Hamburgh class was also inferior, colour being much deficient, except in the prize bunches from Mr. George Reid, gr. to A. Moncur, Esq., Rockfield, Dundee, and Mr. Roberts, Gunnersbury. The bunches of Madresfield Court were a decided improvement, the winning examples, staged by Mr. Goodacre, Mr. Roberts of Gunnersbury, and Mr. McKelvie, being all that could be desired. Black Alicantes also furnished a first-rate class, and here Mr. Wallis, gr. to the Rev. W. Sneyd, Keele Hall, Newcastle, Staffordshire, came in 1st, Mr. Hunter 2d, and Mr. D. Roberts, gr. to D. Hussey Packe, Esq., 3d. Mr. Wallis also came to the front in the next class, which was for Gros Colmar, with a sample remarkably fine in fruit and in the size of the berry. Mr. W. B. Upjohn, gr. to the Earl of Ellesmere, Worsley Hall, came in a good 2d, and Mr. Elphinstone 3d. Mr. W. Kelvie, Mr. McIndoe, and Mr. Wallis secured the awards with Lady Downe's, and Mr. McIndoe with a very good example of Barbarossa secured the 1st prize in the any other black Grape class; Mr. Wallis being a good 2d with the same variety; and Mr. Hudson, gr. to H. J. Atkinson, Esq., Acton, 3d, with Alnwick Seedling, in a very strong class. Mr. J. Day took the lead with Muscat of Alexandria, showing two grand bunches, not large, but well shouldered, evenly filled out, and pure golden-yellow in colour. Mr. G. McKinnon, gr. to Viscount Melville, had also a very highly-coloured example, and came in 2d; and Mr. D. Murray was a good 3d. The class for Duke of Buccleuch only brought out two bunches, and those shown by Mr. McIndoe were awarded the 1st prize. In the any other white Grape class there were sixteen competitors, and the 1st prize went to Mr. John Gray, gr. to the Rev. T. H. Turnbull, Lesmahagow, who had white Syrian; the 2d to Mr. Wallis, for Golden Queen; and the 3d to Mr. D. Dickson, who had the same variety, and which was also well shown by others in this class. A series of prizes for single bunches resulted in Mr. McIndoe being 1st, and Mr. Boyd, gr. to W. Forbes, Esq., Callander, 2d. For Black Hamburgh, Mr. D. Roberts was 1st, and Mr. J. Maconochie, gr. to P. B. Smollett, Esq., Cameron House, Alexandra, 2d. For Black Alicante Mr. Elphinstone was 1st, and Mr. Lees 2d. For Lady Downe's, Mr. D. P. Bell, Clive House, Alnwick, was 1st, and Mr. Roberts, Gunnersbury, 2d. For Alnwick Seedling, Mr. Wallis was 1st, and Mr. McIndoe 2d. For Gros Maroc, Mr. J. Day was 1st, and Mr. McKelvie, 2d. For Muscat of Alexandria, Mr. J. Brown, gr. to C. S. H. D. Money, Esq., Abercairny, was 1st; and Mr. Roberts, Gunnersbury, 2d, with Golden Champion; and Mr. Wallis 1st, and Mr. Austen 2d, for Mrs. Pearson—nearly all the classes being well contested. The heaviest bunch of black Grapes was a large one of Gros Guillaume, in excellent condition for its size, which came from Mr. Roberts, of Charleville, a renowned growger in the big-bunch line; the next heaviest being a bunch of the same variety weighing 10 lb. 8 oz., and grown by Mr. McIndoe. With a well-shaped bunch of Trebbiano, weighing 10 lb. 4 oz., Mr. McIndoe was 1st in the heavy white Grape class. Tested for flavour, some bunches of Madresfield Court shown by Mr. McIndoe proved the best of the black varieties, and Mr. Roberts' Duchess of Buccleuch the best of the whites. Mr. Wallis took the 1st prize for "bloom" with superb Gros Colmar, and Mr. Johnston was 2d, with the so-called Gosford Black. In the seedling black Grape class, Messrs. Downie & Laird, Edinburgh, showed a seedling named John Downie, in the way of Gros Colmar, with immense round berries, and said to be a seedling from the Muscat of Alexandria. In a bunch of the latter a berry half black appeared, and the seeds were sown, and all the plants raised therefrom bore white fruit but this one, which has a striking appearance; but it was not ripe, and the judges recommended it to be shown again. Mr. D. Murray, Culzean, also showed small bunches of a distinct-looking seedling, which also was unripe. In a series of classes confined to exhibitors not competing in any of the above sections, there was also a very good competition. For six bunches, not less than three varieties, Mr. J. Witherspoon, Red Rose Vineries, Chester-le-Street, was well 1st, showing handsome, medium-sized bunches of Gros Maroc, Buckland Sweetwater, Black Prince, Madresfield Court, Foster's Seedling, and Alnwick Seedling; 2d, Mr. G. McLure, gr. to J. Milne, Esq., Trinity; and 3d, Mr. McLeod, gr. to G. Younger, Esq., Westbourne House, Tillicoultry. In the two-bunch classes Mr. Finlay, gr. to Mrs. Maynard, East Layton Hall, Darlington, was 1st, and Mr. Young, Edinburgh, 2d. For Black Hamburghs, Mr. Collins, gr. to J. Ballantyne, Esq., Walkerburn, was 1st, and Mr. G. McLeod 2d. For Black Alicante, Mr. Shaw, gr. to Lord Muncaster, Ravenglass, was 1st, and Mr. Hugh Watson, gr. to Miss Morrison, Stirling, 2d; and Mr. G. McLure 1st, and Mr. J. Harper, gr. to J. Russell, Esq., Dundas Castle, 2d, for Muscat of Alexandria. For single bunches of Black Hamburgh Mr. J. Jeffrey, gr. to A. Pringle, Esq., Langholm, was 1st, and Mr. Watson 2d, Madresfield Court.—Mr. J. McDonald, gr. to J. Younger, Esq., Ashfield, 1st; and Mr. Harper, 2d. Black Alicante.—1st, Mr. W. Collins; and 2d, Mr. Harper. Lady Downe's.—1st, Mr. G. Greig, gr. to W. Christie, Esq., Craigend Park. Muscat of Alexandria.—Mr. J. Jeffrey, 1st. Vines grown in pots were more numerously shown than usual, and for the most part good ones, but nothing approached half-a-dozen superb examples shown by Messrs. H. Lane & Son, Berkhamstead, who had no difficulty in securing both the 1st prizes offered. Mr. Gellatly, gr. to the Earl of Wemys, Gosford, was 2d.

Pines.—The six classes offered for these noble fruits brought out a very poor show as regards numbers, and not much in the way of quality. For two ripe Pine-apples, growing, Mr. D. Calderhead, gr. to R. J. E. Wemys, Esq., Wemys Castle, was a good 1st; and Mr. McIntyre, The Glen, 2d. For two Smooth Cayennes the latter was also 2d; while for two Queens Mr. Calderhead was 1st, and Mr. Johnston, Glamis, 2d. For two Charlotte Rothschilds, Mr. Goodacre took the 2d prize; and in the class for any other sort Mr. McIndoe was 1st with a fine fruit, unnamed; and Mr. McIntyre, The Glen, again 2d.

Collections of Fruit.—In a class that tries the skill of a grower more than any other, *i.e.*, that for the best twelve sorts of fruits, there were five competitors, and all deserved awards, so good were the fruits staged. The 1st prize was easily taken by Mr.

McIndoe, with a grand lot of fruit, consisting of large handsome bunches of Barbarossa and Trebbiano Grapes, large and fine Charlotte Rothschild and Queen Pines, McIndoe's Scarlet Premier and Best of All Melons, Violette Hâtive Peaches, Humboldt Nectarines, Moor Park Apricots, Brown Turkey Figs, Magnum Bonum Plums, and Jargonelle Pears. Mr. Goodacre was 2d, with handsome Queen Pines, William Tillery and Hero of Lockinge Melons, Madresfield Court and Muscat Grapes, Bellegarde Peaches, Victoria Nectarines, Brown Turkey Figs, &c. Mr. Austen was 3d, but some thought he deserved a higher position. He had very fine Madresfield Court and Muscat Grapes, a beautiful dish of Salway Peaches, Blenheim Orange and Victory of Bath Melons, &c. The same number of competitors entered the class for twelve sorts, exclusive of Pines, and not more than two sorts of Grapes; and here Mr. Hunter got into his old position with fine Muscat and Black Alicante Grapes. Best of All and New Hybrid Melons, Early Grosse Mignonne Peaches, Elruge Nectarines, Durandeau Pears, Worcester Pearmain Apples, Plums, Figs, &c.; 2d, Mr. D. Dickson, with a first-rate lot of fruit; and 3d, Mr. McKelvie, [who also showed well. A similar class, in which Pines and Grapes were excluded, brought out eleven competitors, who made a most meritorious display. Mr. McIndoe was 1st with a very fine lot of fruit, including Premier and Best of All Melons, clean well grown Louise Bonne of Jersey and Beurré d'Amanlis Pears, a pretty dish of Worcester Pearmain Apples, Royal George Peaches, Brunswick and Negro Largo Figs, Kirke's and Jefferson Plums, Hemskirk Apricots, and Belle Magnifique Cherries; Mr. W. Williamson was a good 2d, and Mr. P. W. Fairgrieve, gr., Dunkeld, was a close 3d. In the class for a collection of tropical fruits Mr. J. Muir, gr. to C. R. M. Talbot, Esq., M.P., Margam Park, South Wales, secured the 1st prize with a most interesting collection of twenty-two sorts of Citrons, Oranges, and Lemons, &c., accompanied by flowers and foliage of each; and Mr. McIndoe was 2d, with a collection which included Egg Fruits, Bananas, Oranges, Lemons, Capsicums, &c. The only table of fruits exhibited by fruiterers, a very good one, came from Messrs. Boyd & Bayne, of Princes Street.

APPLES AND PEARS.—These hardy fruits are so scarce this season, that a comparatively small display was not to be wondered at. But what was wanting as regards numbers in the competing classes, was more than made up for by fine collections shown by Messrs. James Veitch & Sons, Chelsea; Messrs. J. Cheal & Sons, Crawley, Sussex; and by the Royal Horticultural Society, from Chiswick. The Messrs. Veitch's fine contribution consisted of some 150 sorts of Apples grown on pyramids on the Paradise stock in their Fulham Nursery, and about fifty sorts of Pears. The Messrs. Cheal staged about fifty sorts each of Apples and Pears, the former grown on cordons, and excellent in quality. From Chiswick Mr. Barron brought about three dozen each of Apples and Pears—a very instructive collection. The best six Jargonelle Pears came from Mr. J. Short, a very good sample. The best collection of twelve sorts of Pears, two of each, came from Mr. Austen, Ashton Court; and the six heaviest Pears—Grosse Calabasse—from Mr. Brotherston, gr. to the Earl of Haddington. Mr. Alex. Milne, gr. to Col. D. Milne-Holme, Berwick-on-Tweed, took the 1st prize for a collection of dessert Apples—a pretty lot, but small in size. The class for a collection of twelve sorts of baking Apples was a much better one. Here Mr. McIndoe came in 1st again, showing fine examples of Reinette Blanche d'Espagne, Ecklinville Seedling, Mère de Ménage, Annie Elizabeth, Peasgood's Nonsuch, Hawthornden, Lady Henniker, Cellini, Nelson Codlin, Cox's Pomona and Beauty of Kent. The finest samples of Lord Suffield came from Mr. John Blackie, Viewforth House, Leith; of Stirling Castle, Ribston Pippin and Blenheim Orange from Mr. G. Edgar, Ecklinville Seedling from Mr. Gellatly, and King of the Pippins from Mr. J. Brunton. The best six dessert Apples fit for table came from Mr. D. Murray, and Mr. W. Williamson, with a very fine dish of Warner's King, came in 1st for the six heaviest fruits. Mr. Webster, Gordon Castle Gardens, showed fruit-laden branches of an Apple raised by him, and called Beauty of Moray—a medium sized culinary sort, of good quality, and remarkable for its free bearing qualities.

VEITCH MEMORIAL PRIZES.—Three sums of £5 each and a medal were awarded—1, to Mr. McIndoe, for his grand collection of twelve dishes of fruit; 2, to Mr. McIndoe, for two very fine bunches of Barbarossa Grapes, shown in his collection of six sorts; and 3, to Mr. James Day, for his superb Muscat of Alexandria, shown in class 17.

MELONS, PEACHES, AND NECTARINES, &c., with Gooseberries and Currants, made up some good classes among them. Of green-fleshed Melons the judges had thirty-four to taste, and Mr. McIndoe took another 1st prize with Best of All; Mr. J. Maule, gr. to J. C. Hope Vere, Esq., was 2d, with Colston Bassett; and Mr. W. Elphinstone 3d, with Hero of Lockinge. Of twenty-nine scarlet-fleshed varieties Bloxholm Hall, shown by Mr. McKelvie, was the best; another fruit of the same variety, shown by Mr. McIntosh, being 2d; and Christison's Favourite, staged by Mr. Hugh Watson, 3d. The best twelve Figs came from Mr. Boyd, of Callendar; and in a first-rate Peach class Mr. Alexander McMillan, gr. to J. McBraire, Esq., was 1st, with grand fruits of Lord Palmerston; Mr. Young 2d, with Walburton's Admirable; and Mr. McLeod, gr. to R. Smith, Esq., Brentham Park, Stirling, 3d, with Barrington—all very fine. Nectarines were a smaller class, and the 1st prize here went South, to Mr. George, gr. to T. W. Boord, Esq., M.P., Ockenden, Sussex, for finely coloured Violette Hâtive; the 2d honours going to Mr. Gilbert, Burghley. Mr. J. Brunton was 1st for Apricots, and Mr. J. Short for Plums, in relatively small competitions.

VEGETABLES.

Only three prizes were offered and awarded in a class for twelve sorts of vegetables, which, however, was so good that half-a-dozen more would not have been thrown away. There were fourteen competitors, and a very close run between three or four of them for 1st honours made it no easy matter for the judges to decide. The 1st prize was eventually awarded to Mr. J. Muir, Margam Park, who had a very fine sample of the white Defiance Celery, and good Hollow-crowned Parsnips, Intermediate Carrots, hybrid Vegetable Marrows, Carter's Champion Runner Beans, Crossling's Glamorgan Tomatos, Cardiff Castle Cucumbers, Telegraph Peas, Banbury Onions, Manhattan Potatos, Snowball Turnips, and Sutton's King of the Cauliflowers. Next best came Mr. Donald McBean, gr. to J. C. Cunningham, Esq., Craigend, with a collection, but a shade if anything inferior; and 3d, Mr. James Brown, of Abercairny; while deserving of honourable mention were Mr. D. Murray, Mr. E. Atkinson, Morpeth, Mr. Gideon Potter, Mr. W. Lowe, and Mr. D. Logan, Castlelaw, Coldstream. For a collection of salads, Mr. J. Muir was also 1st, with an excellent assortment, and Mr. C. Smith was 2d. For the prizes offered for twelve and six sorts of Potatos respectively there was an excellent competition, the number being large and the quality good, but not so the judging, which would not do at the "International." Of twelve varieties, there were twenty lots to choose from, and the prizes were awarded to Mr. James Culton, gr. to John Cowan, Esq., Dildawn Castle; Mr. R. Blair, Craigie House; and Peter Robertson, Hartrigg, Jedburgh. Of six dishes there were twenty-three lots, and the 1st prize went to Mr. Gideon Potter, the 2d to Mr. G. McKinnion, and the 3d to Mr. A. Brenner, gr. to G. Dempster, Esq., Ormskirk. The best market gardener's collection of vegetables came from Mr. Robert Black, of Libberton Mains—an excellent lot. The best French Bean, a very strong class (Scarlet Runners being little appreciated, in Edinburgh at all events), came from Mr. James Hall, of Kelso, and the 2d best from Mr. M. McLean, gr. to J. Whatman, Esq., Vinters Park, Maidstone; the best Peas from Mr. W. Williamson, Celery from Mr. Thomas Hogg, gr. to J. Gordon, Esq., Cathcart; Tomatos from Mr. Ramsey, of Fordell Gardens, Inverkeithing; Leeks from Mr. A. Thomson, of Kirkintilloch; and Onions from Mr. Gideon Potter. In each of these classes there was a vigorous competition, and the quality all through was very good. Of Cucumbers, Brussels Sprouts, and Cauliflowers there were also fine classes.

PLANTS.

The leading features in this department were the competitions in the classes for ten stove and greenhouse plants, and for amateurs and nurserymen's tables of miscellaneous subjects, these and the large combinations of hardy and exotic plants contributed by the local nurserymen being the mainstay. In the specimen-plant class, the local champion, Mr. J. Paterson, gr. to J. Syme, Esq., Millbank, a very successful grower, was beaten by Mr. Letts, gr. to the Earl of Zetland, Upleatham, who staged two magnificent Crotons, large specimens, with clean, robust leaves, most brilliantly coloured; a large and very good Gleichenia, a well-flowered large Allamanda, Phœnocoma prolifera, a grand bush in perfect health; a well-bloomed Stephanotis floribunda, a good Ixora, a noble Cycas revoluta, and a very fine Zamia cycadifolia. Mr. Paterson was strong in flowering subjects, having amongst others a very good Statice profusa, Eucharis amazonica, about 4 feet over and well bloomed; Erica Irbyana, and E. Austiniana, &c. Mr. A. Henderson, gr. to S. Clark, Esq., Paisley, was a good 3d, showing in his group a remarkably fine Seaforthia elegans and exceedingly fine specimens of Dæmonorops palembanicus and Areca lutescens. Mr. Hammond, of Brayton, and Mr. McGregor, gr. to C. Walker, Esq., Milnthorpe, also exhibited in good form. Specimen Crotons were a good feature, many fine plants being staged. The best single specimen was a medium-sized C. Weismanni, with perfect leafage, splendidly coloured, shown by Mr. Archibald Scott, gr. to Lord Elphinston, Carberry Towers; and Mr. G. Atkinson had the best pairs. There were also a few Heaths and Liliums of good quality, and a capital lot of Ferns, both hardy and exotic, the finest half dozen among the latter being shown by Mr. W. Anderson, gr. to P. Neill Fraser, Esq, and including a splendid example of Goniophlebium subauriculatum, hanging from the roof of the market, and having about 200 fronds from 7 to 12 feet long; handsome specimens of Pteris scaberula, 5 feet across; Lygodium scandens, trained as a pyramid, 6 feet high, 3½ feet through; Pteris serrulata magnifica, Nephrolepis tuberosa var. compacta, and Phlebodium aureum, &c. Mr. Lyall, gr. to Sir A. Hope, sent the finest British Ferns, immense masses in tubs of Polystichum angulare Wollastoni, Lastrea filix-mas cristata, Osmunda cristata; and of dwarf species a collection of twelve charming specimens came from Mr. Anderson, Pilrig Model Buildings, a clean, pretty, well grown, and neatly named lot that did him credit. Gleichenias and Todeas were also nicely shown.

For new plants introduced since 1879, Messrs. Ireland Thomson were 1st, with Anthurium Andreanum and Veitchii, Nepenthes Williamsii and Mastersiana, Adiantum Victoriæ, Dracæna Wilsoni, &c.; and the same firm also secured 1st prizes for six Crotons, six Dracænas, six Ferns, and six Tuberous-rooted Begonias. In the nurserymen's class for tables of plants, equal 1st prizes were awarded to Messrs. Ireland & Thompson and Messrs. Clark Bros., Carlisle (a decision that was much discussed); and the 3d prize to the Liverpool Horticultural Co., Garston, who put up, each, with Messrs. Downie & Laird, very neat collections. In the amateurs' class, A. Paul, Esq., Gilmore Place, and Mr. Hammond, Brayton, were placed equal 1st; Mr. McIntyre, The Glen, being 3d.

The Orchid classes were well filled for the season, and the best half dozen, a well-grown lot, came from A. Paul, Esq., a very successful local grower. In the single specimen class the 1st prize was taken by Mr. David Paton, gr. to Mrs. Tait, Galston, with one of the finest plants of Renanthera coccinea we remember to have seen, the specimen having three growths from 4 to 5 feet high, and four noble branching spikes of its bright red flowers. Fuchsias were capitally represented, as also were Vallottas, exceedingly good; zonal and variegated Pelargoniums, &c.

The miscellaneous collections included a fine table from Mr. B. S. Williams, of Holloway, who had a choice assortment of stove and greenhouse plants, Orchids, &c.; general collections of plants from Messrs. Thos. Methven & Sons, Messrs. Gordon & Sons, Murrayfield; Messrs. James Dickson & Sons, Inverleith Nurseries; Messrs. Dicksons & Co, Waterloo Place; Messrs. Drummond Brothers, George Street; Messrs. Downie & Laird, Messrs. Ireland & Thomson, Mr. Robertson Munro, and Messrs. Rodger, McLelland & Co., Newry, whose small collection of choice things included one of the finest pots of Trichinium Manglesii we have ever seen, the plants being in good health, and bearing sixty-seven of their plume-like blossoms—a plant that attracted much attention. An interesting group of Nepenthes and other plants of a singular character was contributed from the Royal Botanic Gardens.

HARDY TREES AND SHRUBS were represented by two large collections of coniferous plants, ranging in size from a few inches to several feet in height, contributed by the Lawson Nursery and Seed Co., who were also 1st for six specimens; Messrs. Ireland & Thomson being 2d. The last-named firm also had a capital group of specimens, and half a dozen bright golden plants of young golden Chinese Juniper, which seems to do as well in Scotland as at Godalming. A fine group of specimen Conifers also came from Messrs. Little & Ballantyne, Carlisle; and excellent collections were also shown by Messrs. Cunningham, Fraser & Co., Comely Bank.

CUT FLOWERS.

In this department Dahlias played the leading part, followed by Gladioli, Roses, Phloxes, Pentstemons, Asters, &c. The competition with Dahlias was very keen in several classes, and a first-rate lot of flowers was put up. Among the winners of 1st prizes were Mr. Simpson, The Cemetery, Wigton; Mr. Veitch, The Cemetery, Carlisle; Mr. Thomas Hogg, Messrs. Downie & Laird, Messrs. Harkness & Son, Bedale, &c. The amateurs' classes for Gladioli were very good, and especially worthy of mention is a stand of eighteen spikes shown by Mr. James Gray, gr. to W. Tinnie, Esq., Newfield, and another of twelve from Mr. Kilgour, Kincardine Schoolhouse, Blair Drummond. Hollyhocks were also good, as well as Cockscombs. Roses included a very brightly coloured collection from Mr. Hugh Dickson, Belmont Nursery, Belfast; and Mr. T. Smith, of Stranraer, had a nice stand or two, and Pompon Dahlias; and a pretty stand of single ones came from Messrs. Downie & Laird.

Royal Horticultural: *Sept.* 12.

Floral Committee.—G. F. Wilson, Esq., F.R.S., in the chair. Although the number of plants exhibited was but small, and the attendance of the members likewise restricted, owing to the preponderating attractions of the great show at Edinburgh, there were many exhibits of an interesting nature, such as usually characterise these most useful meetings. The leading features comprised a fine show of cut Roses, from Messrs. W. Paul & Sons, of Waltham Cross; beautiful series of single Dahlias of many hues, from Messrs. Hooper and Ware, elsewhere alluded to in detail; a collection of Tydæas and Nægelias, from Chiswick, and other plants. The most noticeable feature was the collection of single Dahlias above referred to, the beautiful colours being very remarkable, while the elegance of their form contrasted strongly with the formal lumpish ugliness of the show Dahlias. Cut flowers of the singular and brilliant Cactus-Dahlia, D. Juarezii, were shown in better form than we have before seen them; and a white form, supposed to be a white Juarezii, was also worthy of notice. Messrs. Hooper & Co. showed plants of the Gynura aurantiaca, with its leaves, as it were, covered with purple-violet, and bearing long loose panicles of small cylindrical flower-heads like those of a Cacalia. The gem of the exhibition was undoubtedly the plant of Vanda Hookeri shown by Mr. Hill, gr. to Sir N. M. de Rothschild. The plant has the habit of V. teres, and the specimen exhibited bore two flowers, each about 2½ by 2 inches long, of a pale lilac ground-colour, blotched and dotted with richest deep lilac-purple. The three outer segments of the flower were oblong-ovate with a short broad stalk and wavy edges, in colour pale lilac with a few deeper coloured spots. The lateral petals were of similar shape and colour but more rounded. A great peculiarity was observable in the flowers exhibited, in that the upper or odd sepal was twisted out of position so as to stand in front of or inside the lateral petals, which in their turn were bent back so that though really belonging to the inner series of segments they were so twisted as to be outside the upper sepal. The lip is three-lobed, the two lateral lobes much the smallest concave erect oblong sharply pointed, and of the richest purple colour, but white at the extreme base, the central lobe much larger transversely oblong divided into three shallow rounded lobes, pale lilac with numerous purple blotches especially towards the base. The column is short deflexed, violet-coloured and fitting into the hollow formed by the base of the lip and the two lateral lobes. The stand of cut Roses from Messrs. Wm. Paul & Son, of Waltham Cross, was recommended by the committee for a medal. Among the collection the bunches of Safrano in bud and half expanded were very beautiful, as were also those of Niphetos, exhibited in a similar condition. Messrs. Paul's new Rose, Queen of Queens, was shown in good condition, and attracted considerable attention from Rose growers. Messrs. Hooper & Co., of Covent Garden, had a First-class Certificate for their new single Dahlia, Ruby King, a finely-shaped symmetrical flower of a rosy-purple colour; and the same firm showed several stands of cut flowers and other miscellaneous plants. Messrs. James Carter & Co. furnished some good examples of Liliums in pots, consisting of Lilium lancifolium album monstrosum, L. lancifolium roseum, and a fine group of Hyacinthus candicans. Messrs. Rawlings Bros., Romford, obtained a First-class Certificate for their new Dahlia, John Henshaw, a small, well-shaped flower of purplish hue; and Mr. T. S. Ware, of Tottenham, was awarded a similar distinction for his new single Dahlia Christine, of a lovely mauve rint. Mr. Ware also showed several stands of single Dahlias and autumn flowering Chrysanthemums, which are very useful as border plants or as cut flowers, and was accorded a vote of thanks. Messrs. Cannell & Sons showed their white Dahlia Constance, which is likely to be largely used for church decoration, and various purposes of furnishing. Mr. G. Duffield, Winchmore Hill, exhibited cut blooms of a seedling Carnation, and the committee awarded him a vote of thanks. Mr. G. Goldsmith, Hollanden, Tunbridge, sent specimens of Iresine formosa, and Messrs. Charles Lee & Son samples of Cupressus Lawsoniana erecta viridis variegata, with creamy variegation; and Viburnum Tinus marginatus aureus, a Laurustine with pale yellow marginal variegation to the leaves. From Mr. E. Morse, The Nurseries, Epsom, came a sample of Vanda cœrulea, nicely flowered, and Mr. E. Hill, gr. to Sir N. M. de Rothschild, Tring Park, Herts, a well-flowered specimen of Dendrobium bigibbum.

First-class Certificates.

Messrs. Hooper & Co., for single Dahlia, Ruby King.

Mr. E. Hill, for Vanda Hookeri.

Messrs. Rawlings Bros., Romford, for Dahlia John Henshaw.

Mr. J. S. Ware, for Dahlia Christine.

Medals.

Paul & Son were recommended for a Medal for their stands of Roses.

Fruit Committee.—John Lee, Esq., in the chair. The exhibits were few and not of a particularly striking character. Mr. C. Ross, the Gardens, Welford Park, Newbury, sent a seedling green-fleshed Melon named Emerald, for which the committee awarded a letter of thanks. Mr. Bonsall, the Gardens, Campsmount, Doncaster, showed a Melon named Campsmount Hybrid; and Mr. George, Putney Heath, received a Cultural Commendation for a fine dish of Beurré d'Amanlis Pear. Mr. Laxton, of Bedford, exhibited two dishes of American Crabs, for which he was awarded a letter of thanks and a similar recognition for a dish of Potatoes, said to be a white selection from Beauty of Hebron. Messrs. H. Lane & Son, Great Berkhampstead, Herts, sent a good collection of Filberts, the culture of which has been sadly neglected lately. Of Apples and Pears, Messrs. Wm. Paul & Son, furnished a large collection, filling a long table in the entrance vestibule from one end to the other. The collection was a representative one of all the best varieties, both late and early. About the centre of the table there was a collection of six varieties of Siberian Crabs, which are very pretty at this season, and well adapted for the ornamentation of shrubberies and pleasure grounds.

Crystal Palace Autumn Fruit Show: *Sept.* 8 *and* 9.

—The exhibition of fruit held in connection with the Dahlia show, while possessing many meritorious features, was not so numerously attended as on former occasions. It is possible that upon the eve of the great show at Edinburgh a good many fruit growers were conserving their forces for that event; but, be that as it may, there can be no excuse for those who, in the ordinary way, notify their intention of exhibiting in certain classes, and withdraw their entries at the last moment. It is impossible for those who are responsible for the organisation and management of large exhibitions to be successful in their undertakings unless exhibitors comply with the rules laid down in the schedule. Blank spaces are left which cannot be filled up at the last moment, and the effect of the exhibition may be and often is spoilt through what can only be characterised as sheer negligence on the part of exhibitors. The collections of fruit were upon the whole of great merit; Pines were the weak point of the show. For a collection of twelve dishes of fruit Mr. Coleman, gr. to Earl Somers, Eastnor Castle, Ledbury, was 1st, showing Queen Pines, fine Black Hamburgh and Muscat of Alexandria Grapes, Bellegarde Peaches, Stanwick Elruge Nectarines, Pitmaston Duchess Pears, Brown Turkey Figs, Moor Park Apricots, Jefferson Plums, and a Melon. Mr. Roberts, gr. to the Baroness L. de Rothschild, Gunnersbury Park, was a good 2d, his best dishes being Black Hamburgh and Madresfield Court Grapes, both well finished; Negro Largo Figs, Hero of Lockinge Melon, Vicomtesse Héricart de Thury Strawberries, Bellegarde Peaches, and Jefferson Plums. Mr. Goodacre, gr. to the Earl of Harrington, Elvaston Castle, was 3d, also showing a good collection. For a collection of eight dishes, exclusive of Pine-apples, Mr. H. G. Oclee, gr. to the Marchioness of Lothian, Blickling Hall, Aylsham, was 1st, his best dishes being Muscat of Alexandria and Madresfield Court Grapes, Lord Palmerston Peaches, Hero of Lockinge Melon, Pitmaston Orange Nectarines, Brown Turkey Figs, and Williams' Bon Chrétien Pears; 2d, Mr. Goldsmith, Sandhills, Bletchingly; 3d, Mr. G. T. Miles, Wycombe Abbey.

In class C, for a collection of ten kinds of Grapes, the contest lay between Mr. Roberts, of Gunnersbury, and Mr. Goodacre, the former taking the premier place with very fine samples, consisting of Black Hamburgh, Foster's Seedling, Alnwick Seedling, beautifully coloured; White Tokay, Madresfield Court, Muscat Hamburgh, Muscat of Alexandria, Mrs. Pince, Buckland Sweetwater, and Black Alicante. Mr. Goodacre also staged some capital examples. In the class for ten kinds of Grapes, six black and four white, Mr. Allan, gr. to Lord Suffield, Gunton Park, Norwich, was a good 1st, his best being Trebbiano, Gros Colmar, Muscat of Alexandria, Chatsworth Seedling, a promising-looking Grape; and Alnwick Seedling. Mr. Coleman was 2d, and Mr. W. Elphinstone, gr. to E. M. Mundy, Esq., Shipley Hall, Derby, 3d. In the Black Hamburgh class (three bunches) Mr. Coleman was 1st; T. Wallis, Esq., Lister House, Clapham Common (Mr. R. Holmes, gr.), 2d; and Mr. C. Herrin, gr. to J. N. Hibbert, Esq., Chalfont Park, Bucks, 3d. For three bunches of Muscat of Alexandria Mr. E. Hill, gr. to Sir N. de Rothschild, Tring Park, Tring, was successful in obtaining the 1st place, being closely followed by Mr. Johnson, the Gardens, Bayham Abbey, Lamberhurst, and Mr. A. Smith, gr. to W. H. Sewell, Esq., Warren Hill, Loughton, Essex, who were 2d and 3d respectively. Mr. W. Elphinstone, Shipley Hall, Derby, had 1st prize for three bunches of Gros Colmar.

There was a keen contest in the class for three bunches of Madresfield Court, all the exhibitors showing very fine bunches, which, however, were somewhat deficient in colour; and the judges, very rightly adhering to the principle of quality, after a minute inspection of the merits of each, awarded 1st honours to Mr. E. Hill, gr. to Sir N. M. de Rothschild, Bart., Tring Park, Tring, who showed medium-sized well coloured bunches; Mr. C. Herrin, Chalfont Park, Bucks, being 2d, and Mr. Goodacre, 3d. The class for three bunches of Black Alicante was hardly less meritorious, the bunches being of good size and well coloured. Mr. W. How, gr. to H. Tate, Esq., Park Hill, Streatham Common, was easily 1st, with three highly finished bunches, Mr. Hibbert, Chalfont Park, Bucks, 2d; and Mr. Elphinstone, Shipley Hall, Derby, 3d. One Pine-apple (Queen).—1st, Mr. Coleman, Eastnor Castle, Ledbury; 2d, Mr. G. Ford, gr. to Earl Cowper, Wrest Park, Ampthill, Beds.; 3d, Mr. J. Bailey, gr. to T. T. Drake, Esq., Shardeloes Gardens, Amersham. For one Pine-apple (Smooth Cayenne), Mr. A. Barker, gr. to Sir H. Allsop, Bart., Hindlip Hall, Worcester, had 1st prize, for a beautifully formed, well-finished fruit, the best example of Pine growing in the show. And for one Pine-apple, of any other kind, Mr. Miles was 1st, Mr. Goodacre 2d, and Mr. J. Bailey 3d. Some very fine Peaches were exhibited, the best coming from Mr. Coleman, who was disqualified in the class for three dishes, distinct kinds, upon the ground that two of the dishes were of the same variety. The prize winners in this class were Mr. Roberts, Gunnersbury; Mr. H. G. Oclee, gr. to the Marchioness of Lothian; and Mr. G. T. Miles, Wycombe Abbey, Bucks. For three dishes of Nectarines, distinct kinds, Mr. Coleman was 1st, Mr. W. Elphinstone 2d, and Mr. Roberts, Gunnersbury, 3d, all showing very good fruits. In the class for one dish of Peaches, Mr. Coleman had 1st prize for a splendid dish of Bellegarde; Mr. Roberts 2d, with Barrington; and Mr. Halliday, gr. to James Norris, Castle Hill, Bletchingly, 3d. Eleven dishes were shown in this class. One dish of Nectarines.—1st, Mr. Coleman; 2d, Mr. H. G. Oclee, gr. to the Marchioness of Lothian; 3d, Mr. G. H. Richards, gr. to the Earl of Normanton, Somerley, Ringwood, Hants. Melons were not extensively shown, nor was the appearance or quality much more than average. For the green-flesh variety, Mr. C. Herrin, gr. to J. N. Hibbert, Esq., Chalfont Park, Bucks, was 1st; Mr. H. G. Oclee 2d; and Mr. George, Putney Heath, 3d. In the class for one scarlet-flesh, Mr. C. Herrin was again successful; Mr. Barker, gr. to Sir H. Allsop, Bart., being 2d; and Mr. J. Bailey 3d. Plums were well shown, the fruits generally being of good size, and well coloured. In the class for three dishes, distinct kinds, nine fruits of each, Mr. J. Fry, gr. to D. J. Baker, Esq., Haydon Hall, Middlesex, had 1st prize for, among others, Belgian Purple, Emperor, and Transparent Gage; Mr. Goodacre 2d; and Mr. Coleman 3d. Plums, Green Gage, nine fruits.—1st, Mr. Fry; 2d, Mr. J. Lennon, gr. to J. O. Cooper, Esq., Calcot Gardens, Reading; 3d, Mr. J. Wells. Plums, red or purple, nine fruits.—1st, Mr. Goodacre; 2d, Mr. C. Herrin; 3d, Mr. Wells, gr. to R. Ravenhill, Esq., Fernhill, Windsor Forest. There was only one competitor for the Melon prizes offered by Messrs. J. Cheal & Sons, nurserymen, Crawley, namely, Mr. O. Goldsmith, gr. to Sir W. Farquhar, Polesden Lacy, Dorking, who was awarded the 1st prize for a fruit of Crawley Paragon. Mr. J. Neighbour, gr. to G. Wythes, Esq., Bickley Park, Kent, showed a large collection of fruit, consisting of Grapes, Peaches, Plums, Figs, Nectarines, Melons, &c., and was awarded an extra prize. The miscellaneous exhibits in the fruit department were an important feature, notably the large collection of Pears and Apples shown by Messrs. Wm. Paul & Son, of Waltham Cross, and the stand of cut Roses exhibited by the same firm. Mr. J. Omer Cooper, Calcot Gardens, Reading, exhibited a collection of Apples and Filberts; Messrs. Kelway & Son, of Langport, a fine display of Gladioli—their best effort this season; Messrs. John Laing & Co., single and double Begonias; and Messrs. G. Paul & Son, Cheshunt, stands of cut Roses. Messrs. Cannell & Son, of Swanley, had stands of Dahlias and other flowers in this department, among which were good bunches of their white Dahlia Constance, which is likely to be a very effective kind for beds and borders.

Dahlia Show.—This, if not a grand show, was yet a large and thoroughly representative one; and it was national in the strictest sense, for there were flowers from Aberdeen, Yorkshire, Wiltshire, Suffolk, and other counties widely apart, and it was encouraging to the promoters to note that some new exhibitors were forthcoming; so that at the luncheon Mr. C. Turner was fully justified in speaking very hopefully of the future of Dahlia culture from the fact that such a goodly number of young men were present in the capacity of exhibitors. The enthusiasm which prevailed gave point to Mr. Turner's remarks.

The Dahlias were arranged on tables running along the centre of the western portion of the transept. The classes were generally well filled, especially the larger ones. In the class for forty-eight varieties there were at least nine competitors, and it was matter for regret on the part of the judges that they could not give some extra prizes, for they were richly deserved. In this class the time-honoured competitors, Turner and Keynes, fought their battles over again, and a very near thing it was; a few flowers in the Slough stand a little past their best, inclined the balance in favour of Salisbury, and Messrs. Keynes & Co. were placed 1st, their best flowers being James Cocker, Prince Arthur, Lady Gladys Herbert, Flora Wyatt, as a self; Arbitrator, Henry Bond, Rosy Morn, Henry Walton, Mrs. Harris, Emily Edwards, Senator, a fine new variety, to be hereafter described; Mr. Spofforth, Walter H. Williams, Thomas Goodwin, Clara, Prince Bismarck, Prince of Denmark, a very fine crimson-shaded flower; Lord Chelmsford, Triumphant, Miss Cannell, an excellent tipped flower; James Vick, &c. In Mr. C. Turner's stand were fine blooms of Henry Walton, Lady G. Herbert, James Vick, Herbert Turner, an exquisite flower, selected as the premier show variety in the exhibition; Fred. Smith, a fancy variety, shown as a fine lilac-purple self; William Rawlings, Christopher Ridley, John Wyatt, Modesty, Prince of Denmark, Mr. Spofforth, J. N. Keynes, J. C. Reid, Joseph Green, and H. W. Ward. 3d, Mr. W. Boston, nurseryman, Bedale; 4th, Messrs. H. Cannell & Son, Swanley. In the class for twenty-four varieties Mr. C. Turner was 1st, with some remarkably good flowers; and in this class also there was a capital competition. The best blooms were Henry

Walton, George Rawlings, Perfection of Primroses, H. W. Ward, Julia Wyatt, Joseph Green, Herbert Turner, John Wyatt, &c. ; 2d, Messrs. Keynes & Co., with fine blooms of George Rawlings, George Barnes, as a fine lilac self ; Prince Arthur, Thomas Goodwin, Joseph Green, Mrs. Stancomb, Prince of Denmark, &c. 3d, Mr. W. Boston. In the class for twelve varieties, exhibitors in the two previous classes being excluded, Messrs. Paul & Son, Cheshunt, were 1st, their stand including good blooms of the following :—Flora Wyatt, Chris. Ridley, Emily Edmonds, Constancy, George Barnes, Lord Palmerston, Criterion, and James Service ; 2d, Mr. J. Walker, nurseryman, Thame, whose best blooms were Royal Queen, Chris. Ridley, Emily Edwards, A. Cramond, Mrs. Tranter (new), Mrs. Harris, James Vick, Ovid, and C. Lidgard ; 3d, Messrs. Titmarsh & Sons, Chelmsford ; 4th, Mr. R. T. Veitch, Exeter.

In the amateurs' class for twenty-four varieties there was a very good competition, Henry Glasscock, Esq., Bishop's Stortford, being placed 1st with good blooms of William Rawlings, Prince Bismarck, Ethel Britton, Joseph Green, J. N. Keynes, James Vick, A. Cramond, James Service, W. H. Williams, H. Turner, Prince of Denmark, Miss M. Batchelor, Mrs. Hodgson, Thomas Goodwin, &c. ; 2d, Mr. E. Fletcher, Baildon, near Leeds, with W. H. Williams, Shirley Hibberd, Vice-President, Lord Chelmsford, Acme of Perfection, J. C. Quennell, and Henry Bond ; 3d, Mr. Thomas Hobbs, Lower Easton, Bristol ; 4th, Mr. W. Godden. In the class for twelve varieties Mr. W. B. Butterworth, Greenhill, Kidderminster, was 1st, his best blooms being Prince Bismarck, Criterion, Henry Walton, James Cocker, Duchess of Connaught, Frank Rawlings, and Prince of Denmark ; 2d, Mr. J. T. West, gr. to W. Keith, Esq., Brentwood ; 3d, H. Glasscock, Esq. The best six varieties came from Mr. F. Masters, Penenden Heath, Kent ; Mr. Monk being 2d.

In the nurserymen's class for twenty-four fancy Dahlias there was a close competition, and here Messrs. Keynes & Co., Salisbury, were 1st with a fine lot, the best flowers being Hercules, Jessie McIntosh, Professor Fawcett, Hugh Austin, Parrot, Chorister, Polly Sandell, James O'Brien, Maid of Athens, Mrs. Saunders, George Barnes, Singularity, Robert Burns, and Fanny Sturt ; 2d, Mr. Charles Turner, with Miss Letty Large, Mrs. Saunders, Edward Peck, Magician, George Barnes, Jeannette, James O'Brien, Miss Browning, Peacock, Laura Haslam, John Lamont, and Beauty ; 3d, Mr. W. Seale, Sevenoaks ; 4th, Messrs. H. Cannell & Sons.

In the class for twelve Fancies Messrs. Rawlings Bros. were 1st, having good blooms of the Rev. J. B. M. Camm, Chorister, Mrs. Saunders, Parrot, Hercules, George Barnes, Egyptian Prince, Hugh Austin, &c. ; 2d, Messrs. Paul & Son ; 3d, Mr. John Walker, Thame. In the amateurs' class for twelve Fancies, Mr. H. Glasscock was 1st, having fine blooms of Flora Wyatt, Viceroy, Fanny Sturt, Mr. Browning, Mrs. Saunders, Wizard, Gaiety, Letty Coles, &c. ; 2d, Mr. W. Butterworth ; 3d, Mr. E. Fletcher. In the corresponding class for six blooms Mr. J. T. West had the best six varieties ; Mr. J. Ridout, gr. to T. B. Haywood, Esq., Reigate, the next best.

In the classes for twenty-four cut specimens of pompon varieties there was a very pretty display indeed, and Mr. Turner showed a remarkably good lead in the way of setting up bunches of these, for it was done in a very effective and tasteful manner. He was a good 1st, with admirable examples of Favourite, Mabel, Little Eva, Isabel, Adonis, German Favourite, E. F. Jungker, Prince of Liliputians, Professor Bergeat, Gruss aus Wien, Nemesis, Lady Blanche, Countess von Sternberg, Princess Sophie Sopicha, &c. ; 2d, Messrs. Cannell & Sons ; 3d, Messrs. Keynes & Co. Mr. Turner was also 1st with twelve bunches, and Messrs. Keynes & Co. 2d. There was also a class for six varieties.

In the class for twelve bunches of single Dahlias Mr. Turner was 1st, with superb examples of Paragon, The Baron, Foxhall, Firefly, Mauve Queen, Huntsman, Coccinea, Canary Bird, Yellow Gem, &c. ; 2d, Messrs. Keynes & Co. ; 3d, Mr. T. S. Ware ; 4th, Messrs. H. Cannell & Sons. Mr. Turner was also 1st with six bunches ; Messrs. Keynes & Co. 2d, and Mr. T. S. Ware 3d.

Dahlias in pots were not a success, and in a few of the classes the 1st prizes were withheld. Is it worth placing such classes in a schedule of prizes? Dahlias are seldom seen to advantage in pots, and it is not at all usual to cultivate them in that way. It is quite true that the Dahlia gives at least three months of effective and useful floral service ; and if we are blessed with a fine dry autumn, free from frost, that period is materially prolonged. It would be easy to lift a few plants from the open ground if frost appeared imminent, and place them in pots to prolong their usefulness.

The best show-flower in the exhibition was Herbert Turner, shown by Mr. Turner, but hotly pressed by a splendid bloom of W. H. Williams, shown by Messrs. Keynes & Co. The best fancy Dahlia was a fine bloom of Flora Wyatt, shown by Mr. John Walker, Thame.

Several First-class Certificates of Merit were awarded : the names of the favoured flowers were as follows :—

First-class Certificates for Seedlings.

Messrs. Keynes & Co., for Show Dahlia Senator.
Messrs. Keynes & Co., for Show Dahlia Hope.
Messrs. Keynes & Son, for Show Dahlia Condor.
Messrs. Harkness & Sons, for Show Dahlia Earl of Ravensworth (sport from Vice-President).
Mr. C. Turner, for Pompon Dahlia Gem.
Mr. C. Turner, for Pompon Dahlia Little Duchess.
Mr. C. Turner, for Pompon Dahlia Isabel.
Mr. C. Turner, for Pompon Dahlia Favourite.
Mr. C. Turner, for Pompon Dahlia Mabel.
Messrs. Keynes & Co., for Single Dahlia Acquisition.
Messrs. Keynes & Co., for Single Dahlia Evening Star.
Mr. T. S. Ware, for Single Dahlia Christine.
Mr. T. S. Ware, for Single Dahlia Pantaloon.
Mr. T. S. Ware, for Single Dahlia White Star.

Commendation.

Mr. Harris, for Show Dahlia Beauty of the Grove (for its colour).

We shall hereafter refer to some of these at length.

Obituary.

WE regret to have to announce the death of Mr. GEORGE SMITH, on the 6th inst., at his residence, New Villa, Edmonton. Mr. Smith has long been known as a florist of the old type, and a most conscientious man. He took great part in the initiation of the recent Dahlia show at the Crystal Palace, but was obliged from ill health to abandon his work in connection with it, and died before he could hear of the success of his efforts. Mr. Smith was on several occasions a member of the Floral Committee, and his judgment on florists' flowers was always held in respect.



STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, SEPT. 13, 1882.

Month and Day.	Barometer. Mean Reading Reduced to 32° Fahr.	Barometer. Departure from Average of 18 years.	Temperature of the Air. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years	Hygrometrical Deductions from Glaisher's Tables 6th Edition. Dew Point.	Degree of Humidity. Sat. = 100.	Wind. Average Direction.	Rainfall.
Sept.	In.	In.	°	°	°	°	°				In.
7	30.17	+0.26	71.0	48.0	23.0	57.3	— 1.1	52.9	85	N.E.	0.00
8	30.19	+0.29	70.0	47 5	22.5	56.6	— 1.7	48.9	76	N.E.: E.N.E.	0.00
9	30.08	+0.18	67.0	45.1	21.9	55.4	— 2.7	48 7	79	E: N.E.	0.00
10	29.71	—0.19	67.0	50.0	17.0	57.2	— 0 8	54.1	90	S.	0.00
11	29.51	—0 39	64.0	47.5	16 5	55.3	— 2.5	49.6	80	W: SW	0.02
12	29.46	—0.43	57.2	46.5	10.7	50.3	— 7.3	44.9	82	E.: S.E.	0.29
13	29 50	—0.39	60.2	41.0	19.2	58.7	— 0.7	53 4	82	W.	0.00
Mean	29 83	—0.10	65.2	46.5	18.7	55 8	— 2.4	50.4	82	N.E.	0.31

Sept. 7.—Very fine day : partially cloudy till evening ; cloudless afterwards.
— 8.—Fine bright day : cloudless at night.
— 9.—Fine ; partially cloudy.
— 10.—Fine ; generally cloudy. Fine night ; cloudless.
— 11.—Fine both day and night ; cloudy.
— 12.—A dull morning ; rain ; generally cloudy. Fine cold night.
— 13.—Fine, but cold and foggy, gleams of sunshine at times. Fine cold night.

LONDON : *Atmospheric Pressure.*—During the week ending September 9, the reading of the barometer at the level of the sea increased from 29.67 inches at the beginning of the week to 30.23 inches by 9 A.M. on the 5th, decreased to 30.13 inches by 9 A.M. on the 6th, increased to 30.37 inches by 9 A.M. on the 7th, decreased to 30.35 inches by midnight on the same day, increased to 30.39 inches by 9 A.M. on the 8th, decreased to 30.36 inches by 3 P.M., and increased to 30.38 inches by midnight on the same day, and was 30.16 inches by the end of the week.

The mean reading for the week at the level of the sea was 30.21 inches, being 0.45 inch higher than last week, and 0.12 inch above the average of the week.

Temperature.—The highest temperature in the shade in the week was 71°, on the 7th. On the 5th the highest temperature was 62°.8. The mean of the seven high day temperatures was 68°.

The lowest temperature in the shade in the week was 45°.1 on the 9th ; on the 3d the lowest temperature was 56°.5. The mean of the seven lowest temperatures was 51°.1.

The greatest range in one day was 23° on the 7th ; the smallest was 9°.8, on the 5th. The mean of the seven daily ranges was 16°.9.

The mean temperatures were—on the 3d, 61°.2 ; on the 4th, 59° ; on the 5th, 57°.3 ; on the 6th, 58°.5 ; on the 7th, 57°.3 ; on the 8th, 56°.6 ; and on the 9th, 55°.4 ; of these the 3d, 4th, and 6th were above their averages by 2°.1, 0°.2, and 0°.1 respectively, and those of the 5th, 7th, 8th, and 9th were below their averages by 1°.3, 1°.1, 1°.7, and 2°.7 respectively.

The mean temperature of the air for the week was 57°.9, being 1°.2 lower than last week, and 0°.6 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo, placed in the full rays of the sun, was 135° on the 8th ; the highest on the 4th was 97°. The mean of the seven readings was 123°.5.

The lowest reading of a minimum thermometer with its bulb placed on grass and fully exposed to the sky, was 40° on the 9th. The mean of the seven readings was 45°.

Rain.—Rain fell on the 5th, to the amount of 0.34 inch.

ENGLAND : *Temperature.*—During the week ending September 9 the highest temperatures were 74° at Sunderland, 72°.7 at Cambridge, and 72° at Truro and Hull The highest temperature at Bolton was 64°.5, at Wolverhampton 64°.8, and at Bristol and Sheffield 65°. The general mean was 68°.

The lowest temperatures in the week were 35° at Hull, 38° at Cambridge, and 38°.5 at Sheffield ; the lowest temperature at Brighton was 49°, at Plymouth 47°, and at Liverpool 45°.3. The general mean was 42°.1.

The greatest ranges of temperature in the week were 37° at Hull, 34°.7 at Cambridge, and 32° at Sunderland ; the least ranges were 19° at Plymouth, 19°.7 at Brighton, and 20°.1 at Liverpool. The general mean was 25°.9.

The mean of the seven high day temperatures was highest at Sunderland, 69°.8, at Cambridge 68°.5, and at Hull 68°.4 ; and was lowest at Liverpool, 61°.4, at Wolverhampton 61°.8, and at Bolton 61°.9. The general mean was 65°.1.

The mean of the seven lowest night temperatures was highest at Brighton, 53°.1 ; at Blackheath, 51°.1, and at Plymouth, 50° ; and was lowest at Hull, 43°.8 ; at Cambridge 45° ; and at Bolton, 46°. The general mean was 47°.9.

The mean daily range was greatest at Hull, 24°.6 ; at Cambridge, 22°.9 ; and at Sunderland, 22°.4 ; and was least at Brighton and Liverpool, 12°.7 ; and at Plymouth, 14°.4. The general mean was 17°.2.

The mean temperature was highest at Brighton, 58°.1 ; at Blackheath, 57°.9 ; and at Sunderland, 57°.2 ; and was lowest at Bolton, 52°.5, ; at Wolverhampton, 53° ; and at Liverpool, 53°.6. The general mean was 55°.1.

Rain.—The largest falls were 0.80 inch at Nottingham, 0.73 inch at Wolverhampton, and 0.59 inch at Bristol ; and was smallest at Truro, 0°.04 inch ; at Sunderland 0.07 inch, and at Plymouth and Liverpool 0.09 inch. The general mean fall was 0.3 inch. It fell on one day only at Truro and Blackheath, on four days at Bristol, Nottingham, and Leeds. The general average was three days.

SCOTLAND : *Temperature.*—During the week ending September 9 the highest temperature was 67°, at Dundee ; the highest temperature at Greenock was 64°. The general mean was 66°.

The lowest temperature in the week was 35° at Perth ; at Greenock the lowest temperature was 43°.2. The general mean was 38°.5.

The mean temperature for the week was highest at Dundee, 54°.5 ; and was lowest at Paisley and Perth, 53°.6. The general mean was 54°.

Rain.—The largest fall was 0.97 inch at Aberdeen, and the smallest was 0.15 inch. No rain fell at Dundee or Perth. The general mean fall was 0.27 inch.

JAMES GLAISHER, F.R.S.

Enquiries.

He that questioneth much shall learn much.—BACON.

BEES.—*G. R.* asks which is the most expeditious method of destroying bees in ordinary straw hives, in order to take the honey, and without imparting any disagreeable flavour thereto? Also what is the best time of the year to perform this operation?

Answers to Correspondents.

*** Owing to the pressure on our space and time, several communications, &c., are deferred till next week.

ARDISIA CRENULATA : *J. O. S.* The roots have been eaten by some insect—probably a weevil or a woodlouse.

BOOKS : *E. S. The Epitome of Gardening* (Black, Edinburgh) will probably answer your purpose. If you require a more expensive and larger volume, then you cannot do better than get Thompson's *Gardeners' Assistant* (Blackie).

CATALPA TREE : *S. M.* Yes ; cut the tree moderately back, and it will break again with renewed vigour. If the situation is damp drain it well. Catalpas all over the country suffered severely from the effects of the late severe winters.

DAHLIAS, SINGLE: *W. & J. B.* Evidently a nice lot of flowers, but so much bruised through bad packing that we can say no more about them.

DRY ROT: *J. C.* Yes; dry-rot — timber quite unsound. The disease is likely to spread; remove it at once, and wash over the sound wood with a strong solution of carbolic acid.

GARDEN WALL: *A. B. C.* Train the shoots of the fruit trees an inch or so from the wall, and you will obviate any danger.

HARDY FERNS: *J. Meaver.* The best time to plant is late in the autumn or early in spring, before the plants begin to grow. Trailing plants for rockwork:—Ivies, Cotoneaster, Juniperus prostrata, some of the Brambles, Genistas, Polygonum vaccinifolium, Clematis montana, and other hardy kinds, and Pernettya mucronata—the best plant you can have in your aspect; hardy Honeysuckles would also look pretty. Any respectable firm can supply you.

INSECTS: *W. M.* The reeds sent have the centre of the stem swollen, and the foliage within the swollen part entirely destroyed, by the attacks of a number of small white maggots or larvæ of two-winged flies (Muscidæ) of two species. The larger grubs seem to be single, but the small ones in the upper part of the swelling are numerous. We will endeavour to rear the insects, and report progress. The swollen reeds ought to be cut off and burnt. *J. O. W.*

NAMES OF PLANTS: *G. S. C.* 1, Lobelia cardinalis; 2, Dahlia (please send better specimen); 3, Pimpinella saxifraga, var. dissecta; 4, Verbascum Blattaria.—*T. G.* 1, 2, 3, species of Mesembryanthemum, not in a proper condition to be named; 4, Lysimachia Nummularia; 5, 6, specimens utterly insufficient.—*G. B. C.* 1, A species of Rhamnus, which we cannot name without flowers: what country does it come from? 2, Cornus sanguinea (Dog-wood).—*A. B. C.* Perhaps Passiflora racemosa (princeps); send better specimen.—*Camjee.* Inga seed = Guizotia abyssinica (see p. 368). — *Craven.* Freesia Leichtlinii. — *W. Thomson.* 1, 2, 3, Different varieties of Calluna vulgaris; under No. 5 two specimens are sent—one E. cinerea, the other, with long protruding stamens, is E. vagans (the Cornish Heath).—*C. D. & Sons, Ryde.* 1, Phacelia Whitlavia, *alias* Whitlavia grandiflora; 2, Helenium autumnale, var. grandiflora; 3, a species of Platyclinis which we cannot identify.—*J. C.* 1, Solidago virga aurea; 2, Scutellaria galericulata.—*H. K.* Erica Mackaii.—*C. E. B.* Apparently a form of Gilia multicaulis, but the specimen is not satisfactory. —*A. D.* 1, Lolium perenne; 4, Triticum repens; 5, Avena elatior; 6, Dactylis glomerata; 7, Hordeum murinum, The specimens are so miserable that we decline to attempt to name the rest, and will not guarantee the correctness of those mentioned.—*An Interested Beginner.* Nos. 2, 4, and 6 are garden varieties of Begonias which we cannot name; 3, Passiflora quadrangularis; 5, P. Empress Eugénie.—*J. O. S.* Kennedya monophylla.—*Rusticus.* Ptelea trifoliata.

SEEDLING BEGONIA: *A. J.* There are so very many better ones that we do not recommend you to propagate it.

Letters relating to ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the Publisher, and* not *to the Editor.*

☞ FOREIGN SUBSCRIBERS sending Post-Office Orders are requested to send them to the Publisher of this journal, 41, Wellington Street, Covent Garden, and to make them payable to William Richards, at the post-office, Drury Lane, London, W.C.

CATALOGUES RECEIVED.

CHARLES TURNER, Slough—Choice Bulbous Roots, &c.
P. J. PERRY, Banbury—Foreign Flower Roots.
THOS. IMRIE & SONS, Ayr—Dutch Flower Roots.
P. M. FAY & CO., Thomas Street, Dublin—Choice Dutch and other Flower Roots.
BEN. REID & CO., Aberdeen—Dutch Flower Roots.
AUGUSTE VAN GEERT, Ghent, Belgium—General Plant Catalogue.
M. BRUANT, Boulevard St. Cyprien, Poitiers, France—Fruit Trees, Roses, &c.
E. G. HENDERSON & SON, Maida Vale, W.—Dutch Bulbs and other Bulbous Flower Roots.
JAMES YATES, Stockport—Continental Flowering Bulbs.
SMITH & SIMONS, 36, Howard Street, Glasgow—Hyacinths and other Choice Flowering Bulbs.
KEYNES & CO., Salisbury—Roses, Grape Vines, &c.
JULES DE COCK, Ghent, Belgium—Ornamental and other Plants.
BOULTON & PAUL, Norwich.—Iron Shooting Boxes, &c.
S. DIXON & CO., Moorgate Street, London—Bulbs, &c.
R. PARKER, Tooting—Asters, Chrysanthemums, &c.
G. COOLING & SON, Bath—Bulbs, &c.

COMMUNICATIONS RECEIVED:—W. M.—W. J.—W. S. W.—A. F.—D. B. C.—A. D.—J. D. D.—*Kilmarnock Standard.* —T. C.—W. M.—W. E.—V. D., Erfurt.—H. H. D—G. H.—J. O. W.—F. A. F.—H. H.—R. D.—A. D.—E. S.—G. H. S. (too late)—W. L.—Rchb. f.—R. J. L.—Ponica.—G. N.—Connon & Reid (next week).—Sutton & Sons.—F. P. B. (next week).—J. O. S.—J. S.—R. L.—T. F. R.—Primrose & Co.—W. S.—J. R. J.—J. M.—R. D.—H. E.—Carter & Co.—C. B. P.—P. N. F.—Belfast.—John Munro.—R. F.—W. H. F.—J. C.—F. E. W.—H. T. B.—B. W.—J. S.—E. J.—Dr. Beijerinck, Wageningen.—C. W. D.—R. & K.—G. S.—J. W. P.—J. R., Demerara.—C. Naudin, Antibes.—E. B., Sibbertoft.—A. B. C.—E. C.—J. Y. J., Madeira.—W. H. H.—E. W., Stockholm.—R. J. L.—V. V., Brussels.—G. H.

Markets.

COVENT GARDEN, September 14.

Our market has now settled down to a quiet trade, with good supplies of indoor fruit, the demand for which is shy. A fair quantity of Apples has reached us this week, growers seeing the necessity of sending early in view of American competition. Kent Cobs selling more freely, supply falling off during the hoping season. *James Webber, Wholesale Apple Market.*

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe, per doz.	3 0– 6 0	Horse Radish, bund.	4 0– –
Beans, French, English grown, p. lb.	0 4– ..	Lettuces, Cabbage, per score	1 6– ..
Beet, per doz.	1 0– ..	Mint, green, bunch	0 4– ..
Cabbages, per doz.	1 0– 2 0	Mushrooms, p. baskt.	1 6– 3 0
Carrots, per bunch	0 4– 0 6	Onions, per bushel	4 0– ..
Cauliflowers, English, dozen	2 0– 4 0	— Spring, per bun.	0 6– ..
Celery, per bundle	1 6– ..	Parsley, per bunch	0 4– ..
Cucumbers, each	0 6– 1 0	Peas, per qt.	1 6– ..
Endive, per doz.	2 6– ..	Radishes, per doz.	1 6– ..
Garlic, per lb.	1 0– ..	Small salading, pun.	0 4– ..
Herbs, per bunch	0 2– 0 4	Spinach, per bushel	3 0– ..
		Tomatos, per doz.	2 0– ..
		Vegt. Marrows, doz.	3 0– ..

POTATOS:—Magnum Bonums, 90*s.* to 100*s.*; Regents, 80*s.* to 90*s.*; Myatt's, 100*s.* to 110*s.* per ton.

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, ½-sieve	3 0– 5 0	Melons, each	2 0– 4 0
Aubergines, per doz.	4 0– ..	Peaches, per dozen	2 0– 8 0
Cobs, 1 0 lb.	.. 35 0–40 0	Pears, per dozen	1 0– 2 0
Figs, per dozen	0 6– 1 0	Pine-apples, Eng., lb.	3 0– 4 0
Grapes, per lb.	0 6– 2 0	Plums, ½-sieve	5 0– 8 6
Lemons, per 100	6 0–10 0		

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldii, doz.	12 0–24 0	Ficus elastica, each	1 6– 7 0
Arbor vitæ (golden), per dozen	6 0–18 0	Foliage Plants, various, each	2 0 1 0 6
— (common), dozen	6 0–12 0	Fuchsias, per dozen	4 0– 9 0
Asters, per dozen	4 0– 6 0	Genista, per doz.	8 0 12 0
Balsams, per dozen	3 0– 6 0	Gloxinia, per dozen	12 0–18 0
Begonias, per doz.	6 0–12 0	Heliotrope, per doz.	3 0– 6 0
Calceolaria, doz.	4 0– 9 0	Hydrangea, doz.	9 0–12 0
Chrysanthems., doz.	4 0– 9 0	Lilium, in var., doz.	18 0–42 0
Coleus, per dozen	3 0– 9 0	Marguerite Daisy, per dozen	6 0–13 0
Cyperus, per dozen	6 0–12 0	Myrtles, per doz.	6 0–12 0
Dracæna terminalis	30 0–60 0	Palms in variety, each	2 6–21 0
— viridis, per doz.	12 0–24 0	Pelargoniums, per doz.	2 0–12 0
Euonymus, various, per dozen	6 0–18 0	— scarlet, per doz.	2 6– 6 0
Evergreens, in var., per dozen	6 0–24 0	Solanum per doz.	9 0–12 0
Ferns, in var., dozen	4 0–18 0		

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Abutilon, 12 blooms	0 2– 0 4	Pansies, 12 bunches	1 0– 3 0
Arum Lilies, per doz.	4 0– 6 0	Phlox, 12 bunches	3 0– 6 0
Asters, 12 bunches	3 0– 6 0	Pelargoniums, 12 sprays	0 9– 1 0
Bouvardias, per bun.	0 9– 1 0	— zonal, 12 sprays	0 3– 0 6
Calceolaria, 12 bun.	6 0–12 0	Primula, double, per bunch	1 0– 1 6
Carnations, 12 bun.	2 0– 6 0	Pyrethrum, 12 bun.	3 0– 9 0
Chrysanth., 12 bun.	4 0– 9 0	Roses (indoor), doz.	1 0– 3 0
Cornflower, 12 bun.	2 0– 4 0	— (outdoor), doz.	0 4– 0 9
Eucharis, per doz.	3 0– 6 0	— Coloured, doz.	1 0– 2 0
Fuchsias, 12 bunches	6 0– 8 0	Stephanotis, 12 spr.	3 0– 6 0
Gardenias, 12 blms.	3 0– 6 0	Stocks, 12 bunches	4 0– 9 0
Gladioli, 12 bun.	6 0–12 0	Sunflower, 12 blooms	0 6– 2 0
— brenchleyensis, 12 sprays	1 6– 3 0	Sweet Peas, 12 bun.	2 0– 6 0
Heliotropes, 12 sp.	0 6– 1 0	Sweet Sultan, 12 bun.	1 6– 3 0
Lapageria, white, 12 blooms	3 0– 4 0	Tropæolum, 12 bun.	1 0– 2 0
— red, 12 blooms	1 0– 3 0	Violets, 12 bunches	1 0– 1 3
Lilium various, 12 bl.	3 0– 6 0	White Jasmine, 12 bunches	4 0– 9 0
Marguerites, 12 bun.	4 0– 6 0		
Mignonette, 12 bun.	1 6– 4 0		

CORN.

At Mark Lane on Monday trade was very dull. English Wheat declined 2*s.* to 3*s.* per quarter, red Wheat being the most depressed. Foreign sales were difficult to close at 2*s.* reduction, and in some cases even a larger concession had to be made on new Wheats. The flour trade was currently depressed 1*s.* to 2*s.* per sack, and town flour was reduced 4*s.* per sack, making 43*s.* the present top price. Malting Barley was quiet and without alteration in value. Grinding sorts 6*d.* lower. Beans and Peas were firm; Maize was hardly so well supported in any position; and with liberal arrivals Oats met a dull sale at about late value.—On Wednesday English Wheat was in small supply, but good arrivals of foreign. Both exceedingly dull of sale, with hardly sufficient business to establish quotations, but the tendency downwards. Flour was dull, and drooping in value. Barley, Beans, and Peas in light supply, and unaltered. Maize was quiet, and unchanged; and Oats in moderate request at steady prices.—Average prices of corn for the week ending Sept. 9:—Wheat, 45*s.* 9*d.*; Barley, 38*s.*; Oats, 22*s.* 9*d.* For the corresponding period last year:—Wheat, 54*s.* 5*d.*; Barley, 34*s.* 6*d.*; Oats, 24*s.* 4*d.*

HAY.

Tuesday's Whitechapel Market report states that large supplies were on offer, especially hay, which ruled lower. Quotations:—Prime old Clover, 120*s.* to 145*s.*; inferior, 75*s.* to 80*s.*; new, 90*s.* to 100*s.*; best old meadow hay, 100*s.* to 115*s.*; inferior, 55*s.* to 90*s.*; new, 70*s.* to 100*s.*; and straw, 30*s.* to 44*s.* per load.—On Thursday there was a large supply, and the trade was dull, especially for hay. Prices unaltered.—Cumberland Market quotations:—Superior old meadow hay, 115*s.* to 126*s.*; inferior, 90*s.* to 105*s.*; new, 70*s.* to 96*s.*; superior old Clover, 130*s.* to 147*s.*; inferior, 98*s.* to 110*s.*; new, 70*s.* to 110*s.*; and straw, 42*s.* to 47*s.* per load.

NOVELTIES
FOR
AUTUMN.

CARTERS' AFRICAN TUBEROSES.—Double sweet-scented. Grown in South Africa especially for James Carter & Co. Expected to arrive about middle of October.
Price, per dozen, 7*s.* 6*d.* and 10*s.* 6*d.*; per 100, 55*s.* and 7 *s.*

CARTERS' "EMPRESS" POPPY ANEMONES.—We are enabled to offer for the first time the entire Stock of a splendid strain of Single Anemones, comprising the most brilliant and varied colours. There has been of late years a marked improvement in the stocks of several growers of this popular genus, but we do not hesitate to say that the variety we now offer will prove immeasurably superior to anything seen before. The flowers are of immense size measuring 4 inches in diameter) and great substance, invaluable for cutting and decorative purposes generally; and the very moderate price at which they are offered admits of their being extensively used for the decoration of the shrubbery border, where a constant and brilliant display can be produced.
Price, per 1000, 55*s.*; per 100, 6*s.*; per doz., 1*s.*

CARTERS' NEW "COCKADE" RANUNCULUS.—A splendid variety of colours and shades, immense double flowers, fitting in all respects to be cultivated by the side of the Empress Anemone, and equally superior with that variety to any other class of Ranunculus. The flowers are as double as the most perfect Rose, of immense size, and combine every possible shade of colour peculiar to this interesting and easily cultivated flower. It is impossible to over-estimate their value to all lovers of the Ranunculus family.
Price, per 1000, 5*s.*; per 100, 6*s.*; per doz., 1*s.*

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,, ,, ,, 6 to 9 inches	5 0	35 0	250
,, ,, ,, 9 to 12 inches..	10 0	75 0	..
,, ,, ,, 12 to 18 inches	18 0	..	..
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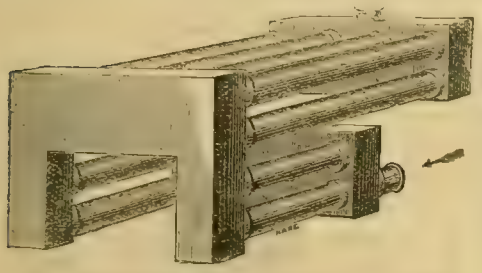
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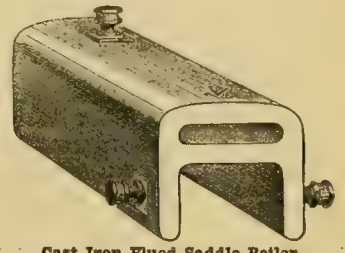
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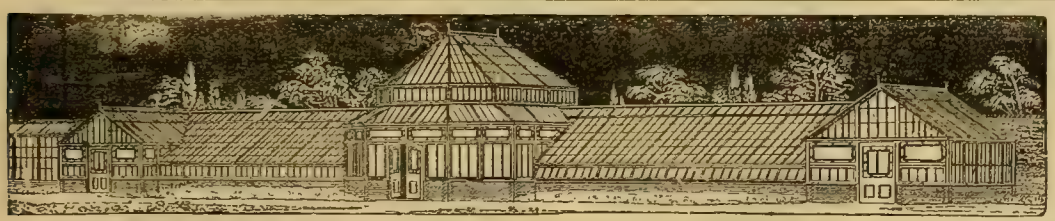
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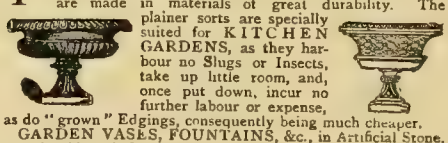
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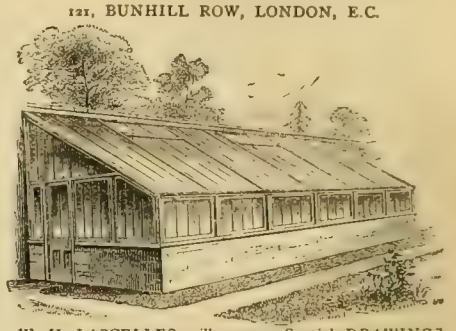
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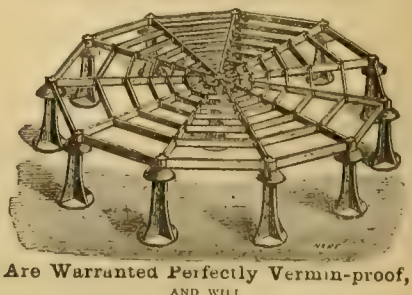


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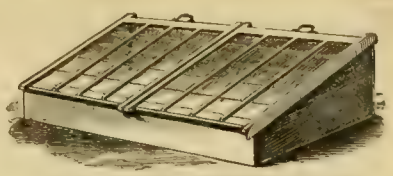
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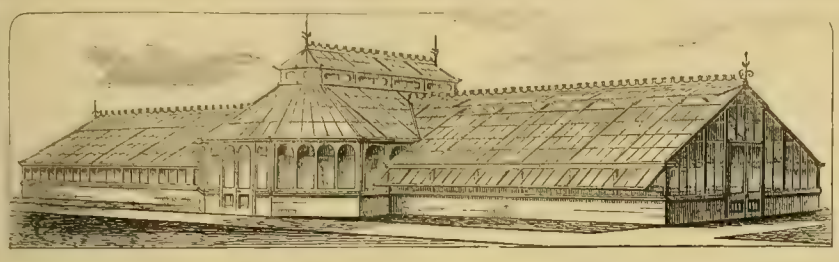
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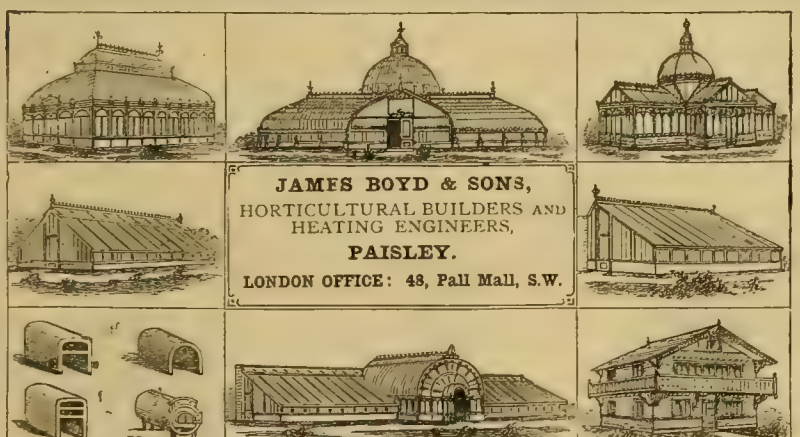
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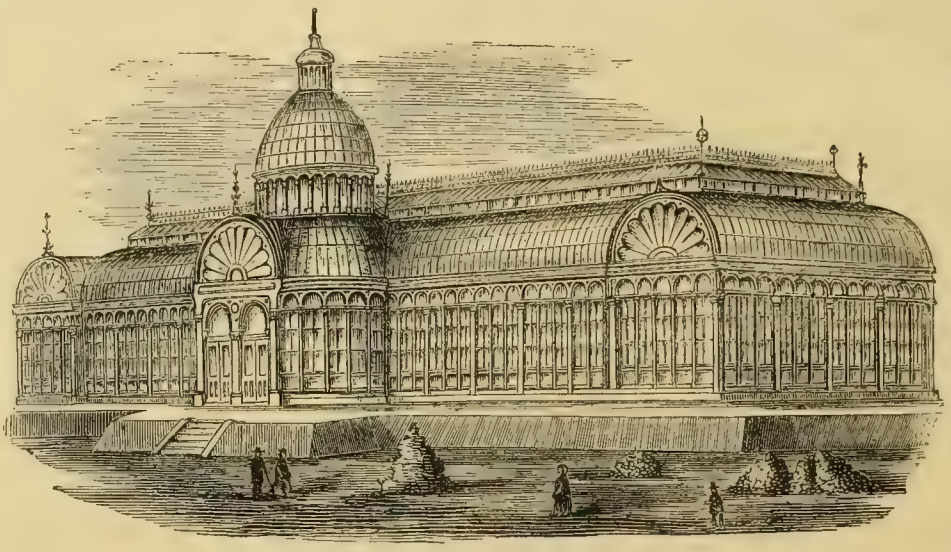
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THE GARDENERS' CHRONICLE,
Volume XVII., JANUARY to JUNE, 1882.
W. RICHARDS, 41, Wellington Street, Strand, W.C.

CHRYSANTHEMUM, FRUIT and VEGETABLE EXHIBITION, Royal Aquarium, Westminster, November 15 and 16. Schedules and all particulars of WILLIAM HOLMES, Frampton Park Nursery, Hackney, London, E.

THE THIRD GRAND CHRYSANTHEMUM, PLANT and FRUIT SHOW, will be held in St. George's Hall, on NOVEMBER 21 and 22, and the SPRING SHOW will be held in the same Hall, in MARCH, 1883, when Valuable Prizes will be offered for Hyacinths, Tulips, and other Bulbous and Spring Flowering Plants, &c.
Schedules for the Chrysanthemum Show and other information may be had from JOHN GLOVER, Secretary.
Wood Lane, Gateacre, Liverpool.

HEATH AND SON are now sending out their beautiful WHITE VIOLA "THE CHAMPION," which was awarded a First-class Certificate at South Kensington on June 13, 1882. 4s. per dozen, 25s. per 100.
HEATH AND SON, Exotic Nurseries, Cheltenham.

Mary Morris.

BORDER CARNATION.—First-class Certificate was awarded at Kensington on August 22, 1882. A beautiful rose-coloured self, very large, and highly scented. Orders now being booked, to be sent out early in spring, 1883. Price, and all particulars, on application to
H. G. SMYTH, 17A, Coal Yard, Drury Lane, W.C.

Lilium auratum.

CHARLES NOBLE has just harvested his LILIES, and will be happy to quote prices. The value of home-grown bulbs is too well known to require any recommendation. Bagshot.—September 20, 1882.

To the Trade.

SINGLE and DOUBLE SNOWDROPS.
Samples and Prices on application.
EDMUND PHILIP DIXON, Hull.

CAMELLIAS.—Large Camellias for Sale, to make room for other plants. LIST, with sizes and prices on application.
EDW. COOLING, Mile Ash Nurseries, Derby.

CAULIFLOWER, BRUSSELS SPROUT PLANTS.
VEITCH'S AUTUMN GIANT, 3s. 6d. per 1000.
BRUSSELS SPROUTS, 3s. per 1000.
Packages 3d. per 1000 extra. Order of
R. BATH, Crayford; or J. BATH, 34, Wellington Street, Covent Garden, W.C.

SINGLE DAHLIAS.—Strong plants, established in pots for winter bloom, can now be supplied. The largest collection in the world may be seen at the Nurseries. Catalogues and every information free.
THOS. S. WARE, Hale Farm Nurseries, Tottenham, London.

Dutch, French, and other Flowering Bulbs.

JAMES DICKSON AND SONS' carefully prepared CATALOGUE of their large excellent stock will be sent post-free on application. Early orders are solicited.
Seed and Bulb Warehouse, 108, Eastgate Street, Chester.

Hyacinths, Tulips, &c.

BUDDENBORG BROTHERS, Bulb Growers, House Bloemswaard, Hillegom, near Haarlem, Holland. Wholesale CATALOGUE now ready, and will be sent, post-free, on application.

SAXIFRAGA DIVERSIFOLIA.—New Seed of this most distinct Himalayan yellow-flowered species is now offered in 2s. 6d. and 3s. 6d. packets.
RODGER, McCLELLAND AND CO., Nurserymen, &c., Newry.

A Special Cheap Offer of

HARDY PLANTS will be found enclosed in my new A B C BULB GUIDE for 1882. Free on application.
THOMAS S. WARE, Hale Farm Nurseries, Tottenham, London.

CREEPERS for WALLS, TRELLISES, &c., in great variety. See Descriptive LIST. Most of these plants being in pots, may be moved now.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Azaleas, Camellias, Palms, Roses, &c.

C. VUYLSTEKE, NURSERYMAN, Loochristi, near Ghent, Belgium. Wholesale CATALOGUE may be had free of Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, London, E.C.
N.B. Plants grown specially for English Trade.

Tea Roses.

THE LIVERPOOL HORTICULTURAL COMPANY (JOHN COWAN), Limited, The Vineyard and Nurseries, Garston, near Liverpool, have a splendid stock of TEA ROSES in all the leading varieties.
LIST free. Price to the Trade on application.
Also a large stock of GRAPE VINES.

Hyacinths, Tulips, Crocus, Lilies, &c.

C. G. VAN TUBERGEN, JUN., Haarlem, Holland.—Wholesale CATALOGUE now ready, and may be had free on application to
Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, London, E.C.

Early Roman Hyacinths, &c., for present Planting.
BULBOUS PLANTS of all kinds, ORCHIDS, &c.
THE NEW PLANT AND BULB COMPANY beg to announce that their AUTUMN CATALOGUE is just published, post-free on application.
Lion Walk, Colchester.

6000 Grape Vines.

THE LIVERPOOL HORTICULTURAL COMPANY (JOHN COWAN), Limited, The Vineyard and Nurseries, Garston, near Liverpool, have a splendid stock of VINES, grown from eyes this year, suitable for present planting.
CATALOGUE free. The Trade supplied.
Also a large stock of TEA ROSES.

Floral Commission Agency.

W. CALE, FLORAL COMMISSION AGENT, begs to give notice to Senders, that there is now a good trade for choice FLOWERS and FRUITS, EUCHARIS, STEPHANOTIS, TUBEROSES, also CHOICE FRUIT WANTED. Please note address.
4, Tavistock Row, Covent Garden, W.C.

CONSIGNMENTS WANTED of PEACHES, PINES, MELONS, TOMATOS, CUCUMBERS, good sorts of APPLES, PEARS, &c. Also EUCHARIS, STEPHANOTIS, good ROSES, and other CHOICE CUT FLOWERS.—WISE AND RIDES, Fruit and Flower Salesmen, Covent Garden, W.C.

To Nurserymen and Others.

WANTED, the lowest Price per 1000 for Bedding-out Plants, consisting of the best varieties of GERANIUMS, FUCHSIAS, HELIOTROPES, LOBELIAS, &c., to be delivered in the Spring of 1883.
H. C., 95, Great Russell Street, Bloomsbury, W.C.

WANTED, in quantities — CYCLAMEN, blooming corms; ERICAS WILMOREA, HYEMALIS, GRACILIS; SOLANUMS, well berried; GENISTAS, HYDRANGEA PANICULATA GRANDIFLORA, VIBURNUM PLICATUM, Guelder Rose; White Persian LILAC, PRIMULA CORTUSOIDES AMŒNA, and PRIMULA CORTUSOIDES AMŒNA ALBA. Please state lowest trade cash price to CHARLES B. MANSFIELD, Llys Onen Gardens, St. Clears, Carmarthenshire, South Wales.

WANTED, a quantity of Lord Grosvenor and Grenadier APPLE, BERRY-BEARING PLANTS, and ROSE TREES. Quote price per hundred.—BRADBURY, Fern Cottage Nursery, Glazebrook, Warrington.

WANTED, Crown Bob and White Swan GOOSEBERRIES, 2 or 3-yr., good bushes on "legs." State quantity and price per 1000, to
WOOD AND INGRAM, The Nurseries, Huntingdon.

Popular Talks on Social and Sanitary Science.

MR. JOSEPH J. POPE, late Staff-Surgeon A.M.D., Professor of Hygiene at the Birkbeck Institution, and Lecturer to the National Health Society, is NOW BOOKING DATES for the delivery of his entertaining and instructive HEALTH LECTURES. Early application is solicited. Address
Mr. POPE, 4, South Crescent, Bedford Square, W.C.

BULL'S choice PRIMULAS (alba and rosea), and choicest CINERARIAS.—150,000 of the above at 1s. 4d. per dozen, 7s. per 100; 60s. per 1000—all good, strong, and healthy. Terms cash with all orders.
T. FLETCHER AND SON, Florists, &c., Chesterfield.

To the Trade Only.

TEA ROSES, on own roots, extra strong, out of 4½-inch pots, £2 per 100, for cash.
MAIRIS AND CO., Weston-in-Gordano, Bristol.

A Special Cheap Offer of

NARCISSUS will be enclosed in my new A B C BULB GUIDE for 1882. Free on application.
THOMAS S. WARE, Hale Farm Nurseries, Tottenham, London.

Christmas Roses.

BUDDENBORG BROTHERS, Bulb Growers, Hillegom, near Haarlem, Holland, are now booking orders for the above. Prices will be given on application.

LAPAGERIA ALBA, well-rooted plants, 10s. 6d., 15s. and 21s. A few extra specimens, size and price on application.
LAPAGERIA RUBRA, superb, 7s. 6d., 10s. 6d. and 15s. A few extra-sized specimens, size and prices on application.
W. HOWARD, Southgate, N.

TWO HUNDRED THOUSAND HERBACEOUS and ALPINE PLANTS for Borders, Rockwork, &c. See Descriptive LIST, giving colour, height, time of flowering, &c., free by post for 1d. stamp.
Selection of 100 good showy varieties for 25s.
R. SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

A Cheap Offer of

MISCELLANEOUS HARDY BULBS will be found on page 23 of my A B C BULB GUIDE. Free on application.
THOMAS S. WARE, Hale Farm Nursery, Tottenham, London.

LASTREA ARISTATA VARIEGATA.—Fine Greenhouse Fern, nice seedlings, in small pots, at 20s. per 100. SEAFORTHIA ELEGANS, the best Greenhouse Palm, three leaves, in small pots, 48s. per 100.
A. VAN GEERT, Continental Nurseries, Ghent, Belgium.

A. VAN GEERT'S English Trade CATALOGUE of Continental Plants, such as Camellias, Azaleas, &c., is now to be had, free of charge, at
Messrs. R. SILBERRAD AND SON'S, 25, Savage Gardens, Crutched Friars, E.C.

15,000 High-Stemmed

ROSE-TREES for Sale, cheap, of the following varieties:—Tea, Hazel, and Remontant, with very large crowns, good roots and beautiful stems.
C. KUBLER, Rose Nursery, Heilbronn-on-the-Neckar.

To the Trade only,

GOLDEN EUONYMUS.—These are really fine plants, bushy, and well coloured. None better in the Trade.
F. J. BIGG, Jeffery Road Nursery, Clapham, S.W.

The White Cactus Dahlia,

CONSTANCE.—Orders are now being booked for the above, for delivery in spring. 1s. 6d. each; pot roots, 2s. 6d. each. Trade terms on application.
J. R. PEARSON, Chilwell, Notts.

Special Culture of

FRUIT TREES and ROSES.—A large and select stock is now offered for sale. The Illustrated and Descriptive CATALOGUE of Fruits, post-free for threepence. The Descriptive CATALOGUE of Roses post-free.
THOMAS RIVERS AND SON, The Nurseries, Sawbridgeworth, Herts.

GRAPES FOR SALE.—About 1 Ton, on view at the above address. Particulars on application.
S. WOOLCOCK AND CO., Holybourne Vineries, Alton, Hants.

Strawberry Plants.—In consequence of

H. CANNELL AND SONS being located in the midst of hundreds of acres of the above (runners are this year unusually fine and early), they would be pleased to quote price for any quantity and any sorts.
Swanley, Kent.

STRAWBERRIES.—Strong roots for present planting and for fruiting next year, 4s. per 100. Descriptive LIST and price for plants in pots for forcing on application. — RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

CABBAGE PLANTS, 500,000, for immediate planting; also 500,000 Boston, the earliest and best for market. Price on application.—J. E. KNIGHT, Old Whitmore Reans Nurseries, Wolverhampton.

SALES BY AUCTION.

Hyacinths, Tulips, Crocuses, Narcissus, Iris, Scillas, Snowdrops, and other Flower Roots from Holland.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY during September, at half-past 12 o'Clock precisely each day, CONSIGNMENTS of DUTCH BULBS, arriving weekly from well known farms in Holland, in large and small lots, to suit all buyers.

On view morning of Sale, and Catalogues had.

Thursday Next.

IMPORTANT SALE of ORCHIDS.

PHALÆNOPSIS GRANDIFLORA, ONCIDIUM MARSHALLIANUM.

MR. J. C. STEVENS has received instructions from Mr. F. Sander to SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, September 28, at half-past 12 o'Clock precisely, the entire importation of PHALÆNOPSIS GRANDIFLORA, just received—the plants are in splendid condition, and this is undoubtedly the finest lot of this the grandest Phalænopsis ever offered; also a magnificent importation of ONCIDIUM MARSHALLIANUM, in masses of altogether unusual size and quality. To which will be added a grand lot of LÆLIA DAYANA, the lovely new DENDROBIUM BURSIGERUM, producing claret-red flowers in great quantity; COLAX JUGOSUS, CATTLEYA CRISPA, and a very fine lot of ODONTOGLOSSUM ALEXANDRÆ, &c.

On view morning of Sale, and Catalogues had.

Friday Next.

ESTABLISHED ORCHIDS.

MR. J. C. STEVENS will include in his SALE by AUCTION on FRIDAY NEXT, September 29, about 100 lots of ESTABLISHED ORCHIDS from the collection of Albert Wood, Esq., Bodlondeb, Conway, comprising Cattleya labiata, C. Trianæ, C. Mossiæ, and C. Mendelii; Aërides of sorts, Saccolabium præmorsum, Vanda cœrulea, V. tricolor, Cypripedium Roezlii, C. Hartwegii, Lælia Schilleriana splendens, L. purpurata, L. autumnalis, Dendrobiums, Oncidiums, &c.; also about 100 lots of other ESTABLISHED and IMPORTED ORCHIDS.

On view morning of Sale, and Catalogues had.

Auction Rooms and Offices, 38, King Street, Covent Garden.

Friday Next.

IMPORTED ORCHIDS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on FRIDAY NEXT, SEPTEMBER 29, at half-past 12 o'Clock precisely, by direction of Messrs. Shuttleworth, Carder & Co., ODONTOGLOSSUM CRISPUM (Alexandræ), LYCASTE SKINNERI, BARKERIA SKINNERI, B. SPECTABILIS, ONCIDIUM ORNITHORRHYNCHUM, O. WENTWORTHIANUM, ODONTOGLOSSUM GRANDE, &c., all in the best possible condition.

On view morning of Sale, and Catalogues had.

Dutch Bulbs.—Sales every Monday.

MESSRS. PROTHEROE AND MORRIS will SELL at the Mart, Tokenhouse Yard, City, E.C., every MONDAY, at half-past 11 o'Clock precisely, over 800 lots of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, SNOWDROPS, and other ROOTS, from Holland; in lots to suit all buyers.

Catalogues at the Mart, and 8, New Broad Street, E.C.

Stoke Newington, N.—Trade Sale.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Stroud & Sons (in order to make room for other stock) to SELL by AUCTION, on the Premises, the Lordship Park Nursery, Green Lanes, Stoke Newington, N., on TUESDAY, September 26, at 12 o'Clock, 1500 ARALIA SIEBOLDI, 3000 ASPLENIUM BULBIFERUM, 1000 GREVILLEA ROBUSTA, 500 DRACÆNAS, 500 PALMS, in variety; 500 well set CAMELLIAS and AZALEAS 1 to 4 feet; 500 YUCCAS, 2000 IVIES, 3000 EUONYMUS, 3000 CLIMBING PLANTS, and other stock; the whole of which are well established in pots, and worthy the attention of the Trade and other extensive buyers.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 8, New Broad Street, E.C.

Maryland Point, Stratford, E.

By order of the Executors of the late Sir Antonio Brady.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, as above, on WEDNESDAY, September 27, a small COLLECTION of CHOICE STOVE and GREENHOUSE PLANTS.

Catalogues on the Premises, and at 8, New Broad Street, E.C.

Acton, W.—Trade Sale.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Reeves to SELL by AUCTION, on the Premises, The Nursery, Acton, W., on WEDNESDAY NEXT, September 27, 20,000 FERNS, in great variety; including 3000 Adiantum cuneatum, PALMS, CROTONS, FICUS, 2 to 3 feet 6 inches; specimen CAMELLIAS and AZALEAS, BOUVARDIAS, including the new Double White Alfred Neuner, and other stock.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 8, New Broad Street, E.C.

Lewisham, S.E.

To the TRADE and PRIVATE GENTLEMEN.

IMPORTANT CLEARANCE SALE, in consequence of the Land and Premises being required by the Local Government Board for the Erection of New Buildings

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, by order of Mr. Biggs, on the Premises, The Nurseries, High Road, and George Lane, Lewisham, S.E., on FRIDAY, September 29, at 12 o'Clock precisely (in consequence of the large number of lots), without reserve, the Indoor Stock-in-Trade, comprising 50,000 FERNS, including 20,000 ADIANTUMS, 10,000 LOMARIA GIBBA, PTERIS, TREE and other FERNS, 2000 BOUVARDIAS, Specimen White CAMELLIAS and AZALEAS, PALMS, ERICAS, GENISTAS, and SOLANUMS in large quantities, 200 EUCHARIS AMAZONICA; also the first portion of the OUTDOOR NURSERY STOCK, consisting of an assortment of EVERGREENS and CONIFERÆ, trained FRUIT TREES, a nearly new PLANT VAN, and SUNDRY EFFECTS.

May be viewed. Catalogues had on the Premises, and of the Auctioneers and Valuers, 8, New Broad Street, E.C., and Leytonstone.

Leytonstone.

Re P. E. White.—In Liquidation.

To SMALL CAPITALISTS.—In TWO LOTS.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, at the Mart, E.C., on THURSDAY, September 28, at 2 o'Clock, the BENEFICIAL INTEREST in the LEASES of the commanding Shop in the High Street (which could be used for any other business), and also of the Cottage and Nursery Ground in Temple Street. Held at Low Rentals.

The Stock-in-Trade, Glass Erections, and Utensils will be included in the purchase of the respective lots.

Particulars and Conditions of Sale may be had at the Auctioneers' Offices, 8, New Broad Street, E.C.

Tooting, S.W.—Annual Sale.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, by order of Mr. R. Parker, on the Premises, the Exotic Nursery, Tooting, S.W., on THURSDAY, September 28, at 1 o'Clock, a quantity of STOVE and GREENHOUSE PLANTS, in healthy condition; a selection of choice Established ORCHIDS, PALMS, and Exotic FERNS, in variety; SUCCULENTS, and HARDY HERBACEOUS PLANTS; also a capital Exhibition Plant VAN, in excellent condition. An inspection is invited of this well-grown stock, which may be viewed any day prior to the sale.

Catalogues had on the Premises, and of the Auctioneers, 8, New Broad Street, E.C.

Important Sale of Established and Semi-Established ORCHIDS.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from Mr. W. B. Freeman to SELL by AUCTION, at the Mart, Tokenhouse Yard, E.C., on FRIDAY, September 29, at 12 o'Clock precisely, a grand lot of ESTABLISHED and SEMI-ESTABLISHED ORCHIDS, comprising Vanda cœrulea, V teres, Phalænopsis Schilleriana, P. amabilis, Dendrobium Falconeri, D. Farmeri, D. Wardianum, nobile pendula, and others; Oncidium Marshallianum, O. Rogersii, O. Forbesi, Cattleya Eldorado, and other varieties; also 120 lots of CHOICE ESTABLISHED ORCHIDS, being the entire collection of a private gentleman who is giving up their culture.

Catalogues had at the Mart, and 8, New Broad Street, E.C.

The Westbourne Nursery, Harrow Road, N.W.

ANNUAL SALE.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, by order of Messrs. Woodroffe & Sons, on the Premises, as above, on TUESDAY, October 3, at 12 o'Clock, 4000 GENISTAS, 2000 BOUVARDIAS, Red and White; 1500 CHRYSANTHEMUMS, 2000 Double PRIMULAS, 1000 strong POINSETTIAS, 1000 ALOYSIAS, 1000 HYDRANGEAS, 1000 SOLANUMS, well berried; 300 AZALEAS, well set; 1200 CYCLAMEN PERSICUM, a fine strain; EUCHARIS AMAZONICA, in large 14-inch pots; a variety of STOVE PLANTS, and other stock.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 8, New Broad Street, E.C., and Leytonstone.

Fulham, Sunbury, and Hampton.

By order of the Executors of Mr. R. A. Osborn, deceased.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL by AUCTION, at the Mart, Tokenhouse Yard, City, E.C., on THURSDAY, October 5, at 2 o'Clock precisely, the following properties:—

FULHAM.—In one or two lots, an attractive FREEHOLD BUILDING ESTATE, known as Osborn's Nursery, situate in New King's Road, having frontages of about 2000 ft. to existing roads, and containing a total area of 4 a. 0 r. 11 p.; also the modern detached brick-built Residence and Seed-shop with Conservatory attached. These premises could be utilised for any other business, and notably that of a Licensed Victualler.

SUNBURY.—The FREEHOLD PROPERTY known as Osborn's Old Nursery, containing an area of 17 a. 0 r. 11 p., together with the Goodwill of the Nursery and Seed Business, which was established in the year 1700. There is a detached eight-roomed House, nine newly-erected Greenhouses, fitted and heated upon the most improved principles, ranges of Pits, Stabling, Sheds, and other Out-buildings. The property has Frontages of 1100 feet to two Public Roads, the greater portion of which is particularly adapted for building purposes, without deteriorating the remainder of the land for carrying on the present business.

HAMPTON.—A compact FREEHOLD ESTATE known as Osborn's Nursery, possessing a frontage of 332 feet to Broad Lane, and containing an area of nearly 5 acres. It is now cultivated as a nursery, but is also eligible for building.

Particulars and plans of the several estates are now ready, and may be had at the Mart; of Messrs. WALKER, BELWARD AND WHITFIELD, Solicitors, 5, Southampton Street, Bloomsbury, W.C.; and of the Auctioneers and Surveyors, 8, New Broad Street, E.C., and Leytonstone.

NOTE.—The purchasers will have the option of taking by valuation within 7 days, the whole of the beautifully grown Stock in Trade, but should they not decide to do so, it will be sold by Auction on the Premises, due notice of which will be given.

Brixton, S.W.—Important Sale.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Ponsford & Son to SELL by AUCTION, on the Premises, The Nursery, Loughborough Park, Brixton, S.W., on THURSDAY and FRIDAY, October 5 and 6, at 12 o'Clock each day, a large quantity of well-grown NURSERY STOCK, in healthy and thriving condition, including an assortment of Evergreen and Deciduous Shrubs, 10,000 Variegated and Green Euonymus, bushy stuff for potting; 1200 Planes, 6 to 14 feet; 5000 Limes, 1000 Mulberries, 5000 Flowering Shrubs; also a variety of STOVE and GREENHOUSE PLANTS, 1000 Palms, 1000 Bouvardias, 400 Camellias and Azaleas, &c.

May be viewed Catalogues had on the Premises, and of the Auctioneers, 8, New Broad Street, E.C., and Leytonstone.

Woking.

PRELIMINARY NOTICE.

GREAT UNRESERVED SALE, in consequence of the Lease having expired, of a portion of the Nursery.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Jackman & Son, to SELL by AUCTION, on the Premises, The Nurseries, Woking, on TUESDAY, October 10, and two following days, several acres of NURSERY STOCK, in fine condition for removal, thousands of Forest and Ornamental Trees, &c.

Catalogues are ready, and may be had on the Premises, or of the Auctioneers and Valuers, 8, New Broad Street, London, E.C., and Leytonstone.

Sunbury, Middlesex.

By order of the Executors of Mr. R. A. Osborn, deceased

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises known as Osborn's Old Nursery, Sunbury, on TUESDAY, October 17, and following day (unless taken by the purchaser of the Freehold Estate at a valuation), the whole of the HARD-WOODED GREENHOUSE PLANTS, including the entire collection of strong short-jointed and well-ripened Vines, the beautifully grown Tea, H.P., and Noisette Roses, the extensive collection of Figs in bearing condition, several hundreds of splendidly grown Camellias and Azaleas abundantly set with buds, Clematis in great variety, and other stock.

May now be viewed, and an inspection is invited.

The first portion of the thriving and well grown OUTDOOR NURSERY STOCK will be sold on TUESDAY, November 14, and following days unless taken by the purchaser of the Estate by valuation. Due announcements will appear.

To Florists, Gardeners, and Others.

Sale of Surplus Stock of Mr. J. Prewitt, Swiss Nursery, St. Peter's Road, West End, Hammersmith, W.

MR. JAMES H. GREEN will SELL by AUCTION, as above, on WEDNESDAY, September 27, at 1 o'Clock precisely, the entire SURPLUS NURSERY STOCK, comprising Camellias, Azaleas, Eucharis, Stephanotis, Anthuriums, Adiantum farleyense (fine specimen), a few good Orchids, Ficus elastica, Maréchal Niel Roses (in pots), a strong lot of Chrysanthemums, Maidenhair and other Ferns, Dwarf Roses, Pinks, &c.

On view day prior. Catalogues on the Premises, and of the Auctioneer, 72 and 217, King Street, Hammersmith, and The Parade, Goldhawk Road, W.

Highly Important Sale.

MR. D. MITCHELL will SELL by AUCTION, at Mayfield, Falkirk, on SEPTEMBER 28, 29, and 30, each day at 11 o'Clock forenoon, the entire COLLECTION of PLANTS which belonged to the late Provost Russell, comprising a choice collection of Orchids, Stove and Greenhouse Plants, magnificent Specimen Camellias, Tree and other Ferns. Also the rare and beautiful collection of large and well-grown Hybrid Specimen Rhododendrons, finely set with Flower-buds, and without exception the grandest private collection ever offered to the public. The Conifera are of the rarest and richest description. The Golden and other Yews, in various shapes, are marvels of cultivation; the Golden, Silver, and Green Hollies are models; and from the manner in which the whole of the outside plants have been treated for years they are capable of being removed to any distance with perfect safety.

Catalogues, may be had from the Auctioneer, D. MITCHELL, 6, Comely Bank, Edinburgh; or THOS. SORLEY, Mayfield Gardens, Falkirk.—Edinburgh, September 6, 1882.

Mid-Surrey Nurseries.

Mr. Henry Potter's Nursery, adjoining the Railway Station, Sutton.

EARLY CLEARANCE SALE.—STOCK and VINERIES.

MR. MORGAN is instructed to SELL by AUCTION, on the above named Premises, on MONDAY, October 2, at 1 for 2 o'Clock (the buildings having to be cleared for the erection of Shops, &c.), the Range of FOUR LARGE VINERIES, with Stages and Hot-water Pipes; Established VINES and Vines in Pots; also AZALEAS, CAMELLIAS, winter-flowering HEATHS, CHRYSANTHEMUMS, SOLANUM (Winter Cherry), ROSES in pots, PALMS, FERNS, LAPAGERIA ROSEA and other GREENHOUSE CLIMBERS, mixed STOVE and GREENHOUSE PLANTS, SHRUBS, EVERGREENS, &c.

Catalogues at the Nurseries or of the Auctioneer, close to the Railway Station, Sutton.

Hook Heath Nursery, near Woking, Surrey.

London and South-Western Railway: nearest stations, Woking and Brookwood.

UNRESERVED SALE OF NURSERY STOCK.

MR. H. W. COPUS has received instructions from Mr. Chapman, who is leaving the neighbourhood, to offer by AUCTION, at a DATE NOT YET FIXED, without reserve, the whole of the well-grown NURSERY STOCK at the above Nursery, comprising Aucubas, Hollies, ditto various, Yews English and Irish, Rhododendrons, Cupressus, Retinosporas, Cedars, Heaths of sorts, Ivies, Berberries of sorts, Laurels common and Portugal, Roses of sorts, Arbor-vitæs, Lilacs, Climbing Plants, Box, &c.

Further particulars will be announced and Catalogues ready in due course, which may be had of the Auctioneer, 16, Friary Street, Guildford, and Woking Station.

To Fruiterers and Greengrocers.

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5-inch pots (1st selection), fine, bushy, 1½, 2 to 2½ feet.

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7-inch pots, suitable for forcing.

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Second to none in quality.

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1882.—A B C Bulb Guide.—1882.

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RETINOSPORA PLUMOSA, 6 to 9 inches..	2 6	15 0	120
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,, ,, 12 to 18 inches	7 0	50 0	..
,, ,, 18 to 24 inches	10 0	85 0	..
,, ,, 24 to 30 inches	12 0	90 0	..
,, ,, AUREA, 4 to 6 inches	3 0	18 0	150
,, ,, ,, 6 to 9 inches	5 0	35 0	250
,, ,, ,, 9 to 12 inches..	10 0	75 0	..
,, ,, ,, 12 to 18 inches	18 0	..	..
,, ,, ,, 18 to 24 inches	24 0	..	..
,, FILIFERA, 12 to 15 inches	6 0	40 0	..
,, ,, 18 to 24 inches	12 0	90 0	..
DEUTZIA GRACILIS, 9 to 12 inches		10 0	70
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ASH, Common, 2 to 5 feet.
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HAZEL, 3 to 6 feet.
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PRIVET, Common, 1½ to 3 feet.
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SPIRÆA CONFUSA (fine for forcing, pure white).
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THUIA ERICOIDES, 9, 12, to 24 inches.
HYPERICUM CALYCINUM.
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APPLES, on Paradise and Crab Stocks, Pyramid, Bush, and trained trees, in all the leading hardy and free-bearing varieties, very fine.
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Many thousands of ERICA HYEMALIS, of various sizes.
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Many thousands of ERICA VENTRICOSA COCCINEA MINOR, and other choice varieties of ventricosa.
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Many thousands of AZALEA INDICA in variety, of various sizes.
Many thousands of AZALEA INDICA, Fielder's white, narcissiflora, and other white-flowering varieties.
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Many thousands of GREVILLEA ROBUSTA.
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GREENHOUSE RHODODENDRONS in variety.
Many thousands of PELARGONIUMS, choice Show, French and Decorative varieties. Small plants to pot on
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A lucrative market crop.

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Evergreens, Hollies, Coniferæ, Forest Stuff
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Bulbs—Bulbs—Bulbs.

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EIGHTY THOUSAND CLEMATIS, in Pots, of all the finest double and single varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants.
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35 HYACINTHS, mixed, in distinct colours
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50 ,, double, best mixed
30 NARCISSUS, POLYANTHUS, best mixed
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400 CROCUS, in four distinct colours
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782 Bulbs in all.

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24s. *per dozen.*

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WE are now sending, post-free, for 1s. 6d., this extraordinary hardy plant. Flower nearly black, very large and full, and double as a Rose. For the button-hole a gem. Received First-class Certificates at Liverpool, London, and wherever shown. 12s. per dozen.

DOUBLE CINERARIAS.

IT is well known that we have frequently exhibited the finest collection of the above ever seen, and now offer plants from seed of the above, by post, 4s. per dozen; in pots, 6s. per dozen. These add quite a new feature, and are splendid for cutting.

SINGLE CINERARIAS.

OUR Single Varieties also received Three First-class Certificates at London and Liverpool last year, and it is acknowledged by all that our "March Past" strain is an immense stride, totally surpassing all others. Twelve, post-free, for 2s. 6d.; larger, in pots, 4s. and 6s. per dozen.

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WE have great pleasure in offering fine plants, in full flower, of GLOIRE DE NANCY, one of the best of this family, 3s. each.

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SPECIALITIES of the SEASON.

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Suitable for the Adornment of

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RANUNCULUS, New French.—These comprise a variety of colours quite unprecedented, and produce three times the quantity of flowers of the older kinds: 10s. 6d. per 100; 1s. 6d. per dozen.

GLADIOLI, New Dwarf Hybrids.—It is difficult to convey an adequate idea of the beauty and immense variety in this charming class, with exquisite spotted flowers of every shade and hue. They are fine, either out-of-doors or in pots: 14s. per 100; 2s. per dozen.

CYPRIPEDIUM CALCEOLUS MAJOR.—This exquisite yellow and brown hardy Orchid appears to force well in pots. Every pip will bloom, and as a personal decoration, or in bouquets, it is delightful. Pots in a greenhouse will bloom about February: 1s. 6d each; six, 6s.; twelve, 10s.; twenty-five, 17s. 6d.; fifty, 30s.

LILIES.—The following Californian species will be sent in by our Collector during October, in strong blooming bulbs, and are offered at prices much lower than hitherto possible. We solicit an early booking of orders. Our CATALOGUE contains a full-sized and very beautiful coloured plate of these, and may be had for four stamps, which will be allowed again to purchasers :—

CANADENSE, true, most beautiful, 10s. 6d. per dozen; 1s. 3d. each. CANADENSE RUBRUM, the red variety, 15s. per dozen; 1s. 6d. each. COLUMBIANUM, Yellow and Brown Turk's Cap, 15s. per dozen; 1s. 6d. each. HUMBOLDTI, one of the largest and grandest, brilliant orange densely spotted purple, 21s. per dozen; 2s. each. PARDALINUM, a great beauty, most difficult to describe, but to be adopted by everybody, 21s. per dozen; 2s. each. PARRYI, rare, yellow, trumpet-shaped, 42s. per dozen; 4s. 6d. each. POMPONIUM, Scarlet Dwarf Turk's Cap, 7s 6d. per dozen; 1s. each. RUBESCENS, clustered heads of lilac and white, finely spotted, 21s. per dozen; 2s. 6d. each. SUPERBUM, beautiful orange, richly spotted, and finely reflexed, 7s. 6d. per dozen; 1s. each.

All Bulbs are forwarded Carriage Free, according to the terms of our Catalogue.

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SUCH AS

HYACINTHS, TULIPS, CROCUS, NARCISSUS, IRIS, GLADIOLI, &c.,

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No. 1,	containing over 1340	Bulbs	£4	4 0
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Collections for Conservatory and Window Culture.

No. 5,	containing over 470	Bulbs	£4	4 0
No. 6,	,, ,, 300	,,	3	3 0
No. 7,	,, ,, 200	,,	2	2 0
No. 8,	,, ,, 100	,,	1	1 0
No. 9,	,, ,, 50	,,	0	10 6

Collections for Outdoor Planting.

No. 10,	containing over 1730	Bulbs	£4	4 0
No. 11,	,, ,, 1300	,,	3	3 0
No. 12,	,, ,, 860	,,	2	2 0
No. 13,	,, ,, 400	,,	1	1 0

These Collections are ready from September to December.

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SEEDSMAN, EHRENFELD, GERMANY,

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COCOS BRANDI, quite new	..		80	0
,, ROMANZOFFIANA	75	0	8	0
EUTERPE EDULIS	25	0	3	0
GEONOMA POHLIANA	120	0	15	0
JUBÆA SPECTABILIS	75	0	8	0
KENTIA CANTERBURYANA	..		32	0
LATANIA BORBONICA	12	0	1	6
PHŒNIX RECLINATA	16	0	2	0
ZAMIA SPIRALIS	120	0	16	0
MACROZAMIA DENISONI	240	0	32	0
ARAUCARIA IMBRICATA	40	0	5	0
,, ,, germinated seeds	80	0	10	0
ARAUCARIA BRASILIENSIS	80	0	9	0
,, ,, germinated seeds	160	0	18	0
DRACÆNA AUSTRALIS	3	0	—	
,, INDIVISA and vars. (eight sorts)	15	0	—	

1s. 3d.

ARECA LUTESCENS, SEEDLINGS, 8s. per 100, 60s. per 1000.

AMPELOPSIS VEITCHII.—Upwards of 10,000 of the above, extra fine Plants; also fine stock of AMPELOPSIS SEMPERVIRENS. Are now receiving orders for STANDARD and DWARF ROSES, which are unusually fine this season. Prices on application to W. B. ROWE (Limited), Barbourne Nurseries, Worcester.

THURSDAY NEXT.

IMPORTANT SALE OF ORCHIDS.

PHALÆNOPSIS GRANDIFLORA.

ONCIDIUM MARSHALLIANUM.

MR. J. C. STEVENS has received instructions from Mr. F. SANDER to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, September 28, at half-past 12 o'Clock precisely, the entire Importation of PHALÆNOPSIS GRANDIFLORA, just received—the plants are in splendid condition, and this is undoubtedly the finest lot of this, the grandest Phalænopsis, ever offered; also a magnificent Importation of ONCIDIUM MARSHALLIANUM, in masses of altogether unusual size and quality; to which will be added a grand lot of LÆLIA DAYANA, the lovely new DENDROBIUM BURSIGERUM, producing claret-red flowers in great quantity; COLAX JUGOSUS, CATTLEYA CRISPA, and a very fine lot of ODONTOGLOSSUM ALEXANDRÆ, &c.

On view morning of Sale, and Catalogues had.

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Early Single White, extra fine Bulbs, **3s. 3d.** per dozen, **23s.** per 100.

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	s.	d.
50 in six varieties	7	6
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12 in six varieties	2	0

SUPERB NAMED CROCUS.

	£	s.	d.
1000 in twenty fine named varieties	1	10	0
500 in ten fine named varieties		15	0
300 in ten fine named varieties		10	0
200 in six fine named varieties		7	0
100 in five fine named varieties		3	6

CHOICE SNOWDROPS.

Fine Bulbs, Double or Single, **2s. 6d.** per 100, **21s.** per 1000.

POLYANTHUS NARCISSUS.

	s.	d.
100 mixed varieties	12	6
12 mixed varieties	2	0
50 in ten fine varieties	13	0
50 in five fine varieties	12	0
25 in ten fine varieties	7	0
12 in six fine varieties	3	6

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of Choice Flowering Bulbs for

GREENHOUSE DECORATION.

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Collection "A"	contains	127	selected Bulbs price	10	6
" "B"	"	202	" "	15	0
" "C"	"	254	" "	21	0
" "D"	"	417	" "	42	0

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				s.	d.
Collection "E"	contains	315	selected Bulbs price	10	6
" "F"	"	390	" "	15	0
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" "H"	"	1265	" "	42	0
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5 per cent. Discount for Cash; 20s. Value Carriage Free.

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NAMED HYACINTHS FOR POTS OR GLASSES.

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100 choicest selected bulbs in 100 varieties					80	0
100 choice	,,	,,	in 100	,,	60	0
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100 in 12 choice named varieties						25	0
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For other Flowering Bulbs and Roots see our AUTUMN CATALOGUE,

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180 Choice Bulbs.	600 Choice Bulbs.

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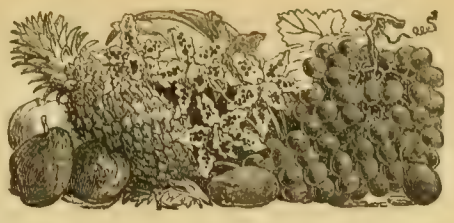
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THE QUEEN'S SEEDSMEN,

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READING, BERKS.



THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 23, 1882.

BRAMSHILL PARK.

THE Rev. Sir William Cope, Bart., the owner of Bramshill, is deeply indebted to that eleventh Lord Zouch who built the house in the reign of James I. He owes him a handsome Jacobean brick house with stone dressings—one of the most striking Jacobean mansions in England, says *Murray*, who ought to know—with terraces, Yew tree walks, Renaissance ornaments to aid the architecture, and among them a queer stone figure of himself—I mean Lord Zouch—above the central entrance. The crest of the Prince of Wales appears here, too, the house having been intended for that heir-apparent whose premature death made way for Prince Charles, afterwards Charles I. He owes him the selection of a good district for a residence on the borders of Hants, Berks, and Surrey, midway between Windsor and Winchester, and between Farnham and Reading, among streams of fertilising water, and yet on the borders of interesting wastes where the wild boar lingered long, and where in after-times there was good cross-bow shooting. In this very park of Bramshill, in 1621, during Lord Zouch's residence, the Archbishop of Canterbury shot a keeper dead with a cross-bow—a sad business. The tree stands yet where the accident occurred. The advantages of the country now are fox-hunting, fishing, shooting, a delightful air, mild yet bracing, favourable for man and plant, a fine field for naturalists, and the occasional excitement of bugle-calls and rumbling artillery waggons and flying columns from Aldershot. Outside the Park you may meet sometimes all the paraphernalia of a small advancing army.

Sir William Cope also owes his predecessor a good high site, commanding views which, in the eloquent words of Kingsley, rector of this parish—for Bramshill is in Eversley—look out "far and wide from its eyrie of dark Pines." The windows command the country as far as Basingstoke, and the high ground about Highclere, where Sidon Hill, in Lord Carnarvon's Park, overtops all other earth in Hants, and bears timber on its brow too. And he owes him a soil so well suited for timber that fine Oaks and Sweet Chestnuts, and the best Scotch Firs in England flourish in the Park side by side. You enter the Park from the north-west, say from Reading, by a long double avenue of Oaks which, in spite of the sandy soil, must have grown into handsome timber trees very rapidly if Mr. Hunt, the gardener, is correct in saying they were planted in the lifetime of men still surviving, and not more than sixty or seventy years ago. The trunks are not so tall as they would have been on better ground, but they are good "sticks of timber," growing fast and beautifully overarched above, the branches interlacing and carrying a vigorous growth of foliage. As you enter this mile or more of avenue there is a young Oak plantation on the right hand which was blessed at the planting by Kingsley. Mr. Hunt was engaged in the work, and he remembers Kingsley pulling up

as he rode along, and remarking that the soil was excellent for Oaks. This was fifteen years ago, and the trees by their rapid growth have proved the words true.

But noble as the specimen Oaks and Chestnuts are, especially the Chestnuts growing immediately about the house, the Scotch Firs are the pride of the Park and its most remarkable ornament. Charles Kingsley, a great observer of Nature and a good geologist, particularly learned as to the Bagshot Sand formation, speaks of "James the First's gnarled giants up in Bramshill Park." Mr. Hunt walked with me through more than 2 miles of Scotch Firs till the boundary of Bramshill was reached, close to Eversley Rectory. Half the length of this road passed through a common planted with Firs, Sir William Cope being now the only commoner, I believe. In the Park proper, in a porous soil watered by a rivulet which rises in the high ground here, and, with the aid of springs, feeds the lake, there are some capital Silver Firs, as well as Oaks, and the biggest of the Scotch Firs. We measured the best Oak and the best Fir, and found them respectively 12 feet 10 inches and 9 feet 5 inches round their trunks at 5 feet from the ground. One of the "gnarled giants" with a divided trunk, covered with large warts, measures 10 feet 10 inches; this tree, however, must be classed with abnormal specimens. It is a porous soil which produces these large trees, dark in colour and mixed with rolled gravel. There is another soil well described by Mr. Hunt as "callous soil," which is not nearly so good for timber, because, whatever its chemical contents may be, its texture is bad.

It is a traditional belief here that the Scotch Fir was re-introduced at the building of Bramshill. But "whatever may have been the date of their re-introduction," says Kingsley, "here they are, and no one can turn them out." Some years since several devastating heath fires broke out in the neighbourhood, and sometimes encroached on the Firs of Bramshill. One occurred during divine service when Kingsley, who had long since turned the empty church of Eversley into a full one, was in the pulpit. He was always active in putting out the fires, and now the news came that the Firs he so very much admired were threatened. Men were needed. It was a case of emergency similar to that when sabbath-day exertion becomes a duty sanctioned by divine authority. The Rector did not hesitate a moment, and when messengers arrived at the church in hot haste to call out the men, we are told that he left the curate to finish the service and rushed to the scene of action, taking a flying leap in surplice, hood, and stole over the churchyard palings. Armed with a billhook and divested of his ecclesiastical attire he took the command of the army of beaters, organised them well, and resisting the fire at points of vantage, he saved the Fir woods.

It was a very sad affair the shooting of the keeper, and all, including bishops and archbishops, may learn thereform to avoid the beginnings of evil. If that bow had not been strung and had not been put into the reverend prelate's hands—which we may hope were clumsy at using such tools—the poor fellow would not have been bowled over in the place of the buck. The archbishop was Kingsley's ancestor, and he tells the story as such stories should be told, with sympathy and without a sneer. He says, "I went the other day to Bramshill Park, the home of the *Seigneur du pays* here—Sir John Cope, and there I saw the very tree where an ancestor of mine, Archbishop Abbott, in James I.'s time, shot the keeper by accident! I could fancy the noble old man, very different then from his picture as it hangs in the dining-room at Chelsea. I could fancy the deer sweeping by, and the rattle of the cross-bow, and the white splinters sparkling off the fatal tree as the bolt glanced and turned, and then the death shriek and the stagger, and the heavy fall of the sturdy forester, and the bow dropping from the old man's hands, and the blood sinking from his heart in one chilling rush, and his glorious features collapsing into that look of changeless and rigid sorrow which haunted me in the portrait upon the wall in childhood. He never smiled again! As I sat under the tree, there seemed to be a solemn and remorseful moan in the long branches, mixed with an airy whisper of the lighter leaves that told of present as well as past."

The size of a great tree and the space required for its growth lends it an interest such as the large animals inspire compared with the small ones. I remember how my heart fluttered when I shot my first hare. I saw her on her form and drew near to put her up so as to shoot her honourably when running. Thump, thump, and I dare say it would thump now as badly or worse at an elephant or any big creature with tusks or horns, that might run in the wrong direction—not away! The tree falls with a solemn sound, but not so the grass before the scythe. And so, at the birth of plants the lesser tribes spring into being unnoticed, but we look upon the youth of the giant races with some such respect as President Garfield felt for a boy. He had sprung from the ranks himself, and he said he never met a boy but he felt inclined to doff his hat to him. There were such "grand possibilities," he said, in every boy! The same idea occurs in the reference to the "village Hampdens" and the "mute, inglorious Miltons," in Gray's *Elegy*. All young trees inspire interest from the "possibilities" bound up in them. What will be their fate and the long story of their maturity and age? But self-sown trees are particularly interesting because pigs and the several consumers of acorns and other seeds of trees, and civilisation have rendered them comparatively rare.

There is no space left in our highly cultivated woods for self-sown trees; but here and there, especially within sound of the guns of Aldershot, in the sandy tracts of West Surrey and neighbouring counties, self-sown Firs do spring wild upon the waste. Kingsley exclaims, after pointing out that from the Acacia on his lawn you get the first glimpse of the Fir forests and moors of which five-sixths of his parish consisted—"Those delicious self-sown Firs!"

Devout man as the observant, active, vigorous, Charles Kingsley was, poet and novelist, yet best of husbands and best of parsons, you might take him sometimes for an arboriculturist. He says elsewhere, "In countless thousands the winged seeds float down the south-west gales from the older trees, and every seed which falls takes root in ground which, however unable to bear broad-leaved trees, is ready by long rest for the seeds of the needle-leaved ones. Thousands perish yearly, but the eastward march, up hill and down dale, is sure and steady. As you stand upon some eminence, you see, stretching to the eastward of each tract of older trees, a long cloud of younger ones, like a great comet's tail. Truly beautiful—grand, indeed, to me it is—to see young live Nature thus carrying on a great savage process in the heart of this old and seemingly all-artificial English land; and reproducing here, as surely as in the Australian bush, a native forest, careless of mankind." Yes, "beautiful"! The phenomenon is here well described, but it becomes rare now, for Nature's way is not the most profitable, and even in the Scotch forests the "eastward march" of self-sown Firs and their advance up the mountain sides, self-sheltered as well as self-sown, are sights of interest which have given place to extensive artificial planting.

The enclosed common between Bramshill Park and Eversley is well planted with self-sown Scotch Firs in the most vigorous health, and of the deepest, richest hues. The land is enclosed, and the young trees have not experienced those troubles of an untoward youth which afflict them on common or pastured ground, where Kingsley describes them as "Nibbled off by hares, trodden down by cattle, cut down by turf-parers, seeing hundreds of their brethren cut up and carried off in the turf-fuel, they are as gnarled and stubbed near the ground as an old Thorn bush in a pasture. But they have conquered at last, and are growing away, 18 inches a-year, with fair green brushes silver-tipped, reclothing the wilderness with a vegetation which it has not seen for—how many thousand years?" This refers to modern explorations, showing that the Scotch Fir was indigenous to England in the Geologic Period, before the present settlement of the land obtained. He adds on this subject, "For when last the Scotch Fir was indigenous to England, and, mixed with the Larch, stretched in one vast forest from Norfolk into Wales, England was not as it is now; Snowdon was, it may be, 15,000 feet in height, and from the edges of its glaciers the marmot and the musk ox, the elk and the bear, wandered down into the lowlands, and the hyena and the lion dwelt in these caves, where fox and badger now only abide. And how did the Scotch Fir die out?" Changes of climate and sinkings and uprisings of the land. The Firs may have been frozen in an "Age of Ice," or at some interval of tropical heat they and the musk oxen may have perspired to death together. In any case, the Scotch Firs vanished, and in this part of the country they are traditionally held to have been reintroduced at Bramshill. *H. E.*

PINE-APPLES.

THE group of Pines as given in our illustration (fig. 62), were grown by Mr. D. Wilson, gardener to Earl Fortescue, Castle Hill, South Molton, Devon, the twelve fruits weighing 90¾ lb., and averaging over 7½ lb. each. It will be in the recollection of our readers that Mr. Wilson was awarded a Silver Flora Medal for a collection of fourteen Smooth Cayenne Pines exhibited by him at the meeting of the Royal Horticultural Society held at South Kensington on July 25 last, and weighing collectively 104 lb. 8 oz., the fruits being considered remarkable examples of cultural skill by all who saw them—the symmetry of the fruits, their well-developed pips, and handsome and proportionate crown, being their most conspicuous points in the eyes of fruit growers.

New Garden Plants.

MASDEVALLIA ERYTHROCHÆTE, *n. sp.**

A NEW Saccilabiata, imported in very small numbers from Central America by Mr. F. Sander. It stands near Masdevallia Houtteana, but it is larger. The narrow leaves exceed even 1 foot in length, and reach ¾ inch in width. The peduncles are ascending, 4 inches high, with numerous sheaths. The flower exceeds that of Masdevallia Houtteana, whose long reddish-purple tails it bears. The bodies of the sepals are white and light yellow, which makes an elegant contrast to the tails. There are no such purple dots as are found in Masdevallia Houtteana. The sepals are covered inside over and over with styliform processes. The fasciate narrow lip is as-

* *Masdevallia erythrochæte*, n. sp.—Aff. Masdevalliæ Houtteanæ: foliis cuneato-ligulatis acutis pedalibus; pedunculo ascendenti breviusculo multivaginato; sepalorum caudis elongatis; sepalo impari brevi, sepalis omnibus semioblongo-triangulis intus hispidis; tepalis ligulatis acutis bivalvibus, inter valvas, muricatis, labelli laciniis lateralibus angulatis, lacinia mediana oblongo saccata apice ascendente, multidenticulata, dentibus lateralibus intus lamelligeris, carinis longitudinalibus ternis; columna apice denticulata. Ex Am. Centr. imp. cl. Sander. *H. G. Rchb f.*

cending at its top. It will prove very lovely. *H. G. Rchb. f.*

Curcuma sumatrana, *Miq.*[*]

This is a very showy species, which is likely to prove useful for decorative purposes. It has been introduced by Mr. Curtis from Sumatra into Messrs. Veitch's nurseries, and it is to their kindness that the Kew herbarium is indebted for a specimen.

The leaves have dark violet-purple petioles about 6 inches long, minutely puberulous, and bright green, elliptic blades, 9 inches long by 4½ inches in breadth. Peduncle about 2 inches long, glabrous, deep red. Spike about 6 inches long, bracts large and broad, of a vivid deep orange-red, verging on crimson, puberulous on both sides, the edges of the lower half of each bract are adnate partly to the peduncle and partly to the bases of the two bracts next above, so as to form a series of pockets, in which the flowers are seated; the free part of the bracts is broadly elliptic-ovate obtuse. Flowers yellow. *N. E. Brown, Kew.*

Microstylis trilobulata, *Kurz.*

A good living plant of what I take to be this species, has recently been sent to the Royal Gardens, Kew, by Lieut.-Colonel E. S. Berkeley, who brought it from the Andaman Islands.

I can find no reference to any description of this plant, nor are there any specimens of it in the Kew Herbarium under the above name, yet I have little doubt that it is the species mentioned by name only as Microstylis trilobulata by Kurz in his *Report on the Vegetation of the Andaman Islands* (1868), Appendix B., p. xix. On p. 20 of this report is the statement that "Appendix C. contains the descriptions of the apparently new species gathered by me on these islands." Unfortunately this "Appendix C." was never published, since in Mr. Kurz's second report on these islands, dated 1870, under Appendix A. we find the following foot-note:—"Appendix C., containing the descriptions of the apparently new species, is also here omitted. These descriptions, and also the corrections and additions, will be given in my contributions towards the knowledge of the Burmese flora." The description of this Orchid I fail to find among his "contributions," therefore it is probable that the description here given of it is the first that has been published. In the Kew Herbarium I find a specimen of this plant from Penang (Maingay, 1601, Liparis sp.). It is well distinguished from the other Indian species by the form of the labellum, which is distinctly trilobed in front (a character which leads me to believe it to be the M. trilobulata of Kurz), and merely sessile and cordate at the base, the auricles not being prolonged (as in many of the species) beyond the back of the short column.

Plant 6—12 inches high; stem with about three strongly tricarinate green sheaths at base, and four or five subdistichous elliptic or elliptic-lanceolate light green leaves, 4½—6 inches long, 2—2¾ inches broad (smaller in juvenile plants), 5—7 nerved, petioles broad and sheathing throughout their length, strongly 5-keeled on the back by the decurrent nerves of the lamina (these keels are not seen in the dried specimens). Flower-stem terete, with seven narrowly winged angles, light green. Raceme rather dense, 2—3 inches long, ½ inch in diameter; bracts (of which there are a few distant barren ones on the flower-stem), lanceolate-subulate, 2—3 lines long, adpressedly reflexed, light green. Ovary subsessile, slightly recurving, very narrowly six-winged, ⅛ inch long, green or brownish tinted. Perianth 2 lines in diameter, of a dull brownish-purple tint; the odd sepal oblong obtuse, with strongly reflexed margins, lateral sepals broadly elliptic-oblong obtuse, slightly twisted, so that they are turned edge-ways to the column; petals rather shorter than the sepals, narrow, linear, with reflexed margins; labellum sessile, cordate at base, the auricles not prolonged behind the column, apex 3-lobed, the middle lobe or tooth much longer than the lateral lobes, ovate-oblong, obtuse, fleshy, disc of the lip excavated in front of the column.

Andaman Islands (Lieut.-Colonel Berkeley); Penang, in the jungle among brushwood (Maingay, 1601); Herb. Kew. *N. E. Brown, Kew.*

[*] *Curcuma sumatrana*, Miq., *Flor. Ind. Bat.*, Supplement, p. 615.

NOTES FROM A LANCASHIRE GARDEN.

Sept. 16.—"The pleasant time is well-nigh done," so far as the garden is concerned. The Golden-rods and Michaelmas Daisies are almost in flower, and there is already the sharp feeling in the morning air which says that summer is all but over. What a disappointing season it has been! It is all very well to have the mildest of winters, but if a late frost catches all the fruit blossom, and a wet ungenial summer damps off or holds back our flowers, it would seem that an old-fashioned winter is greatly to be preferred.

Our Apples are a dead failure, and as for Pears I doubt whether I can find a hundred in the whole garden, and of these Jargonelles are the only tolerable specimens. We have no Plums; our few Apricots sternly refused to ripen, and a dozen Peaches were scarcely worth making into a very moderate tart. On the other hand, it is fair to say that Strawberries have been exceptionally fine, and Gooseberries exceptionally abundant, nor were we teased as much as usual with that disagreeable visitor, the Gooseberry caterpillar. I think the reason of this may be that we strenuously dug lime into all the soil under the Gooseberry bushes.

Our Peach-house has done well, and so have the vineries, but the bunches are hardly so fine as they should be, and I must renew the border. At this moment, too, the Grapes are suffering from a plague of wasps and big black flies. It is in vain that I tempt them with the most appetising bottles of sugared beer, they evidently prefer the Grapes. I am swathing up some of the bunches in muslin, but I can hardly do this to all. The last resource seems to be to place Tomato plants in the vineries, as I hear that wasps have an inveterate objection to Tomatos. I'm sure I hope it is so; as for finding the wasps' nest, which is naturally the sovereign remedy, we are hopeless. We have searched every bank and hedge, and all in vain.

Before passing away from fruits to flowers, I wish to mention one delightful little fruit which I have



Fig. 62.—Pines grown at Castle Hill, North Devon. (see p. 392.)

grown and tasted for the first time—the berry of the Eugenia Ugni. If it were only a little larger—it is about the size of a very large black Currant—and a little harder, it would be well worth growing. As it is, I intend to have plants enough to supply several dishes next summer. It has a curious aromatic flavour, something like a Strawberry, something like a black Currant, something unlike everything but itself.

The first effect, as one now enters the walled garden, is rather melancholy. The late cold winters all but destroyed our beautiful pink-blossomed Arbutus, which stood by the garden door. I determined to cut it down, in the hope that some of the branches might break out again, but this they have obstinately refused to do, and the little quivering life at the roots, where a few small shoots may be seen, gives me but little hope that this Arbutus will ever really recover.

At this moment the gayest beds I have are where the white Japanese Anemone throws up its delicate blossoms, where the Cardinal flower flames upward from its bronzed foliage, and where the Clematis Jackmanni twines a thousand purple blooms around its supporting withies. Then on the mixed herbaceous borders the Fuchsia is in great beauty, and the Rudbeckia, the Tradescantia, and many more. Along the grass walk the Hollyhocks are standing tall and encrusted over with tufts of rose or sulphur or maroon, though the sunflowers have been a failure. Still, after all, the herbaceous borders have passed their best, and, as Hartley Coleridge says of this season of the year—

"Large flowers blaze out at intervals forlorn."

My Roses have done rather well this year, in spite of the rain, and there is one little Rose which has interested me a good deal. It was given to me a year or two ago, and has this year flowered. The flower is a small pink single flower, and in its general look and habit the plant looks rather like a very minute single Pæony; there are hardly any thorns, and the foliage is peculiar. I was told it was "the Rose de Marie," and then that it was "the Rose of May." Now the only place where I had ever seen it was at a wonderful old abbey in Shropshire, and I had some faint remembrance of a poem by either William or Mary Howitt describing "the Rose of May" as scarcely to be found except among the old abbeys of England. However, I sent up some blossoms to the Editor of the *Gardeners' Chronicle*, and he kindly tells me that it is Rosa carolina, a native of the United States, and that an allied form is called Rose de Mai or Rosa maialis. But with the Carolina Rose there is (to me at least) a more tender association than with even the Rose of May. I suppose there are still some of us who remember the touching story of Nina in Mrs. Beecher Stowe's "Dred," and how, when she went South to visit at the home of her betrothed, the negro slaves all pressed round to well come her, and sung in chorus—

"O, de North Carolina Rose!
O, de North Carolina Rose!
O, plant by our verandah
De North Carolina Rose!

Nor can we quite forget that this never came about, and that later on the refrain could only be—

"Weep, for the Rose is withered!
The North Carolina Rose."

The Japanese Rose (R. rugose), with its wonderful large berries, has done very well this year; indeed, it is the only standard I now have which looks thoroughly healthy. I intend to give up standards altogether. On the other hand I can strongly recommend the pretty old-fashioned pink monthly Rose pegged down with blue Lobelias in between.

Annuals, Zinnias, Phlox Drummondi, and others, have failed with me this year, and a bed of Dianthus Heddewigii, which the late Miss Hope, of Wardie, strongly recommended, was most disappointing—the plants looked weedy, and the flowers were ineffective; however, this, of course, may be the fault of the seed. Foxgloves have been magnificent, beautiful mottled fellows, covered with blossom, and standing more than 7 feet high. The Kalmias, too, have never done better, nor the alpine Rhododendrons.

For the house nothing is now so beautiful, as it seems to me, as the Vallota purpurea, with its intense and brilliant red; and then we have just had in the hall a large pot of Hedychium Gardnerianum with several large scented spikes, and when this Hedychium is out of flower it is worth looking at, for the seeds take brilliant colour, and appear to vie in beauty with the flowers themselves. *H.*

FURTHER NOTES FROM SYON.

FRUIT.

CONTINUING our remarks upon this fine garden from p. 361 of our last number, we propose in the first place to notice one or two points of interest in the fruit-houses. Syon is an early forcing establishment, and therefore the autumn is not the best time to see the finest display of fruits. But those who are acquainted with the details of early forcing, and who know the care and skill required to keep Vines, as indeed all other fruit trees, in a satisfactory condition year after year, cannot help being interested in Mr. Woodbridge's plan of procedure. Here are eleven houses in one range, every one of which contains subjects requiring different treatment. Vines that are to be forced early are fast ripening their wood, the health and cleanliness of their foliage affording the best proof that the work of maturation is satisfactorily going on. In another division renovation is the order of the day; the Vines have been lifted and a new border made outside, and this has been accomplished without the loss of a single leaf. Mr. Woodbridge considers August the best month in the year to carry out operations of this nature with early Vines. The Muscat-houses are being gradually renewed with young Vines, which are remarkable for that medium stamp of growth which brings fertility in its wake, as well as symmetry of bunch and high colour. Alnwick Seedling, which is somewhat shy to set, is well done at Syon, the secret of success being that the Vine has been grown in a Muscat temperature. The bunches are of medium size, perfect in form, and as black as Sloes. In the fruit line, however, we were more struck with the crops of Figs than anything else. The trees have been bearing all the season, and are still swarming with fruits in various stages, notwithstanding that they are being rested and will have to be forced again early next season. The favourite varieties are Brown Turkey and White Ischia, which we are sure will be superseded by that grand new variety, Negro Largo, the best Fig in cultivation and the highest flavoured. The late crops of Melons are very fine for this season, or, indeed, any season, and will come in about the end of next month or the beginning of November. In this division we noticed a stock of well-grown Calanthes.

THE TROPICAL HOUSE VINERY.—This is the title of a large lofty vinery which was formerly employed as a tropical house, hence its name. It is in two divisions. In the first one there are good Lady Downe's, Black Alicante, and Mrs. Pince's Black Muscat Grapes, the former very fine in berry, as well as in colour. The second division is planted with young Vines of Madresfield Court and Muscat of Alexandria, with pot Vines growing between them.

THE BANANA HOUSE.—The splendid accommodation afforded at Syon for growing these noble leaved plants enables Mr. Woodbridge to grow and fruit them to perfection, and to have a good succession of plants coming forward in the order of rotation. In the same house the Vanilla is in fine health, and fruiting remarkably freely. Its roots are confined in a narrow border, but as roots are freely produced up the stems the great point is to maintain a tropical heat and plenty of moisture.

PLANTS.

The show of greenhouse plants is of an unusual character for the season. They consist of decorative Pelargoniums, Fuchsias, tuberous-rooted Begonias, and Celosia compacta, Crimson Superb. Such a show of the decorative section of Pelargoniums in September is novel; we do not say the same has not been done elsewhere, but it is a fact that a display of those flowers in September is rather the exception than the rule. Four different batches are flowered at Syon every season, the latest one being the most useful of all. Such varieties as Captain Raikes, Blanche, Dr. Andrews, and Salmon Queen, afford very gay material for a show house, and they are no less useful as cut flowers. We noticed a fine stock of Begonia insignis coming forward for winter flowering, but the great attraction in the cool plant department is Mr. Woodbridge's strain of Celosia referred to above. The plants are of uniform height, dwarf bushes, grown in 48-sized pots, and produce their rich crimson feathery plumes in regular conical form, and so thickly that no prettier objects could be imagined for the dinner-table or other purposes of furnishing. The plants have a very brilliant effect by gaslight.

ORCHIDS AND STOVE PLANTS.—These are grown in a range similar to that in which the cool plants are grown, but furnished with additional appliances for giving the necessary heat and moisture. The Orchids consist chiefly of useful subjects, such as Odontoglossums, Oncidiums, Cattleyas, Cœlogyne cristata, of which there is a good healthy stock; Aërides, Vandas, Dendrobiums, Cypripediums, and others. Anthuriums are also prominent in the collection. Of miscellaneous subjects we find these vary a good deal as regards the number that are grown. If Mr. Woodbridge is anything, he is practical. He calls his houses "workshops," and they are fitted up rather to facilitate work than to look as mere ornaments. Upon the same principle, plants are grown in quantities according to their usefulness. We have never seen a finer stock of Hymenocallis macrostephana than those at Syon; they are large bulbs, with broad shining leaves, and the vigour of one or two plants in bloom gives one an idea of what the sight will be when the whole collection is in flower. The flowers are beautifully scented, and they are used singly at Syon for filling small glasses. They have also a bold effect when the flower-spikes are cut in their entirety and put in glasses of medium height in sitting-rooms accompanied with a few sprays of Ferns. We were much struck with a plant of Stephanotis floribunda in flower, the rich fragrance of its blossoms being an unexpected pleasure at this late period of the year. In the same house Dipladenia boliviensis is quite a show of flowers; the plant is trained near to the light, and flowers continuously for months together. Dipladenia Brearleyana has been in flower since May, and the blooms even now show no signs of falling off in size, substance or colour. The plant is rooting out into a bed of cocoa-nut fibre refuse, and as many as ten dozen flowers have been gathered from it at a time. At the front of this house we noticed a bed of Gardenias, and elsewhere a very fine stock of Cycas circinalis, grown in 10-inch pots for furnishing.

PLANTS FOR FURNISHING.—These fill several houses in the botanic garden, and consist of Palms, Dracænas, Aralias, Pandanads, and Ferns. Of the latter a whole house is filled with large plants for cutting. Mr. Woodbridge raises all the young stock from spores, and has always a large supply on hand to meet emergencies. Thousands of winter-flowering plants are grown besides, including Primulas, Cinerarias, Cyclamens, bulbs of sorts, Heliotropes, Mignonette, Chrysanthemums, and numerous other subjects of a useful and decorative character.

CUNONIA CAPENSIS.—The plant of this now in flower at Syon is said to be the only one of its kind in this country. It bears numerous white flowers after the form of the Bottle-brush, and has beautifully cut leaves, which renders it a striking and ornamental plant for the conservatory, where there is plenty of space to grow it to a good size.

CLETHRA ARBOREA.—Another conspicuous plant at Syon is the Lily of the Valley tree. It has attained the dimensions of a large bush, and has been bearing numbers of its striking white flowers since early in August. It is a plant that should be freely grown among Camellias in large plant structures.

ARISTOLOCHIA ORNITHOCEPHALA.—This remarkable plant is bearing a profusion of its bird-like flowers almost the colour of a partridge. It is not unlike the pitcher of a Nepenthes with wings, the dark veins and spots giving the flowers a very singular appearance. The plant is trained as a creeper in one of the warm divisions of the conservatory.

RHODOCHITON VOLUBILE.—This charming creeper is also in flower in a cool division of the conservatory. The shoots hang gracefully from the roof, nearly 3 yards in length, and are studded with beautiful purplish-mauve flowers.

THE ROSE-HOUSE.—The management of the Rose-house is one of the most instructive features at Syon. The Roses are planted in an outside border like Vines, and trained up the wires as Vines are. The strong growing varieties, such as Maréchal Niel, Gloire de Dijon, and Cheshunt Hybrid, are planted at their base with such kinds as Lamarque, Alba rosea, and Madame Margottin, leaving not an inch of space that is not covered with leaves and flowers during the growing

season. This house is also used for storing Azaleas and Camellias in winter.

The Victoria Regia-house, where the great Lily was formerly grown, is now filled with a stock of Pelargoniums for autumn flowering, including that charming pink variety Gloire d'Orléans, which, we believe, was first brought into prominent notice by Mr. Barron, of Chiswick, also a healthy collection of Azaleas and Lapagerias, the red and white varieties.

GARDENING IN EGYPT UNDER THE PHARAOHS.

We (*Land*) take the following sketch from the Rev. F. Barham Zincke's *Egypt of the Pharaohs and of the Khedive*:—

"That horticulture was a favourite occupation among the ancient Egyptians is shown abundantly by their sculptures and paintings. Representations of gardens are so common that we may infer that no residence of any pretensions was considered complete without them. We even see that rare and interesting plants, brought from Asia and Ethiopia, each with a ball of earth about the roots carefully secured with matting, formed at times part of the royal tribute. The very Lotus, which may be regarded as among flowers the symbol of Pharaohonic Egypt, is supposed to have been an importation from India. In this matter, as in every other respect, the country has sadly retrograded.

"Their style of gardening was stiff and formal. Straight lines were much affected; angles did not displease. Basins or ponds of water were *de rigueur*. Every plant or tree was carefully trimmed and trained. It could not have been otherwise. This was all settled for them by the aspects of the Egyptian nation, the character of their religion, and their general manners and customs. As is the case among modern Orientals, flowers were not so much valued for their form and colour as for their odour. The European of to-day, as he looks on the painted or sculptured representations of Egyptian gardens three or four thousand years ago, at which date his own ancestors were living in caves, from which their ancestors had expelled races of animals now extinct, finds that, notwithstanding the barbarism of his ancestors and the recentness of his civilisation, there have come to be reproduced in himself ideas and sentiments which were giving grace and finish to the highly-organised society which had been established then—no one knows for how long a period—on the banks of the Nile. At all events, he beholds in these Egyptian gardens a curious instance of an instructive similarity between the two, for he sees that the Egyptian of that day, just like the Englishman of to-day, took pleasure in watching and controlling the life and growth of plants; in tending them because they tasked and were dependent on his thought and care; in making them minister to a refined and refining taste for the beautiful, and in creating by their aid, within the limits in such matters assigned to man, a kind of artificial nature.

"Of course, all subtropical and many tropical trees and plants do well here, if only they can be regularly supplied with water. I never saw more interesting gardens, on so small a scale, than those of Signor Cecolani at Alexandria, and of the American Consul at Port Said. The same may be said of the gardens of the Viceroy at his Gezeerah Palace. In them you will find the plants we keep in stove-houses doing well in the open air, and many of them in flower at Christmas or soon after. In the first-mentioned of their gardens I saw very beautiful specimens of the Norfolk Island Pine, about 30 feet high, growing luxuriantly. There was also a species of Solanum, which, if I knew its Christian name, I would recommend to the attention of those who are endeavouring to produce in their English gardens something of a subtropical effect. It was about 10 feet high, and so regularly filled up with branches as to have a perfectly symmetrical and somewhat dome-like form. Its leaves were large, rough, and prickly. At the extremity of each twig or lesser branch was a large branching spike of purple flowers. The individual flowers in the spikes of flowers were about the size of the flowers of its relation, the common Potato, and similar in shape. It was a most effective shrub. I never saw one more so.

"It is generally supposed amongst us that our English gardens are quite unrivalled. They may be in the thought, care, and money bestowed on them; but in variety of interest they are very inferior to Egyptian gardens. They may contain all the plants we consider most beautiful and most worthy of artificial heat, which, too, may be grouped with Bamboos, Palms, Indian Figs, Bananas, Cactuses, Daturas, Poinsettias growing 9 or 10 feet high, and many other plants and trees one would go some way to see growing with the freedom they exhibit in this bright, winterless clime, in which the transparent sunlight is never the mere mocking garb of a withering Liebig extract of east wind."

NEW INVENTIONS.

Boilers.—Mr. Warhurst, already favourably known by his modification of the saddle boiler, and anxious, perhaps, to please the advocates of the tubular as well as those of the saddle boiler, has designed what he calls the Monarch Boiler, which consists of a tubular boiler, but of wrought iron, and encased by a conical flued boiler communicating with the tubes. In this way it is claimed that an extraordinary amount of heating surface is compressed into small space. The boiler can be used with or without brickwork setting. The same principle is carried out with horizontal tubes. The outer water-jacket absorbs the excess heat from the water in the tubes, and so equalises the temperature and utilises the whole.

Arnold's Patent Simplex Garden Pump.—This we consider to be one of the best articles of its kind with which we are acquainted. The working of it is simplicity itself, and the gardener will find his labours very much lightened by its use. Instead of the tugging and pulling required to force a continuous stream of water, as in the case of ordinary pumps constructed upon the packing principle, you have only to press the piston downwards—the slightest touch being sufficient to do this—and the wire spring rising swiftly in the cylinder does the work that the operator has been accustomed to do before. The whole material being of metal, the implement is of a most durable and simple character; and it is sure to meet with a hearty welcome from the gardening fraternity without exception—if, indeed, its sphere of usefulness does not one day extend beyond the precincts of the garden. In the Simplex garden pump the amateur will find a new friend, and in future he may cleanse his wall trees, Roses, and even his greenhouse, with half the labour that he has done before.

THE RETINOSPORAS.

Under this heading I observe that at a recent meeting of the Scientific Committee of the Royal Horticultural Society, Dr. Masters showed fruiting specimens of R. squarrosa, received from Mr. Meehan of Philadelphia, and which confirmed the opinion that R. squarrosa was a larval form of R. pisifera.

These specimens are the more interesting in view of the stand taken by Mr. Meehan, no later than May, 1881, when he asserted that the garden plant represented by them was a "juvenescent form of R. obtusa, and not of R. pisifera."

I, too, have before me, at last, a cone-bearing branch of R. squarrosa, for which I am indebted to the kindness of the Messrs. Veitch, of Chelsea. It is just such a piece as for years I have longed to see, because, like Mr. Meehan, I had my notions about the proper place of the plant in the coniferous scale; I even made notes about it and kindred plants during the month of September, 1879, with a view to offer them to the Editor of this journal for publication, but I preferred to wait until I was in possession of some such fruiting specimen.

And even now, though perhaps just a little late, it may interest some to know what reason I had, three years ago, to believe the Veitchian R. squarrosa to be a variety of the dissimilar looking R. pisifera. I shall quote from the MS. notes referred to.

"Retinospora pisifera, in its normal state, passes from youth to age, through three distinct phases of vegetative vigour, these being represented by well-defined differences in the shape of their leaves. The first, or juvenile state, in its foliage, is represented in gardens by the Veitchian R. squarrosa; the second, or sub-adult state, by the rather long, loosely imbricated leaved R. plumosa; and the last by the adult fruiting or typical condition."

"In the autumn of 1875 I collected a quantity of cones from two very distinct seedling plants, each about 12 feet high, of undoubted pisifera.* Their contents were sown, and in due course I was rewarded with about 2000 seedlings, many of which are now (September, 1879) 2 feet high. They were all like R. squarrosa for the first four months of their existence, after which, towards the close of the season, the great majority assumed the branches and leaves of the garden R. plumosa, and in the following year finally developed into the third and last specific leaf phase. A small minority did not change from the strictly juvenescent or linear-leaved phase until they were nearly two years old; and one in particular only when it was quite three years old, which then passed into the intermediate or sub-adult phase of R. plumosa, in which garb it may or may not remain. I am however of opinion that it has become "fixed," because it has this year added 18 inches to its stature, without showing the least tendency to assume the specific adult foliage. One other of these seedling pisiferas is at the present time—say four years from the time it germinated—identical in all its characters with R. squarrosa, *i.e.*, unchanged from its original juvenescent condition."

"Before me is a pisiferoid branch which I lately cut from a large plant of R. squarrosa. It is what is known as a 'bud variation,' in that in the shape and arrangement of its branchlets and leaves it is identical with R. pisifera. Such 'bud variations' are not infrequent on the garden forms of the species of Cupressinæ.

"Before me is a branch of undoubted pisifera of a golden-green hue, which I cut from a large plant of R. plumosa aurea. There is also in my herbarium a similar specimen but of a whitish hue, which I cut from a plant of what is known as R. plumosa argentea. I have also a normal branch of R. pisifera, which I cut from R. filifera. All these bud variations are constant when propagated."

"I have now, I believe, given good circumstantial proof that all the garden plants above mentioned are merely juvenescent or depauperated forms of R. pisifera; nevertheless, were other proof required, I might ask interested readers to compare the trunk barks of all the varieties above enumerated with that of R. pisifera, and they will find them to agree in every detail. And what applies to this species and its varieties is equally applicable to other species of Cupressinæ and their garden varieties, so that in future there need be little difficulty in deciding the parentage of garden Conifers, for each species, when carefully examined, will be found to be possessed of a decidedly distinct and peculiar trunk bark."

Geo. Syme, Jamaica.

* "The general law that 'like produces like' would appear to be as applicable to the individual as it is to the specific community. I have stated that the two plants from which the seeds were gathered were 'very distinct seedlings.' One had more spreading branches, and broader, darker green leaves than the other. Their distinctive types are now very apparent in the batch of 2000 seedlings; one set with rather strict branches and narrow light green leaves; the other with spreading branches and stouter, darker green leaves. We have also seen that by some law of growth, at present imperfectly known, occasional seedlings of the race are cramped and restricted in their development, and thereby made to assume exceptional and apparently new characters, which, if fertility supervenes, do not always die out with the original individuals, but are frequently perpetuated (if not intensified) in the offspring or issue. And these deviations from the community or specific type are by no means confined to the vegetative organs, but are accompanied by corelated changes in the reproductive organs. I have here particular reference to such garden forms of R. pisifera as plumosa, filifera, and argentea (and I may now add squarrosa), all of which are certainly several degrees less vigorous than the typical plant; and those botanists who have seen the fruits of these will the more readily appreciate the position I here take. I may add, having proved it, that there is nothing more certain than that these remarkable garden varieties most faithfully perpetuate their respective peculiarities by seed. It may interest physiologists to learn that a dozen or more of the 2000 seedlings referred to range through all shades of greenish-yellow to sickly white. Their colour weakness is probably a result of imperfect ovular fertilisation, and this view is perhaps strengthened by the fact that the parent plants were respectively isolated and therefore dependent on their own pollen and the whimsical breezes for the fertilisation of their flowers. I think it highly probable, though I have not time now to discuss it, that to this cause—imperfect ovular fertilisation—must also be attributed the origin of the abnormal peculiarities of the cultivated varieties of R. pisifera." *G. S.*

FORESTRY.

A Substitute for Larch.—Will you allow a layman to supplement Mr. William Carmichael's remarks on "a substitute for the Larch" in your paper of the 16th inst.? I will not discuss whether the Larch is doomed, but I am sure it will be well to be prepared with a substitute. Before the disease had become so prevalent, I had often cast about for another nurse, owing to the mischief so frequently witnessed from the overpowering growth of the Larch. Every one must have known plantations nearly, if not entirely, denuded of hard wood from the smothering qualities of the Larch. The answer will be that these plantations cannot have been properly thinned, but we all know how loth a forester is to waste his time over Larch sticks not much thicker than one's thumb. Where an ornamental wood is the object, and profit not considered, Birch make admirable nurses; they are pleasing to the eye from their earliest and their latest days, and in exposed situations not to be beaten. The only exception I can take to your correspondent's letter is where he talks of Taxodium sempervirens as a substitute for Larch. My experience of this tree is that, however well it may be growing,

when it overtops its neighbours and lacks shelter it invariably loses its leader, and therefore it cannot be considered hardy. Douglas Fir, I have been told on good authority, is the second best Conifer wood in the world; but then, as your correspondent truly says, it will not grow everywhere, and it also is very apt to lose its leader under exposure. My experience has chiefly been on a limestone soil in Ireland, where few Conifers flourish. I can answer for Thuia Lobbii growing in a marvellous manner, but I have never seen it under exposure, nor do I know anything about the quality of the timber. The Larix leptolepis is a stranger to me, but I hope Mr. Carmichael does not overrate its good qualities. Abies nobilis is too captious as to soil and situation to reckon upon. Last, but not least, comes the Pinus Laricio, a gawky, ugly plant, but as a hardy nurse quite invaluable. I am told that the wood is excellent, but of this I have no personal knowledge. Up to this date I consider Pinus Laricio as the substitute for Larch, and, for reasons which I have given above, preferable for some things. I am, moreover, not sure that the droppings of the Larch do not injure young hard-wood plants. I trust this subject will not be allowed to drop, and that some of your correspondents will favour us with their experiences. *L. Agar-Ellis, Albany, Piccadilly.*

—— Your correspondent, Mr. Carmichael, says "that your correspondents might do good service in pointing out localities where it [Abies Douglasii] thrives." Permit me, then, to say that it is growing here (south-east coast of Ireland) magnificently on the sides of a rocky (trap-rock) glen. The trees were planted with Larch, Spruce, &c., and have far outstripped them all. I have also a few flourishing trees planted for experiment in retentive undrained clay, which bears good Oak and Scotch Fir; but I do not accept this as a proof of ultimate success, for I find that Larch also flourishes in this soil for ten or twelve years, when it deteriorates rapidly. I should say that all my specimens of Abies Douglasii are sheltered from wind, but not much above sea level. The great drawback to the planting of Abies Douglasii on a large scale is its price. Is Taxodium sempervirens hardy in all parts of the British Isles? I have seen it much injured apparently by cold in Norfolk, but Mr. Carmichael's experience at Bury St. Edmunds may show that I was mistaken in the cause of the injury. Gordon (Gordon's *Pinetum*) says of it (Sequoia s. v. Redwood of the Californians) :—"The timber is fine and close grained, but light and brittle." I have, therefore, only planted a few for ornament in sheltered places—they are most flourishing.

I am glad to see Mr. Carmichael notices Thuia Lobbii as a possible substitute for Larch; it is identical, I think, with Thuia gigantea (not, of course, with the tree once called Thuia gigantea, but now Libocedrus decurrens). Sir E. Belcher, quoted by Gordon and Veitch, says :—"The timber is very fine grained, very valuable, and much used at Sitcha for building purposes," but Veitch (*Manual of Conifers*) says in a note :—"It is quite probable that Cupressus nutkaensis may be the tree Sir Edward refers to." This tree flourishes with me wherever planted. I find it is easily propagated from cuttings. Can any of your correspondents give any information of the Cupressus Lawsoniana referred to in a quotation from a report of the United States Commissioners on Port Orford Cedar as given in your columns on July 2, 1881, p. 8 (this should be a good tree for sandy soils), or of Thuiopsis dolabrata, which should flourish in damp soils? I can find no notice of its value as a timber tree. The question of a substitute for Larch being of so great importance I could hope that all your readers who have any experience will contribute to the public whatever information they can give. *C. C. H. G.*

—— If your correspondent, "A Country Gentleman" (page 204), were to plant the Nutka Cypress as a substitute for Larch I do not think that his successors would complain. Although of less rapid growth, its beautiful clean stem gives promise of health, and its habitat, as far north as Russian America, shows it to be hardy. Admiral Mayne describes it as the best timber for boat building that he had met with. *H. K.*

PETALOSTEMON FOLIOSUS.—Under this name there is now blooming in the herbaceous department at Kew a charming species of Prairie Clover, the English name of the genus Petalostemon given in Dr. Asa Gray's *Manual of the Botany of the Northern United States*. It has small pinnate leaves, with linear leaflets and terminal spicate heads of rose-purple flowers.

GUMMING IN FRUIT TREES.

LAST summer it was discovered in the botanical laboratory of Professor Hugo de Vries, at Amsterdam, that one of the three diseases of Hyacinths now prevailing in Holland is caused by Bacteria. The bacterial slime spreads, together with the sap-current, through the xylem, or woody part of the vascular bundles, and consequently infects the whole plant, even the tips of the leaves.

M. de Vries having told me of this discovery, it occurred to me that the gum-disease (gummosis) of our stone-fruit trees might be explained in like manner. I supposed the gum might be slime of bacteria; and I thought this the more probable as I had frequently discovered numerous extremely small bacteria in the gum-diseased wounds of Peach trees; yet I must especially note here that I have up to this time not been able to find any traces of bacteria in the transparent lumps of gum excreted from the wounds.

If my supposition were right, it followed that the disease might be occasioned in healthy trees by means of artificial inoculation; and in order to make sure as to this I resolved to undertake a series of experiments. In February of this year, therefore, I made a considerable number of incisions, such as are made in budding, into the bark of the one-year's branches of a perfectly healthy Peach tree. Under the bark, which I slightly raised for this purpose, I inserted small dried particles of gum which I had taken from the branches of a Peach tree suffering to a high degree from gum-disease. The consequence of this proceeding was that each of the infected wounds became much diseased, so that in May at every infected spot a lump of gum might be seen many hundred times the size of that used for the inoculation.

In order to render my experiments quite trustworthy, I took care to make other incisions in the bark in the vicinity of each of the infected wounds, but without introducing any gum. Without a single exception all these incisions remained quite healthy for a very considerable time; the greater part of them formed a sound callus; some few were at last infected by the gum which descended with the drops of rain-water from the neighbouring diseased wounds.

Later in the year I repeatedly experimented with other species of trees also. With the Peach the result was always the same; the branches of the Apricot also proved to be easily infected by the gum derived from Peach trees. On the contrary, incisions made in the fruits and petioles of an Apricot, though infected with gum, healed completely, without any gum having come out of the wounds. I also succeeded in causing gum-disease in a perfectly healthy Plum tree by depositing under the bark of the stem and branches particles of gum taken from a Peach. With Cherry trees, too, I have frequently made the same experiments, always using the Peach-gum for the inoculation, but as no gum ever appeared in the wounds, it seems that the gum-disease of this tree is of a somewhat different nature to that of the Peach, Plum, and Apricot.

To me it seems that the above experiments have satisfactorily shown the fact, important to practical horticulture, that the gum-disease is really contagious, and may be artificially caused by inoculation. But whether my original idea, that the disease arises from bacteria, be really true is not yet demonstrated; and I must call particular attention to the fact that I have frequently been successful in producing gum-disease by means of particles of the quite transparent and clear gum above-mentioned, but in which microscopical examination did not reveal the slightest traces of bacteria. Yet it must be admitted that some few of these extremely small organisms might very easily escape observation, particularly on account of their being embedded within the slimy substance formed by the disorganisation of the cell-walls. It must also be acknowledged that the principal symptoms of the disease * may be well explained if attributed to bacteria. Nevertheless, whatever the truth of the matter, the knowledge of the fact of the disease being contagious is important, and some practical hints may be derived from it for combating the evil.

The manner in which healthy trees in nurseries and gardens are first infected cannot yet be explained. It is, however, very probable that the evil, having attacked one tree, spreads over the nursery in various ways. With regard to this the following points seem to deserve particular attention :—1. The gardener, having touched or pruned diseased trees, is likely to infect healthy trees by means of particles of gum sticking to his hands or pruning-knife. 2. The rain dropping from diseased branches may fall upon healthy parts. 3. It may be that the wind wafts dried parts of gum through the nursery. It follows therefore that the means of contending with the disease are—Carefully to cleanse the hands and the pruning-knife after the pruning of diseased trees; to burn the diseased branches that have been lopped off, and not to throw them aside with the rubbish of the garden; and if possible, to remove from the nursery all the trees suffering from the evil.

The great similarity that exists between the gum of stone-fruits and gum-arabic, or gum-senegal, induces me to think that the latter drug might be also artificially produced in the trees (certain species of Acacia). If this idea be right, a new branch of industry might be originated in the countries where such trees are grown. *Dr. U. W. Beijerinck, Wageningen, Netherlands.*

* P. Sorauer, *Handbuch der Pflanzenkrankheiten*, Berlin, 1874, p. 188; B. Frank, *Die Krankheiten der Pflanzen*, i, Breslau, 1880, p. 85.

PEACH TREE LIFTING.

FEW subjects engage the attention of gardeners during the present month more than the transplanting of Peach trees, and the renewing of worn-out borders. Our artificial system of fruit growing almost forces operations of this kind annually upon those who have large supplies of fruit to produce in succession year after year. We are not now satisfied with either the same numbers or the size of fruits that would have delighted our forefathers. We have performed prodigies in fruit culture in regard to size, but whether we have made a proportionate advance as regards quality is another matter. At all events, both quantity and size must be forthcoming at the present day, and to achieve both cultivators very often tread upon experimental ground, sometimes, it must be admitted, with success, but often, alas! receiving but meagre results in return for their labours. We do not discourage the efforts of the experimentalist, quite the contrary: what we would like to see is some plan of a carefully devised nature set about in respect to the accomplishment of certain ends. We suspect gardeners have lately learned to trust too much to artificial manures. Many of them—perhaps most of them—are good in their way, but they are often applied at random, and frequently with anything but satisfactory results. Again, there is another section of cultivators who, from a praiseworthy ambition to excel, use powerful stimulating liquids, which are fatal rather than beneficial to the object they have in view. Many liquids are rank poison both to roots and soil, killing the former, and rendering the latter unhealthy. Used with discretion they might become powerful fertilisers, but in our zeal to do well we produce or bring about a directly contrary effect. Most practical men must have noticed that manure applied in a liquid form to pot plants, if used beyond a certain strength, will clog the surface of the soil in the pots and render it impervious to water. The same thing goes on in the case of fruit borders, until the pores of the soil are well nigh closed up, and, while the roots are famishing beneath, the water which should go to nourish and sustain them finds an outlet by the sides of the walls or crevices under the hot-water pipes, while the surface of the soil appears moist and refuses to take in the water. Parts of a border are sometimes dry, while the adjoining portion is saturated. Again, soils vary much in regard to the amount of nutriment they contain: some are light and fibrous, and in these fruit trees grow and fruit freely for a short period, but a time comes when there is a falling off in the quality of the crops, and steps must be taken to restore the trees to their former health and vigour. We might go on enumerating causes which lead to unsatisfactory results, but enough has been said to show that it is a duty incumbent upon gardeners at this season to examine for themselves the condition of fruiting trees, and to weigh well in their minds the prospects for another season's crops. A tree or trees that are deficient of roots, cannot, for obvious reasons, produce good fruits. We do not ignore the skill of the cultivator in pruning, dressing, training, and other practical remedies, which tend to fertility in fruit trees, but, depend upon it, as long as there is anything wrong with the drainage of a border, or with the material of which it is composed, the annual returns cannot be profitable.

Dressings may be given to the surface of borders which will materially assist in the increase of roots, and give corresponding vigour in the branches, but still there will be ill-formed, split-stoned fruits as a result of partial derangement caused by defective action of the roots, temporary or otherwise as the case may be. Renew the border, and the state of things is changed as if by magic. Peach trees at any age always bear shifting or transplanting so well, that an experienced fruit grower never scruples to undertake the task. Not only is this so, but large trees may also be taken from the open walls to furnish new houses or structures, which, from a variety of causes, require renewing with healthy trees. Where the trees are under glass the sooner these operations are carried out the better. First prepare the compost — rich maiden loam roughly chopped up and slightly mixed with lime rubble and a few brickbats broken up small, and when the trees are ready for shifting the work proceeds smoothly. Broadly speaking, the operation may be commenced when the leaves begin to fall rather thickly. It is an advantage to the trees if the work can be carried out during dry dull weather, as in that case they will sustain little or no check. But as we cannot command the weather, we can at least do something towards obviating its effects when it is unfavourable to the carrying out of important operations. We can screen the trees from strong sunshine while the work is proceeding, and we can be careful not to undertake the lifting of more than one tree at a time. If the work is properly organised, the most skilful workmen will remove the soil from the trees' roots with forks, while the less experienced take it elsewhere. One side of a tree is done first, then the other, laying in the young roots in the fresh compost which is being supplied by a different batch of workmen. Thus there will be but four hands employed in the house at the same time, while a dozen may be engaged in assisting in one way or another. The tree once planted, it is unfastened from the wall or trellis, and allowed to remain so until the new compost subsides to its proper level, except that the larger branches may be loosely slung to the wires for the sake of convenience, and also that the sun, air, and light, may have full play upon the shoots. The work completed, syringe the trees every morning, and shade from strong sunshine for a few days if they appear to suffer. We operated upon trees in this way in an unheated house about two years ago, when the great bulk of the crop was unfit to go to table owing to the condition of the border, in which healthy root-action had ceased to exist, except such as was coaxed upon the surface by mulching and other means. The trees were quite green when the transplanting took place, and the wood appeared to shrivel under bright sunshine, but by using the syringe, and shading slightly, they were soon restored to their normal condition, and we afterwards ripened the wood well, and gathered a crop of excellent fair-sized fruits the following season.

In case of furnishing new houses we have acted on the same principles, removing trees from late houses to furnish early ones, and forcing them the following season. We syringed the trees and kept the house close for a week or so after they were shifted, but giving no shade, and afterwards applied heat and ripened the wood in time to start forcing at the new year. We may use artificial manures, feed with strong liquids, surface mulch, and exhaust every known remedy in our effort to restore health and vigour, but no remedy is equal in effect to the new border composed of pure maiden loam, and a proper proportion of rubble. *W. H.*

ORCHID FUNGUS.

NUMEROUS specimens have occasionally been forwarded to us of a disease which has perplexed cultivators of Orchids as much as the notorious Cucumber pest has almost every gardener in the kingdom, and which have in both cases elicited much interesting information, though unfortunately it appeared after all that the disease was inscrutable, if that were any real satisfaction. There are two forms which appeared on Orchis leaves known under the name of black spot, one of which often comes over with imported Orchids, and which evidently commenced while the plants were still in their native country. This was comparatively slow in its progress, though it too often proved in the end fatal. The other was paler in colour, but more speedy in action, and was altogether moister, and it is to this we now call attention. A small leaf of a Dendrobium was lately sent to us which called to mind a matter to which some years since we devoted much time, though without success. Instructed previously by what had been written by De Bary and others, we at once examined the leaf, and at first we found an immense quantity of aleurone (a proteinous matter) under most of the forms figured by Hartig in a paper translated from the *Botanische Zeitung* in *Annales des Sc. Naturelles*, ser. 4, vol. vi., and especially the very curious form represented in fig. 7, i.—ii. Mixed with these were abundant globose pale umber bodies, which we supposed to belong to a species of Protomyces, but as they were without any trace of mycelium or connection with hyphæ we felt rather doubtful. However, a fortunate thin slice brought into view abundant mycelium, with infant sporangia, besides others which were perfect and connected still with the fertile threads. A comparison of our figure (fig. 63) with those of De Bary in *Beiträge*, No. 1, 1864, will at once show that we have before us an allied production, for which we propose the name of Protomyces concomitans*. Our figure represents dark spores quite free, and others still adhering to the fertile threads, besides abundant mycelium passing beyond the cellular tissue,

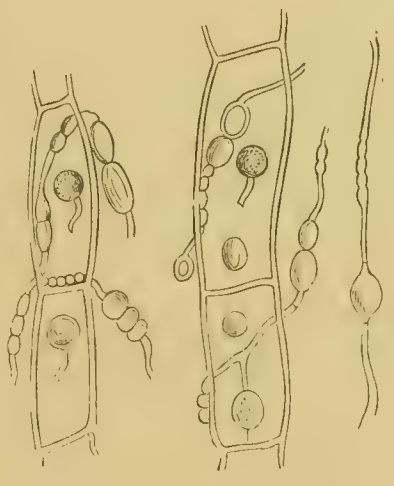


FIG. 63.—AN ORCHID FUNGUS—PROTOMYCES CONCOMITANS, BERKELEY.

and sometimes immediately under the true cuticle. In one spore there is a distinct margin. *M. J. B.*

HARDY ORCHIDS.

(*Continued from p.* 363.)

THE selection of species now to be described does not by any means exhaust the list obtainable for the purpose. The asterisk (*), as before stated, signifies that the plant requires the loamy compost described at p. 363; the † is affixed to those which require protection from wet, while dormant.

**Aceras anthropophora* (the Man Orchis) is a common dwarf-growing British species, with oblong leaves, and spikes of small greenish-yellow flowers edged with pink; the labellum is long, four-lobed, resembling a man hung up by his head; hence the common name. *A. hircina* (the Lizard Orchis) is a peculiar and very rare native species, with stem growing from 18 to 36 inches high, terminated with long spikes of flowers, of a dull rose colour; the labellum is very conspicuous, three-lobed, with the central lobe elongated and tail-like, hanging down 2 inches or more in length; and somewhat resembling the tail of a lizard.

Arethusa bulbosa. — The only species; found sparingly in swampy places throughout the North-eastern United States. It has a one-leaved scape, 6 to 9 inches high, with a large, solitary, rosy-purple flower, sweetly scented. The root is small and tuberous. It delights in abundance of moisture during growth, usually flowering with us in June or July.

†*Bletia* (*Cymbidium*) *hyacinthina.*—A native of North China. It is a tuberous-rooted plant, with narrow, shining leaves and naked scapes, terminated by racemes of rosy-pink, very fragrant flowers. It flowers outside in June, but much earlier if under shelter, and it is well worth room in the cool Orchid-house. There is no doubt this plant is as nearly hardy as possible, but with frame protection it thrives well with a little loam with peat.

Calopogon pulchellus.—This is a common species in the United States, inhabiting wet swamps at the margins of woods. It is tuberous-rooted, with narrow grass-like leaves, and smooth, slender scapes, 9—12 inches high, with from two to four flowers at the top; flowers an inch or rather more across, of a bright purple colour, with the labellum at the top of the flower, which is its normal position; a small tuft of hairs at the base of the labellum is very distinct. It is a very handsome and free-growing plant, quite hardy, flowering in July. The following species can also be as easily grown, also natives of North America—*C. multiflorus*, *parviflorus*, and *pallidus*.

**Calypso borealis.*—This is a dwarf-growing plant, with a slender stem not more than 6 inches high, with one ovate leaf clasping the stem at the base, terminated by a solitary flower rather less than 1 inch long, brown tinged with delicate rose, with a yellow crest on the lip. It is an elegant little species, enjoying a damp and shady position, flowering very early in the year. It is distributed throughout Northern Europe, Asia, and America, occurring in several of the North-Eastern States. An excellent figure of it appeared in the *Gardeners' Chronicle*, vol. xvi., p. 656.

**Corallorhiza innata.* — A curious little plant, occurring in Scotland. It is of slender growth, and parasitical, with stems 6—9 inches high, with brownish scales instead of leaves, and greenish-white flowers; the lip more white, 3-cleft. The root is formed of a number of thick fleshy fibres, freely divided into short blunt branches, copiously interlacing, of very remarkable appearance. Hence it has received the name of Coral-root. Flowers in July. *C. multiflora* is a more handsome plant, found in the North-eastern United States.

†*Cypripedium acaule.*—A native of several of the Atlantic States of North-east America. It has two oblong radical leaves, from which the scape springs about 4 inches high, naked, with the exception of a bract subtending the base of the flower; the latter being nearly or quite 2 inches long; sepals ovate-oblong, acute, brownish-green; petals linear, brownish-purple; labellum large, much inflated, tinged and veined with rosy-pink, and very conspicuous. It has been grown in a few collections for a very long time; flowering in May.

†*Cypripedium arietinum.*—This is also a North American species, but nowhere very plentiful. Stem about 1 foot high, clothed with ovate-oblong hairy leaves, and terminated by a solitary flower; sepals and petals greenish-brown; labellum projecting, white, heavily tinged and veined with rose. A very rare plant under cultivation, flowering during May or June. It enjoys abundance of moisture during the summer, but must be kept dry when in a dormant condition.

Cypripedium calceolus.—This is one of our rarest British plants, occurring only in a few northern localities, although more abundant in other parts of Europe. Stem 12 to 18 inches high, with a few ovate, hairy leaves. Flowers one, two, or rarely three on each stem; sepals lanceolate, brownish-purple; petals linear, wavy, of the same colour; labellum large, pouch-like, bright yellow. It is a very pretty plant, and will succeed in ordinary border soil in a partially shaded position, flowering in June and July.

†*Cypripedium californicum.*—A rare species, from Oregon and California. Stem from 18 to 24 inches high, copiously clothed with oblong acute leaves. Flowers numerous, varying from six to ten, axillary, about 1 inch across, with brownish-purple sepals and petals, and the labellum pure white and projecting; a very distinct species, owing to the axillary inflorescence. It flowers in this country during June and July.

†*Cypripedium candidum.*—This species occurs in the Western United States, and is a comparatively rare plant in its natural habitat. Stem slender, from 9 to 12 inches high, with narrow oblong leaves. Flowers small, solitary; sepals ovate, petals narrow, both greenish-white; labellum pouch-like, pure white. It blooms in June, requiring a well-drained position.

Cypripedium macranthum.—A native of Siberia, occurring in damp woods. Stem about a foot high, with a few large ovate-oblong blunt leaves, one or more-flowered; flowers 2 inches long or more; sepals

* *Protomyces concomitans*, Berk., n. sp. — Sporis globosis pallide umbrinis sero marginatis; mycelio hic illic moniliformi.

ovate, petals more acuminate, rather longer, purplish-brown; labellum large, dilated, heavily tinged with purplish-crimson. This is a most distinct and showy species, recently reintroduced. It is perfectly hardy, as it withstood the winter of 1880-81, and appears to be of free growth.

Cypripedium occidentale. — A vigorous-growing Californian species, also found in Oregon. Stem 12—18 inches high, with ovate-lanceolate leaves, very hairy. Flowers one to three, on a stem about 1½ inch across; sepals ovate, petals narrower, both purplish-brown; labellum white, internally veined with red. It is a distinct and rare plant, being but very recently found in our collections, but it is undoubtedly hardy, judging from what I have heard of it.

Cypripedium parviflorum.—This occurs in everal of the Northern and Eastern States of America. Stem from 1 to 2 feet high, with ovate-lanceolate pubescent leaves. Flowers one to three, rather more than an inch across, or less; sepals and petals brownish-purple; labellum light yellow; deliciously fragrant. This is a charming plant, growing freely, and perfectly hardy, flowering in this country in June.

Cypripedium spectabile.—This grand species is very abundant in the Northern and Eastern States of America in swampy places, about the margins of woods. Stem from 1 to 2½ feet high, copiously clothed with oblong-lanceolate pubescent leaves. Flowers one, two, or rarely three, 2 inches or more across; sepals broadly ovate; petals oblong-ovate, both white, labellum as long as the petals, nearly as wide, much inflated, white, variously tinged with rose; sometimes the colour is deeper, resembling that of a ripe Peach—a very showy plant, perfectly hardy, flowering in June.

There are numerous other species of Cypripedium which could as easily be secured and grown, among which are *C. japonicum*, a most distinct foliaged kind; *C. guttatum*, a pale yellow flowered species, freely blood-stained, from Siberia; and *C. pubescens*, a North American variety, similar to, but with larger flowers than, those of our native *C. Calceolus*. These plants deserve special attention, and if allowed to thoroughly establish themselves they are most handsome and interesting objects. *Orchidophile.*

(*To be continued.*)

The Flower Garden.

BULBS FOR EARLY SPRING FLOWERING.—The time is now fast advancing when bulbs for early flowering in the mixed border should be planted. These comprise Roman Hyacinths, Scillas, Crocus in various colours, Spanish and English Iris; the former are very effective in patches in the borders, and are also very suitable for massing in beds. Crown Imperials, and chequered and other Fritillarias, Velthemia, Muscari botryoides, comosum, and monstrosum; Corydalis, Trillium grandiflorum, and Arum dracunculus — these are sufficient to show that a very varied selection may now be made, and they should, as a rule, be none of them planted less than 2 inches below the surface, according to the size of the bulbs or tubers, because the larger ones must be allowed from 4 to 5 inches in depth; and as these will of necessity be mostly planted in patches, the ground must be moved about 8 inches in depth, and if a little stimulating artificial manure can be stirred in and mixed with the earth at the bottom of each hole, so much the better for the plants. Be sure to mark the site with a stout heart of Oak peg, about 10 inches in length. The general planting of Hyacinths, Tulips, &c., in the beds now occupied with bedding plants must be deferred until next month.

SEED GATHERING.—Although as a rule it would not be possible, nor are gardeners expected to save a full collection of seeds, yet they may have some favourite sorts of which the strain is so good as to render it advisable to retain it by saving their own, and now is the time to see to this. It will be very desirable to be particular in marking and keeping separate the impregnated varieties of the many beautifully coloured single Dahlias; they are quite worth the extra attention, for if taken indiscriminately the stock will assuredly degenerate into common colours and forms. Great care must also be taken to guard choice seeds from the insidious attacks of mice, as they are apt to nibble out the good seeds, leaving only the husks and imperfect ones.

BIENNIALS, such as Canterbury Bells, should now be planted; Antirrhinums may be used to fill up vacancies; the double white Rocket should now be taken up and parted and the plants inserted in fresh places, two in a place, as they are apt to degenerate if this is not attended to annually. Room may now be found for the Sweet Williams and Wallflowers from the July sowing for the spring, also choice strains of Brompton Stock should be planted at once.

BEDDING PLANTS.—Cuttings of Pelargoniums put in early in the open borders will now be ready to lift, and should be potted either singly in small pots, or two in pots of a larger size. They may be placed at once in the pits where they are expected to winter. They will not require much water at present; but it will accelerate the rooting process if a moderate amount of heat can be afforded for a short time, but not for long, as the plants will require free ventilation to harden the tissues and enable them to pass the winter. As we are not now free from the liability to early morning frosts, it becomes advisable to get the cuttings of Pelargoniums, inserted in boxes some time back, under the protection of glass every night. At present, however, the lights must be drawn off every morning unless rain prevails, as, until the cuttings are well rooted, an overplus of water is in general fatal, and therefore to be guarded against. Miscellaneous cuttings of every description in store pots must also now be so placed that effective protection may be quickly applied in case of a change of temperature. In favourable weather, such as often prevails at this season, ventilation should be freely applied to the rooted cuttings of Alternanthera, Coleus, Iresine, and others requiring heat to strike them, as the hardier the young growth can be brought forward the better the preparation for the coming winter.

GENERAL ROUTINE OF MANAGEMENT.—Every exertion will now be necessary in order to maintain a neat and trim appearance in the flower garden as long as the vicissitudes of weather will allow; to this end a final mowing of the grass and clipping of the edges of walks and verges will be necessary. The time for falling leaves, too, is come, and these necessitate constant removal, and, as equinoctial gales may soon be expected, it is advisable to secure all top-heavy plants, such as Dahlias, Castor-oil plants, Sunflowers, and most tropical plants, from its probable effects, as it is desirable to retain them as long as possible in a good condition. *John Cox, Redleaf.*

Orchid Notes and Gleanings.

WORK IN THE HOUSES.—As the influence of the sun is now declining, and cold nights may soon be expected, a gradual reduction in the temperature of the different houses will now be advisable. The East Indian-house will be sufficiently warm for the season at 68° at night and 75° by day; and the Cattleya-house 63° at night, and 68° by day. These temperatures during dull weather must now be maintained with fire-heat, but should the weather be clear and warm, a few degrees higher will do no harm. No fire-heat will be required at present to keep the cool house up to 55° at night and 60° by day. Any plants of Odontoglossum Phalænopsis, O. citrosmum, O. vexillarium, O. Warscewiczii, and O. nævium majus that have been kept in this house through the summer, will now be better removed to cool positions in the Cattleya-house. As there will now be no difficulty in maintaining a moist atmosphere in the cool-house, and no fire-heat will be required to maintain the temperature, advantage should be taken of these favourable conditions to go through the plants, and repot any that require it, and to put the house in order for the winter. There are two stages of development when it is safe to repot the Odontoglossums—the one is just as growth commences, and the other just when the bulbs are completing their growths. I prefer the plants to be in the latter condition at potting time, as they soon after throw out a fresh set of roots, which lay hold of the new compost with avidity, and the bulbs never fail to flower freely. Plants on which the growths are only half made must not be interfered with at the root beyond giving them a light top-dressing, and this must be done without damaging any roots, otherwise the growths will be checked and the bulbs will not reach the size they would do if left undisturbed. The best compost for thoroughly established plants is two parts best fibrous peat to one of sphagnum moss, with the addition of some pounded crocks and charcoal. For plants that are only establishing themselves, a little more sphagnum may be used with advantage. Any Dendrobiums that are late in making their growths, such as D. moschatum, D. clavatum, and D. Bensoniæ should now have warm positions assigned to them to bring them forward as quickly as possible, and at the same time they should have all the light that can be given to them. Sobralias in full growth must be kept close to the glass to prevent them from getting drawn. A moderate temperature will suit them best, such as they would get in a warm position in the Cattleya-house. The Calanthes will soon begin to show their flower-spikes, and the foliage will show signs of decay; but the latter can, to a great extent, be prevented if the plants are kept in a good stove temperature, at the same time keeping them well nourished at the roots. Precautions must now be taken against drip, as nothing is more fatal amongst the East Indian species. Where the sash-bars of the houses are not fitted with some means of carrying off superfluous moisture, the houses should be covered during the night to keep the glass warm to prevent condensation. With a reduction in the temperatures, less atmospheric humidity will now be required, and this should be supplied during the earlier parts of the day. *J. Roberts, Gunnersbury.*

RENANTHERA COCCINEA.—This beautiful Orchid is now grandly in flower at Bemerton Rectory, Salisbury. The flower-spike is about 3 feet long, and an equal distance across from tip to tip of its branches, and carries eighty fully expanded blossoms. Mr. Lampard, the gardener, says the plant has been in flower since December, this being the second spike, and I observed another flower-spike which promises to follow the one now open very closely. Thus the plant in all probability will remain in flower the whole year. The cultural condition Mr. Lampard is always careful to observe is to give the plant all the light possible, never shading any part except the lower part of the stem, (which is one mass of roots), and the pot. This plant has been trained to a trellis on the roof of the stove, but is now growing in a light position in a vinery, which is well ventilated, to keep the Grapes, which are now coloured and ripe. *C. Warden, Clarendon Park.*

AËRIDES SUAVISSIMUM.—So few Orchids are found in flower at this season of the year in small collections that even an individual spike or two coming into flower makes a visit to the Orchid-house interesting. We lately saw a good spike of the above variety in the healthy collection at Syon House. The length of the spike was 9 inches, and the colour of the flowers pale pink and white.

The Hardy Fruit Garden.

THE recent bright weather has greatly assisted the ripening of late Peaches, which are now finishing off well, and great care will be required to secure them from the depredations of birds and wasps, which may be expected to pay greater attention to them as other fruits are gathered and food becomes more scarce. See to the cleaning of all trees as soon as late crops are removed, but avoid heavy drenchings of water to the borders at this time. Trees that continue to make late growths, in spite of repeated pinchings, had better be at once attended to in the matter of root-pruning, which must, however, be performed with discretion, and with a due regard to the amount of check required by the individual tree to be operated upon. By lifting the trees that require this particular assistance at once, an opportunity is given them of making fresh rootlets and again establishing themselves before the cold weather prevents further root action. In most cases it is well to save as much of even the larger roots as possible, and to depend upon the

effects of bringing them nearer to the surface, and upon the ripening effects on the wood of the withdrawal of any superabundant supply of moisture that is being pumped up by deeply running feeders for producing the desired fruitful condition, rather than resort to extreme measures and close root-pruning. A trench may be cut out at about two-thirds the distance from the bole of the tree of the radius of the branches, and should be taken out sufficiently deep to insure cutting through all spreading roots. The top soil in which there are no roots can be thrown off, and the soil gradually worked out from between them with a fork into the trench, from which it can be removed, and the work of cutting quite under the tree to the wall proceeded with. In cases where the tree has been properly planted near to the surface it is only necessary to clear the soil from between the roots (which must be protected from excessive drying as the work proceeds), and to cut any that have taken a downward direction ; replacing and covering up carefully and firmly with as much dispatch as is consistent with an effectual job. But in many instances trees are planted too deeply in the beginning, and in such cases the entire tree must be unnailed and lifted. Where too rich or otherwise unsuitable soil has been used a portion, or, possibly, even the whole may require renewing to effect an improvement. Drainage must, of course, be duly attended to if deficient, and the operations of root-pruning or root-lifting be conducted with a steady object in view of producing a more fruitful condition by a thoughtful regulation of root-growth and supply. Continue to gather fruits as they reach maturity. Apples and Pears are generally scarce this year, and the few there are must be secured in the best possible condition to ensure their keeping well, and prolonging the supply as much as practicable. See that late varieties are not gathered too soon, or the fruits will wither. Damsons will require to be gathered as soon as ripe, or some means provided for their protection from birds. Attend to the housing of nets from bush and other fruits when they can be secured sufficiently dry. Filberts and Cob-nuts should be gathered now, and stored in a cool place. Every opportunity ought to be taken when the ground is dry to destroy any late weeds that may be making their appearance on fruit quarters. Selection of fruit trees must now be made, suitable sites chosen, and a good stock of soil prepared for use in planting, choosing that which from its nature is calculated to correct any too decided tendency either to extreme lightness or to heaviness in the garden soil. *Ralph Crossling.*

The Pine Stove.

No more shading will be required, even in the lightest structures, after the end of this month. Take off the scrim canvas from the rollers, and let it be thoroughly dried before being put away. As all shading materials are expensive and perishable, time bestowed on its preservation is amply repaid. The rollers should be taken off and be well painted, then stored in a shed or any dry place. Label the canvas when it is put away, so that when wanted each piece will be ready at hand. Continue to close the houses or pits early in the afternoon throughout this month, so as to make the most of the sun-heat. The structures may be closed at 80°, and let them still rise to 90°, or 2° or 3° higher. The sun's rays are not so strong at this season, therefore the same vigilance will not be necessary as was the case at an earlier date. Spring potted plants should have every facility afforded them to make broad, sturdy growths. Ventilate freely on mild, sunny days, from 10.30 A.M. to 2.30 P.M. Keep a little heat in the pipes all day, but only a little when the days are very bright. This keeps up a current of warm air, and ensures a thorough maturation of the growth. A spongy, sappy growth can be corrected by free ventilation and less atmospheric moisture. Keep the night temperatures for fruiting plants in various stages at 73° to 75° at 10 P.M. ; this should fall to 70° by 6 A.M. Keep succession plants about 70° by night, with a rise of 10° or 15° by day. The ventilation of these plants should be studied according to the growth they are making ; if the growth is broad and sturdy, they may be pushed on at a higher temperature—that is, the same as advised above. If, however, the growth is not of good form and substance, subject them to more ventilation, and keep them a little cooler. The autumn suckers will now have established themselves with roots to the sides of the pots ; knock one or two to see if this is the case, and if so they may be ventilated more freely. Still keep them growing steadily, so that the leaves assume a robust green colour. Give fruiting and succession plants liberal supplies of liquid manure every time they are watered for the next two months. Give the liquid manure to the plants at the strength before advised. Let the bulk of the moisture be caused by the steam from the evaporating troughs and by damping the paths, walls, beds, &c. Study the temperatures during cold frosty nights and mornings, it is most essential that they should fall and rise gradually, which can only be done by a studied regulation of the hot-water pipes, and this should be balanced with the waning solar heat. Start the fires gently early in the afternoons, so that fire-heat is at command before the day temperatures recede too low. Discontinue syringing the plants overhead for the winter, as the water will find its way into the axils of the leaves, and moisture during the winter is better supplied by evaporation than in any other way. Examine all suckers that were taken off during the summer months, and if likely to get too much pot-bound give them a slight shift, so that they will stand without injury until next February. If the rooted suckers are large, with a good number of roots, pot them into second-rate loam ; this will retard them a little, without making them fruit prematurely, when the proper potting time arrives. It is almost certain that some of the first started succession plants will show fruit this autumn, and these should be well taken care of, and placed in a compartment to themselves only ; for this purpose keep Smooth Cayennes, Charlotte Rothschilds, and Black Jamaicas, as these will grow and swell all through the winter. This batch will come in at a scarce time, and are more to be depended upon than the first lot of spring-started fruiting plants for very early work. Queens that may start from any cause are not worth keeping. *D. Wilson, Castle Hill.*

The Kitchen Garden.

NOTES ON VEGETABLES.

ASPARAGUS.—Mr. Speed grows this at Penrhyn, in two ways—in beds in the usual manner, and on the flat ; he has not yet tried the French plan. We have rarely seen finer Asparagus, the stems 6 to 8 and more feet in height, and vigorous in proportion. There seemed no great difference between the plants grown in the two ways. Mr. Speed attributes his success to the use of stakes. We cannot wholly assent to this, for in other gardens in the neighbourhood where the plants were also staked they were much inferior to Mr. Speed's.

FORCED BEANS IN WINTER.—When choice vegetables are plentiful enough in autumn we are liable to forget that winter is so near at hand, when our supply out-of-doors will be cut off. That forced Beans in winter are a scarce and very costly commodity few people will dispute. That they are much esteemed between November and Christmas—even in small quantities—is also a fact. One reason of the scarcity is doubtless that gardeners are not furnished with proper facilities for forcing them ; but another equally good reason is that too many depend upon pot culture instead of planting them out in heated pits. The best way to convince people of this error is to ask them to put the matter to a practical test for themselves. Beans are wonderfully prolific in winter if grown under favourable conditions, provided you are in possession of the right variety for forcing. People who take it for granted that they have only to write for a certain variety of Bean and send the money with the order to obtain it, will sooner or later find out their mistake. It is a moral certainty some Beans will come, but it is a moot point whether the variety stipulated for will be forthcoming, and this through want of knowledge rather than anything else. One of the best, if not the very best forcing kind, is the old Fulmer's Forcing, which is now very scarce in the country, except in name, and has, indeed, almost disappeared. But whatever the favourite sort may be, the most certain way to proceed at this season is to start the Beans in small pots, and afterwards plant them out in beds of shallow soil. A low heated pit facing the south and not shaded from the sun will grow them well. The compost should not be over-rich, nor exceed from 9 inches to a foot in depth. Lay the soil upon the slates, flags, or rubble, immediately over the bottom-heat pipes, and keep up an equable temperature from start to finish, both at top and bottom, and there is little doubt but that many good gatherings may be made during the first months of winter.

BEANS.—At Penrhyn Castle, Mr. Speed grows Negro Longpod Beans in large quantities. The earliest he finds to be Williams' Prolific.

Grapes and Vineries.

KEEP the earliest house as cool as possible night and day, and the roots sufficiently moist to keep them healthy. Where the wood is well ripened and the foliage falling off, they may be pruned any time now, and the house thoroughly washed. If mealy-bug or red-spider has been troublesome get the house well painted inside, and then clean out all the surface soil after well scrubbing the Vines, and top-dress the roots with fresh loam, bones, and charcoal. After washing the Vines paint them with a mixture of Gishurst Compound, 8 oz. to the gallon, using clay, sulphur, and a little soot to make it of the consistency of paint ; then paint the rods, thoroughly working it well into the crevices. The loose bark can be taken off with the finger and thumb, but do not scrape them. After pruning and cleaning the Vines tie them down in a horizontal position and keep the house cool until starting time. Where ripe Hamburghs are hanging keep the atmosphere cool and dry, using fire-heat only to dispel the damp, and give no front air on foggy mornings or wet sunless days. When the weather is bright admit air freely on both front and back ventilators, and reduce it early in the afternoon before the external atmosphere becomes humid ; give water at the roots carefully, only sufficient to keep the berries plump.

The latest house of Hamburghs will now be ripe, and will not require much fire-heat, but continue to use a little until both the fruit and wood is well ripened. If any rods of Foster's Seedling are growing in the same house, now that there is no danger of the berries cracking they can have the laterals shortened back, so that the berries will get more sun and light, which will make them finish better, for they never take on such a golden colour if grown in too much shade. Muscats that have been ripe some time, and are required to be kept longer, must only have sufficient water at the roots to keep the berries plump, choosing a bright morning for watering, when plenty of air can be admitted to dry up the surface moisture. On bright days ventilate freely ; on dull days very little air will be required ; use a little fire-heat only, but do not let the temperature fall lower than 55°, or the berries will turn brown.

The latest Muscats should now be ripe, but if not, still keep them at a night temperature of 65° to 70°, with a rise of 10° by day. If the nights are cold, as they have been the last ten days, 65° will be hot enough for a night temperature until they are ripe, when the heat may be reduced. Do not let the foliage get crowded about the bunches, but let them have plenty of sun and light without extreme exposure, for if too much exposed to the sun when it is powerful, I find the berries sometimes turn brown, and do not keep so well. All late varieties of Grapes, such as Alicante, Lady Downe's, and Gros Colmar, should now be ripe, and if the borders inside are dry they should be watered with clear water at a temperature of 65°, which will last them for some time. A little fire-heat may be used to dry up the damp, choosing a fine bright day for the operation. After the surface moisture has dried up it is a good plan to cover the border with dry Fern, as it keeps it uniformly moist, and prevents the dust rising on the bunches. Those that are not thoroughly ripe must be assisted during bright weather with a high day temperature, but 65° will be plenty hot enough for a night temperature, giving plenty of air on front and back ventilators on all favourable occasions. Vines making their first, second, or third year's growth, and in which the wood is strong and not well ripened, must be assisted with fire-heat in the daytime, with abundance of air on the front and back ventilators until the wood is well ripened, when it may be discontinued. Afterwards keep the house cool and give sufficient water at the roots to keep them healthy. Those with the roots in outside borders only will usually get plenty of water with the rainfall after this time.

The earliest pot Vines should now have the wood well ripened, and if the house room is required, they may be placed outside against a south wall, fastening them securely with stakes to prevent them being damaged by the wind. Those that were put in later, or which are intended for cut-backs, must have plenty of heat and air until the wood is ripe, when they can be placed out-of-doors in a warm sunny aspect. *Joshua Atkins, Lockinge Gardens, Wantage.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Sept. 25	Sale of Dutch Bulbs, at Stevens' Rooms. Sale of Bulbs, at the Mart, by Protheroe & Morris
WEDNESDAY,	Sept. 27	Sale of Bulbs, at Stevens' Rooms. Sale of Plants, at Reeves' Nursery, Acton, by Protheroe & Morris.
THURSDAY,	Sept. 28	Sale of Imported Orchids, at Stevens' Rooms. Sale of White's Nursery, &c., at Leytonstone, by Protheroe & Morris Sale of Orchids and other plants, at Parker's Nursery, Tooting, by Protheroe & Morris.
FRIDAY,	Sept. 29	Sale of Imported and Established Orchids, at Stevens' Rooms. Sale of Orchids, at the Mart, by Protheroe & Morris. Sale of Plants at Biggs' Nursery, Lewisham, by Protheroe & Morris
SATURDAY,	Sept. 30	Sale of Dutch Bulbs, at Stevens' Rooms.

THE recent exhibitions of DAHLIAS at the Crystal Palace and at the last meeting of the Royal Horticultural Society will surely go far to convince the florists proper, as it has unquestionably shown the general public, that from the point of view of beauty as cut flowers, and, we may add, of general utility in the garden, the single forms far surpass the ordinary show kinds. It may be admitted that for symmetry and regularity of form, and at present for range and variety of tint, the show varieties must be preferred. On the other hand, excepting perhaps the pompon and Lilliput varieties, the symmetry referred to is that of an exceedingly ugly, purposeless flower, and the range and variety of tint will soon be equalled among the single forms. The show kinds have the advantage in point of substance and durability, but these also are qualities which the raisers of single Dahlias will speedily know how to improve. As to the original forms and species, we may refer to the descriptions and figures which have been given in these columns in former years (see vol. xii., July—Dec. 1878), but which the pressure on our space forbids us now to repeat. What seems to be needed is some standard by which the single flowers may be judged. In framing such, florists have an opportunity of showing that it is possible, consistently with the requirements imposed by the exhibition table, to make their rules elastic rather than arbitrary, and to consider Nature's own laws rather than the absolute requirements of a merely arbitrary standard. Not that it is possible under the circumstances wholly to avoid fixed, and therefore, to some extent, arbitrary rules. The points to be considered after the qualities of vigour, free flowering, and the like, are, first, the natural form of flower as seen in the original species, and in considering this it is necessary to bear in mind the probable purport of the arrangements and form seen in the natural flower. The ray-florets are usually barren, while the tubular florets in the centre are seed-bearing. The ray-florets are brilliantly coloured and conspicuous, not alone in colour but in form; the more useful florets in the centre are in Nature less conspicuous. Yet in Nature the two forms are necessary the one to the other; the ray-florets by their colour and other attributes attract the insects necessary to the perfect fertilisation of the flower, and guide them in their course to where the honied secretions are formed, in the search for which the insects fertilise the flowers. The aim, therefore, of the florist should be, not to obliterate but to accentuate these salient differences, to secure sufficient contrast (without, however, violating harmony of colour) between the two kinds of florets, to secure substance of petal and durability. In the ordinary show Dahlia all adaptations to purpose are obliterated for the sake of producing a flower which in detail is symmetrical, but which in the mass is, to our thinking, ugly. This, however, is a question of personal predilection, in which the utmost latitude must be allowed. But in the obliteration of purpose, and in the effacement of all trace of history, affinity, and progressive development, the recognised canons of beauty are set aside. An object which is merely beautiful without bearing any suggestion of purpose or utility may be temporarily agreeable to the sense of vision, but makes no appeal to the higher qualities of intelligence; and in so far the impression it conveys, however vivid it may be for the moment, is not durable or permanently satisfactory.

Never before, perhaps, has such a thoroughly representative collection of single Dahlias been exhibited as that Mr. T. S. WARE, of Hale Farm Nurseries, Tottenham, and Messrs. HOOPER, of Twickenham, staged. The collections were not only numerous, but the flowers were in the best condition, and one could judge of their merits with something like accuracy. There were a great many varieties, showing how active raisers are in producing new kinds, and by far the larger part of those shown were new or nearly so.

For the sake of giving a definite idea (as far as it can be given) of the flowers forming these collections, they are grouped according to their colours. Under the head of crimson are included some with maroon shades, but yet with enough of crimson in the flowers to justify their being classed under such a heading. We begin with Emblem, a rich bright crimson-scarlet, small, but very fine in colour; Ne Plus Ultra, rich glossy crimson-maroon, the sides of the petals banded with bright crimson; Walter Ware, rich deep crimson shaded; Darkness, a little deeper in colour than the preceding, and slightly reflexed—good form; Sensation, the sides of the petals banded with dark magenta; In Memoriam, the centre of the petals shaded maroon, and banded or edged all round with magenta-crimson; Effect, scarlet flushed and shaded with crimson; and Richness, very bright crimson, striking in colour. Then of scarlet and red shades there were Beauty of Cambridge, very bright and showy, rich scarlet in colour; Clarissa, clear orange-scarlet, fine; Dangor, small, bright orange-scarlet; Fusilier, deep red, very bright, small, and somewhat reflexed; and Ruby, ruby-scarlet, the edges tipped with magenta, dull in colour, but distinct. Of purple shades there were:—Violet, deep violet-purple, very fine and distinct; Francis Fell, magenta-purple, bright and pleasing; Painted Lady, pale magenta; and Ascalon, magenta, flushed with crimson, very good. Of mauve and pink shades there were:—Mauve Queen, delicate mauve, very pleasing; Christine, clear pink, very pretty; and Fairy, tinted pink towards the edges on a pale ground, orange ring round the eye. Orange:—Kingeman, bright orange, distinct and fine; Buffalo, orange-buff, small; and Orangeman, tinted with orange on a pale ground, very fine. Of striped flowers there are but few, but an extension of these may be looked for in another season. Those in Mr. WARE'S stand were Charles Law, buff, flushed with orange, and slightly flaked with purple; Mars, lilac-pink, striped with rosy-purple, very good; Union Jack, crimson, with a white flame up each petal, and sometimes tipped with the same; and Pantaloon, blush, flamed scarlet, and tipped with white, small, distinct, and striking. Of yellow flowers there were Yellow Queen, very fine in colour, deep pure yellow; Canary, pale yellow, very good; Lutea grandiflora, sulphur-yellow; and Amos Perry, lemon-yellow, tipped with white. Of white flowers, White Queen, one of, if not the very best whites; White Star, flushed with delicate pink on a white ground; Elaine, in the same way, but too much reflexed; Victory, white, with lemon ring round the eye; Albatross, small white; and White Pet, flushed with purple on the edges. Nor must the old Dahlia Zimapani, or what is being shown as such, be overlooked. After many years' relegation to botanical gardens, it is now reappearing among the single Dahlias, with its small rich maroon-coloured blossoms. It is well worthy of notice for its colour, which is very striking.

In Messrs. HOOPER & Co.'s collection of single Dahlias, shown at the same meeting, one striking flower, named Ruby King, was awarded a First-class Certificate of Merit; it has flowers of a ruby-scarlet colour, and is a really good acquisition.

A good selection from the foregoing should include Ne Plus Ultra, Walter Ware, Sensation, Beauty of Cambridge, Fusilier, Ruby King, Violet, Francis Fell, Mauve Queen, Christine, Kingeman, Charles Law, Mars, Union Jack, Pantaloon, Yellow Queen, Amos Perry, White Queen, and White Star.

Since writing the above we have been favoured with a box of cut blooms from Mr. T. S. WARE, of the Hale Farm Nurseries, Tottenham, among which we recognise several varieties so distinct in colour, and of such form and substance of petal, that we cannot help thinking they will be a great boon to gardeners, not only as cut flowers, but also as enlivening objects in the shrubbery bed or border, as well as in masses by themselves, during the autumn months. Planted among Rhododendrons they have a fine effect in the distance at this season, and now that we have so many distinct varieties, what would look better than beds of them planted *en masse*? As cut flowers they are invaluable, and if they were only hothouse plants, such as the Eucharis, we venture to think they would have been received with open arms by the million before now. What better effect has the Eucharis than that charming variety, White Queen? And are there not yellows, like Canary and Lutea grandiflora, as effective for a large dinner-table arrangement as the best grown Allamanda? A variety called Orangeman is of a deep striking shade. A very fine mauve-red, called Pink of Perfection, is very pretty, as also Clarissa, a deep crimson of beautiful shape; White Star, with a tinge of pink in it; Richness, a small dark crimson flower; Mauve Queen, Yellow Queen, Ne Plus Ultra, a flower of the Paragon stamp, but with rather more substance; and Juarezii. Pantaloon, which was awarded a First-class Certificate at the late Dahlia show held at the Crystal Palace, is a small flower, with petals having dark maroon edges, and their centres suffused with red, changing to white at the point.

Popular as the single Dahlias undoubtedly are, it is doubtful, however, if they will entirely displace the pompon varieties for garden decoration. The latter are decidedly freer in blooming, and they are much more durable when cut and placed in water. These are two great advantages, that are bound to tell in the long run. The flowers of the pompon varieties are generally small, symmetrical, and bright coloured, and they have a singularly compact growth. The old tall forms, of 4½ or 5 feet in height, have gradually given place to varieties that are truly dwarf, and they are exceedingly attractive in the flower garden.

A group of really good and useful pompon Dahlias will be found in the following, selected from those shown at the Crystal Palace:—Favourite, shaded purple; Gem, rich bright scarlet; Mabel, pale lilac; Garnet, shaded orange; Little Eva, pale ground, tipped with rose; Isabel, orange-scarlet; Adonis, rosy-carmine; German Favourite, crimson-lake, heavily edged on a light ground; E. F. Jungker, amber, distinct and pretty; Prince of Liliputians, shaded maroon, tipped with white; Professor Bergeat, rosy-crimson, very bright; Gruss aus Wien, shaded buff, very pretty; Narcissus, primrose, tipped with white; Lady Blanche, pure white, one of the very best white varieties that can be grown for cutting from; Comtesse von Sternberg, yellow and white; Princess Sophie Sophicha, shaded lake, very bright and free; Förstmaster Gshwind, white, peculiarly tipped

with scarlet, very pretty and free; Coquette, orange-red; Little Duchess, white, tipped with claret-crimson, very bright; The Khedive, pale ground, heavily tipped with deep crimson; Weimar, yellow, tipped with bright red; Northern Light, scarlet; Rosetta, rosy-purple; Dora, white; and Little Bobby, crimson, striped with yellow.

This by no means exhausts the lists of varieties in cultivation. They are numerous and very varied in character, and there is this great advantage about them that no stopping or disbudding is required. They simply require to be planted in good soil and left alone to grow and flower of their own will. If a few plants be grown on in pots and put out as soon as it is safe to do so, they will be as the van of the floral service, which, taken up by those planted later, shall be extended till the decay of autumn sets in.



Fig. 64.—Jubæa spectabilis in the King of Portugal's Garden.

— Jubæa spectabilis.—Professor Henriquez, the Director of the University Garden of Coimbra, has been good enough to send us a photograph of this noble Palm, as growing in the open air in the gardens of His Majesty the King of Portugal at Lisbon (see fig. 64). The girth of the trunk near the base was 4 m. 25 cent., or about 13½ feet. At 1 metre from the ground it measured 3 m. 50 in circumference. The height from the ground to the first leaf is given at 2 m. 57, the total height in metres being 7.74 (more

than 23 feet). These measurements were taken some few years since, its present height being 8.55 metres (27 feet). In the same garden may be seen other Palms, a fine specimen of Strelitzia angusta, good specimens of Cycas revoluta, one with a forked stem. The Mango—Mangifera indica—has produced flowers in the open air. The King is a well-known connoisseur in plants, taking much interest in his collections. "In the Botanic Garden at Coimbra," writes Professor HENRIQUEZ, "Phœnix silvestris, P. reclinata, Livistona inermis, Arenga sapida, Seaforthia elegans, Sabal Adansoni, S. glaucescens, Cocos Romanzovii, and other Palms, flourish in the open air, as well as Bamboos 12 metres in height, and Musa Ensete."

—— DR. E. WARMING. — This accomplished morphologist has left Copenhagen, on his appointment as Professor of Botany in the new University of Stockholm. We congratulate our Swedish friends on this appointment.

—— SILWOOD PARK.—This estate, near Bagshot, is, we hear, to be offered for sale shortly. Its horticultural interest consists in its great Vine, the rival of those at Cumberland Lodge and Hampton Court.

—— THE MOUNTAIN ASH.—In a large park or public garden this is a very ornamental tree during the autumn months. Upon the slope of a steep hill or bank in front of large Beech, Oak, or Elm, we have seen it look a picture in Devonshire and elsewhere. We were again quite struck with it in the grounds of the Crystal Palace a few days ago. The specimen referred to is quite loaded with large clusters of its bright red berries, the weight of which is bearing the branches downwards towards the ground.

—— ABOUT POTATOS.—Whether the promoters of the International Potato Show held during the past week will or will not take any credit to themselves for the present condition of our Potato crops, at least it is eminently satisfactory to find that, in spite of some well grounded alarm raised earlier in the season, we have an abundant produce, and that Potatos will be cheap and plentiful throughout the coming winter. This fact, combined with the great abundance of cereals, makes the winter prospect for the masses one, if not joyous, at least far from being gloomy. So great is the space now allotted in this country alone to the production of Potatos, that when a really fair and healthy crop is gained we find ourselves overstocked. Last winter, wonderful to relate, we largely exported Potatos to the United States. Even if our home stocks are not so large as last year —and that is a doubtful point—there is no present prospect that we shall be asked by less favoured countries for some of our spare produce, whilst plenty of foreigners will be only too happy to make up deficiencies if later on any are found to exist. The International Potato Show was, therefore, held at a fitting time, and under pleasant auspices; and indeed it may well be regarded as a sort of Potato harvest festival, where growers of all kinds met to offer hearty congratulations to each other, because of the abundance with which they were blessed. We are somewhat apt to forget in the moment of congratulation, however, that such good fortune may not always be in store, and though the fell Peronospora has touched us but lightly this year, we must not assume that it is about to disappear for ever. We know how much it varies in its operations with the seasons, and just as they fluctuate so does the Potato disease. We have not had a hot summer, we have not had a dry one, and yet, whilst it has not been hot, it has not been absolutely cold; neither has it been excessively wet. But for an exceptional circumstance the Potato crop, large as it is, would have been much heavier. Following upon a cold spring, which checked rather than helped Potato growth, came an unusually early development of the disease, which largely smote the first early kinds, doing many of them great injury, and not stopping in its course until it had denuded all early, medium, and many late sorts of their leafage. This earlier appearance, by some three weeks, probably reduced the bulk of our Potato produce one-fourth with all earlier kinds, and to a large extent affected the production of the later sorts. As showing, however, in what respect some kinds have disease-resisting power it was worthy of note that, even after all others had not a stem left alive, some few of the most popular strong growers kept up stems and leafage, and in many places are even now green and growing, so that it is evident that some innate strength kept them from that general collapse which fell upon their fellows. But the disease this year seemed to have died out with remarkable quickness, though during its existence it was very virulent in its effects. A week or two of really hot dry weather proved most effective for good in checking the spores withering up the plant life upon which they existed, and rendering them, for this season at least, no longer harmful. As a result, not only do all the strong-growing late kinds continue to hold their leafage, but the tender and very susceptible Tomato leafage has also escaped—a very unusual experience of late to growers of that esteemed vegetable. To this sudden collapse of the Peronospora must be attributed some failures which have resulted in testing Mr. JENSEN'S system of protective earthing, made so widely public during the summer. Commenting upon that gentleman's book at the time of its first issue, we said that we had at once put the system of protective earthing he had suggested and, indeed, practised, to the test upon a long row of Woodstock Kidney Potato—a kind, as all who have grown it know full well, that is peculiarly susceptible to disease. Our experiment was carried out as far as possible in exact conformity with Mr. JENSEN'S instructions, and apparently just at the right time. The row was of 50 feet in length, and one of three planted each 3 feet apart, so that there was ample space from which to get the required 4 inches of soil with which to cover the tubers. When the rows were lifted, long after all leaves and stems had disappeared, strange to relate, not a diseased tuber was found in either row, although the crop, having regard to the somewhat early loss of leafage, was fairly good. The more rigid application of the protective earthing test must remain over till the next or future years. But the disease in its operation fully establishes the truth of Mr. JENSEN'S declaration, that the fungoid spores operate chiefly upon the new tubers through the soil. The worst diseased kinds were those having short tops, or which, from other causes, were but thinly earthed. Specially diseased in almost every instance were the tubers on those plants which through some check had formed near or on the surface of the soil. Still farther ample proof was afforded in the tubers themselves, for in almost every instance the disease in those affected was seen in the form of surface spots or taking running zigzag shapes, showing that the spores were active just beneath the skin. In some cases the spots bore a close resemblance to small-pox scabs, whilst all other portions of the tubers were apparently sound. Then as to the subject of lifting the crop, upon which Mr. JENSEN gave such excellent advice, we found that all kinds got at whilst the spores were active in the leafage gave a considerable proportion of diseased tubers after being stored a few days; still farther, that many others permitted to remain much longer in the ground have since shown no disease, and were fairly sound when lifted. Still farther, in very many cases roots lifted during the active life of the fungus, exposed for a short time to the air, and then re-buried, would often show much disease when re-lifted a month later, whilst the remaining roots untouched were quite sound. These things may have been incidental to the present season only, but, whether so or no, they at least amply corroborate Mr. JENSEN'S conclusions. We have dwelt upon these matters somewhat fully that more general attention may be given to suggestions so worthy of consideration; and certainly no other time is more fitting than just now, when the International Potato Show is interesting all Potato cultivators. Variety, beauty, quality of diverse kinds—all these in abundance are now seen in Potatos; but above all things we want a sound crop and a plentiful one, and to that end all Potato exhibitions may usefully work.

—— THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—Some time since we announced that, with the sanction and earnest co-operation of Lord and Lady HENNIKER, Mr. PERKINS, the gardener at Thornham Park, had organised a *fête* in the Park, to which admission was to be had on payment of a small fee, the proceeds to be given to the Institution above-named. Mr. PERKINS left no stone unturned to carry out his benevolent purpose, Lord and Lady HENNIKER entered heartily into the scheme, and all went well except the weather. Tuesday, September 12, was the day fixed, and every arrangement had been made for the entertainment of the visitors. But persistent drenching rain literally threw cold water over the proceedings. Rather than despair the *fête* was postponed, or rather adjourned, to the following Thursday, when the programme was carried out under more favourable conditions, but of course numbers never heard of the adjournment. As a consequence of the unfavourable weather, the expenses bore a large proportion to the receipts, the latter amounting to £74. It is clear, however, that Mr. PERKINS has virtually succeeded, and we most earnestly trust that others will in due time be able to follow his example. Without going to the expense and trouble that Mr. PERKINS did, the mere permission in many places to see the picture gallery at the Hall, to ramble through the park, and inspect the gardens, would bring in a very considerable sum if the admission fee were not put too high. Quite lately the Duke of WESTMINSTER allowed his palace at Eaton Hall to be thus visited, the proceeds being devoted to some local benevolent object. We are quite certain that there are scores of places throughout the country where a day might be set apart for this purpose, with the permission of the owners. Let us hope Lord HENNIKER and his gardener have set the fashion. Whether or no, let us be the mouthpiece of the fraternity, and tender, on behalf of the aged and infirm among us, our deep gratitude for what was well planned, and, so far as circumstances would allow, well carried out.

—— LAGERSTRÖMIA HARDY.— M. CORREVON writes from Geneva, saying that this shrub, usually treated as a stove plant in England, proves quite hardy at Geneva, where a plant of it, 3—4 metres high, is growing on the wall of the Botanic Garden, where it has never been known to suffer from the frost.

—— NYMPHÆA CANDIDISSIMA.—Mr. LYNCH sends us from the Cambridge Botanic Garden flowers of this extremely fine white Water Lily. The flowers measure 16—18 inches in diameter when expanded, and are similar to those of N. alba, but larger and clearer in colour. The plant grows under the same conditions as N. alba, and has been in bloom all the summer. We can fully endorse all that Mr. LYNCH says in praise of this grand variety.

—— LINCRUSTA LABELS.—Mr. MUNRO writes from the Sunbury Nurseries:—"I beg to hand you a sample of labels made from a patent material called 'Lincrusta,' and which are perfectly impervious to wet, frost, or any kind of weather. The name of the plant is stamped on them in relief. A piece of the stuff has been exposed now for about two years in the open air, and is still intact. They can be produced for about half the price of the 'Acme' labels." So far as we can tell from the sample sent, and from what Mr. MUNRO tells us, the Lincrusta label seems admirable where a hanging label is required.

—— SINGLE DAHLIAS.—Still they come! The single Dahlia is, *par excellence*, the flower of the day, and well does it deserve all the interest that is being manifested in its culture. Messrs. W. & J. BROWN, of Stamford, send us a good sample, chiefly remarkable for variety, and the different shades of colours represented in the flowers. There are dark and light yellows, pure white, creamy white, buff, mauve, maroon, orange, various shades of violet, crimson, red, and scarlet, and delicate shades of lilac, any or all of which would contribute in no small degree towards making a fine show in shrubbery beds or borders at this season.

—— THE SMOOTH SEA ANEMONE.—Mr. SADLER has in his possession at the Royal Botanic Gardens, Edinburgh, a very interesting specimen of the Smooth Sea Anemone, Actinia mesembryanthemum. It was taken from a rock-pool at North Berwick in August, 1828, by the late Sir JOHN GRAHAM DALYELL, and placed in the glass jar which it now inhabits. It was at that time supposed to be at least seven years old. During a period of twenty years it produced 334 young ones. After the death of Sir J. D. DALYELL, in 1851, "Granny" (as it has been familiarly called) was handed over to the late Professor JOHN FLEMING, and remained in his possession until his death in November, 1857. In the spring of that year

(after being unproductive for many years) "Granny" unexpectedly gave birth, during a single night, to 240 living young Actinias. In November, 1857, "Granny" was presented by Mrs. FLEMING to Dr. JAMES McBAIN, R.N., and remained in his custody until a few days before his death (March, 1879), when he presented it to Mr. SADLER. "Granny" is fed once a month with the half of a live mussel, and on the following day the sea-water is changed. On February 18, 1882, seven young ones were born, three of which still keep "Granny" company.

—— FORCED ROMAN HYACINTHS.—As useful plants to gardeners these are so much better than anything else that can be had in flower in November that it is surprising more of them are not grown and forced. Why country gardeners go in for so many double Hyacinths in preference to these is a matter that hardly seems clear. You can show off Hyacinths, both single and double, in the greenhouse or conservatory, or you can fill stands with them for a sitting-room; but for general utility, especially for cutting, they will not compare with the Roman Hyacinths, which may be forced into flower by the middle or end of November. When the bulbs commence to root (before showing any symptoms of top-growth) plunge the pots in clean yellow sand under the stage of a plant-house where the temperature ranges from 50° to 60° at night. A week or a fortnight will be gained in this way, and after the flower-spikes appear they may have a higher temperature, and be set on a shelf near the glass. For shooting parties in November these flowers are invaluable, and may be used in stands or as pot plants, or, better still for the gardener, as cut flowers.

—— PILEA MUSCOSA NANA.—People who are often at their wits' end for what they call a bordering plant, that will hide the pots of other plants on front stages of warm houses, or of groups in whatever form or style arranged, should try this lovely little plant, which will grow nearly a foot across in a 4-inch pot. It grows but a few inches in height and is of such spreading habit that a small pot slipped in between every two large ones will hide the latter effectually. Where there is much staircase furnishing it should be largely grown, and even in the plant stove it may be effectively employed. Cuttings put in now will be rooted plants in a few days, and will be ready for use in a few weeks, if from four to six cuttings are put in a small pot. The plant is more easily increased than the common Selaginella Krausiana, and is likely to take the place of the former for many purposes of furnishing.

—— HARDY SHRUBS FOR FORCING.—Those who are unacquainted with the requirements of large gardening establishments have but little idea of the difficulties that private gardeners have to contend with in keeping up a constant supply of cut flowers throughout the winter. The absence of private families from their country residences when their gardens and grounds look the brightest is one of the many contingencies that are likely to operate against the interests of the gardener. Flowers are but evanescent at best, and are soon forgotten by a great many who see them; how much more so are they likely to be forgotten by those who only know of their existence as a matter of course? Let any unbiassed person visit a fairly representative private garden, even at this late period of the season, and he can hardly fail to be struck with the struggles of the gardener, who has hundreds, perhaps thousands, of plants to pot up and force before next Christmas. In a few more weeks the beauties of the parterre and flower-garden will have passed away for the season, probably without their owners having ever once seen them. The gardener knows that he will get little or no credit for what his employers have never seen, and makes a plucky attempt at producing a show of forced plants and shrubs. The beds and borders of the pleasure-grounds are scoured, and all shrubs or plants that appear to be suitable for forcing are taken up, potted, and ultimately forced, to succeed Chrysanthemums and other autumn flowering subjects. The success resulting from this hap-hazard system is sometimes meagre, very often *nil*. The cause is that the plants are really not in a condition for forcing; the wood is not properly ripened, and the only redeeming feature about some of them is that they furnish fresh green leaves in the conservatory. Of flowers there are few, very often none. Grown in pots for a season under the full influence of sun, air, and light, they flower as freely under glass as they do in their natural season in the open bed or border. Those, therefore, who would have a supply of forced flowers for the coming winter should lay in a stock of Lilacs in pots, Gueldres Roses, Spiræa Thunbergia, Prunus alba plena, Deutzia crenata fl.-pl., Kalmias, and Andromedas, which will give flowers during the coming winter, and make useful stock for forcing another year.

—— CUT ROSES.—Judging from the quality of the cut blooms lately exhibited by Messrs. WILLIAM PAUL & SON, and others, at the Royal Horticultural Society and at the Crystal Palace, it would appear that Roses are somewhat erratic in their behaviour this autumn. There always have been, and always will be, grumblers—some who have a right to complain, and others who have not. The plain fact is, Roses, like other plants, differ in habit, in constitution, and in other respects, and they are influenced for good or evil by soil, climate, and treatment. Therefore the opinions of the grumbler, or of the grower, who is labouring against the influence of a poor soil, or climate, or both, must not be taken as being applicable generally. The quality of the stands of Roses referred to, notwithstanding that they may have been gathered from an extensive collection, proves conclusively that autumn-blooming Roses should be planted more extensively than they are. We are now referring to the hybrid perpetuals, and to the bunches of Tea Roses such as Niphetos, and Marie Van Houtte (sulphur-yellow), and Safrano, the best yellow Rose for button-holes extant. The latter were shown in bunches at the Crystal Palace, in bud, some of which were just opening, and they appeared to charm the visitors to the exhibition more than anything else.

—— VERONICA ANDERSONI VARIEGATA IN AUTUMN.—That an old plant long grown in greenhouses should become a bedding favourite shows what hopeful ideas we may cherish of the future as regards flower-gardening. We can remember when an odd plant or so of this Veronica, grown under glass until the end of May or June, used to be planted out in the mixed bed as a novelty, now we propagate them like Calceolarias, and plant them out by the hundred or thousand. Planted alternately with crimson Verbenas the effect is such that we might bestow any amount of praise without saying a word too much. At Hampton Court Palace Mr. GRAHAM has some charming beds, which he regards as one of his best autumn arrangements.

—— CANNA VAN HOUTTEI.—Beds of this variety, planted *en masse*, are among the most striking features in the sub-tropical garden during the autumn months. Considering the meagre attention they require, we might well have more of them. In wet or dry weather their beauty never changes, and they stand a good share of cold, not to say rough weather. The leaves are rigid in habit, and of a hardy-looking character, veined with red, and they produce their spikes of reddish-orange flowers freely. A group of this kind may be said to be a combination of flowers and foliage, and a pretty combination it is.

—— PELARGONIUM MONT ROUGE. — We have upon several occasions during the past season seen this Pelargonium in such fine form in Battersea Park that we think a special word of commendation is due to it. It is a fine trusser, bright red in colour, and, given a good position, it makes a distinct and telling show. The example referred to forms a broad edging-band upon a sloping bank, behind which are green-leaved Cannas and a background of evergreen shrubs. The Pelargoniums may indeed be said to be surrounded on three sides by green, and as seen across the lake, in the Peninsula Garden, the effect is telling in the extreme. In wet or dry weather the brilliancy of this red band never seems to alter.

—— HOW TO DESTROY WASPS.—A correspondent of the *Times* writes:—"I have for the last ten or twelve years destroyed these troublesome feeders on fruit with methylated chloroform, but this involves the necessity of waiting till night when all are at rest. But pulverised 'commercial cyanide of potassium,' one or two tablespoonfuls, may be put into the entrance of the nest at any time of the day, and if quietly done does not in the least disturb the ingress of the insects. They readily enter, never to return, so that in twenty-four hours every individual is destroyed. The entomologist may then dig them up, or they may remain; they can do no more mischief. I was curious to know the contents of a large nest, measuring 9 inches across, having eight tiers of cells. I counted 3400 wasps, and five of the tiers were full of pupæ, which I did not count. Such simple and inexpensive means I consider a public benefit, to be made known as much as possible." We have testimony to the same effect, but it must be remembered that the cyanide is a potent poison, to be kept in a safe place, and used carefully.

—— THE ESSEX FIELD CLUB.—The sixth part of the *Transactions* of this energetic Club has lately reached us. The contents are above the level of such publications in general. The paper on the "Galls of Essex," consists of a full descriptive account of the galls found on various wild plants of the county, together with illustrations and a list of the insects by which the galls are produced. This is from the pen of Mr. E. A. FITCH, and is a very valuable contribution, useful for reference, the more so as prefaced to it are a brief history of galls in general, and references to the literature of the subject.

—— CLEMATIS COCCINEA. — Messrs. CARTER send us a coloured plate of this handsome creeper, of which frequent mention has been made. In Messrs. CARTER'S plate the vase-shaped flowers are shown as bright scarlet. The colour, however, varies from scarlet to light rose-pink.

—— BEDDING AT THE CRYSTAL PALACE.—Although the season is now too far advanced to see bedding at its best there are some good autumn beds at the Crystal Palace which are rather a departure from the ordinary style of planting. The groupings that struck us most were the showy beds of scarlet Tropæolums, blue Ageratums, and such-like, which are very showy, and even striking, upon the green slopes. In a large park or garden a few beds of this kind are indispensable, as they can be seen a long distance off by visitors, the majority of whom have but little idea of quiet harmony in the arrangement and planting of flower-beds. But Mr. HEAD has also introduced a number of mixed beds, so that those who are first attracted by the bright colours must perforce cast a glance at those mixed arrangements which we are pleased to see coming to the front. Beds of Lobelia cardinalis, purple Stocks, scarlet Gladiolus, and white Pentstemons, are very beautiful and natural-looking; and the material being mostly hardy, it occurs to us that where reduced labour is the order of the day there might be many more such beds without detracting much from the attractions of the flower-garden. We were pleased to notice so much variety, as no doubt it is best in a public garden to have a scrap of everything. The border round the Rose temple is very effective, having Dahlias and Pentstemons planted for a top row, and panels of salmon, pink, and scarlet Pelargoniums, Lobelias, Tropæolums, Iresine, Coleus, and other foliage and flowering plants, sloping down to the walk. The flowers were more numerous than we expected after so much rain, and the foliage plants looked none the worse for it.

—— TROPÆOLUMS IN WET WEATHER. — We have upon more than one occasion drawn the attention of practical gardeners and others to the merit of these plants in the flower-garden during wet seasons. We have never advised a policy of exclusion in the case of plants, but have rather advocated that there should be as much variety as possible in the flower-garden — plants that are known to stand hot dry weather, as well as those that will bear a low temperature and wet. In the grounds at the Crystal Palace there are some beautiful beds of Tropæolums upon the green slopes, which are so conspicuous for brilliancy of colour that we think it would be worth while to make provision for obtaining a stock of such plants for next season's work. The present month is a good time to propagate from cuttings.

—— FALLING HARDY FRUITS.—Complaints are very general that both Apples and Pears, of even mid-season ripening kinds, are falling rapidly, though not from maggot, being sound enough in all other respects. That maggot is very abundant amongst Apples, where there are any, is evident; the fly which produces this little pest having doubtless been a considerable factor in that plague of blight which so

seriously troubled our trees last May. The present general falling, however, is due to other causes, and we are largely disposed to think that the recent few warm days, following a considerable rainfall on the 5th, induced unusual activity amongst the roots, and, as a consequence, there has been a late renewal of activity as shown in renewed growth and leafage. It is well known that in spring the swelling of the tissues in the Turkey Oaks and in the Hornbeam liberates the dried leaves that have adhered so tightly to the wood through the winter. The same process goes on in evergreen trees and shrubs, and it is just probable that the like cause is now operating to promote the early loosening of hardy fruits. This phenomenon, together with the high prices which all kinds of hardy fruit now obtain in the market, has led to the stripping of the trees unusually early; indeed, growers do not care to see their sparse crops becoming less every day by falling and spoiling, and therefore run them in to some good purpose. Growers speak very hopefully of the next year's fruit prospects, because the trees look so well. No doubt young and perhaps too highly cultivated ones are making rather too much wood, but that will right itself in a very profitable way in a year or two. Older trees, having got over the spring check, seem to have enjoyed the season thoroughly, and are getting studded with plump fruit-buds all over. It is easy enough to propound theories as to what ought to follow the present season, but Nature takes her own way none the less.

—— THE EDINBURGH SHOW.—The receipts were nearly £600 on Wednesday, and upwards of £500 on Thursday—in all about £1120—the number of visitors being over 30,000, which number would have been largely increased if the second day had proved as fine as the first. Much of this success was due to the cheap fares charged on the days of the show by the North British and Caledonian Railways, which brought large numbers of visitors from Aberdeen, Dundee, Perth, Glasgow, Carlisle, Newcastle, and intermediate places. To meet the railways the Council of the Society determined to reduce the charge for admission on the first day to 1*s.* after 1 o'clock and on the second day to 6*d.* at 5 o'clock, after which hour the show was crowded with thousands of intelligent and well-dressed working men and women. The low charge for admission is a step in the right direction, and the success of the show, financially and otherwise, will doubtless encourage the Council to persevere with the small rate of admission, trusting to the good taste of the public, and the excellence of the shows to make them a financial success. The excellent plan of paying the prizes to the winners on the day of the show, which has been followed in Edinburgh for some years, allowed the Treasurer to make up the balance and clear off all expenses in the course of a few days, and we are pleased to hear that the receipts for the show have more than met the expenditure. The show closed at 10 o'clock on Friday night, and a few members of the committee were on the spot at 5 A.M. on Friday morning to admit exhibitors to remove their articles, when for about three hours the market presented a very busy scene. By 9 o'clock most of the exhibitors from a distance had departed by the early trains, and long before mid-day the immense hall was restored to its usual condition. The muster of gardeners from England and Ireland was much larger than at any previous International Show at Edinburgh, or probably elsewhere, if we except the London "International" in 1866. Many thanks are due to the Treasurer, Mr. NEILL FRASER, for the active part he took in the matter; commendation is also due to the Secretaries.

—— FLOWER SEED POCKETS.—Messrs. ROLLS & KELLY have introduced a series of seed-pockets bearing on one side a roughly-executed coloured drawing of each particular plant, and on the other the name of the variety, with directions for its culture. The idea is excellent, and no doubt, if it meet with popular favour, its execution will in future be improved upon.

—— AUTUMN FLOWER BEDS. — Shall we ever grow wise in our generation, and make the flower-garden and its immediate adjuncts more interesting from February to November, or even later, when there is a mild season? In how many flower-gardens is there the smallest attempt made at an autumn effect? And yet that it is possible to have a really good display is clearly demonstrated by Mr. GRAHAM at Hampton Court Palace. That gentleman has some gorgeous beds of the white autumn-flowering Chrysanthemum Madame Desgrange and Lobelia cardinalis, mixed. The effect is good just now, but it will be much better in a week or two, and we venture to think that a practical illustration of this kind will do much towards cultivating a taste and a desire to give more attention to autumn flower gardening.

—— MANY-CROWNED STRAWBERRIES. — About this time every season those who are engaged in preparing Strawberries in pots for next season's forcing have to determine whether plants are to be grown with several crowns or only with one crown. There are some kinds that are very liable to form several crowns, such as Vicomtesse de Thury (a very popular sort), and Sir Charles Napier. It causes, perhaps a little labour to grow the plants with one crown, but the labour quite repays. It is, however, necessary to inquire at the outset what advantage is gained by the labour, and it must be admitted that if a man is growing his stock in order to obtain the greatest weight of fruit from the plants, it would be as well, if not better, to let Nature have her way. Upon the other hand, the private grower or exhibitor will gain considerably by growing his plants with one crown only. Let us look at the case briefly. A young runner is taken in July that afterwards developes into a plant which at first has only one crown, but as the plant increases in size it developes several side crowns; it cannot be denied that if these are removed as soon as they appear, the centre or main crown must of necessity increase in size and consequent strength, and that in the spring it will naturally throw up finer and larger trusses of flowers. The advantage, therefore, is that plants grown with one crown give larger and finer individual fruits, while the many-crowned plant will give the greatest aggregate weight of fruit. The question is, therefore, one of circumstance only, and cultivators must determine for themselves which plan will answer their purpose best.

—— THE WEATHER.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending Sept. 18, issued by the Meteorological Office, London:—The weather has been more changeable and showery than during last week, although in places some very fine clear days have been experienced. In the south and south-east of England sharp thunderstorms occurred on the 12th and 14th. The temperature has been even lower than it was last week, the deficit being as much as 6° in the "Midland Counties" and "England, S.W.," 5° in the S., E., and N.W. of England and in the S. of Ireland, and from 2° to 4° elsewhere. The thermometer was generally highest on the 17th, when readings of 70° were reported over southern and central England, but in other parts of the kingdom the maxima varied between 62° and 67°. The minima, which were registered on different dates in the various districts, were very low everywhere. At Cullompton (Devon) the sheltered thermometer fell to 31°; in "England, E.," the "Midland Counties," and "Ireland, N.," to 32°; and to between 33° and 36° elsewhere. On the grass readings were, of course, much lower. The rainfall has been rather more than the mean in "Scotland, E.," and about equal to it in "England, E.," and "Ireland, N.," but less in all other districts. In "England, S.," the fall has been very slight. Bright sunshine shows an increase on that recorded last week over southern, central, and north-western England, but a considerable decrease in all other places. The percentages ranged from 24 in "Scotland, E.," to 48 in the "Midland Counties," and to 51 in "England, S.W." Depressions observed:—During nearly the whole of this period two areas of comparatively high pressure were shown—one over Scandinavia, and the other to the westward or south-westward of our islands. Between these regions (*i.e.*, over the North Sea and the north-east of England) some shallow depressions travelled slowly in a northerly and north-westerly direction, and the wind, though very variable in places, was generally light or moderate from between north-west and south-west.

—— GARDENING APPOINTMENTS. — Mr. WM. FARCY, late Gardener to C. C. G. CRAVEN, Esq., of Brockhampton Park, Cheltenham, has been engaged as Gardener to J. GWINNE, Esq., Kenton Grange, near London.—Mr. ARTHUR ELLEN, late Foreman for Mr. G. WOODGATE, Warren House, Kingston Hill, has been engaged as Gardener to Lord TEYNHAM, Tower House, Woolwich.

AUTUMN PLANT LIFTING.

THOSE who grow what are called valuable plants, and are provided with every modern facility for the purpose, can form but little idea of the shifts that many private gardeners have to make to get up a good stock of winter blooming plants. With inadequate glass accommodation, and often hampered with pressing demands upon other slender resources, the outlook at times is anything but bright. Were it not, therefore, for a good deal of thinking and scheming, the gardener so situated could hardly keep up an appearance above mediocrity. Of late years a good many growers have found out a short way of meeting the demand for decorative plants in winter. A large number are now planted out instead of being grown in pots as formerly. The success and advantages attending the system are so great that some effort should be made to retain those advantages in their entirety. But such is not generally the case. From the nature of the system under which plants of this kind are grown their stems and leaves are somewhat sappy and luxuriant, and therefore susceptible to injury from the action of the sun or drying winds at the time of lifting. To obviate this the operation is best carried out on a dry dull day, and the plants, after being potted, should be taken one by one and placed under glass in a north aspect. If such a structure is not already at hand, it is not a difficult matter to erect one temporarily. The plants alluded to are as follows:—

SALVIAS.—These being tall growers should receive attention first, and as they are potted they should be placed as a basket row in the house or shelter provided for them. The ventilators should be closed and the plants syringed overhead if they show the slightest symptoms of suffering.

RICHARDIAS. — Common as these are, and easy as they are to grow, there is a right and a wrong way of treating them. They generally grow vigorously, and if they suffer during the process of lifting or afterwards, they lose their lower and largest leaves, and are disfigured and rendered unfit for decorative purposes in consequence. Those who have much furnishing to do should keep an eye to the future, and select good sized plants for the purpose, taking care that the plants are potted into suitable sized pots. Plants that have made medium growth are most likely to carry their lower leaves through the winter. These should be treated as recommended for Salvias.

SOLANUMS.—Trade or market growers of these, having but one object in view, are what may be called "class growers;" they cultivate for a certain class, and it must be conceded that their plants are wonderfully well done. The private gardener, upon the other hand, has some back corners in a big conservatory to replenish with winter plants, and he wants a good many of various sizes, always of course giving preference to quality. He requires also a good number of plants suitable for room decoration and for packing stuff when there is anything like grouping carried out on special occasions. If there is a north house to put the plants in after being potted, well and good, but they ought to have a place near the glass, and after they recover themselves from the shift warmth and an abundance of dry air are required to ripen up the berries of the earliest batch. Plants that are not wanted for use until after the turn of the year should be kept in a north aspect a little longer.

WINTER FLOWERING CARNATIONS.—Carnations are flowers that require no recommendation. The point is to have enough of them. Lifted at once they will, if carefully handled, bear ordinary sunshine in a house with a south aspect. In case of strong sunshine shade for a few hours in the middle of the day, and syringe overhead once a day in favourable weather. They do well in a light airy position near the glass in a temperature ranging from 50° to 55° by night, and a corresponding rise by day. White Swan, Angleterre, Lady Musgrave (the two latter red), and Miss Joliffe are sorts that every gardener should grow in quantities for cut flowers.

SCHIZOSTYLIS COCCINEA.—Where plants of these were pulled to pieces in the spring and planted out in rich soil there should now be plenty of good flowering stuff ready for lifting. In any case where there are clumps or patches of it about the borders it is well worth lifting and potting them up for flowering at the end of October and November. The leaves of the plant

are perfectly hardy, not so, however, the flowers, which are easily injured by frost. These are amenable to almost any treatment, and are easily forced into flower. Their beautiful spikes of scarlet or red flowers and narrow green leaves are about the freshest and brightest looking objects with which to adorn a greenhouse in the dull month of November.

Eupatoriums are not by any means brilliant subjects, but still useful for furnishing conservatories, and in a cut state they assist materially in filling up large stands for the dinner-table. The autumn-flowering variety, E. ligustrinum, or odoratum, is excellent for the last-named purpose, as a kind of groundwork, at all events, for choice and more highly coloured flowers. These require but little attention, a dew overhead for a few days after potting, and afterwards a good position near the glass, to hasten the development of the flowers.

Libonias are more difficult to deal with. If the shoots are not properly ripened and the plants are subjected to much warmth or moisture they are likely to start into fresh growth. It is better, therefore, to give the plants a position near the glass in a pit having a due south aspect, and to shade from strong sun for a day or two; then keep a mean temperature of from 50° to 60°, with a dry atmosphere, which will assist in completing the ripening of the shoots and cause them to be more free-flowering. The dwarf autumn flowering variety Penrhosiensis is very useful for cutting, and it also makes a good margin for a plant stage, arranged alternately with pots of Roman Hyacinths.

Bouvardias.—Where these succeed out-of-doors they are well worth extra attention when they are being lifted and potted. A mellow soil of a rather light nature suits them best—say about one half of light loam, and the other half a mixture of leaf-mould thoroughly rotten, a dash of horse-droppings, and a sprinkling of sand to sharpen the compost. In this they will soon root afresh, and they should be kept cool or nearly so until the roots are fresh at work. Given a light structure, a low pit near to the glass, and a moderate degree of heat, they will grow and flower continuously until Christmas. For making buttonhole or ball bouquets, or for dressing small glasses for the dinner-table, Bouvardias stand in the foremost rank, not even excepting the choicest of stove flowers.

Chrysanthemums.—The late varieties of these only are usually planted out, and much labour is thereby saved. After they are potted and tied into form, they should be stood behind a north wall, where the swelling of the flower-buds will not be much influenced by the weather, should it be mild and warm. By-and-bye a temporary screen should be got in readiness to protect them in case of frost, but if the plants are kept rather dry a few degrees of frost will not harm them. The longer they remain out-of-doors the more useful will they be at the turn of the year. Of the above the Richardias, Schizostylis coccinea, Carnations, Solanums, and Bouvardias, afford the gardener the first supply. In a very few days after lifting, or as soon as their roots have laid hold of the fresh soil, they may be forced gently into flower, coming in about the same time as the early batch of Chrysanthemums, and at a time when flowering plants and cut flowers are in great demand by country families. *W. H.*

VINE AND GRAPE MOTHS.—I.

The insects which attack and injure the Vine and its precious products in wine-growing countries have necessarily attracted great attention, and formed the subject of various memoirs and works published by naturalists of eminence. The Baron Walckenaer, in a series of articles published in the *Annals of the French Entomological Society for* 1835 *and* 1836 (vols. iv. and v.), entitled, *Recherches sur les insectes nuisibles à la vigne, connus des anciens et modernes et sur les moyens de s'opposer à leurs ravages*, has given an extensive bibliographical and historical account of all the insects known up to that period to be injurious to the Vine. A similar work on the Vine insects of Spain was published about the same period by D. Salvador Lopez, of Madrid. Subsequently, in 1842, the late Professor Victor Audouin published a splendid volume in 4to, with many plates, entitled, *Histoire des insectes nuisibles à la Vigne et particulièrement de la Pyrale* (Pyralus Pilleriana of Fabricius, Pyrale de la Vigne of Bosc., P. Vitana of Fabricius), the larva of which especially attacks the foliage of the Vine, and occasionally the very young berries. Of this work we published an abstract in the *Gardeners' Chronicle* for 1847, p. 388, of which we here reproduce the illustration (fig. 65).

The late Dr. Boisduval, President of the Horticultural Society of Paris, published in 1867 a very useful *Essai sur l'Entomologie Horticole*, in which he gave the history of the chief insects injurious to horticulture, and in which the first place amongst the Micro-lepidoptera, or small moths, was given to the Tortrix Pilleriana, or Pyrale de la Vigne, abovementioned. Another species of Tortricidæ (T.



Fig. 65.—Pyralus Pilleriana (a grape moth).

Roserana of Frœlich, Tinea (Eupæcilia) ambiguella of Hübner, an extremely rare British species) is described as equally injurious with the Tortrix Pilleriana, its caterpillar appearing in May, and feeding exclusively upon the Vines, enveloping the bunches of Grapes whilst in blossom with a silken web, devouring the newly formed berries, whilst the silk which envelopes the bunches causes the remainder to wither by preventing their growth and retaining the moisture, which causes them to rot. The moth appears in June or July, from which there is a second brood of caterpillars in September. These pass through the winter in the chrysalis state, the moth appearing in April. Although somewhat rare in the neighbourhood of Paris, it is very common in the South of France, and especially in Italy. Frœlich states that in the neighbourhood of Stuttgard it is so abundant in certain seasons that the crops of Grapes are nearly destroyed.



Fig. 66.—Tortrix vitisana (grape moth).

The species is named after the Senator Van Roser, by whom a circumstantial account of its ravages was published in the *Transactions of the Wurtemberg Agricultural Society*, December, 1829, and of which an abstract is given by Kollar in his *Treatise on Injurious Insects*.

Another species, Tortrix (Cochylis) vitisana of Jacquin (T. reliquana of Treitschke, Lobesia botrana, W. V.), is extremely injurious in Austria; Vines on trellises, in gardens, or in the open country being equally subject to its ravages. The habit of this species, detailed by Kollar, appears to be nearly the same as that of T. Roserana; the females depositing their eggs in April or May on the twigs or buds of the Vine, from which the young are hatched at the time when the blossom-buds are unfolded. These caterpillars fasten several blossom-buds together by means of whitish threads, eat off the inner parts of the blossoms, and progressing from bud to bud, which become covered as by a spider's web. When fully grown the caterpillar is a quarter or one-third of an inch long, dirty green, beset with whitish warts, from which arise stiff hairs; the head and first segment of the body are yellowish-brown. They enter the pupa state about the end of June, either in the web or in a curled-up leaf, and appear as moths in about twelve days. The pupa is brown, with rough points. The caterpillars of the second generation of this moth appear towards the end of August and beginning of September. They are also found on the bunches of Grapes, but they do less damage, as the berries are then of considerable size. The caterpillar penetrates into them, and feeds on their ripe pulp. When a berry is so much consumed that it begins to wither, the caterpillar spins a silken gallery to an adjoining Grape, four or five of which are sufficient, in general, for the nourishment of a single caterpillar. But in rainy weather the mischief extends to a greater number, because those which the caterpillars have begun to devour soon rot, and the infection spreads to those near. The full-grown caterpillar then leaves the bunch of Grapes, to assume the chrysalis state at the root of the Vine, or in some other suitable place.

The account given by Boisduval of the ravages of this insect (of which he says that it, "Dieu merci, n'a pas encore fait son apparition en France") is consequently taken from the work of Kollar, above referred to. Although unknown in France, it occurs sparingly in England; and as no satisfactory magnified figure has yet been published of it, and as some confusion as to its identity has occurred in the United States, we here represent it magnified about 4½ diameters (fig. 66), the natural dimensions of larger individuals being indicated by the cross lines. The fore wings are chestnut-red, varied with whitish buff, and with two large triangular dark brown spots on the hinder or inner margin, edged with whitish. There are also some small dark dots on the anterior margin of the wings. The hind wings are brown in the females, but nearly white in the males. *J. O. W.*

FLOWERS IN SEASON.

Hypericum prolificum.—From Messrs. F. & A. Dickson, of Chester, we have flowers of this very pretty, but, as we believe, little known species. It is a native of the North-Eastern States of the American Union, and, though long since introduced, is rarely met with. It is a shrub 2—3 feet high, with rather long lanceolate or narrow oblong obtuse leaves, and numerous clear yellow flowers. The plant varies a good deal, but is one of the best of its kind.

Erythrina Crista-galli.—Apart from being one of the best autumn-flowering plants for the greenhouse or conservatory, we notice a growing desire on the part of flower gardeners to give this a more prominent place in their arrangements than it has hitherto held. Few plants are more worthy of a good position in the foliage or subtropical garden. It succeeds best out-of-doors in a warm raised situation, where it will make shoots of medium size, and the flower-spikes will be less likely to be blown about by rough winds. Staking is always objectionable if it can be avoided, especially in grouping. To show the plant off properly there should be a groundwork or carpet beneath it, in which case its general appearance is improved, and its dark red flowers look better and brighter.

Osmanthus ilicifolius. — Seldom have we noticed the beauty of this useful Holly-like shrub displayed in a better manner than we did lately in Battersea Park, where Mr. Rogers has a bed of it intermixed with white Phloxes, which are most effective towards evening, when the leaves of the Osmanthus are covered with dew, and when its dark green leaves are in striking contrast to the pure white flowers of the Phloxes. This is what we would call a permanent, hardy, and showy bed.

Tropæolum speciosum.—This beautiful creeper seems to thrive as well in Wales as it does in Scotland. It may be that the moist climate suits it, but inland, as near Malpas, in the garden of Mr. Wolley Dod, and in Messrs. F. & A. Dickson's nursery at Chester, it also does well, as we know it does in Epping Forest in Mr. George Paul's nursery, and at Tooting in Mr. Parker's nursery. It is clear, then, that the plant cannot be so exacting in its requirements as some suppose. Its flowers are suffi-

ciently brilliant, but he that has not seen the ripening and ripened fruits has a surprise in store. Anything richer in colouring we never saw than the fruits of this as grown at Colwyn Bay in Mr. Walker's garden. In various places in Wales we noticed the plant growing in association with Clematis Jackmanni, the combination being remarkably effective, and toned down in some cases by the foliage of the Japan Maple.

TWO GOOD FUCHSIAS.—When old friends serve us well we should not be in a hurry to discard them lightly. In Monarch and Dr. Lindley we have two varieties which in a cool greenhouse, trained under the rafters, may be had in bloom almost, if not quite, all the year round.

HOME CORRESPONDENCE.

Herbaceous Lobelias and Mimulus cardinalis from Seed.—Being asked about this time last year by the gardener of a great house in this neighbourhood, how to get a large stock of a large variety of hardy plants, I advised him to apply at once to W. Thompson of Ipswich for his entire collection of seeds, and I am glad to say that the advice was followed, and promises great success; but to those who cannot raise seedlings on so large a scale, I mention two kinds of seed obtained from Mr. Thompson, which are now producing most conspicuous and ornamental results here: namely, mixed hybrid herbaceous Lobelia and mixed varieties of Mimulus cardinalis. A packet of the former will produce several hundred plants, many of which will flower the first autumn, and display every shade of purple and scarlet to white. The nearer the seedlings approach the type of L. syphilitica, the hardier they are, but most of those of the cardinalis type are hardy the first winter, and well repay the trouble of keeping. The soil should be rich and retentive, and the situation rather sheltered. I consider them amongst the most attractive flowers now out in my garden. Mimulus cardinalis requires a moist soil to do well, but the number of plants to be obtained from a packet of seed is countless. I saved about two dozen and threw away the rest, but amongst those saved are many varieties of bright rose and red, with a deeper coloured eye. These plants are quite hardy, and any one of the varieties may be increased endlessly by cuttings or division. *C. Wolley Dod, Edge Hall, Malpas, Sept.* 16.

Quadricolor Convolvulus.—I enclose a few flowers of Convolvulus tricolor. For several years this Convolvulus has been in my possession, though it is as yet not in the market, and it is characterised by being of four colours. The throat is marked by five broad, pure gold-coloured stripes; the centre of the flower, as a contrast, is pure white, and is bordered by splendid violet-purple rays; while the upper, and by far the largest part of the flower, is of a delicate rose-red colour. *V. Dopplet, Erfurt.* [The specimens sent bear out our correspondent's statements. ED.]

Leeks in Scotland.—In the leading article of your issue of the 16th inst. the remark that Leeks were prominent amongst the vegetables shown at the International Exhibition at Edinburgh illustrates and emphasises the fact that this valuable winter vegetable is grown in Scotland to a degree of perfection not attainable in the South. The cool moist climate and the absence of any excessive drought combine to produce a continuous growth and development, and at the Leek shows held in the South of Scotland in the month of December the gigantic specimens exhibited would astonish many of your southern exhibitors of vegetables. The varieties of exhibition Leeks are very numerous, every grower having a special strain of his own selecting. One of the best of these, if not the very best, is the Syon Leek, grown by an amateur near Kelso, who has carried off prizes and medals innumerable during the last twenty years. The Syon Leek has been grown with a blanched portion of 15 to 20 inches in length, as white of ivory, and crisp and tender as Celery, while some of the specimens have measured 8 to 10 inches in circumference, and weighed 4 to 5 lb. each. The seed is sown early in February in a gentle heat and potted off, hardened, and finally planted out in May in very strong deeply trenched and heavily manured soil, in open trenches such as are made for Celery. They are carefully tended during the summer, and get liberal supplies of liquid manure, and so kept steadily growing and increasing in size. The Leek is one of the hardiest of winter vegetables, and at the same time most valuable and nutritious, lasting far into the spring months, and furnishing a supply of delicious and wholesome green food when other vegetables are scarce. The complaint that large vegetables are mostly coarse and uneatable does not apply to the Leek, for these gigantic specimens are by far the best for tenderness and mildness of flavour. *Stuart & Mein, Kelso, N.B.*

Harebell Flowers with Linear Petals.—Attention has been invited in these columns to the great variation in form of the flower of this plant (Campanula rotundifolia), and varieties of the plant are sold under many names. Last year I bought from a Continental nursery a variety with a duplex corolla, which was sold to me as C. Scheuzeri, but which might more properly have been called C. rotundifolia flore duplice. I carefully saved the seed from this, and sowed it early in the spring, and many of the seedlings are now in flower. Some have the double corolla of the parent, but are altogether different in leaf. Others are typical C. rotundifolia, but many plants have flowers with a divided corolla of stellate form, having five distinct almost linear petals. I enclose specimens. *C. Wolley Dod, Edge Hall, Malpas, Cheshire.* [Very interesting and important morphologically. We may have something to say about them at another time. ED.]

Squirrels v. Oak-galls.—These little animals, which are too often marauding, are now seen here doing good service in the evergreen Oak trees, biting off and splitting open the Oak-galls. I believe they are also devouring the maggot. While these busy little fellows have been working away over my head, and fragments falling all around, I have examined the excrescences, both green and brown, and could not find a single grub. This is a practice I have never before seen them at. They are now, however, making a wholesale slaughter of them. We have often reason to complain of these pretty little creatures doing mischief that to have an occasion to speak of their usefulness is a rare pleasure. *Henry Mills, Enys, Penryn.*

A Morning Rainbow.—

> "A rainbow in the morning
> Is the sailor's warning;
> A rainbow at night
> Is the shepherd's delight."

At 5.40 to-day (September 5), when I looked out to see what kind of a day we were likely to have, I was agreeably surprised to see before me a magnificent rainbow; besides the primary one there was the second, and even the third reflection. The sun must, of course, have risen, but to us he was scarcely visible. So seemingly did this appear to be the case, that a man who was coming to his work remarked that it was the first rainbow he had ever seen before the sun was up. Many other similar remarks were made, but all agreeing that during their lifetime they had never seen one so early in the morning and under such peculiar circumstances. It was observed by many from different parts of this neighbourhood. The east was bright, but out of the west there arose great darkness, which rapidly spread all over the heavens; this was soon followed by a downpour of rain, which continued without intermission the whole of the day. All this was quite unexpected, because the previous day had been very fine; farmers were busy carrying their harvest until far on in the evening. The barometer, although not high, was rising satisfactorily, and there was nothing very unreasonable in expecting a continuation of similar weather. The glass had gained a little during the night, but by the time of the coming on of the storm it would go no higher, and soon after commenced to fall, although it fell but little. At no time lately had the glass stood high. On August 31 the *Daily Telegraph* finished its weather forecast by the remark that "in all probability we were now likely to have fine weather." Never, perhaps, was a weather forecast so suddenly falsified, for it rained all that day to excess. At this time of year the damping influence of all these days put together naturally created well grounded fears as to the safe ingathering of the harvest, which, on the heavy land of this neighbourhood, is never very early. Evidently we are yet without any very substantially correct weather forecast. The farmer or gardener who makes arrangements overnight for the work of the morning must still continue to do so, subject to modification on account of weather alterations during the night. But this with us is trivial and unimportant as compared to other pursuits and industries which are carried on where the safety of both life and property depend entirely on the amount of disturbance in the elements of which the weather is made up. Lately I remember reading an account of a Russian medical expedition which was being organised to travel in Russia and other countries for the purpose of gathering from any and every source all possible information respecting the cure of diseases of any kind. Here science, for the sake of information, put aside all prejudice, so that humanity might benefit.

> "Knowledge is proud that he learnt so much,
> Wisdom is humble that he knows no more."

Might it not also be wisdom on the part of the Weather Bureau of England to take a leaf out of the Russian book, and send an expedition around our coasts and through our midlands with a view to gather from weather-wise individuals all the information which a lifetime only of close observation can bring together? Science in her laboratory might then go to work, and with such raw material reduce the whole into practical form. The concluding remarks in the *Daily Telegraph* weather forecast points significantly to the fact that, notwithstanding much scientific parade, we are yet without any reliable sign that a very destructive storm may be approaching, and, indeed, upon us without the slightest human warning beyond that of the natural phenomenon of the rainbow, which so plainly to us heralded the approach of the storm on the morning of Tuesday. Much has lately been said about the necessity of establishing weather forecast stations in the Atlantic in the course of the Gulf Stream, which is a good idea, only I fear too far advanced, as we have in many instances failed to herald approaching storms from the far nearer observatory stations on the coast of Ireland. But notwithstanding these occasional breakdowns let us be patient. The day may not be far off when we may have the coming man who will teach us to know when and by what signs we are to have a storm; in fact, what we appear to be mostly in want of is a substantial modern prophet who will be able to give us from time to time seasonable interpretation of the Scripture text and tell us from whence the wind cometh and whither it goeth. *William Miller, Combe Abbey Gardens.*

Phillyrea decora (*Gard. Chron.*, No. 451, p. 238). — In the supplement to their catalogue of seeds and shrubs, issued in April, 1867, Messrs. Vilmorin, Andrieux & Co., advertise:—"Filaria: Espèce nouvelle du Caucase (?). Phillyrea decora (Boissier et Balansa): Espèce tout-à-fait distincte et nouvelle. C'est un des arbustes les plus remarqables du Pont. Par sa taille et son port il ressemble beaucoup au Lilas commun. Ses feuilles ont presque la grandeur et la consistance du Prunus Lauro-Cerasus. Les fleurs sont d'un blanc pur et deux fois plus grandes que celles du Phillyrea latifolia; elles naissent en gros bouquets à l'aisselle du feuilles. Les fruits sont presque de la grosseur et de la forme de ceux de l'Olivier Sauvage. Cette espèce croît dans les montagnes du Pont à l'altitude de 900 mètres." The seeds I procured then remained for two years in the ground, until, in 1869, one grew into a shrub I have ever since kept in the conservatory, as the Phillyrea generally are not hardy in Belgium. It is a sparsely foliated, straggling bush, which has flowered several times, but never produced fruits. The flower bunches, of a dirty white, are very inconspicuous; but the clusters of fruit, of the size and colour of those of the Aucuba, might be an ornament to it for a long time. I have reason to suppose that this species was found by M. Balansa in the hills above Batoum. He sent them over at the same time with the Acer velutinum, that unravelled puzzle. *J. v. V.*

Sidalcea candida. — I mentioned this plant honourably some weeks ago, and its flowers are produced, it is true, in handsome spikes of pure white, but I little knew what to expect from it. To-day I noticed the ground in its neighbourhood full of tufts of leaves appearing above the ground, of which I dug up more than thirty at distances varying from a foot to a yard. I find them connected with the parent by thick underground stems, rooted on each side as thickly as the legs of a centipede. It seems to be the most desperate runner of which I have ever had experience, and will probably soon be established in cultivated land as a pernicious weed, if all plants of it behave as mine has done. *Caveat emptor. C. Wolley Dod, Edge Hall, Sept.* 14.

Exhibition Potatos.—"A. D." thinks that I shall find myself mistaken in what I said about the table qualities of the Potatos shown at the Potato Show. But "the proof of the pudding is in the eating," and unless they are cooked how am I or anybody else, judging by appearances, to know whether they possess good cooking qualities or not? I am an exhibitor myself, in my own and the neighbouring counties, and not an unsuccessful one, I am happy to say; but the varieties which I have to select for exhibition purposes will not do for my employer's table, and I do not grow my

Potatos on a dung-bed, but on a warm, dry soil carefully prepared with the proper manures; and I may here say that a Potato that is very fastidious as to soil will not be of much value to the country at large, as very few growers have the opportunity of selecting their soil, especially cottagers. I cannot agree with "A. D." when he says that the International Kidney will resist the disease better than the Lapstone, although practically I cannot say, as I use every precaution against the disease, and so do not get a diseased tuber of either variety; but a neighbour who grows the two, and allows them to take their chance, told me that every one of his Internationals was rotten. Well, the Lapstones were nearly as bad; I saw them dug out. If, as "A. D." asserts, the progeny of the International Kidney, Vicar of Laleham, and other popular show kinds will combine good table quality with the handsome shape and heavy cropping capabilities of their parents, we shall have all that is desired in a Potato except immunity from the disease. Some of the varieties named by "A. D.," although possessing excellent table qualities, are not a good colour when cooked, and that would tell against them on the dining-table, the colour of their skins permeating the flesh, so that they have a rather dirty appearance. I find this to be the case especially with Grampian and Bountiful. What is going on behind the exhibition I don't know, neither does the general public; I can only speak of Potatos as they are put in commerce, but so far the Potato has not been improved in quality by the exhibitions. I procured all the varieties I could which figured prominently at the International Potato Show last year, and there were none of them of such good quality as the first Potatos I saw showed many years ago, such as well grown Ashleafs, flukes, Paterson's Victoria, and others. What we want in a Potato is good flavour, flouriness, freedom from disease, and good cropping capabilities, but the Potato that takes the prize may be a good shape and no more. This is what I intended to say when I said that Potato exhibitions were not doing the amount of good credited to them. Although, unlike "A. D.," I have not been initiated into what is going on behind the exhibition, still I sincerely hope that Potato exhibitions will go on and prosper, as they have done a vast amount of good, in one way at least—they have given an impetus to raisers of new varieties and growers, which could not have been given in any other way. Raisers must be prepared to add a little adverse criticism to their other discouragements, but, nevertheless, the public is greatly indebted to those who give time, labour, and in fact devote all their energies to the improvement of the Potato. I think, however, that after I have paid about 3s. per pound for some new variety and then find that it is next to uneatable, I may be pardoned if I growl a little. I agree with "A. D." in thinking that American varieties will not hold their own in this country much longer; the natives are certain to beat them in the long run, unless they improve. I find them very fastidious as to soil, and requiring a dry hot season (which we do not often get), and then the majority of them are moist after cooking and are earthy flavoured. *G. B. G.* [Our correspondent's letter was received before the late exhibition was held. ED.]

Yucca quadricolor.—I never saw here (Belgium) any variegated Yucca in blossom; but on the Mediterranean coast they flower freely, and fruit also. I once sowed a large quantity of such seeds gathered in that wreck of a botanical garden at Rome. But in the thousands that came out, every one was perfectly green, like the type. As the Yuccas fruit so freely in a climate congenial to them, as at your correspondent, Mr. Hanbury's, at Mortola-by-Mentone, is their barrenness here not attributable more to our climate than to the absence of Pronuba Yuccasella? *J. v. V.*

Globba atrosanguinea.—In your last issue (see p. 363) this excellent plant is alluded to as having been sent from Borneo to Messrs. Veitch by myself. I often saw the plant in Borneo, together with yellow and white flowered varieties or species, and included roots of them in my cases, which, however, did not survive the voyage. To my friend and brother explorer in Borneo, Mr. Curtis, belongs the sole honour of having introduced this plant alive to our gardens. *Palmam qui meruit ferat. F. W. Burbidge, Trinity College Botanic Gardens, Dublin.*

Last Winter's Mildness.—I kept a Cobœa scandens, which had not flowered in the summer, all the winter out-of-doors in a N.E. corner between two walls where it can only get the sun in summer; it has flowered much more than ever it did in the greenhouse, the flowers are much deeper in colour—the stalks by which they hang are very long. Also the Maurandya Barclayana stood out all the winter, and is now in full and profuse flowering. This Maurandya was just the reverse of the Cobœa—it was on the south side and fully exposed to the sun all day. *East Somerset.*

Brier Cuttings.—For the benefit of those amateurs who like to work their own plants we give a figure of the natural size of a Brier cutting (fig. 67). To economise space the artist has judiciously shown the cutting in two pieces but the × will indicate where continuity should be restored. All the leaves and



FIG. 67.—BRIER CUTTING: NAT. SIZE.

buds are carefully removed except one. The cutting so prepared strikes readily in a north border or in a frame, and may readily be budded in the season. Even now it is hardly too late. It is claimed for the Brier cuttings that they are more easily budded, not having to be worked so low down as in the case of the seedling Brier; that the roots are nearer the surface, and that, from the removal of all the buds save one, the tendency to produce suckers is minimised. *M.*

Gall on Acronychia.—In view of the increasing interest felt in the study of galls and gall-



FIG. 68.—LEAF-GALL.

producers, we give a figure of the under-surface of the leaf of a species of Acronychia, sent to us by Baron von Müller (fig. 68). The galls are not unlike the nail galls produced on the leaves of the Lime, as recently figured, but these are produced on the lower surface, and have a small aperture at the top, the edges of which are everted. The galls fall off, leaving a pit on the under-surface of the leathery leaf. ED.

THE WHEAT CROP OF 1882.

SIR JOHN LAWES writes:—

"The autumn of 1881 was exceedingly favourable for sowing, and in consequence many were tempted to sow rather more land with Wheat, the result of which is seen in the increased acreage under that crop.

"The winter and early spring were equally favourable to the plant, and at one moment there were all the elements that tend to the production of an immense crop; this promise, however, was not fulfilled, as, instead of a continuously progressive temperature and dry weather, we had severe frosts and continuous wet: the result, as shown by the produce of our experimental crops, is that—compared with the straw—the yield of corn is exceedingly small, while the weight of straw, which in one case exceeds 3 tons to the acre, is larger than it has been in any season since we began our experiments in 1844.

"In the following table is given the produce in 1882, upon the same selected plots as usual, in the field at Rothamsted, which has now grown Wheat for thirty-nine years in succession. There is also given for comparison the average produce on the same selected plots over the last ten years—1872-1881; over the preceding twenty years—1852-1871; and over the total period of thirty years—1852-1881; during which time the same manures have, in every case, been annually applied to the same plots:—

Harvests.	Unmanured. Plot 3.	Farmyard Manure. Plot 2.	Artificial Manures. Plot 7.	Artificial Manures. Plot 8.	Artificial Manures. Plot 9.	Mean of Plots 7, 8, 9.	Mean of Plots 3, 2 and 7, 8, 9.
Bushels of Dressed Corn Per Acre.							
1882	11	32¾	35¼	37	31¾	34⅞	26¼*
Average 10 years, 1872-81	10¼	28⅞	26⅞	31¼	34¼	31	23½†
Average 20 years, 1852-71	14⅝	35⅞	35¼	38⅛	36⅞	36⅞	28⅞‡
Average 30 years, 1852-81	13⅛	33½	32½	35⅞	36⅛	34⅞	27½§
Weight per Bushel of Dressed Corn in Pounds.							
1882	58¾	59⅝	60	59⅛	59¾	59⅝	59⅛
Average 10 years, 1872-81	57⅞	59¼	59½	59¼	58½	59⅛	58⅞
Average 20 years, 1852-71	57⅝	60	59¼	59	58⅜	58⅞	58⅞
Average 30 years, 1852-81	58	60	59¼	59⅛	58½	59	59
Total Straw, Chaff, &c., per Acre in Cwts.							
1882	9¼	35⅝	51⅛	63½	56	56⅞	34⅛
Average 10 years, 1872-81	8½	28	28¾	36¼	40¼	36⅜	24
Average 20 years, 1852-71	13	33⅞	35½	41⅜	41½	39⅛	28¾
Average 30 years, 1852-81	11½	32	33	39¾	41¼	38	27⅛

"It is so long since we have had good seasons for the production of Wheat that one of the agricultural journals, in asking for opinions respecting the yield of the present crop, requested their contributors to base their estimates upon the yield of the seven previous seasons.

"If we adopted this mode of estimating the present crop we should return it as considerably above an average one; and, as will be seen from the table above, it would be above the average, even if, instead of the last seven, we took the last ten years' crops as the standard of measurement. But if we adopt 28 bushels as representing what we considered to be an average yield of Wheat in this country before we encountered the late long series of bad seasons, the present cannot be considered an average crop.

"Whether, however, the average be 28 bushels, or considerably less—as appears to have been the case for some years past—neither standard will afford much help in assisting us to estimate how much Wheat the crop will furnish for consumption during the next year.

"If we estimate the mean population to be fed during the year ending September 1, 1883, at rather more than 35,500,000, and the requirements of each individual at 5⅔ bushels, the total consumption will reach a little over 25 million quarters. The area under Wheat in Great Britain in 1882 was rather more than 3 million acres; and, assuming Ireland to have the same acreage under Wheat as in the previous year, the total will amount to 3,157,924 acres.

* Equal to 25⅝ bushels, at 61 lb. per bushel.
† Equal to 22⅝ bushels, at 61 lb. per bushel.
‡ Equal to 27⅞ bushels, at 61 lb. per bushel.
§ Equal to 26¼ bushels, at 61 lb. per bushel.

"If we take the figures of the yield of my experimental Wheat crop as a basis for calculation, and deduct 2¼ bushels per acre for seed, the result gives an available home produce of 9¾ million quarters, leaving 16 million quarters to be supplied from foreign sources.

"In the *Times* of September 5, under the title of 'The World's Harvest in 1882,' a review is given of a work issued every year in France, which, we are told, 'is regarded by the corn trade of the world as the leading guide to the harvests of the year.'

"The available Wheat for consumption in the United Kingdom is there estimated at 10 million quarters, and the necessary supply of foreign Wheat is considered to be 14 million quarters.

"I am myself disposed to think that our requirements of foreign Wheat will exceed 14 million quarters. Too much reliance, however, should not be placed upon my figures, as the results obtained from experiments in one field can only indicate approximately what would be the general yield of the country. The character of the crop in my experimental Wheat field is one of enormous bulk of straw, and a relatively small yield of grain; but how much above or below 9 million quarters the crop over the whole acreage of the country will yield for market it is impossible to say.

"Last year, the figures taken from the previous year's crop in the same field, showed an available produce, over the whole acreage, of 8 million quarters; and in the *Economist* of September 2 the home-grown supply of Wheat during the past year is estimated to have been over 7½ million quarters. Beyond the returns given in the *Gazette*—which do not probably represent more than one quarter of the whole crop—there are no statistics to enable us to correct any errors in our previous estimates.

"Of the four factors which make up the sum of our Wheat statistics, three of them—that is to say, the stocks, the home produce, and the consumption—are simply based upon the best estimates we can make. The imports alone can be said to rest on reliable figures.

"In conclusion, although the yield of the Wheat crop may not be equal to expectation, all the other crops of the country generally are very good, and the prospects of agriculture are more favourable than they have been for several years past."

Reports of Societies.

International Potato Exhibition.—The great exhibition of Potatos at the Crystal Palace, on September 20 and 21, was to have been opened by the Lord Mayor and Sheriffs of London, but they were unavoidably absent in Holland, the duties of the Lord Mayor devolving upon Mr. Alderman De Keyser, who, in a few well chosen remarks, declared the show open, and afterwards presided at the luncheon. In extent as well as in quality the exhibition exceeded any of its predecessors, and, as was truly remarked by the Chairman, it was probably one of the finest exhibitions of its kind ever held in this or any other country. The oft-repeated clamour that certain varieties of Potatos are certificated and exhibited upon the ground of their good looks was satisfactorily dispelled by Mr. Shirley Hibberd. Mr. Hibberd discharged a duty to himself and his colleagues, by removing what is undoubtedly a rather deep-rooted misconception. It appears that all new varieties are not only tried but trebly tried before they obtain a certificate, and, as showing the extreme caution that is exercised in awarding certificates, it transpired that out of twenty-six varieties grown for trial at Chiswick during the past season only four have been awarded certificates. The trials are conducted under the eye of Mr. Barron, who, as Mr. Hibberd observed, is a tower of strength in all things practical. Firstly, a Potato that is honoured with a certificate must be a good grower, a free bearer, cook well, and eat well; and finally, said Mr. Hibberd, he must look like a handsome gentleman when he is brought here to the Crystal Palace exhibition. Another point, and a very important one, is that the judges selected to award the prizes are each and all of them fully cognisant of the quality of every Potato submitted to their judgment, and they are therefore not influenced by mere form or appearance in arriving at their decisions. When the quality of any particular variety of vegetable, fruit, or anything else is known, of course appearance has its due weight, and Potatos are no exception to the rule.

Out of 2000 dishes exhibited there were surprisingly few coarse samples—certainly fewer by a great many than last year; and as long as exhibitors are found ready to stage such well-known kinds as Myatt's Ashleaf, Mona's Pride, and Veitch's Ashleaf, in the midst of what outsiders call fancy kinds, they may be assured that their efforts in the direction of quality will be appreciated by a grateful public. The liberal prizes offered by the Crystal Palace Company for twenty-four varieties of Potatos, distinct, nine tubers of each, brought out thirteen competitors, this class alone presenting a magnificent array of the "noble tuber." The great bulk of the collections was wonderfully good, and although six prizes are given, it really seemed as if one could have wished more. The coveted prize was won by Mr. W. Ellington, West Row Gardens, Soham, with fine medium-sized samples of Queen of the Valley, Bresee's Purple, Carter's Eight-Weeks, International Kidney, Vicar of Laleham, Blanchard, Adirondack, Porter's Excelsior, Covent Garden Perfection, Schoolmaster, Matchless, White Emperor, Triumph, Early King, Reading Russet, Wiltshire Snowflake, Grampian, Rector of Woodstock, Mr. Bresee, Woodstock Kidney, Prizetaker, Pride of America, Fiftie's Annie, and Early Border. The 2d prize was won by Mr. J. Pickworth, Loughborough, who showed Champion, Matchless, Wiltshire Snowflake, Fenn's Cricket-ball, Magnum Bonum, Vicar of Laleham, Porter's Excelsior, Beauty of Kent, Fox's Seedling, Prizetaker, Bresee's Prolific, Peach Blow, Woodstock Kidney, King of Flukes, Blanchard, Reading Hero, Grampian, Ashtop Fluke, Queen of Valley, and Reading Russet. The 3d prize was won by Mr. H. E. Gribble, Cannon Hill Gardens, Maidenhead, who had good Magnum Bonum, Extra Early Vermont, Bedfont Prolific, Beauty of Hebron, St. Patrick, Manhattan, Defiance, Triumph, Porter's Excelsior (very pretty), Early Oxford, Early King, Wonderful, Vicar of Laleham, Schoolmaster, Covent Garden Perfection, Myatt's Ashleaf, Grampian, Radstock Beauty, Adirondack, International, Mr. Bresee, Heatherbell, Rector of Woodstock, and Beauty of Kent. The 4th prize was won by Mr. William Finlay, Wroxton Abbey, Banbury; the 5th by Mr. W. Kerr, Dagarel, Dumfries; and the 6th by Mr. James Caunce, Winmarleigh, near Garstang, Lancashire.

In class B there was a very formidable array of exhibitors, eighteen in all! The prizes in this class were given by Messrs. Sutton & Sons, Reading—who offered medals, plate, or money—for eighteen varieties of Potatos, distinct, nine tubers of each, with the stipulation that the prizes can only be competed for by noblemen's and gentlemen's gardeners; and the quality of the tubers staged were such as must have been very gratifying to the Messrs. Sutton, nearly all the dishes staged being characterised by quality. Mr. James Matthews, Woodstock Park Gardens, Sittingbourne, carried off the 1st prize, with clean handsomely formed tubers of Beauty of Kent, Pride of America, Holborn Favourite, Reading Abbey, Magnum Bonum, Triumph, Woodstock Kidney, Adirondack, Sutton's First and Best, Beauty of Hebron, Bedfont Prolific, Pride of Ontario, Early Goodrich, Trophy, Wiltshire Snowflake, Reading Russet, Myatt's Ashleaf (the best dish in the collection), and Superior. 2d, Mr. J. Hughes, Eydon Hall Gardens, Byfield, who also staged remarkably fine samples of Jackson's Improved, Garibaldi, Woodstock Kidney, Vicar of Laleham, Cosmopolitan, Mr. Bresee, Fiftyfold, Purple Ashleaf, Adirondack, Triumph, Porter's Excelsior, Fillbasket, Advance, Blanchard, Reading Russet, Radstock Beauty, Prizetaker, and International Kidney. The 3d prize was won by Mr. R. West, Northlands, Salisbury, who had a very clean collection, and who evidently knows the way to grow and show Potatos in good form, quality being conspicuous throughout his collection. The 4th prize went to Mr. H. E. Gribble, Cannon Hill Gardens, Maidenhead; the 5th to Mr. W. Finlay, Wroxton Abbey, Banbury; and the 6th to Mr. W. Skarratt, Wooley Firs, Maidenhair Thicket.

A dozen competitors showed up in good form in class C, for twelve dishes of Potatos, to consist of six English and six American varieties, distinct, nine tubers of each. The 1st prize in this class was given by Messrs. Bliss & Sons, New York. The 2d by Vice-President Mr. Alderman Hadley, and the 3d by Messrs. George Ure & Co., Bonnybridge, Scotland. Mr. T. Pickworth, Loughborough, obtained 1st prize with excellent tubers of Woodstock Kidney, Matchless, Ashtop Fluke, Rose, International, Queen of Valley, King of Flukes, Trophy, Magnum Bonum, Triumph, Amazon Queen, and Beauty of Hebron. Mr. R. Dean, Ranelagh Road, Ealing, was 2d, his collection being perfect as regards form, and very clean and bright. They consisted of Triumph, Snowflake, Edgecote Seedling, International, Vicar of Laleham, Early American Rose, Queen of Valley, Advance, Radstock Beauty, Magnum Bonum, Adirondack, and Matchless. Mr. W. Ellington, West Row Gardens, Soham, was 3d, showing larger tubers, but not so fine in quality. Mr. H. E. Gribble was 4th; Mr. W. Finlay 5th; and Mr. Joseph Butt, Little Chandos Street, Wisbeach, 6th. For six dishes, distinct varieties, the competition was very close, not to say severe, no less than twenty exhibitors putting in an appearance to contest the prizes. Mr. Thomas Pickworth, Loughborough, succeeded in winning the 1st prize, with International, Blanchard, Ashtop Fluke, Grampian, Woodstock Kidney, and Reading Russet. Mr. W. Finlay, Wroxton Abbey, Banbury, was 2d, also showing beautiful samples; Mr. T. Tooley, Newland, Banbury, 3d; Mr. F. J. Hart, 4th; and Mr. G. Akhurst, gr. to the Rev. J. Bramah, 5th.

Class E: four dishes of Potatos, the largest and handsomest, six tubers on each dish, of any variety.—All the prizes in this class were offered by Messrs. Harrison & Sons, seedsmen, Leicester, and the contest was one of the most interesting in the exhibition. The 1st prize winner in this class was Mr. T. Pickworth, of Loughborough, who showed four dishes all of one variety, which caused some comment, although, of course, it was not against the wording of the schedule. The specimens were very fine. Mr. W. Ellington was 2d, showing Silverskin (large); White Elephant (rather coarse, and having large eyes); International, and Queen of Valley. 3d, Mr. H. E. Gribble, who had White Elephant, Vicar of Laleham (rather coarse for the variety), Trophy, and International; 4th, Mr. C. Osman, Sutton, Surrey. For three dishes of white round Potatos, distinct sorts, Mr. R. Dean staged excellent quality, and easily carried off the 1st prize, with Bedfont Prolific, Porter's Excelsior, and Model; Mr. W. Ellington was 2d, with Bedfont Prolific, Schoolmaster, and Porter's Excelsior; Mr. W. Kerr, Dagarel, Dumfries, 3d; and Mr. O. Goldsmith, Polesden Lacy, Dorking, 4th. There were thirteen competitors in this class. The 1st prize was given by James Wright, Esq., Falkirk, N.B., and the remainder were given by the Amies Chemical Manure Co., Mark Lane, London.

Class G.—The 1st prize in this class is given by Mr. R. Dean, Ealing and Bedfont, London, for three dishes of coloured round Potatos, distinct varieties, and the prize-takers were Mr. Thomas Pickworth, Mr. F. Miller, Mr. R. Dean, and Mr. H. E. Gribble, all of whom showed capital examples. For three dishes of white kidney Potatos, distinct kinds, Mr. Richard Dean was invincible, having fine samples of International Kidney, Edgecote Seedling, and Woodstock Kidney of the very highest quality. Mr. Mills, Northdown, Margate, was 2d; Mr. H. E. Gribble, was 3d; and Mr. W. Ellington, 4th. The 1st prize in this class was given by Messrs. Thomas Gibbs & Co., Piccadilly, and there were seventeen competitors in the class. In the class for three dishes of coloured kidney Potatos there were thirteen exhibitors, and the 1st prize was given by Mr. Shirley Hibberd, the Vice-President, who had the pleasure of seeing a good contest for it. Mr. R. Dean was again 1st, Mr. W. Ellington 2d, Mr. F. Mills 3d, and Mr. G. Akhurst 4th. For the best two dishes, to consist of one dish of Sutton's First and Best, and one dish of Sutton's Magnum Bonum, nine tubers of each, Mr. W. Finlay was 1st; Mr. R. Stowe, Kimbolton, St. Neot's, 2d; Mr. J. Matthews 3d, and Mr. C. Ross 4th. All the prizes in this class were given by Messrs. Sutton & Sons, of Reading. The Messrs. Sutton also offered prizes for the best two dishes of Sutton's Reading Hero and Sutton's Woodstock Kidney, and the winners were Mr. F. Mills, Northdown, Margate; Mr. Thomas Pickworth, Loughborough; Mr. W. Finlay, Banbury; and Mr. H. Wood, Bosworth Park Gardens, Market Bosworth. For the best two dishes of Potatos, to consist of Sutton's Reading Abbey and Sutton's Red-skinned Flourball, the same firm again offered all the prizes, which were won by Mr. G. Akhurst, gr. to the Rev. J. Bramah, Faversham; Mr. W. Finlay, Mr. J. Pickworth, and Mr. P. Cornish, The Shrubbery, Enfield. In the class for the best dish of Schoolmaster there were thirteen competitors, Mr. Charles Turner, of the Royal Nurseries, Slough, offering all the prizes in the class, and the 1st prize was awarded to Mr. W. Kerr, Dagarel, Dumfries, the sample being considered the finest ever exhibited of the variety; Mr. C. Osman, Sutton, Surrey, was 2d; Mr. W. Ellington 3d, and Mr. P. Cornish, Enfield, 4th.

The miscellaneous exhibits by several great growers from various parts of the country contributed in no small degree to the success of the show. Messrs. Webb & Sons, Wordsley, Stourbridge, exhibited no less than seventy-five dishes, among which Webb's Surprise, Magnum Bonum, and Schoolmaster, were most conspicuous. Messrs. Charles Lee & Son also staged a large collection; and Mr. G. Fiddler, Potato grower, Friar Street, Reading, staged fifty dishes as grown under ordinary farm cultivation. Messrs. Daniels Bros., Norwich, showed White Elephant and American Giant in good form; and Messrs. Harrison & Son, of Leicester, staged a capital collection of sixty dishes. Messrs. Sutton & Sons, of Reading, were the largest exhibitors, this firm staging no less than 130 dishes, distinct varieties, including twenty-two seedlings not yet in commerce. The Messrs. Sutton had the American and English varieties arranged separately, and if others would follow their example, matters would be less conflicting to visitors who are not Potato experts.

A notice of the new seedlings shown will appear in our next issue.

Brighton and Sussex Floricultural and Horticultural: *Sept.* 13 *and* 14.—The annual autumn exhibition of the above Society was, as usual, held in the grand suite of reception rooms connected with the Royal Pavilion and on the lawn adjoining the same. The high reputation that this Society has enjoyed from its commencement was fully maintained on this occasion in both the plant and cut flower classes. Fruit was not shown up to the average of former years, a falling off being especially noticeable in the greater part of the exhibits of Grapes and Pine-apples. This Society receives considerable aid from the London, Brighton, and South Coast Railway, through whose liberality all exhibits are carried to and from the show free of charge on the railway transit. The directors also annually offer a Silver Cup of the value of £10, which on this occasion was apportioned to a class of twelve plants, consisting of equal numbers each of flowering plants, foliage plants, and Ferns. This was carried off by Mr. Balchin, nurseryman, of Brighton, with an exceedingly well-grown lot, chief among which were grandly-flowered specimens of Stephanotis floribunda, Bougainvillea glabra, and Statice imbricata (Gilbert's var.), the latter being very fine. The strongest point, however, in this collection was the immense specimen of Croton majesticus, perhaps the finest plant of the kind ever exhibited, being grandly coloured all round and measuring nearly 7 feet in diameter, being about the same in height; this, with an excellent plant of C. undulatus, also finely coloured, constituted the best of the foliage plants. Of Ferns, a very fine example of Cibotium regale was the central plant of the group, on one side of which was arranged a good plant, with stout stem, of Dicksonia antarctica. Mr. Rann, gr. to J. Warren, Esq., of Handcross Park, was awarded the 2d prize in this class, his strongest plants being his Cycas revoluta, very fine; Latania borbonica, also good, and two well grown dense bushes of Gleichenias rupestris, glaucescens, and Mendelii. The flowering plants in this collection were not, however, up to the standard of his more successful competitor. A somewhat novel introduction was made at this show in offering prizes for groups of Ferns, arranged for effect, and occupying a space not exceeding 200 square feet. This class brought forth five competitors, who all showed well—the 1st prize, however, being easily taken by a group arranged in a most artistic manner, and from which a lesson might be learnt in grouping that would be beneficial to many exhibitors. The groundwork of this group consisted of Maidenhair Fern, boldly rising out of which were smaller groups, each consisting of one variety, of such sorts as Adiantum farleyense, A. trapeziforme, and others, dotted here and there were nicely grown individual plants of A. macrophyllum and gracillimum, Cheilanthes hirta, and Davallia Mooreana. This collection was exhibited by Mr. Jas. McBean, "The Home for Maidenhair Fern," Cooksbridge, near Lewes, and most deservedly gained for him the handsome "Ashbury" Cup, valued at 10 guineas. The 2d prize in this class went to Mr. Miles, West Brighton Nursery, whose group was also very pleasing, but rather overdone by using Tree Ferns too large for the purpose. In a group exhibited by Mr. Spary, of the "Queen's Graperies," Brighton, were some remarkably well grown plants of the best of the Gymnogrammas (both gold and silver), among which was a seedling of his own raising that bids fair to be a valuable addition to this genus. It is of strong robust habit and somewhat erect in growth. These five groups occupied one entire side of the marquee, extending some 135 feet in length, and attracted a great amount of attraction. On the opposite side were arranged the mixed groups of foliage and flowering plants, two very effective lots being staged by Messrs. Balchin and Miles, the prizes being awarded in the order named—the 1st prize lot containing several very bright examples of Crotons, prominent among which was C. Queen Victoria, and also some of the best of the decorative Palms, as Cocos Weddelliana and Areca lutescens. The 2d prize collection contained more flowering plants than the former, Eucharis being freely used. In a smaller group, open to the county of Sussex only, another local exhibitor showed a very pleasing collection, prominent in which were several nice examples of Orchids, and a few good Amaryllis, with other good things. This was by Mr. Meachen, gr. to C. Armstrong, Esq., Withdean. Three smaller groups of Ferns were also placed alternately between these, and greatly added to the effect by breaking up the colour. Stove and greenhouse plants in collections of fours were shown in excellent condition by Mr. Gilbert, of Hastings, and Mr. Balchin, to whom equal 1st prizes were awarded. The first-named exhibitor had Erica cerinthoides coronata, densely flowered, and very fresh; also Rondeletia speciosa major, very good. Mr. Balchin's four included two freely-flowered and well-coloured Dipladenias—amabilis and Brearleyana. In the 2d prize collection, by Mr. Meachen, was a well-flowered plant of Erica Eweriana. In the suite of rooms were arranged the cut flowers and fruit, also some of the plant exhibits; of these latter a set of six double-flowered zonal Pelargoniums call for especial notice, being fine-flowered dense bushes, not over-trained. For these Mr. Balchin easily secured the 1st prize. In the 1st prize collection of four fine-foliage plants by Mr. Rann—also staged in the rooms—was an unusually well-grown example of Anthurium crystallinum. Messrs. Paul & Son, of Cheshunt, carried off 1st prizes for forty-eight cut Roses and for twelve Teas, both collections being very fresh. Mr. Slaughter, a local exhibitor, also showed well, taking 1st prizes in some other classes. Two boxes, not for competition, from Messrs. Wood & Son, of Maresfield, contained some good blooms, so also did those shown for competition by the local growers, Messrs. Mitchell and Balchin. Messrs. J. Keynes & Co. exhibited Dahlias in their usual high state of perfection in both the show and fancy classes. A box of the single varieties by the same firm contained the best of their kinds. The collections of stove and greenhouse cut flowers, always shown well at this show, were on this occasion even better than usual, Messrs. Balchin and Gilbert securing 1st and 2d prizes respectively with two superb boxes, both of which were well arranged. Some excellent things were also shown in a good boxful from Mr. Archer, gr. to G. S. Gibson, Esq., Saffron Walden, and from Mr. Morse, nurseryman, Epsom, in whose box Anthurium Andreanum was conspicuous. Table decorations brought forth good competition, the best three stands being shown by Mrs. Seale, of Sevenoaks, who displayed her usual taste, choosing, among other good things, a few blooms of Dahlia Juarezii that were very striking. The class for wreaths was well filled, the premier award being to an excellent arrangement by Mr. Brown, of Richmond. Strong competition was elicited in the classes for bouquets, the 1st prize going to Mr. Moore, florist, Chichester, for a wedding and ball-room bouquet, though the 2d prize couple were favoured by many good judges. For a single bouquet, Mrs. Bishop, of Croydon, easily secured the 1st position with a very pretty arrangement. Near these collections was a miscellaneous selection of wreaths, sprays, bouquets, and artistically arranged baskets of fruit and flowers, not for competition, from Mr. Miles, of the West Brighton Nursery; also a good selection of Apples, Pears, and Melons, from Messrs. Cheal, of Lowfield, Crawley. In the competing fruit classes, Mr. Ford took 1st honours with Black Hamburgh Grapes, well finished, while Muscats were not so good as usual in any of the classes. A fine Smooth Cayenne Pine from Mr. Bates, Twickenham, was conspicuous, though no others were shown. The prizes for culinary Apples were chiefly awarded to West Sussex specimens, an excellent collection from Mr. Fowler, gr. to E. N. Hall, Esq., Henfield, taking 1st in their class. Other classes for single dishes were well represented. Figs, always finely shown in Sussex, were on this occasion even better than usual, especially the dish by Mr. McLeod, gr. to the Right Hon. The Speaker, Glynde, near Lewes. Morello Cherries were also shown in quantity, fine dishes of which had to stand out of the awards that would in many cases easily have secured prizes.

The Apiary.

I WOULD advise "G. R." (see p. 376) not to destroy his bees at all, but to drive them into an empty hive and then add them to another colony, which will strengthen those to which they are united, and save unnecessary cruelty. The operation is so simple and so easily performed that there is no excuse for destroying the bees. Let "G. R." dissolve three or four tablespoonfuls of sugar in about a pint of hot water, and add a few drops of essence of peppermint, or, what answers the purpose equally well, let him steep a few sprigs of garden Mint in the syrup. A few good puffs of tobacco-smoke should be blown into the hive which is to be taken; the bees will be so frightened at this that they will immediately run to the honey-cells and gorge themselves with honey, after which they hardly ever attempt to sting or even fly. In three or four minutes after blowing the smoke into the hive it may be safely lifted off the stand and inverted on a pail or bucket; then place an empty hive of the same size over it. If the operator is timid a piece of cloth may be twisted round the rim of the hives when they are in position, so as to keep the bees from coming out. Now begin tapping the bottom hive containing the bees with the palms of both hands, and the bees will soon run up into the empty hive; continue tapping for ten minutes or a quarter of an hour, or longer if necessary, till all the bees have left the bottom hive.

Place the hive with the driven bees in it on the old stand, and throw a cloth over that with the honey to keep off the bees. Now blow smoke into the hive to which they are to be united, and in a few minutes turn it up and sprinkle the bees with the minted syrup. Place it on the ground while you turn up the driven hive, which must also be be sprinkled with the syrup, then knock the mouth of this hive sharply on the standboard of that to which they are to be joined, and all the bees will fall on the board. Now place the other hive on its stand over these bees, and the operation is complete. This is the best month for taking honey, and a fine day should be chosen for the operation; from 2 to 3 o'clock in the afternoon is a good time, as later in the day, now it is getting cold, the bees are loth to leave their hive and the driving takes a longer time to perform.

If the operator is not a smoker, or has not got a fumigator for the purpose, let him roll up a piece of fustian cloth, set fire to it, and blow that into the hive, and it will answer his purpose quite as well, and will keep alight without trouble during the whole operation. *H. Henderson.*

Florists' Flowers.

PENTSTEMONS.—Looking over a collection of these very handsome border flowers in the small nursery occupied by Messrs. Hooper & Co. at Twickenham, we were struck with the very fine qualities shown in a lot of French raised flowers that merit more than passing notice. Monaco is a brilliant crimson-red, throat pencilled crimson, a fine and very striking flower. Of much the same hue, but having a white throat pencilled scarlet, is Jean Veitch, a charming variety. Lamartine has a deep crimson throat heavy pencilled maroon, and of very fine form. Mandoline, dark crimson, has a white throat much pencilled and flushed with purple, a very beautiful flower. Jocelyn, mauve-purple throat, heavily flushed with maroon, but clearly margined with white. Diadême, deep crimson-red, throat heavily flushed with maroon margined white, one of the darkest. Pierre Hermine, rosy-lilac, clearly defined white throat, slightly pencilled red. Vincingetorix, rosy-red, throat flushed with maroon, a very fine flower. Gaulois, white, slightly tinted with pink, a striking kind. Conquérant, reddish-violet, with white throat; and Professor Seitz, rosy-red, throat white, much pencilled with pale red. These are but a few out of many, but the forms of the flowers are in most cases almost perfect, the mouths open, large, and flattened, and in nearly all the plants, though very robust, are of moderately dwarf habit.

CARNATIONS AND PICOTEES.—It is sometimes said that these have declined in the public favour; but if any one were to walk through the Royal Nursery, Slough, at this season of the year, they would find it somewhat hard to credit this statement. A very large piece of ground is occupied by an army of pots of Carnations and Picotees, recently layered. There are many hundreds of large pots with dense circles of clean, healthy, and robust-looking layers round the parent plant. The process of layering occupies something like six weeks, two and more layerers being constantly at work during that time. The plants are now in the open air, and there they will remain till the time comes round for potting off the stock. Probably this is not done so extensively as it used to be, as a great number of the layers are sold from the stock pots, but a great many are still potted. As Carnations and Picotees are generally sold in pairs, a couple of plants of one variety are potted firmly into a 48-pot, and wintered in cold frames. The plants require a good deal of attention during the winter to keep them healthy and clean. Just now the Tree or perpetual Carnations are being repotted for spring flowering, and it is marvellous to note what an immense number of plants is required for the season's trade.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON
FOR THE WEEK ENDING WEDNESDAY, SEPT. 20, 1882.

Month and Day.	Barometer. Mean Reading Reduced to 32° Fahr.	Barometer. Departure from Average of 18 years.	Temperature of the Air. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years	Hygrometrical Deductions from Glaisher's Tables 6th Edition. Dew Point.	Degree of Humidity. Sat = 100.	Wind. Average Direction.	Rainfall.
Sept.	In.	In.	°	°	°	°	°	°			In.
14	29.45	—0.43	52.2	42.0	10.2	45.3	—11.9	43.8	92	N.W.	0.19
15	29.62	—0.25	65.5	37.5	28.0	50.5	— 6.6	44.6	81	N.W.	0.01
16	29.75	—0.11	61.5	43.0	18.5	52.1	— 4.8	45.4	78	S.W.	0.00
17	29.81	—0.04	68.0	47.8	20.2	55.5	— 1.1	48.8	79	S.W.	0.00
18	29.84	0.00	64.3	49.8	14.5	54.1	— 2.1	47.8	78	S: NW	0.00
19	29.66	—0.17	56.0	47.0	9.0	50.9	— 5.2	49.7	96	N.W.	0.37
20	29.56	—0.26	57.5	49.5	8.0	54.2	— 1.6	44.1	69	E: N.E.	0.33
Mean	29.67	—0.18	62.7	45.2	15.5	51.8	— 4.8	46.3	82	S.W.	0.90

Sept. 14.—Slight fog in morning; cloudy in afternoon. Thunderstorm, with vivid lightning, from 12.30 A.M. to 2.30 P.M., and heavy rain between 2.30 P.M. and 5 P.M. Rather foggy from 8 to 9 P.M.; and cloudless afterwards. Bitter cold day and night.
— 15.—Dense fog in early morning. Cold day. Fine afternoon. Cloudless, with slight fog at night.
— 16.—Cloudy and foggy in morning; generally overcast afterwards.
— 17.—Generally cloudy till evening. Fine night, but cloudy.
— 18.—Fine day and night, but cloudy.
— 19.—A dull day and night; overcast. Rain all day till 10.30 P.M.
— 20.—Very heavy showers in early morning. A dull day; overcast; occasional showers. Fine night; heavy dew.

LONDON: *Atmospheric Pressure.*—During the week ending September 16, the reading of the barometer at the level of the sea decreased from 30.16 inches at the beginning of the week to 29.63 inches by 3 P.M. on the 12th, increased to 29.70 inches by 9 A.M. on the 13th, decreased to 29.62 inches by 3 P.M. on the 14th, and was 29.98 inches at the end of the week.

The mean reading for the week at the level of the sea was 29.75 inches, being 0.46 inch lower than last week, and 0.31 inch below the average of the week.

Temperature.—The highest temperature in the shade in the week was 67°, on the 10th. On the 14th the highest temperature was 52°.2. The mean of the high day temperatures was 61°.1.

The lowest temperature in the shade in the week was 37°.5, on the 15th; on the 10th the lowest temperature was 50°. The mean of the seven lowest temperatures was 43°.9.

The greatest range of temperature in one day was 28° on the 15th; the smallest was 10°.2, on the 14th. The mean of the seven daily ranges was 17°.2.

The mean temperatures were—on the 10th, 57°.2; on the 11th, 55°.3; on the 12th, 50°.3; on the 13th, 58°.7; on the 14th, 45°.3; on the 15th, 50°.5; and on the 16th, 52°.1; and these were all below their averages by 0°.8, 2°.5, 7°.3, 0°.7, 11°.9, 6°.6, and [4°.8 respectively—the 12th being the coldest day since May 9.

The mean temperature of the air for the week was 52°.8, being 5°.1 lower than last week, and 4°.9 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo, placed in the full rays of the sun, was 124°.5 on the 15th; on the 14th the highest reading was 61°. The mean of the seven readings was 86°.9.

The lowest reading of a minimum thermometer with its bulb on short grass was 35° on the 15th. The mean of the seven readings was 39°.5.

Rain.—Rain fell on four days to the amount of 0.51 inch, of which 0.29 inch fell on the 12th.

ENGLAND: *Temperature.*—During the week ending September 16 the highest temperatures were 73°.5 at Cambridge, and 72° at Hull and Sunderland. The highest temperature at Wolverhampton was 63°.3, at Bristol 63°.8, and at Bolton 63°.9. The general mean was 67°.3.

The lowest temperatures in the week were 31° at Hull, and 33°.5 at Cambridge and Nottingham; the lowest temperature at Liverpool was 41°.5, at Sunderland 41°, and at Brighton 40°.4. The general mean was 37°.

The greatest ranges of temperatures in the week were 41° at Hull, 40° at Cambridge, and 32°.8 at Nottingham; the least ranges were 23° at Liverpool, 25°.9 at Bolton, and 26°.8 at Bristol and Wolverhampton. The general mean was 30°.3.

The mean of the seven high day temperatures was highest at Sunderland, 67°; at Cambridge 65°.1, and at Hull 64°.; and was lowest at Wolverhampton, 58°.6; at Liverpool 59°, and at Bolton 59°.4. The general mean was 61°.8.

The mean of the seven low night temperatures was highest at Liverpool, 46°.5; at Brighton, 45°.3, and at Sunderland 44°.1; and was lowest at Hull, 39°.3; at Nottingham 40°.2, and at Wolverhampton 40°.6. The general mean was 42°.5.

The mean daily range was greatest at Hull, 24°.7; at Cambridge 24°.2, and at Sunderland 22°.9; and was least at Liverpool, 12°.5; at Bradford 16°.2, and at Brighton and Blackheath 17°.2. The general mean was 19°.3.

The mean temperature was highest at Sunderland, 54°.2; at Blackheath 52°.8, and at Brighton 52°.6; and was lowest at Wolverhampton, 48°.3; at Bolton 49°.1, and at Bristol, 49°.7. The general mean was 50°.9.

Rain.—The largest falls were 1.18 inch at Truro, 0.75 inch at Brighton, and 0.62 inch at Sunderland; the smallest falls were 0.06 inch at Sheffield, 0.08 inch at Bristol, and 0.14 inch at Bolton and Leeds. The general mean fall was 0.39 inch.

SCOTLAND: *Temperature.*—During the week ending September 16 the highest temperature was 67°.5, at Leith; at Paisley the highest temperature was 60°. The general mean was 62°.9.

The lowest temperature in the week was 30°, at Perth; at Greenock the lowest temperature was 41°. The general mean was 35°.4.

The mean temperature for the week was 52°.3, being 1°.7 below that of the week immediately preceding, and 0°.5 below that of the corresponding week of 1881; and was highest at Leith, 54°.3; and lowest at Perth, 50°.

Rain.—The largest fall was 1.03 inch, at Perth; the smallest was 0.55 inch, at Glasgow. The general mean fall was 0.75 inch.

JAMES GLAISHER, F.R.S.

Obituary.

WE regret to learn of the decease of Mr. DANIEL, of Epsom, in his sixtieth year. The deceased gentleman was an occasional correspondent of this journal, and possessed a fine collection of Cacti and Stapelias.

Enquiries.

He that questioneth much shall learn much.—BACON.

MIDSUMMER SHOOTS.—Why is the Oak so much more liable to produce these growths than other trees? *X.* [Probably the reason is to be found in the greater number of buds placed round the terminal bud in the case of the Oak. One of the circlet may start into growth and produce a midsummer shoot. Sycamores often have such a circlet of buds, and they, too, are very liable to form midsummer shoots.]

WHITE EVERLASTING PEA.—Will one of your correspondents kindly give me a hint how to propagate the above? I have one huge clump of it; it seeds freely enough, but the seedlings all, or nearly all, revert to the old red variety. I have tried cuttings and layering, but with no result. The old plant has one powerful tap-root, which apparently goes to a profound depth, and it would be of no use to even try to get it up. *Ignoramus.*

Answers to Correspondents.

BOOKS: *J. J. S. The Epitome of Gardening* (Black).—*The Mug.* 1, Kemp's *How to Lay Out a Garden*; and, 2, Thompson's *Gardeners' Assistant*, include all you want.

CAMELLIAS: *Jexham.* You take far too much trouble with your Camellias, and notwithstanding all that you have done your plants are most likely suffering from drought in the "centre of the ball" all the while. Turn a plant out of its pot, and thoroughly examine it by working right into the centre of the ball of earth, which we suspect is "dust dry." If so, have a short iron spear made, about a foot in length, and insert it several times lengthwise and crosswise into the ball; then dip it ino a tub of water until the ball is thoroughly moistened. Camellias are hardy, or nearly so, and are very simple to cultivate. We would house the plants at once, but give plenty of air. Treat your Azaleas in the same way.

CATTLEYA AUREA: *N.* C. aurea and C. Dowiana have been much confused. C. aurea has usually more or less of a crimson margin to the lip. C. Dowiana comes from Costa Rica, C. aurea from Colombia.

COURTYARD: *B.* In the sunless situation you describe it is no use to try to grow flowers, but you might lay out the central area as a shrub bed edged with common Ivy, and filled in with dwarf evergreens such as Euonymus of kinds, Retinosporas, Hollies, and Aucubas; the latter, dotted in amongst the green shrubs, will lighten up the bed. With a little management all these may be kept dwarf and orderly, in harmony with the buildings around, and much more pleasing to the eye than a flagged space. Some hardy Ferns would also thrive, but they would not be so appropriate as the plants named.

DAVALLIA: *E. S.* You are quite right; it should be D. bullata.

ERRATA.—At p. 368 for "Macranthera," read "Renanthera;" at p. 361, "trees and bushes" should be "tubes and boxes;" "Etoile de Legove" "Etoile de Lyon;" and "Robert Morren" "Robert Moreau."

GLADIOLUS SPIKE: *R. F.* Very curious. The flowers are developed on all sides of the axis instead of being in two rows.

GRAPES: *A Subscriber.* A stagnant atmosphere is the cause of the mischief with your Grapes. Give sufficient fire-heat to keep the air in your vinery in motion, and close the ventilators with a dry atmosphere every night. If this does not improve the state of your Grapes, examine the condition of the border and drainage, which may be defective.

GRASS: *J. R. H.* Certainly an Agrostis—probably a variety of the common A. alba, but the specimens are not sufficient. It is useful in damp heavy land, or where other grasses will not grow. It is very hardy, and grows both before and after others of better quality.

HEAD GARDENER: *Old Subscriber.* A domestic servant.

JASMINUM: *H. A. F.* The plant you mean is no doubt Jasminum heterophyllum. Order it through any nurseryman.

LABEL: *Belfast.* We do not see any novelty in you label.

LANDLORD AND TENANT: *Inquirer.* The law favours the landlord in such a case, and unless the trees are planted in nursery rows, and grown for sale, they must be left on the ground at the expiration of the tenancy.

NAMES OF PLANTS: *W. Foster.* Dendrobium fimbriatum oculatum.—*Amateur.* 1, Zygopetalum Mackayi; 2, Z. crinitum.—*H. A.* The common Eyebright (Euphrasia officinalis).—*J. B.* 1, Clethra arborea; 2, Francoa ramosa; 3, Chlorophytum orchidastrum.—*C. W.*, who sends sixteen economic plants—in leaf only—for us to name, must please remember that it is no part of our duty to name plants. We are very desirous to oblige our correspondents, but they must not make unreasonable demands on our time, or we shall have to neglect other matters of interest to the public. The only ones we recognise at sight are—8, Coffea arabica (the Coffee); 12, Artanthe elongata; 13, Laurus Camphora (the Camphor tree); 16, Asclepias curassavica.—*C. W.* The fragment of leaf is, we suppose, that of Thalictrum minus, but we cannot say for certain what it is.

POMOLOGY: *Filice.* Hogg's *Fruit Manual* (171, Fleet Street).

POTATO WITHIN POTATO: *W. P.* Such cases are not uncommon, and have been frequently figured in these pages. The cause of their formation is not known, but they evidently feed on the parent tuber, and so there is no real gain, but rather loss, in the new formation.

SWEDISH TURNIPS: *A.* We should say you have got an inferior strain of seed. The flowers were probably impregnated with pollen from some other Turnip, but without knowing all the circumstances we cannot speak with certainty.

TREES FOR SHELTER: *Inquirer.* The Black Currants should do very well without shelter in an ordinary position; but if you think it desirable, for any other reason, to plant a few trees, we should recommend Lord Suffield Apple trees for the purpose.

TREE LIFTER: *G. B., West Dean.* Apply to Messrs. Charlton, The Nurseries, Tunbridge Wells.

WHITE SPOTS ON PHALÆNOPSIS LEAF: *D. B. C.* We have not seen anything like them before. They remind us of the little excrescences formed by mites.

CATALOGUES RECEIVED.

HENDERSON & SONS, Brechin—Flower Roots.
DAMMANN & CO., Portici, near Naples—Wholesale List of Garden Flower and Agricultural Seeds, Bulbs, &c.
H. CANNELL & SONS, Swanley—Soft-wooded Florists' Flowers, Winter Flowering Plants, and Bulbs.
MESSENGER & CO., Loughborough—Illustrated Catalogue of Horticultural Buildings.
BARR & SON, 34, King Street, Covent Garden—Bulbs and Plants for all Seasons.
THIBAUT & KETELEER, Sceaux (Seine), France—Stove and Greenhouse Plants.
W. W. JOHNSON & SON, Boston—Dutch Flower Roots.
JOHN LAMONT & SON, Hope Street, Edinburgh—Dutch Flower Roots.
ISAAC DAVIES & SON, Ormskirk, Lancashire—Rhododendrons and Azaleas.

COMMUNICATIONS RECEIVED:—C. W. D.—H. M.—H. A. B.—J. R. P. & Co.—J. S.—Cambrian.—J. M. G.—Bulbophile.—F. Sander & Co.—W. B. H.—H. E.—L. A. E.—F. W. B.—East Somerset.—G. B. G.—E. Vermont & Co.—J. H.—Stuart & Mein.—Observer.—R. D.—J. J. (many thanks).—A Subscriber (next week).—J. S., Basingstoke.—J. T. R.—H. C.—H. L. K. Bochum, Westphalia—V. D., Erfurt.—C. B. P.—J. F—J. W.—P. B.—E. J. (no room).—J. T. B.—E. V. & Co.—Looker On.—J. E. B.—S. P.—F. S., Fiji.—A. D. W. (many thanks; next week)—L. J.—E. M.—Q. R.—J. M. I.—Heath & Son.—J—A. M. (next week).—J. E. B.—Red Cabbage.—H. W. W. (next week).—J. L. Jensen.—I. W.—H. Chamberlain.—G. Guthrie (next week).—C. W.

Markets.

COVENT GARDEN, September 21.

The market is very quiet, there being but few changes to record. Owing to increased demand Kent Cobs have sold freely, and realised higher prices; otherwise trade remains about the same. *James Webber, Wholesale Apple Market.*

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, per doz.	..	3 0– 6 0	Herbs, per bunch	0	2– 0 4
Beans, French, English grown, p. lb.	0	8– ..	Horse Radish, bund.	4	0– ..
Beet, per doz.	..	1 0– ..	Lettuces, Cabbage, per score	..	1 6– ..
Cabbages, per doz.	..	1 0– 2 0	Mint, green, bunch	..	0 4– ..
Carrots, per bunch	..	0 4– 0 6	Mushrooms, p. baskt.	1	6– 3 0
Cauliflowers, English, dozen	..	2 0– 4 0	Onions, per bushel	..	4 0– ..
Celery, per head,	..	0 4– ..	— Spring, per bun.	0	6– ..
per bundle	..	1 0– ..	Parsley, per bunch	..	0 4– ..
Cucumbers, each	..	0 6– 1 0	Radishes, per doz.	..	1 6– ..
Endive, per doz.	..	2 6– ..	Small salading, pun.	0	4– ..
Garlic, per lb.	..	1 0– ..	Spinach, per bushel	3	0– ..
			Tomatos, per doz	..	2 0– ..
			Vegt. Marrows, doz.	3	0– ..

POTATOS:—Magnum Bonums, 90s. to 100s.; Regents, 80s. to 90s.; Myatt's, 100s. to 110s. per ton.

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	..	3 0– 5 0	Melons, each	..	2 0– 4 0
Aubergines, per doz.	4	0– ..	Peaches, per dozen	..	2 0– 8 0
Cobs, 100 lb.	..	45 0–50 0	Pears, per dozen	..	1 0– 2 0
Figs, per dozen	..	0 6– 1 0	Pine-apples, Eng., lb.	3	0– 4 0
Grapes, per lb.	..	0 6– 2 0	Plums, ½-sieve	..	5 0– 8 6
Lemons, per 100	—	6 0–10 0			

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldii, doz.	12 0–24 0	Ficus elastica, each	1 6– 7 0
Arbor-vitæ (golden), per dozen ..	6 0–18 0	Foliage Plants, various, each ..	2 0 10 6
— (common), dozen	6 0–12 0	Fuchsias, per dozen	4 0– 9 0
Asters, per dozen ..	4 0– 6 0	Genista, per doz. ..	8 0 12 0
Balsams, per dozen..	3 0– 6 0	Gloxinia, per dozen	12 0–18 0
Begonias, per doz. ..	6 0–12 0	Heliotrope, per doz.	3 0– 6 0
Calceolaria, doz. ..	4 0– 9 0	Hydrangea, doz. ..	9 0–12 0
Chrysanthems., doz.	4 0– 9 0	Lilium, in var., doz.	18 0–42 0
Coleus, per dozen ..	3 0– 9 0	Marguerite Daisy, per dozen	6 0–18 0
Cyperus, per dozen	6 0–12 0	Myrtles, per doz. ..	6 0–12 0
Dracæna terminalis	30 0–60 0	Palms in variety, each	2 6–21 0
— viridis, per doz.	12 0–24 0	Pelargoniums, doz.	6 0–12 0
Euonymus, various, per dozen	6 0–18 0	— scarlet, per doz.	2 6– 6 0
Evergreens, in var., per dozen	6 0–24 0	Solanum per doz. ..	9 0–12 0
Ferns, in var., dozen	4 0–18 0		

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Abutilon, 12 blooms	0 2– 0 4	Pansies, 12 bunches	1 0– 3 0
Arum Lilies, per doz.	4 0– 6 0	Phlox, 12 bunches ..	3 0– 6 0
Asters, 12 bunches..	3 0– 6 0	Pelargoniums, 12 sprays	0 9– 1 0
Bouvardias, per bun.	0 9– 1 0	— zonal, 12 sprays	0 3– 0 6
Calceolaria, 12 bun.	6 0–12 0	Primula, double, per bunch	1 0– 1 6
Carnations, 12 bun..	2 0– 6 0	Pyrethrum, 12 bun.	3 0– 9 0
Chrysanth., 12 bun.	4 0– 9 0	Roses (indoor), doz.	1 0– 3 0
Cornflower, 12 bun.	2 0– 4 0	— (outdoor), doz ..	0 4– 0 9
Eucharis, per doz. ..	3 0– 6 0	— Coloured, doz ..	1 0– 2 0
Fuchsias, 12 bunches	6 0– 8 0	Stephanotis, 12 spr..	3 0– 6 0
Gardenias, 12 blms..	3 0– 6 0	Stocks, 12 bunches..	4 0– 9 0
Gladioli, 12 bun. ..	6 0–12 0	Sunflower, 12 blooms	0 6– 2 0
— brenchleyensis, 12 sprays ..	1 6– 3 0	Sweet Peas, 12 bun.	2 0– 6 0
Heliotropes, 12 sp. ..	0 0– 1 0	Sweet Sultan, 12 bun.	1 6– 3 0
Lapageria, white, 12 blooms	3 0– 4 0	Tropæolum, 12 bun.	1 0– 2 0
— red, 12 blooms..	1 0– 3	Violets, 12 bunches..	1 0– 1 3
Lilium various, 12 bl.	3 0– 6 0	White Jasmine, 12 bunches	4 0– 9 0
Marguerites, 12 bun.	4 0– 6 0		
Mignonette, 12 bun.	1 6– 4 0		

SEEDS.

LONDON: *Sept.* 20.—There has lately been an improved demand for Trifolium, and fine samples have become scarce. Winter Tares met a good inquiry; current rates are moderate. Alsike is dearer. In neither red nor white Clover seed is there much business now doing. Large blue Peas continue in brisk request. Hemp seed, on account of its unprecedented scarcity, is making a higher price than Canary seed. Feeding Linseed is quiet. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

At Mark Lane on Monday the supply of English Wheat being small and the condition good last Monday's value was upheld, but the trade was slow. Foreign Wheat, of which supplies were liberal, showed quite *1s.* decline on the week where business was done. Flour with a slow sale ruled *6d.* to *1s.* per sack lower. Very little done in malting Barley to test quotations, grinding descriptions *6d.* easier. Beans and Peas without alteration, Maize *6d.* lower for the week, and no quotable change established in Oats.—On Wednesday English Wheat was held for late value, but sold very slowly; the prices of foreign tending against holders. Flour continued depressed; Barley, Beans, and Peas sold in retail quantities at unaltered rates. Maize was dull, and Oats supported steady value.—Average prices of corn for the week ending Sept. 16:—Wheat, 44*s.* 5*d.*; Barley, 36*s.* 11*d.*; Oats, 22*s.* For the corresponding period last year:—Wheat, 51*s.* 1*d.*; Barley, 35*s.* 7*d.*; Oats, 22*s.* 8*d.*

HAY.

Tuesday's Whitechapel Market report states that the supplies were not quite so large, and prices as follows:—Prime old Clover, 120*s.* to 145*s.*; inferior, 75*s.* to 80*s.*; new, 90*s.* to 100*s.*; prime meadow hay, 100*s.* to 112*s.*; inferior, 55*s.* to 90*s.*; new, 70*s.* to 100*s.*; and straw, 30*s.* to 44*s.* per load.—On Thursday trade was a large supply, the trade was very dull, and prices were with difficulty maintained.—Cumberland Market quotations:—Superior old meadow hay, 108*s.* to 120*s.*; inferior, 80*s.* to 95*s.*; new, 70*s.* to 95*s.*; superior old Clover, 135*s.* to 147*s.*; inferior, 100*s.* to 112*s.*; new, 70*s.* to 110*s.*; and straw, 40*s.* to 46*s.* per load.

POTATOS.

The Borough and Spitalfields Markets reports state that trade is steady, with fair supplies. Quotations:—Kent Regents, 90*s.* to 100*s.*; ditto, kidneys, 100*s.*; Essex Regents, 80*s.* to 100*s.*; and ditto Magnum Bonums, 80*s.* to 90*s.* per ton.—The imports into London last week consisted of 200 bags from Bremen, 20 Harlingen, 1839 Hamburg, 17 Antwerp, and 1 bag from Brussels.

COALS.

The prices current at market during the week were as ollows:—East Wylam, 16*s.* 6*d.*; Walls End—Harton, 17*s.*; Hetton, 19*s.* and 19*s.* 6*d.*; Hetton Lyons, 18*s.* 6*d.* and 17*s.*; Lambton, 19*s.*; Wear, 17*s.*; Tunstall, 17*s.*; Thornley, 18*s.*; Tees, 19*s.*

Government Stock.—Consols closed on Monday at 99⅜ to 99½ for delivery, and 99⅝ to 100 for the account. The final figures on Tuesday and Wednesday were 99⅜ to 99¼ for delivery, and 99¼ to 99⅜ for the account. On Thursday Consols close ⅛ better for both delivery and account.

To the Trade.

H. AND F. SHARPE will be pleased to give special quotations for all the leading varieties of VEGETABLE and AGRICULTURAL SEEDS they have grown this season. The quality will be very fine, the Seeds having been harvested in fine condition. They have been grown from the finest selected stocks. The prices will be found very low.
Seed Growing Establishment, Wisbech.

Catalogues for the Season.

CHARLES TURNER'S Descriptive LISTS of the following can be had free on application:—
DUTCH and OTHER BULBS,
CARNATIONS, PICOTEES, and PINKS,
STRAWBERRIES, &c.
The Royal Nurseries, Slough.

Special Trade Offer.

CALCEOLARIA SEED. — Magnificent strain, saved under our own supervision
ALEX. DICKSON AND SONS, Nurserymen and Seedsmen, &c., Belfast.

GERANIUM CUTTINGS. — Waltham Seedling, White Vesuvius, Flower of Spring, *2s. 6d.* per 100. CALCEOLARIA aurea floribunda, Kaye's Yellow, and Sultan, very dark, *2s.* per 100, *18s.* per 1000. Sample sent package free.
WM. ETHERINGTON, Manor House, Swanscombe, Kent.

Roses and Primulas by the 100 and 1000.

EDWIN HILLIER offers Dwarf H.P. ROSES, fine bushy plants, and best varieties; also an extensive collection of Tea and Noisette Roses in pots, mostly on the Seedling Brier. CATALOGUES with cash prices to be had.
DOUBLE WHITE PRIMULAS, fine stuff, in 48-pots; and his New Double "Annie Hillier," First-class Certificate, strong plants in 32-pots now ready.
The Nurseries, Winchester.

LARGE POT ROSES (Teas).—200 surplus stock, No. 24 to No. 1 pots, specially prepared for winter blooming. Niphetos, I. Sprunt, C. Mermet, &c. Also 600 SOLANUMS in 48's, 500 White CHRYSANTHEMUMS, 400 CINERARIAS, coming into bloom; and some large CUNEATUMS.—J. H. HANFULE, Chase Cottage, Southgate, N.

Seakale, Asparagus, and Rhubarb Roots.

H. THORNTON AND CO. are now booking orders for the above, for Forcing and Planting, also Globe and Jerusalem ARTICHOKES, and HERB ROOTS of every description. H. T. & Co. have also very fine samples of DUTCH BULBS and FLOWER ROOTS for present planting, &c.
CATALOGUES sent post-free on application to
H. THORNTON AND CO. (late Dancer), Seed Merchants and Florists, Fulham, London, S.W.

FICUS ELASTICUS.—A fine plant for Sale, 11 feet high. Foliage to the pot, leaves 24 inches in length. Price 40*s.*
R. DACE, Maryland Point, Stratford, E.

GARDEN REQUISITES.

COCOA-NUT FIBRE REFUSE.

4d. per bushel: 100 for 25*s.*; truck (loose, about 2 tons), 40*s.*; 4-bushel bags, *4d.* each.
LIGHT BROWN FIBROUS PEAT, 5*s.* *6d.* per sack; 5 sacks, 25*s.*; sacks, *4d.* each.
BLACK FIBROUS PEAT, 5*s.* per sack, 5 sacks 22*s.*; sacks, *4d.* each.
COARSE SILVER SAND, 1*s.* *9d.* per bushel; 15*s.* per half ton, 26*s.* per ton; in 2 bushel bags, *4d.* each.
YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1*s.* per bushel.
SPHAGNUM MOSS, 8*s.* *6d.* per sack.
Manures, Garden Sticks, Virgin Cork, Tobacco Cloth, Russia Mats, &c. Write for Free PRICE LIST.
H. G. SMYTH,
17A, Coal Yard, Drury Lane (late of Castle St., Long Acre), W.C.

LOAM, splendid Yellow Fibrous, 15*s.* *6d.* per ton. Useful Brown PEAT, 22*s.* per ton, free to Bricklayers' Arms, S. E. R. Fine ORCHID PEAT, as supplied to the principal Orchid Growers. Prices on application.
A. FOULON, 32, St. Mary Axe, E.C.

COCOA-NUT FIBRE REFUSE, newly made, as supplied to the Royal Horticultural Society and principal Nurserymen in England, in sacks at 1*s.* 3*d.* each, or 15 sacks, 15*s.*; 30 sacks, £1 5*s.*, sacks included. Truck-load, loose, £1 10*s.*, fifteen bags or more and truck-load free on to rail. Post-office order or cheque with all orders. Established 1872.—J. STEVENS AND CO., "Greyhound" Yard, and 132, High Street, Battersea, S.W.

COCOA-NUT FIBRE REFUSE, by Chubb's Patent Process, as supplied to all the Royal Gardens and principal Nurseries of Europe; useful at all seasons. Invaluable for Potting, Plunging, Forcing, Ferneries, Strawberries, Bedding-out Plants, &c.; Destroys all Slugs and Insects.
JULY 1, 1882.—In consequence of the great scarcity of husks and enormous Continental demand for our "Refuse," we are compelled from this date to advance prices as follows, and only Orders accompanied by remittance will receive attention (in rotation). We also find it necessary to caution purchasers to beware of spurious imitations and buy the genuine "Refuse" direct. Sacks, 1*s.* *6d.* each: 10 Sacks, 13*s.*; 15 Sacks, 18*s.*; 20 Sacks, 23*s.*; 30 Sacks, 30*s.* (all Sacks included); Truck-load, free on rail, £2. Limited quantities of P M. *Special Quality*, granulated, in sacks only, 2*s.* *6d.* each (2 prize medals), valuable for potting and use in conservatory. Terms strictly cash with order.—To obtain the genuine article, buy direct from the Manufacturers, CHUBB, ROUND AND CO., Fibre Works, West Ferry Road, Millwall, London, E.

COCOA-NUT FIBRE REFUSE, best and pure only, 4 bushel bag, 1*s.* 4*d.*; 15 bags, 14*s.*; 30 bags, 25*s.*; sent to all parts. Truckloads 33*s.*, free to rail.
A. FOULON, 32, St. Mary Axe, London, E.C.

12-oz. Sample Packets, free by post, 12 stamps.

FIBROUS PEAT for ORCHIDS, &c.—BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6*s.* per truck. BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, 15*s.* per ton per truck. Sample bag, 5*s.*; 5 bags, 22*s.* *6d.*; 10 bags, 45*s.* Bags included. Fresh SPHAGNUM, 10*s.* *6d.* per bag.
SILVER SAND, Coarse or Fine, 52*s.* per truck of 4 tons. Red Sandstone ROCKWORK, £5 per truck of 4 tons. GRAVEL, good colour, 25*s.* per truck of 6 tons.
WALKER AND CO., Farnborough Station, Hants.

Thomson's Vine and Plant Manure.

Manufactured and Sold by

THE LIVERPOOL HORTICULTURAL COMPANY
(JOHN COWAN), LIMITED.

This is the Manure used to produce the splendid Grapes grown at the Tweed Vineyard, Clovenfords.

Full particulars on application. The Trade supplied.

All Letters to be addressed to THE MANAGER, The Vineyard and Nursery, Garston, near Liverpool.

Plants Without Earth.

DUMESNIL FERTILISING MOSS grows every variety of Plants without Earth, rendering the presence of Vegetation more agreeable indoors. Pamphlet free by post. Sole Agent for the United Kingdom.
A. FINLAYSON, Dumesnil Fertilising Moss Depot, Southampton.

GISHURST COMPOUND.—Used by many of the leading Gardeners, since 1859, against Red-spider, Mildew, Thrips, Greenfly, and other Blight, in solutions of from 1 to 2 oz. to the gallon of soft water, and of from 4 to 10 oz. as a winter dressing for Vines and Fruit Trees. Has outlived many preparations intended to supersede it. In Boxes, 1*s.*, 3*s.*, & 10*s.* *6d.*

AMERICAN BLIGHT on APPLE TREES CURED by rubbing a wet hard Painter's brush on Gishurst Compound, and working the lather into the infected part

GISHURSTINE keeps feet dry, softens hard boots, preserves leather, takes a polish. In boxes, *6d.* and 1*s.* each.—Wholesale by PRICE'S PATENT CANDLE COMPANY (Limited). Retail by Seedsmen and Oilmen Complaints are made of difficulty in getting Gishurstine. Some leading Nurserymen have put it on their lists, others are requested to do so.

REIGATE SILVER SAND.—Coarse and fine, on rail at 7*s.* *6d.* per ton—not less than 4 ton trucks. Terms cash.—Apply to H. SIMS, The Priory, Reigate.

SPECIAL OFFER.—SILVER SAND, 10*s.* per ton, free on rail Reading. FIBROUS PEAT, COCOA NUT FIBRE REFUSE, LOAM, &c., cheaper than any other house in the trade. Superior RED GRAVEL for Garden Walks, 21*s.* per 5-ton truck (splendid colour and binds well). Cheap through rates to any station. Samples gratis and post-free.—BRINKWORTH AND SONS, Reading, Berks

NEW ARCHANGEL MATS.—We have a fine parcel of the above now to offer, at very low prices. RAFFIA FIBRE, of best quality, at an extremely low price for a quantity.
MARENDAZ AND FISHER, 9, James Street, Covent Garden, London, W.C.

RUSSIA MATS—RUSSIA MATS.
ARCHANGEL, TAGANROG,
PETERSBURG
and every other kind of
RUSSIA MAT
for Garden and Packing purposes. Descriptive Catalogue on application.
JAMES T. ANDERSON,
149, COMMERCIAL STREET, LONDON, E.

ARCHANGEL and ST. PETERSBURG MATS, RAFFIA, SEED BAGS and SACKS, NETTING and SHADING, &c. Prices on application.

MARQUEES and TENTS, SECOND-HAND GOVERNMENT TENTS, 45 feet round, complete, 35*s.*, suitable for the Garden, Cricket Clubs, &c.
W. PETERS, 44, Tenter Street South, Goodman's Fields, E.

TOBACCO PAPER, RAG, MANURES, INSECTICIDES, GLOVES, STICKS, LABELS, BOUQUET PAPERS, GARDEN TOOLS, and all Horticultural Sundries at lowest Trade Price.
WREATHS and CROSSES of Cape Flowers, Metal and Porcelain, new and choice patterns for present season.
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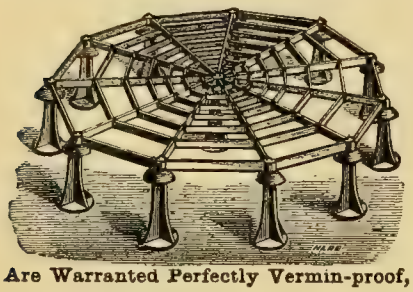
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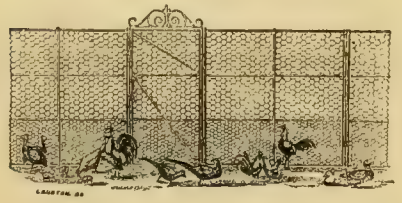
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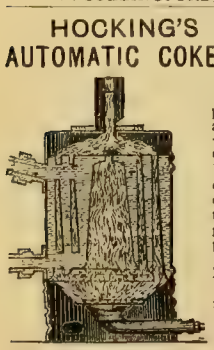


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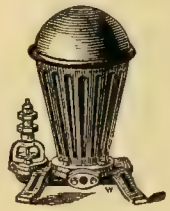
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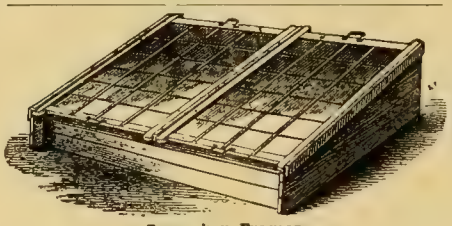
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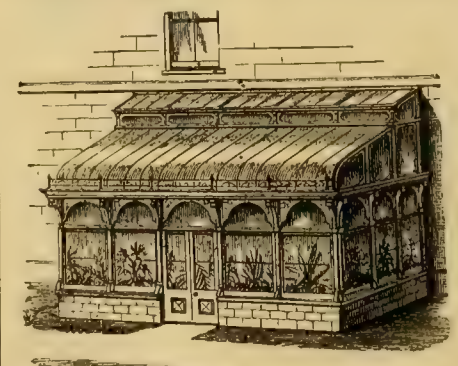
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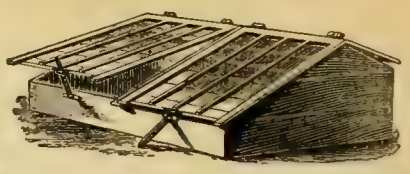
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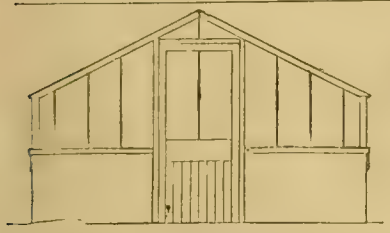
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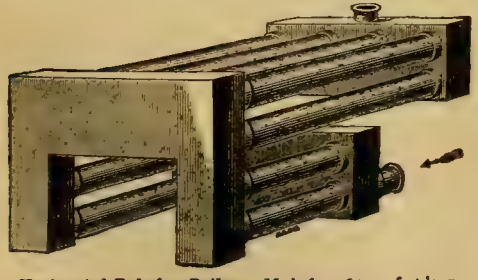
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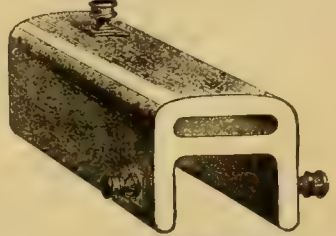
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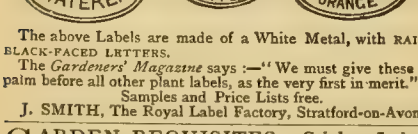
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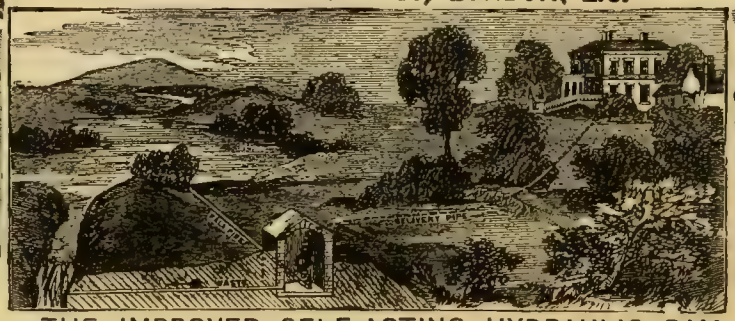
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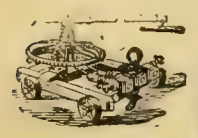
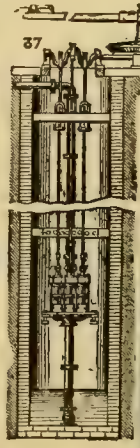
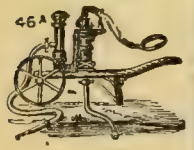
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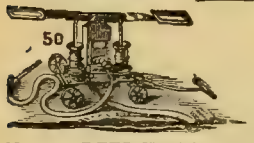
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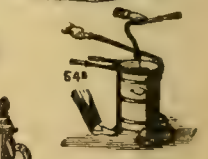
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NOTICE to SUBSCRIBERS and OTHERS. The King Street, Covent Garden, Post Office being closed, Post-office Orders and Postal Orders should now be made payable at DRURY LANE.

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Volume XVII., JANUARY to JUNE, 1882.

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Selection of 100 good showy varieties for 25s.

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THE GARDENER, Honey's, Twyford, Berks.

WANTED, 200 Maiden Pershore PLUM TREES, or "2-years old" for Standards. Apply, stating lowest price to

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To the Trade.

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THE LIVERPOOL HORTICULTURAL COMPANY (JOHN COWAN), Limited, The Vineyard and Nurseries, Garston, near Liverpool, have a splendid stock of VINES, grown from eyes this year, suitable for present planting.

CATALOGUE free. The Trade supplied.

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Dutch, French, and other Flowering Bulbs.

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Seed and Bulb Warehouse, 108, Eastgate Street, Chester.

SINGLE DAHLIAS.—Strong plants, established in pots for winter bloom, can now be supplied. The largest collection in the world may be seen at the Nurseries. Catalogues and every information free.

THOS. S. WARE, Hale Farm Nurseries, Tottenham, London.

CAMELLIAS.—Large Camellias for Sale, to make room for other plants. LIST, with sizes and prices, on application.

EDW. COOLING, Mile Ash Nurseries, Derby.

Lilium auratum.

CHARLES NOBLE has just harvested his LILIES, and will be happy to quote prices. The value of home-grown bulbs is too well known to require any recommendation. Bagshot.—September 20, 1882.

HEATH AND SON are now sending out their beautiful WHITE VIOLA "THE CHAMPION," which was awarded a First-class Certificate at South Kensington on June 13, 1882. 4s. per dozen, 25s. per 100.

HEATH AND SON, Exotic Nurseries, Cheltenham.

J. VANDER SWAELMEN'S Special TRADE LIST, No. 21, of Continental Commercial Plants and Bulbs, is just ready, and will be sent free on application.

The Lily Nursery, Ghent, Belgium.

CAULIFLOWER, BRUSSELS SPROUT PLANTS.

VEITCH'S AUTUMN GIANT, 3s. 6d. per 1000.

BRUSSELS SPROUTS, 3s. per 1000.

Packages 3d. per 1000 extra. Order of

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SALES BY AUCTION.

Dutch Bulbs.—Sales every Monday.

MESSRS. PROTHEROE AND MORRIS will SELL at the Mart, Tokenhouse Yard, City, E.C., every MONDAY, at half-past 11 o'Clock precisely, over 800 lots of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, SNOWDROPS, and other ROOTS, from Holland; in lots to suit all buyers.

Catalogues at the Mart, and 8, New Broad Street, E.C.

The Westbourne Nursery, Harrow Road, N.W.

ANNUAL SALE.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, by order of Messrs. Woodroffe & Sons, on the Premises, as above, on TUESDAY, October 3, at 12 o'Clock, 4000 GENISTAS, 2000 BOUVARDIAS, Red and White; 1500 CHRYSANTHEMUMS, 2000 Double PRIMULAS, 1000 strong POINSETTIAS, 1000 ALOYSIAS, 1000 HYDRANGEAS, 1000 SOLANUMS, well berried; 300 AZALEAS, well set; 1200 CYCLAMEN PERSICUM, a fine strain; EUCHARIS AMAZONICA, in large 14-inch pots; a variety of STOVE PLANTS, and other stock.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 8, New Broad Street, E.C., and Leytonstone.

Fulham, Hampton, and Sunbury.

By order of the Executors of Mr. R. A. Osborn, deceased.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL by AUCTION, at the Mart, Tokenhouse Yard, City, E.C., on THURSDAY NEXT, October 5, at 2 o'Clock precisely, the following properties:—

FULHAM.—In one or two lots, an attractive FREEHOLD BUILDING ESTATE, known as Osborn's Nursery, situate in New King's Road, having frontages of about 1200 feet to existing roads, and containing a total area of 4 a. 0 r. 11 p.; also the modern detached brick-built Residence and Seed-shop with Conservatory attached. These premises could be utilised for any other business, notably that of a Licensed Victualler.

SUNBURY (16 miles from London).—The FREEHOLD PROPERTY known as Osborn's Old Nursery, containing an area of 17 a. 0 r. 11 p., together with the Goodwill of the Nursery and Seed Business, which was established in the year 1700. There is a detached eight-roomed House, nine newly-erected Greenhouses, fitted and heated upon the most improved principles, ranges of Pits, Stabling, Sheds, and other Out-buildings. The property has frontages of 1100 feet to two Public Roads, the greater portion of which is particularly adapted for building purposes, without deteriorating the remainder of the land for carrying on the present business.

HAMPTON (13 miles from London).—A compact FREEHOLD ESTATE, known as Osborn's Nursery, possessing a frontage of 332 feet to Broad Lane, and containing an area of nearly 5 acres. It is now cultivated as a nursery, but is also eligible for building.

Particulars and plans of the several estates are now ready, and may be had at the Mart; of Messrs. WALKER, BELWARD AND WHITFIELD, Solicitors, 5, Southampton Street, Bloomsbury, W.C.; and of the Auctioneers and Surveyors, 8, New Broad Street, E.C., and Leytonstone.

NOTE.—The purchasers will have the option of taking by valuation within 7 days, the whole of the beautifully grown Stock in Trade; but should they not decide to do so, it will be sold by Auction on the Premises, due notice of which will be given.

Brixton, S.W.—Important Sale.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Ponsford & Son to SELL by AUCTION, on the Premises, The Nursery, Loughborough Park, Brixton, S.W., on THURSDAY and FRIDAY, October 5 and 6, at 12 o'Clock each day, a large quantity of well-grown NURSERY STOCK, in healthy and thriving condition, including an assortment of Evergreen and Deciduous Shrubs, 10,000 Variegated and Green Euonymus, bushy stuff for potting; 1200 Planes, 6 to 14 feet; 5000 Limes, 1000 Mulberries, 5000 Flowering Shrubs; also a variety of STOVE and GREENHOUSE PLANTS, 1000 Palms, 1000 Bouvardias, 400 Camellias and Azaleas, &c.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 8, New Broad Street, E.C., and Leytonstone.

Woking, Surrey.

HIGHLY IMPORTANT CLEARANCE SALE, in consequence of expiration of lease, and the land being sold for other purposes.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Woking Nursery, Woking, about a mile from the Station, on TUESDAY, October 10, and two following days, at 12 o'Clock each day precisely, by order of Messrs. Jackman & Son, several acres of valuable NURSERY STOCK, including 5000 green and variegated Hollies, 1 to 8 feet; 7000 common and other Laurels; 3000 English Yews, 1 to 3 feet; 30,000 Evergreen Privet, 25,000 Larch Fir, 1 to 3 feet; 7000 Limes, 4 to 18 feet; 150,000 fine strong bedded Quick; 1500 Acer Negundo variegata and "stocks;" 80,000 Forest Trees, 1500 Scarlet Oaks, 4 to 10 feet; an assortment of ornamental Deciduous Trees, large quantities of Cupressus Lawsoniana, Spruce Firs, Aucubas and other Coniferæ.

May be viewed. Catalogues obtained on the Premises, or of the Auctioneers and Estate Agents, 8, New Broad Street, E.C., and Leytonstone.

Plants from Belgium.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Mart, on FRIDAY October 13, a consignment of CAMELLIAS, AZALEAS, PALMS, and other PLANTS from Ghent.

Catalogues at the Mart, and 8, New Broad Street, E.C.

Sunbury, Middlesex.

By order of the Executors of Mr. R. A. Osborn, deceased.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises known as Osborn's Old Nursery, Sunbury, on TUESDAY, October 17, and following day (unless taken by the purchaser of the Freehold Estate at a valuation), the whole of the HARD-WOODED GREENHOUSE PLANTS, including the entire collection of strong short-jointed and well-ripened Vines, the beautifully grown Tea, H.P., and Noisette Roses, the extensive collection of Figs in bearing condition, several hundreds of splendidly grown Camellias and Azaleas abundantly set with buds, Clematis in great variety, and other stock.

May now be viewed, and an inspection is invited.

The first portion of the thriving and well grown OUTDOOR NURSERY STOCK will be sold on TUESDAY, November 14, and following days unless taken by the purchaser of the Estate by valuation. Due announcements will appear.

Kilburn, N.W.

PRELIMINARY NOTICE.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Kilburn Gate Nursery, Kilburn Gate, N.W., on NOVEMBER 2 and 3, the SURPLUS STOCK of OUTDOOR NURSERY STOCK, 8000 Euonymous, 1000 Standard and Dwarf Roses; also 3000 Double White Primulas, 2000 Adiantum cuneatum, and other Greenhouse Plants.

Further particulars will appear. Catalogues had on the Premises, or 8, New Broad Street, E.C.

Hyacinths, Tulips, Crocuses, Narcissus, Iris, Scillas, Snowdrops, and other Flower Roots from Holland.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY during October, at half-past 12 o'Clock precisely each day, CONSIGNMENTS of DUTCH BULBS, arriving weekly from well-known farms in Holland, in large and small lots, to suit all buyers.

On view morning of Sale, and Catalogues had.

Thursday next.—Cattleya aurea.

MR. J. C. STEVENS has received instructions from Mr. F. Sander to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 5, at half-past 12 o'Clock precisely, a grand importation of CATTLEYA AUREA in superb condition—many of them in splendid masses: the plants have plump eyes and healthy leaves. Also a fine lot of ODONTOGLOSSUM VEXILLARIUM, the new MASDEVALLIA ERYTHROCHÆTE, ONCIDIUM CRISPUM, TRICHOCENTRUM ALBO PURPUREUM, UROPEDIUM LINDENI, ODONTOGLOSSUM LUTEO PURPUREUM, SCEPTRUM, &c.

On view morning of Sale, and Catalogues had.

Established Masdevallias.

MR. J. C. STEVENS has been instructed by Mr. James Anderson to include in his SALE by AUCTION, on TUESDAY, October 10, without reserve, about SIXTY ESTABLISHED PLANTS, comprising the finest varieties of Masdevallias in cultivation, being a portion of the original stock grown at Meadowbank, including several plants of Bull's blood, Harryana splendens and superbissima, ignea, violacea, and versicolor, &c., described in Catalogue.

On view morning of Sale, and Catalogues had.

Auction Rooms and Offices, 38, King Street, Covent Garden, W.C.

Surrey, near Woking Station, Hook Heath Nursery.

MR. H. W. COPUS has received instructions from Mrs. Chapman, who is leaving, to SELL by AUCTION, on TUESDAY and WEDNESDAY, October 3 and 4, at 11 for 12 o'Clock precisely, without reserve, the whole of the STOCK of the ABOVE NURSERY.

Catalogues are now ready, and may be had free by post of the Auctioneers, 16, Friary Street, Guildford, and at Woking Station.

Fulham Fields.

To MARKET GARDENERS, SEEDSMEN and OTHERS.

MR. J. S. GOMME is instructed by Mr. T. Brosnan, of Norman Farm (the land being let for Building) to SELL by AUCTION, on the land, Margravine Road, adjoining the Cemetery at the rear of the Fulham Union, on TUESDAY, October 10, at 2 for 3 o'Clock in the afternoon, about 6 Acres of fine SEAKALE, and 2 Acres of Victoria and Albert RHUBARB, for Forcing, in Lots to suit the Trade.

May be viewed.

Catalogues at the Offices of the Market Garden Auctioneer and Valuer, 99, Strand, W.C.

Beeston Nursery.

One mile from the Beeston Station on the main line from Derby to Nottingham.

To NOBLEMEN, GENTLEMEN, NURSERYMEN, and OTHERS.

MR. T. NEALE has received instructions from Mr. Henry Frettingham to SELL by AUCTION at the above Nursery on TUESDAY, October 10, at 11 o'Clock, a fine surplus stock of Golden and Silver Queen HOLLIES; smooth leaf, yellow berried, and common HOLLIES; CEDRUS DEODARA, specimen Golden and other YEWS, RHODODENDRONS, RETINOSPORA AUREA, LIMES, &c., the whole in a fine state for removal. The Golden Hollies are one of the finest collections in the country.

Descriptive Catalogues will be forwarded on application by post to the Auctioneer, Wheeler Gate, Nottingham.

FOR SALE, a charmingly situated SUBURBAN RESIDENCE—the capital Freehold Mansion House, called Vinery House, Allerton, situated about 4 miles south of Liverpool, together with about 14 Acres of valuable Freehold Land, very eligible for Nursery or Building purposes, belonging, adjoining, and surrounding the same; with Stabling for 4 Horses, Saddlery, Coach-house, Gardener's Cottage, Out-buildings, Pleasure Grounds, Gardens, Lawns, Shrubberies, Fruit Trees, and 5 large Vineries, 4 of which have Top and Bottom-heat, half-span, 52 by 20 feet each, considered for utility and construction the finest Vineries in England; early Peach-house, 84 by 12 feet; late ditto, 54 by 12 feet; Plant Stove, 80 by 20 feet; Conservatory and Greenhouse, 60 by 16 feet; 2 Cucumber-houses, 70 by 10 feet and 21 by 10 feet, &c. The Estate commands a fine view of the Welsh Mountains, and is well wooded, very private, with good scenery and roads, and situated in one of the most healthy and aristocratic neighbourhoods round Liverpool.

This is a rare opportunity for gentlemen with horticultural tastes. All the Vines and Peach trees are in a most flourishing and prolific state of cultivation. The borders are made upon vaulted arches, and so constructed that all the bottom pipes can be got at, and upon the very best principles and material, calculated to last one hundred years. The Vines are all of the best leading sorts. The three early vineries are got into a stage of very early forcing, capable of producing 800 lb. of Grapes annually in April and May, of the very finest quality.

The two Cucumber-houses are now used for growing and fruiting early pot Vines, of which 120 can be grown and fruited annually, producing 480 lb. of Grapes in March and April, when Grapes are worth 10s. per pound wholesale. The two late vineries produce 800 lb. annually.

The Peach and Nectarine trees are second to none, and will compare with any in the United Kingdom, obtaining three First-class Prizes and a Medal at the Royal Horticultural Show held at Nottingham, 1870, and the 1st prize for Nectarines this year at the great Horticultural and Fruit Show at York. This estate would make the finest nursery round Liverpool.

For plans and particulars apply to T. C. CLARKE, Vinery House, Allerton, near Liverpool.

FOR SALE, owing to death of Proprietor, an excellent SEED, NURSERY, and LANDSCAPE GARDENING BUSINESS, in the Midlands. Price £800.

For particulars, apply to HURST AND SON, Seed Merchants, 152, Houndsditch, London, E.

To Fruiterers and Greengrocers.

FOR DISPOSAL, a well-known, OLD-ESTABLISHED BUSINESS, in full trade. Main road—fast improving locality. Proprietor retiring. A sure fortune to an industrious man.

Agent, Mr. J. ELLIOT MORRIS, 567, Fulham Road, S.W., opposite Walham Green Station.

TO LET, on Lease, an Old-Established NURSERY, about 6½ Acres, situated at Atherstone—glass-houses included.

For particulars apply to EVANS AND SONS, Seedsmen, Nuneaton.

TO BE LET, on Lease, about 2 Acres of productive NURSERY LAND, with Stabling, Out-buildings, and about 13,500 feet super of Glass; also a SHOP if required. About five minutes from Waltham Station, Great Eastern Railway. Apply to

E. A. H., Queen Anne's Villas, Waltham Cross, N.

DESIGNS Made and Works EXECUTED

In the Arrangement of TERRACES, CONSERVATORIES, FLORAL CORRIDORS, ROOF GARDENS on uninteresting Lead Flats, &c., formed with substantial PULHAMITE KERB for the FLOWER BORDERS, JARDINIERE, &c., in TERRA-COTTA or ARTIFICIAL STONE of various colours.

BALUSTRADES, VASES, PEDESTALS, FIGURES, FOUNTAINS, CONSERVATORY and WINDOW BOXES in great variety, suitable for any style of House.

Various Specimens of KERB or EDGING, PULHAMITE PERMANENT GRAVEL PATHING for GARDEN, TERRACE and other WALKS and FLOORS, to be seen at the Horticultural Company's, Regent Street, W.; at The Orchard, Philip Lane, Tottenham; and at our Brixton Depot there is the greatest variety of the above to be seen. DURABILITY GUARANTEED.

A Photographic Book of over 200 Illustrations, with Sizes and Prices, sent for Inspection on receipt of twelve stamps.

Address—

PULHAM & SON, The Works, Broxbourne.

(Established in 1837.)

PROTHEROE AND MORRIS, HORTICULTURAL, MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 8, New Broad Street, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

BULBS just imported, quality unsurpassed. Named HYACINTHS, 70 choicest varieties, 4s. 6d. per dozen; mixed for bedding, 2s. 6d. per dozen. Named TULIPS from 1s. per dozen; 100 in 30 finest sorts cultivated, 9s. Choice POLYANTHUS NARCISSUS, 3s.; Bedding NARCISSUS, ALBO-PLENA, INCOMPARABLE, BIFLORUS, 9d.; POETICUS, DAFFODILS, 6d.; SCILLAS, 1s.; JONQUILS, 1s.; RANUNCULUS, 9d.—all per dozen. CROCUS, 1s. 4d. per 100.

HENRY, Dalmon Cottage, Hounslow.

GRAPE VINES.—A large collection of best sorts, in pots, some in fruit, to be sold cheap.

E. TURVEY, Brixton Hill, S.W.

STRAWBERRIES.—Black Prince, Cambrian Prince, James Veitch, Keens' Seedling, Myatt's Improved, Rivers' Eliza, and Sir Joseph Paxton. Prices per 1000 on application.

CONNON AND REID, Seedsmen and Florists, Aberdeen.

LAPAGERIA ROSEA SUPERB.—A very large specimen on Sale, or EXCHANGE for large pots (established) of EUCHARIS AMAZONICA. Will cover over 100 square feet, in splendid condition. Price, &c., to

Messrs. TURNER BROS., Green Hill Nursery, Allerton, Liverpool.

THORNS.—Strong and extra strong, clean and well-rooted. Samples and price on application to

JOS. TREMBLE AND SON, Nurserymen, Victoria and Castle Nurseries, Penrith.

AURICULAS, CARNATIONS, and PICOTEES.

LIST now ready. Address

GEORGE RUDD, Undercliffe, Bradford, Yorks.

FINE CAMELLIAS, 2 to 2½ feet high, well set for blooming early, 30s. per dozen.

W. JACKSON, Blakedown, near Kidderminster.

Special Cheap Offer.

ISAAC MATTHEWS AND SON are prepared to make special offer to the Trade and Large Buyers. Samples and price list on application:—

ASH, Common, 3 to 4 feet, 4 to 5 feet, 5 to 6 feet.
" Mountain, 3 to 4 feet, 4 to 5 feet, 5 to 6 feet, 7 to 8 feet, 8 to 9 feet.
OAK, English, 1½ to 2 feet.
POPLAR, Black Italian, 3 to 4 feet, 4 to 5 feet, 5 to 6 feet.
SYCAMORES, 2 to 3 feet, 3 to 4 feet.
CHESTNUTS, Horse, 9 to 10 feet, 10 to 12 feet.
ELDER, Golden, 2 to 3 feet, 3 to 4 feet.
THORN QUICK, strong, 2-yr., 3-yr., 4-yr. strong.
HOLLIES, Hodgins, maderensis, Bay-leaf, Golden Queen, Silver Queen, Old Silver, myrtifolia, ovata, Shephardii, common Green, in all sizes.
LAURELS, Common, 12 to 18 inches 1½ to 2 feet, 2 to 2½ feet, fine.
CUPRESSUS, in variety, from 1½ to 7 feet.
RETINOSPORA PLUMOSA, 1 foot, 1½, and 2 feet, bushy.
YEWS, English, 18 to 24 inches, 2 feet, 2½ feet, 2½ to 3 feet.
AZALEA Pontica, 1½ to 2 feet, 4 to 6 inches.
RHODODENDRONS, Hybrid and Pontica, 3 to 4 inches, 4 to 6 inches, 6 to 9 inches, 9 to 12 inches, 12 to 15 inches, 15 to 18 inches, 1½ to 2 feet, 2 feet; ditto, choice named sorts, bushy, in 100 varieties.
" CUNNINGHAM'S WHITE, 9 to 12 inches, 12 to 15 inches, 15 to 18 inches.
" CAUCASICUM PICTUM, 9 to 12 inches, 12 to 15 inches, 15 to 18 inches.
PANSIES, in 100 varieties.
IVY, Irish, 2-yr., 3-yr., 4-yr., strong.

The Nurseries, Milton, Stoke-on-Trent.

Catalogues for the Season.

CHARLES TURNER'S Descriptive LISTS of the following can be had free on application:—
DUTCH and OTHER BULBS,
CARNATIONS, PICOTEES, and PINKS,
STRAWBERRIES, &c.
The Royal Nurseries, Slough.

To the Trade.

H. AND F. SHARPE will be pleased to give special quotations for all the leading varieties of VEGETABLE and AGRICULTURAL SEEDS they have grown this season. The quality will be very fine, the Seeds having been harvested in fine condition. They have been grown from the finest selected stocks. The prices will be found very low.
Seed Growing Establishment, Wisbech.

10,000 **Ferns.** 10,000

TWELVE best Stove and Greenhouse FERNS, including Pteris in variety, Lomaria gibba, Adiantums &c., 4s. per dozen, 30s. per 100. Strong plants by post or in pots. An enormous stock of these, as also in larger sizes. See CATALOGUE.
W. M. CROWE, Boleyn Nursery, Upton, Essex.

EIGHTY THOUSAND CLEMATIS, in Pots, of all the finest double and single varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants.
Descriptive LIST on application.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Tuberous Begonias.

JOHN LAING AND CO.'S Gold Medal Collection is unrivalled. 100,000 now in cultivation are producing a magnificent floral display. Orders executed with blooming plants.
Prices, 12s. to 60s. per dozen.
CATALOGUES on application. Address
JOHN LAING AND CO, Forest Hill, S.E.

NEW ROSES of 1882, in pots.—Vendors' Selection, 30s. per dozen; Purchaser's, 36s. per dozen. The above comprise all the best English and French-raised Hybrid Perpetuals, Perpetual Polyantha, Teas, Hybrid Teas, and Perpetual Moss.

ROSES of 1881, of above-named classes, 18s. to 24s. per dozen, in pots.

CHOICE ROSES. — Tea-scented, Hybrid Tea, Noisette, China, and Bourbon, 18s. to 24s. per dozen, strong plants in pots.
Descriptive LIST on application.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

ED. PYNAERT VAN GEERT, NURSERYMAN, Ghent, Belgium, has the following to offer, in fine condition:—
ARALIAS (striped), ARAUCARIAS, ASPIDISTRAS (striped) AZALEAS, BEGONIAS, CAMELLIAS, CLIVIAS, DRACÆNAS, LATANIAS, PHŒNIX, PHORMIUMS, RHODODENDRONS, SPIRÆAS, &c.
Price LIST post-free on application.

5000 **Cylamen persicum** 5000

ALL from the finest procurable strains, good plants by post, 2s. 6d. per dozen; larger, in pots, 3s. 6d. and 5s. per dozen; extra large, 10s. per dozen. Now is the time to pot these on to make grand stuff for flowering the coming season.
W. M. CROWE, Boleyn Nursery, Upton, Essex.

Bulbs—Bulbs—Bulbs.

SEGERS AND CO., BULB-GROWERS, Lisse, near Haarlem, Holland, are now booking Orders for LILY OF THE VALLEY, very strong clumps and crowns; SPIRÆA JAPONICA and PALMATA, LILIUMS, GLADIOLUS BRENCHLEYENSIS, and others. They keep also fine samples in stock of HYACINTHS, TULIPS, CROCUS, &c.
CATALOGUES may be had free on application. No Auction Sales or Retail Trade supplied, but the Wholesale only.
☞ Please observe name and address.

BEAUTIFUL WINTER and SPRING FLOWERS.—All who wish to see their conservatories and flower gardens gay with beautiful flowers in winter and spring, should apply to the subscribers, who make a speciality of the flower-root branch of their business, and supply complete collections of choice flower roots at low prices, delivered free. Orders should be sent in early to secure finest bulbs.
Descriptive Price Lists free on application.
LITTLE AND BALLANTYNE, The Queen's Seedsmen, Carlisle.

Special Cheap Offer of Amaryllis.

DICKSON, BROWN AND TAIT, SEED MERCHANTS, Manchester, can offer 500 large flowering Bulbs of Amaryllis aulica, at 30s. per dozen, £10 per 100. Also 500 Choice Hybrids, all flowering bulbs, 30s. per dozen, £10 per 100. These bulbs are well worthy the attention of purchasers. The bulbs are really fine, and not to be met with at prices named.

TO BE SOLD, CHEAP.—100 ORCHIDS in var., also four specimen CROTONS, and three large PALMS: to be sold in one lot, or separate. No reasonable offer refused, as room is required. Apply for all particulars as to variety and price, to
HENRY NOBLE, Paradise Nursery, Boston Spa, Tadcaster, Yorkshire.

AFRICAN TUBEROSES.
Splendid sample just arrived.
HOOPER AND CO., Covent Garden, London, W.C.

A CHEAP OFFER of 1000 well-grown BOUVARDIAS, in 48-size pots, well set with Bloom, including The Bride, Bridal Wreath, Elegans, longiflora, flammea, Vreelandii, &c., 12s. per dozen, £5 per 100.
P. J. PERRY, The Nurseries, Banbury.

Gardenia intermedia.

CLEAN HEALTHY PLANTS, in 5-inch pots, to flower this winter, 2s. each, 18s. per dozen; nice plants in 60's, 9d. each, 6s. per dozen. A few large plants, about 4 feet, which will be full of flowers this winter; price on application. CATALOGUE free.
W. M. CROWE, Boleyn Nursery, Upton, Essex.

BULBS.

Illustrative Descriptive List free on application.

SPECIMEN TESTIMONIAL (UNSOLICITED):—

"*March* 10, 1882.—Crocus, &c., in borders, purchased and planted last autumn, are making a fine show, and giving every satisfaction. Hyacinths in pots have been very fine and much praised, having spikes of bloom *9 inches in length and so close that they appeared to be solid.* Tulips have been very fine and highly praised. Hyacinths in border now showing very strong bloom."

RICHARD SMITH & CO.,
SEED MERCHANTS and NURSERYMEN,
WORCESTER.

DENDROBIUM FORMOSUM GIGANTEUM.

HEATH & SON

Beg to announce that the Plants of the above imported by them are now flowering with from 3 to 9 flowers on a growth of extraordinary size and colouring.

They will be pleased to send sample blooms to any address.

HEATH & SON,
EXOTIC NURSERIES, CHELTENHAM.

DANIELS' CHOICE FLOWER ROOTS.



Our GUINEA BOX of choice Hardy Flower Roots for Outdoor Planting

Contains the following liberal assortment, all in sound picked Bulbs, with full instructions for cultivation (case, packing, and carriage free to any railway station in England or Wales):—

25 HYACINTHS, choice, mixed
200 CROCUS, in fine variety
12 TULIPS, Rex rubrorum
12 TULIPS, La Reine
12 TULIPS, double, mixed
12 TULIPS, single, mixed
12 TULIPS, Parrot, mixed
25 ANEMONES, double, mixed
12 ANEMONES, double, Scarlet
25 ANEMONES, single, mixed
12 POLYANTHUS NARCISSUS, mixed
12 Double White NARCISSUS
12 Pheasant's-eye NARCISSUS
6 CAMPERNELLE JONQUILS
25 RANUNCULI, scarlet Turban
25 RANUNCULI, mixed Turban
50 SNOWDROPS
50 WINTER ACONITES
12 SPANISH IRIS
6 TRITELEIA UNIFLORA
2 LILIES
559 *Roots in all. Double quantity,* 40s.; *half do.*, 12s. 6d.

Other Collections for Greenhouse and Conservatory, Window-boxes, &c., 12s. 6d., 21s., 42s., 63s., and 84s.
Beautifully Illustrated CATALOGUE, post-free on application.
DANIELS BROS.,
Royal Norfolk Seed Establishment, Norwich.

GLADIOLUS.

Very great care having been taken in eliminating what, till comparatively lately, was considered good in this most beautiful class, a perusal by all interested is invited of the SELECT LIST contained in our BULB CATALOGUE.

RICHARD SMITH & CO.,
SEED MERCHANTS AND NURSERYMEN,
WORCESETER.

CRANSTON'S NURSERIES
(Established 1785).

NOW READY,

Descriptive and Priced Catalogue of ROSES

For Autumn 1882 and Spring 1883.

CRANSTON'S NURSERY and SEED CO.
(LIMITED),
KING'S ACRE, HEREFORD.

NOTICE.
SELLING OFF OF NURSERY STOCK.

EWING & CO.,

EATON, near NORWICH.

Great Reduction in Price for Cash Payments, viz.,
15 per Cent. for Cash before delivery.
10 per Cent. for Cash within One Month of date of invoice.
5 per Cent. for Cash within Three Months of date of invoice.
After Three Months no discount can be allowed.

In addition to their immense Outdoor Stock of ROSES; FRUIT TREES, Bushes and Roots; ORNAMENTAL TREES and SHRUBS, they have ready for immediate Sale a very extensive Stock of New and Scarce ROSES in Pots; Tea and Noisette ROSES in Pots; CLEMATISES of best Old and New Varieties, in Pots; Variegated and Choice Green-leaved IVIES, in Pots; AMPELOPSIS VEITCHII, and many other Hardy CLIMBING and CREEPING PLANTS, in Pots, &c.

N.B. Cut Roses, &c., can be supplied at cheap rates, carefully packed for travelling long distances.

A slight extra charge must in most cases be made for packing. Where cash in payment of goods is sent *with the order*, the amount for *package* may be forwarded in stamps *after* despatch of goods.

N.B. Post-office Orders should be made payable to EWING AND CO., at Eaton, near Norwich. Cheques crossed GURNEY AND CO., Norwich.

Trade Terms on application.

NEW CURRANT, BLACK CHAMPION.

JAMES CARTER AND CO. are now booking orders for this the best BLACK CURRANT in the World.
It was awarded a First-class Certificate by the Royal Horticultural Society Committee, and greatly admired by all who saw the Fruit Exhibition last year. Stock limited.
Price, each, 5s.; per dozen, 55s.; so long as unsold.
The Queen's Seedsmen, 237 & 238, High Holborn, London, W.C.

Special Trade Offer.

CALCEOLARIA SEED. — Magnificent strain, saved under our own supervision
ALEX. DICKSON AND SONS, Nurserymen and Seedsmen, &c., Belfast.

Special Offer.

STUART AND MEIN are prepared to make special cheap offer of the following to the Trade and Large Buyers. Samples on application:—
ALDER, 6, 8, 10, and 12 feet.
ASH, Common, 2 to 5 feet.
,, Mountain, 4 to 9 feet, transplanted.
BEECH, Common, 2 to 3 feet.
BIRCH, 4 to 6 feet.
BROOM, Common, 2 to 4 feet.
CHESTNUT, Horse, 2 to 3 feet.
,, ,, 6, 8, 10, and 12 feet, fine clean stems.
ELDER, Common, 1¼ to 3½ feet.
HAZEL, 3 to 6 feet.
LARCH, 1½, 2½ to 5 feet
,, 3½ to 4½ feet, transplanted 1882.
MAPLE, English, 4 to 6 feet.
,, Norway, 10 to 14 feet, fine clean stems.
OAK, English, 1 to 1½ foot.
PINUS AUSTRIACA, 1, 2, 3, to 6 feet, transplanted, fine.
SCOTCH FIR, 2-yr. 2-yr.
,, 1½ to 3 feet.
POPLAR, Black Italian, 3, 5, 10, to 14 feet.
SYCAMORE, 1, 3, 5, to 9 feet.
MAHONIA AQUIFOLIA, 1½ to 2 feet,
BERBERIS VULGARIS, 2 to 3 feet.
BOX, Tree, 9 to 12 inches.
COTONEASTER SIMMONDSII, 1 to 3 feet.
PRIVET, Common, 1½ to 3 feet.
YEW, Common, 1 to 3 feet.
SPIRÆA CONFUSA (fine for forcing, pure white).
,, FORTUNEI ROSEA, NOBLEANA, THUNBERGIANA.
DEUTZIA of sorts.
SYRINGA, Common.
,, White.
VIRGINIAN CREEPER.
CLEMATIS FLAMMULA.
THUIA ERICOIDES, 9, 12, to 24 inches.
HYPERICUM CALYCINUM.
ESCALLONIA MACRANTHA.

Fruit Trees.

APPLES, on Paradise and Crab Stocks, Pyramid, Bush, and trained trees, in all the leading hardy and free-bearing varieties, very fine.
PLUMS, ditto.
CHERRIES, ditto.
GOOSEBERRIES.
The Nurseries, Kelso, N.B.

Retinosporas.

SAMUEL AND JAMES SMITH, Tansley Nurseries, near Matlock, Derbyshire, can supply excellent plants, as under:—

	Per Doz	Per 100	Per 1000
	s. d.	s. d.	s.
RETINOSPORA PLUMOSA, 6 to 9 inches..	2 6	15 0	120
,, ,, 9 to 12 inches	3 0	20 0	150
,, ,, 12 to 18 inches	7 0	50 0	..
,, ,, 18 to 24 inches	10 0	85 0	..
,, ,, 24 to 30 inches	12 0	90 0	..
,, ,, AUREA, 4 to 6 inches	3 0	18 0	150
,, ,, ,, 6 to 9 inches	5 0	35 0	250
,, ,, ,, 9 to 12 inches..	10 0	75 0	..
,, ,, ,, 12 to 18 inches	18 0	..	..
,, ,, ,, 18 to 24 inches	24 0	..	..
,, FILIFERA, 12 to 15 inches	6 0	40 0	..
,, ,, 18 to 24 inches	12 0	90 0	..
DEUTZIA GRACILIS, 9 to 12 inches		10 0	70
,, ,, 12 to 18 inches		12 0	..
PERNETTYA MUCRONATA, 6 to 9 inches ..		8 0	60

The New Rates for Carriage of Small Parcels.

BULBS of ALL DESCRIPTIONS and PLANTS in great variety delivered free at your nearest Railway Station, at the following Prices, *for cash with order only*. New Descriptive CATALOGUE for autumn, 1882, post-free. All the goods of the best quality.

Bulbs for Pots.

12 fine HYACINTHS for pots, to name, distinct. 6*s*. ; 50, 24*s*. 12 extra fine HYACINTHS for pots, to name, distinct, 9*s*. ; 50, 35*s*. 12 early single White ROMAN HYACINTHS, 3*s*. 6*d*. ; 100, 24*s*. 50 TULIPS for pots, to name, 4*s*. 6*d*. ; 100, 8*s*. 6*d*.

Bulbs for Bedding.

HYACINTHS, Red, White, or Blue, separate, 50, 11*s*. 6*d*. ; 100, 22*s*. TULIPS, to name, colours separate, 50, 3*s*. 6*d*. ; 100, 6*s*. 6*d*. CROCUS, to name, colours separate, 100, 3*s*. NARCISSUS of sorts, to name, 100, 6*s*. 6*d*. SNOWDROPS, double or single, 100, 3*s*. All other Bulbs delivered free at equally low prices. For list, see new Catalogue.

Spring Flowering Plants.

Strong young plants for present planting of WALLFLOWERS, SWEET WILLIAMS, CANTERBURY BELLS, MYOSOTIS, POLYANTHUS, Single PRIMROSES of fine colours, DAISIES, ARABIS, AUBRIETIAS, DACTYLIS, delivered free at 5*s*. per 100. Bedding PANSIES and VIOLAS to name, distinct colours, free at 10*s*. per 100. HERBACEOUS PLANTS, 12 distinct sorts, free at 4*s*. ; 50 varieties, 15*s*. ; 100 plants in 100 sorts, free at 28*s*.

Our selection. CATALOGUES post-free.

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham, Cheshire.

WANTED, to SUPPLY, 1000 ROSES.—900 of them strong-grown Common sorts, in Red, White, and Blush; 100 Named sorts, five to ten each. CLEMATIS, IVY, VIRGINIA CREEPERS.

GEO. WILSON, Kilmeny, Hawick.

CEDO NULLI POMPONS.—Good stuff—well set with buds. Large 60's, 2*s*. 6*d*. per doz., 16*s*. per 100. Do., 48's, 3*s*. 6*d*. per doz., 25*s*. per 100.

GREEN EUONYMUS, 16*s*. to 50*s*. per 100.

WILLIAM HOLMES, Frampton Park Nursery, Hackney, E.

VIOLETS.—Double Russian, full of Flower-buds, very strong compact plants, fine for potting. Single do., The Czar, also full of flower-buds, 2*s*. 6*d*. per dozen, 16*s*. per 100. Carriage paid.

HENRY GODFREY, Nurseryman, Stourbridge.

ANEMONE JAPONICA ALBA.—10,000 extra strong plants, splendid stuff, all flowered this season, 2*s*. 6*d*. per doz., 16*s*. per 100, carriage paid.

HENRY GODFREY, Nurseryman, Stourbridge.

Earliest Roman Hyacinths, Single White.

E. H. KRELAGE AND SON, NURSERYMEN, SEEDSMEN, and FLORISTS, Haarlem, Holland, have yet a superior stock of this very scarce article, in three sizes—*a*, 4¾ inches in circumference ; *b*, 4¼ to 4¾ inches ; *c*, 4 to 4¼ inches.

Prices on application. Please quote quantity wanted.

To Planters.

JAMES BIRD offers the undermentioned Forest stuff, price on application :—

LARCH FIR, 3 to 4 feet, and 4 to 5 feet.
SCOTCH FIR, 1½ to 2 feet, and 2 to 3 feet.
SPRUCE FIR, 1½ to 2 feet, 2 to 3 feet, 3 to 4 feet, and 4 to 5 feet.
PINUS AUSTRIACA, 1½ to 2 feet.
HAZEL, 2 to 3 feet, and 3 to 4 feet.

The Nurseries, Downham.

Autumn List.

JOHN LAING AND CO.'S New CATALOGUE of Dutch Bulbs, Roses, Fruit Trees, &c. ; also Revised LIST of Tuberous Begonias, has been issued to all Customers. Copies gratis on application. Goods all first quality at moderate rates. Address

JOHN LAING AND CO., Nurseries, Forest Hill, S.E.

BELGIAN STOCK of FORCING PLANTS of the Ornamental Plant Nursery of Ghent.

AZALEA INDICA and MOLLIS with buds, CAMELLIAS with buds, DEUTZIA GRACILIS, HELLEBORUS NIGRA, SPIRÆA JAPONICA and PALMATA, &c. CATALOGUE free on application. Send Orders directly to

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HOOPER'S CATALOGUE of BULBS contains a superb COLOURED PLATE of CALIFORNIAN LILIES, *faithfully represented.*

The Catalogue will be forwarded for 4 stamps, and the 4*d*. returned in the first purchase of bulbs.

Splendid Collection of all kinds of DUTCH, FRENCH, CAPE, JAPANESE and AMERICAN BULBS, *at exceedingly low prices.*

Delivery carriage free over 20*s*. value.

Single Dahlias.

HOOPER AND CO. invite inspection of their beautiful collection of these, now in full bloom at their Nurseries, adjoining Twickenham Station, South-Western Railway.

Also specially fine collection of PENTSTEMONS.

HOOPER AND CO., Covent Garden, London, W.C.

NEW GOLDEN BEDDING PANSY, KING OF YELLOWS — the largest, freest, and brightest of all golden-yellow Pansies ; strong plants, 1*s*. each, 9*s*. per dozen.

PANSY THOS. GRANGER, rich glowing Crimson, 5*s*. per dozen.

PANSY SUNBURST, fine Red, 16*s*. per 100, 3*s*. per dozen.

Fine collection of all leading sorts.

RODGER, McCLELLAND AND CO., Nurserymen, &c. Newry.

DUTCH BULBS.

DIRECT FROM THE GROWERS.

ANT. ROOZEN AND SON, NURSERYMEN, Overveen, near Haarlem, Holland.

Before ordering Dutch Bulbs, read ANT. ROOZEN AND SON'S CATALOGUE for 1882, which their Agents, Messrs. MERTENS AND CO., 5, Billiter Square, London, E.C., will forward post-free on application.

AUTUMN PLANTING.

THE LAWSON SEED AND NURSERY COMPANY (LIMITED),

EDINBURGH,

Respectfully invite the attention of intending Planters to their large Stocks of

SEEDLING and TRANSPLANTED FOREST TREES,

ORNAMENTAL TREES and SHRUBS, FRUIT TREES, ROSES, &c.,

And will be glad to submit Special Offers upon application.

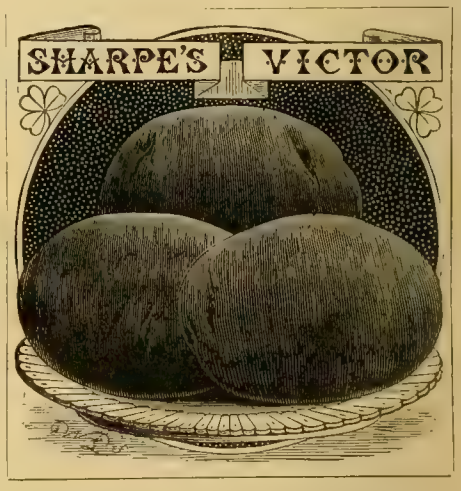
NEW POTATOS FOR CHRISTMAS

May be had without difficulty by planting, any time before October 20, in pots or frames,

THE

EARLIEST OF ALL POTATOS,

"SHARPE'S VICTOR."



Sharpe's Victor is a seedling raised from the Alma Kidney and the old early short-top round Potato. It is earlier than any present variety, and having a very short top is especially suitable for frame cultivation ; its precocity is such that it has been fit for the table in nine weeks from the time of planting, and the raiser assures us that at this date, October 17, he is now growing his fifth successive crop this year, the first being lifted in January. Thus there is no difficulty in **securing new Potatos for the Table every day in the year.** Victor is a flattened roundish oval in shape, with a beautiful clear skin and extremely shallow eyes, being one of the handsomest as well as the heaviest cropper of any variety adapted for Frame-work, or for a first early crop outdoors. It is dry and mealy when cooked, and the flavour and quality of the flesh are superior to nearly every other variety at present in use.

Retail Price, 1s. per pound.

The Stock being very limited, early Orders are solicited to prevent disappointment.

CHARLES SHARPE & CO., SLEAFORD.

TO AUTUMN PLANTERS.

The Subscribers invite Inspection of their Stock of

FOREST AND ORNAMENTAL TREES,

SHRUBS, ROSES,

RHODODENDRONS, FRUIT TREES, VINES, &c.,

WHICH IS ONE OF THE MOST COMPLETE IN EUROPE,

HARDY, HEALTHY, and WELL ROOTED.

Samples and Prices sent free on application, and Special Freights furnished to all parts of the Kingdom. Catalogues free by Post.

LITTLE & BALLANTYNE,

NURSERYMEN AND SEEDSMEN TO THE QUEEN,

CARLISLE.—Established 1812.

Ferns a Speciality.

The largest stock in the greatest number of varieties of

EXOTIC AND BRITISH FERNS

In the Trade, suitable for STOVE and GREENHOUSE cultivation, for Outdoor Ferneries, and other purposes. Special LIST free on application. Illustrated CATALOGUE 6*d*.

W. AND J. BIRKENHEAD, Fern Nursery, Sale, near Manchester.

SPECIAL OFFER OF FERNS.

Having a splendid stock, we offer 100 Stove and Greenhouse Ferns and Selaginellas, nice healthy plants, in 50 species and varieties, for 42*s*. ; 50 in 50 varieties, 25*s*. ; 50 in 25 varieties, 21*s*. ; 25 for 10*s*. 6*d*. ; 12 for 4*s*. or 6*s*.

Special TRADE LIST on application.

W. AND J. BIRKENHEAD, Fern Nursery, Sale, near Manchester.

NEW SEEDS FOR AUTUMN SOWING.

TRIFOLIUM INCARNATUM, WINTER RAPE,

RYE, FIELD MUSTARD, WINTER TARES,

ITALIAN RYE-GRASS, PERMANENT PASTURE GRASSES, &c.

Samples and Quotations on application.

THE LAWSON SEED & NURSERY COMPANY

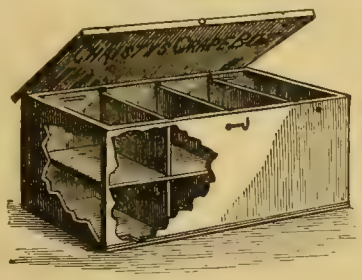
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106, SOUTHWARK STREET, LONDON, S.E.

CHRISTY'S GRAPE BOXES.

Mr. WM. CHALLIS, Bournemouth, August 28.

"The four Grape Boxes arrived safely, and give every satisfaction. I consider them particularly useful, simple, and cheap."



Mr. J. POPE, The Gardens, Holmwood Park, Tunbridge Wells, September 23.

"The Grape Boxes are in principle the best thing I ever saw for sending Grapes by Rail."

With eight divisions (all removable) and holes in front, so that each bunch can be tied by the stalk and cannot possibly damage. The string holes fastening box can be sealed, thus defying pilfering. Price, 4*s*., 4*s*. 6*d*., and 5*s*. each, according to the size of the divisions, which are respectively 4, 5 and 6 inches square by 10 inches long.

PEACH BOXES, on same principle, 10*d*., 1*s*., and 2*s*. each.

THOS. CHRISTY & CO., 155, FENCHURCH STREET, LONDON, E.C.

THURSDAY NEXT.

CATTLEYA AUREA.

MR. J. C. STEVENS has received instructions from Mr. F. SANDER to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 5, at half-past 12 o'Clock precisely,

A Grand Importation of CATTLEYA AUREA, in superb condition.

Many of them in splendid masses. The plants have plump eyes and healthy leaves.

Also a fine lot of ODONTOGLOSSUM VEXILLARIUM, the new MASDEVALLIA ERYTHROCHÆTE, ONCIDIUM CRISPUM, TRICHOCENTRUM ALBO PURPUREUM, UROPEDIUM LINDENI, ODONTOGLOSSUM LUTEO PURPUREUM, SCEPTRUM, &c.

On view morning of Sale, and Catalogues had.

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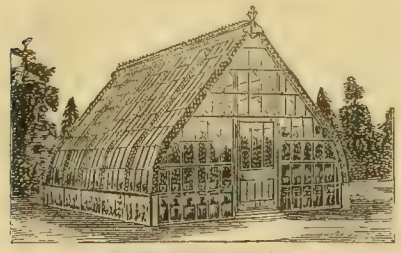
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"J. FREEMAN.

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RHODODENDRONS, hybrid seedlings, with colour labelled on each plant, fine bushes, 2½ to 3½ feet high, two-thirds with buds, 24*s.* to 30*s.* per dozen.

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1000 in twenty fine named varieties	1	10	0
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100 mixed varieties	12	6
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100	in 100	very choice sorts, carriage free	..	£4	4	0
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50	in 25	very choice sorts, carriage free	..	1	15	0
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12	in 12	extra fine sorts		0	12	0
12	in 12	choice sorts		0	9	0
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"I have much pleasure in bearing testimony to the splendid quality of the bulbs received from you. I was in Covent Garden Market in February, and saw nothing to be compared with my show of Hyacinths."—R. A. JONES, Esq., *Maen Hir.*

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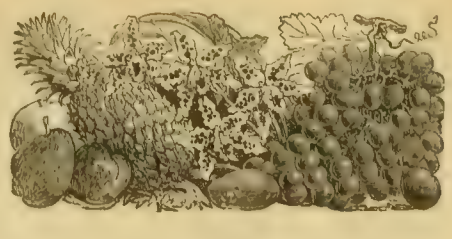
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THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 30, 1882.

EGYPTIAN VEGETATION.

RECENT events in Egypt have attracted much attention in the civilised world generally and in this country particularly, and we may expect that for some time to come yet the progress of affairs in and concerning Egypt will absorb a great deal of public interest. Indeed, so long as Great Britain rules India, we shall be concerned in the prosperity and good government of a country through which thousands of British pass and repass annually. The information respecting vegetation, cultivation, &c., sent home by newspaper correspondents is necessarily vague, and consequently unintelligible to the majority of readers. It may be interesting, therefore, at the present time to give some particulars of the climate, soil, vegetation, and vegetable resources of the country. In this sketch we shall confine ourselves to the Delta of the Nile and the country eastward to the Maritime Canal, running from Port Said in the Mediterranean to Suez in the Red Sea. From a rough calculation, this has an area of 11,500 English statute square miles, whereof about 7200 square miles are cultivated or suitable for cultivation, the rest consisting of lakes, salt marshes, and desert. The Maritime Canal, or the Suez Canal as it is commonly called, deserves a few historical notes, as the beginning of it is not within the memory of the younger generation of readers, and older readers will be spared the trouble of reference.

It is not the first great canal in the same region, for we learn from historians that the ancients practically connected the Mediterranean and Red Sea by means of a canal from the Nile to Lake Timsah, and from thence to the Red Sea. This canal was begun in the time of the Pharaohs, and completed by Ptolemy Philadelphus in 260 B.C. It seems to have been used until within the eighth century A.D., and then from some cause or other to have gradually fallen into disuse. Napoleon I. entertained very strongly the idea of constructing a canal from sea to sea, and in 1799 he appointed a commission for the examination of the project and the survey of the Isthmus. The one memorable result of this survey was that it made the level of the Red Sea at Suez 30 feet higher than the level of the Mediterranean at Pelusium; and this was accepted as a fact, until about the year 1840, when some English officers having made a number of observations, came to the conclusion that there was very little difference in the levels. This was afterwards verified by an international commission, which made the difference less than an inch! M. Ferdinand de Lesseps obtained a firman for the present canal, in 1854, and the preliminary operations were commenced at once; but owing to various obstacles—not the least of which was the determined opposition the project met with in influential quarters in this country—matters proceeded slowly. However, in spite of opposition and many practical difficulties, the great undertaking was so far completed that the first ship passed from sea

to sea on November 17, 1869. During the following months only nine ships passed through, and in January, 1870, only sixteen; till this number increased month by month, till in January, 1871, it had risen to seventy-four. Now, there is no cessation of traffic, and there is nearly as much as can possibly pass through with the present accommodation.

CLIMATE.

For all practical purposes it may be said that Lower Egypt lies in the rainless zone, though it occasionally happens that there is a misty rain in winter at Cairo, but very rarely indeed is there a shower of half-an-hour's duration. A writer who resided at Ismailia some years states that 300 out of the 365 days are sunny On the other hand, Dr. Beke, writing in 1874, stated that rain was frequent enough at Alexandria to be a source of annoyance; and Cairo, which used to have five or six showers a year, had in 1873 twenty-one days' rain. Dr. Beke also speaks of four-and-twenty hours' rain, as heavy and continuous as any in London. From all that we can learn, however, 1873 must have been an exceptional season, even when compared with those that have followed it. But if there is no rain to speak of there is abundance of water that may be had by means of canals. Dr. G. Schweinfurth, who is perhaps the most competent authority on all that relates to vegetation and cultivation in Egypt, and to whom we are indebted for most of the information given here, estimates that nineteen-twentieths of the water of the Nile is carried out to sea unused. That is to say, there is water enough wasted to irrigate millions and millions of acres of land that is now desert only because water is not there, not because the soil is poor. This we find corroborated in what we have collected concerning cultivation. The Nile, it should be remembered, drains an enormous area of tropical Africa, where the rainfall is heavy and its waters are so impregnated with fertilising substances that in Lower Egypt, where inundation is practicable, no other manuring is necessary. With regard to temperature the mean summer heat is about 90° Fahr., and the mean winter heat about 60° Fahr. These means are the result of comparatively cold nights and very hot days. Hoar-frost it is said not to be uncommon in winter in the neighbourhood of Cairo, and thin ice is occasionally formed, though this is ascribed to rapid evaporation rather than to the absolute degree of cold of the atmosphere.

In the valley of the Nile there is a wet and a dry season, corresponding to the height of the water in the river. During the former the water overflows the banks and irrigates the land without the aid of man, whilst during the latter the fields receive moisture only by artificial means. Usually there is a perceptible rising of the waters by the middle of July, and towards the end of September, they remain stationary at the greatest height for twenty to thirty days. The lowest point is reached from the middle of May to the middle of June. Many years' observations teach that 23 ells 2 inches of the nilometer is the highest level favourable to cultivation at the present period, though in Herodotus' time a height of 16 ells was sufficient. But one more ell may cause incalculable mischief in the Delta, whilst 2 ells less would produce drought and famine in Upper Egypt. In other words, or rather according to another authority, a rise of 24 to 27 feet is favourable, whilst either more or less is disastrous.

The temperature divides the climate of Egypt into two seasons—a hot season of eight months, from April to November, and a cool season of four months, from December to March. The greatest heat is from April to July, when in the Delta a maximum of 95° Fahr. is reached, and only at Chamsin, near Cairo, a maximum of 100° Fahr. The winter minimum for the Delta is 35°.5 Fahr., or even lower near the margin of the desert, and, as mentioned elsewhere, thin ice is not infrequently formed.

The prevailing winds also divide the year into two periods, one of eight months, from the middle of June to the middle of February, during which north winds are the order of the day; and the other of four months, from the middle of February to the middle of June, during which south winds prevail.

SOIL.

First there is a narrow strip on the Mediterranean coast in which the soil is sea sand rich in lime and forming hillocks or dunes. The soil of the Delta that is annually submerged consists of a kind of mud which is a mixture of sand and clay and vegetable mould, and this is easily tilled when moist, but dries hard, and splits into polygonal masses. Beyond the area of irrigation are the moving sands of the desert. Some further particulars respecting the soil and its capabilities will more naturally find their place under the heading "Cultivation."

INDIGENOUS PLANTS.

The indigenous vegetation of the Delta is almost entirely herbaceous whether in the form of weeds in the cultivated parts, or the permanent plants of the uncultivated parts. Beyond the influence of the waters of the Nile dwarf shrubs are associated with herbs; but trees exist only under sufferance in waste places, or where they are cultivated for their products or for ornament. There is nothing like our woodlands. On the banks of the rivers and canals bushes of a Tamarisk (Tamarix nilotica), a Willow (Salix safsaf), and an Acacia (A. albida), occur here and there. In Lower Egypt the land flora attains its greatest development towards the end of March and in April, whilst the water plants of the ponds and ditches, lakes and marshes, do not flower and fruit before October. Except at these times the vegetation has a very poverty-stricken appearance. In the richest grounds there is little else in summer and autumn than the two weeds, Ambrosia and Crozophora, a Composite and an Euphorbiaceous plant.

In 1855, shortly after the granting of the firman for the Canal, Dr. Kotschy visited Egypt and investigated the vegetation of that part of the isthmus where there appeared the greatest danger to the Canal from the moving sands, especially with a view to determining how far this danger might be overcome by planting sand-binding plants on the banks. He published a list of the plants which he regarded suitable for the purpose, most of these plants being essentially desert plants and indigenous to the isthmus. For pure sandy soil he recommended Heliotropium undulatum, H. ramosissimum, Sodada (Capparis) decidua, Ochradenus baccatus, Retama Retam, Gymnocarpum fruticosum, and Psamma littoralis; for gravelly soil, Tamarix africana and other species, Calligonum comosum, Ephedra distachya and E. altissima, Acacia Seyal, A. tortilis and A. arabica; for salt-impregnated soil, Nitraria tridentata, Noea spinosissima, Lycium afrum and L. mediterraneum, Zizyphus spina Christi, Salsola kali, Passerina hirsuta and P. arborea. He also naturally proposed planting the Date Palm, and especially the dwarf Chamærops humilis. The same writer records some interesting observations on the plants inhabiting the desert sands, on those growing mainly in a mixture of mud and desert sand, and on those growing in the Nile mud in which there is little sand, that is to say, on the extreme edge of the deposits from the water of the Nile, but it would occupy too much space to reproduce them here. *W. B. H.*

(To be continued.)

New Garden Plants.

DENDROBIUM BURSIGERUM, *Lindl.**

THIS is in the way of Dendrobium secundum, Wall. Its flowers are far more numerous, very dense, usually one-sided, in a fox-brush-like raceme. I know well Dr. Lindley's typical specimen has flowers which are arranged all round the axis, but the eight racemes of my herbarium are one-sided. It appears also to be well distinct in nearly or quite acuminate sepals and petals, in the pouch of the lateral sepals being very curved and broader, in the base of the lip being nearly cordate hastate, in the yellow area of the anterior lip being far longer than in Dendrobium secundum, and in the lamellæ over the middle.

The plant was established as a species both by the late Dr. Lindley and by myself, but our glorious Orchidist came this time before me. It was collected by H. Cuming in the Philippine Islands. It is his No. 2066, much spread in herbaria. A curious matter may now be solved. Dr. Lindley's typical specimen shows a long acuminate leaf. The five leaves I possess are all short, blunt, acute, broad. I have a pencil sketch in my herbarium of such long acuminate leaves of Cuming's specimen, No. 2066. I guess it was made from a plant in Mr. Edmund Boissier's collection. (What a pity it is that one relies on his memory when one is young! Every sketch should have a note as to its origin and date, as I have practised constantly for some years.) As to those specimens having loose inflorescences and loose leaves on bits of stems (prepared by poor schoolboys as I was informed) we are not very sure as yet whether really both forms of leaves belong to the same species, which does not appear very probable. We may know soon all about this, however, Mr. F. Sander having just imported the plant. *H. G. Rchb. f.*

CIRRHOPETALUM ORNATISSIMUM, *n. sp.**

I have known this fine thing since October, 1879, when it was sent me by Mr. W. Bull (No. 407). I received a single flower only. Then it came from Sir C. W. Strickland and Mr. James O'Brien. Finally I now find it amidst the flowers arrived during my absence, both from Messrs. Veitch and Mr. W. Bull. The flowers are equal to those of Cirrhopetalum Thouarsii. Their best feature lies in the tremulous amellæ, which are borrowed from Bulbophyllum saltatorium. They are sessile around the oblong triangular cucullate odd sepal and in highest beauty at the top of the small falcate petals; all of the darkest brown-purple colour. The flowers are straw coloured with purple longitudinal lines. Column and lip light purple. It may come from East India, though I am not sure of it. It is comparable to Dr. Wight's C. grandiflorum. *H. G. Rchb. f.*

SENECIO LAGOPUS, *Raoul.*†

This species is now in flower at Kew, and appears to be a newly introduced plant, having been received from Mr. Max Leichtlin under the name of S. saxifragoides, to which it is allied, but differs markedly in the tomentum of the leaves, those of S. saxifragoides (which I think is not in cultivation) being covered on the upper side with long appressed silky hairs, whilst in S. lagopus the upper surface has numerous outstanding bristly hairs scattered over it; in both species the old leaves become glabrous above. S. lagopus is not a showy plant, but is suitable for rockwork, being about 6 inches to 1 foot in height, with petioled, broadly elliptic, obtuse radical leaves, the upper surface setose, the under surface densely tomentose; the petioles are densely woolly. The flower-stem has a few bracts upon it, but is otherwise leafless; both it and the involucres are glandular, hairy. Flower-heads radiate, about 1 inch across, bright yellow, arranged in a lax few-headed corymb. This species is a native of New Zealand, and will probably prove to be hardy in this country. *N. E. Brown.*

TWO NEW NEPENTHES.

THE singularity of form, the variety and brightness of colour, and the interest attaching to the so-called carnivorous plants afford sufficient reasons for the popularity of Pitcher-plants. That there is a great variety among them is shown by the specimens we have from time to time figured. This variability arises probably from the fact that they hybridise and cross naturally owing to their unisexual flowers, while it is also possible that the great variability in the form and colour of the pitchers may be co-related with the functions they have to perform, the food they require, the conditions under which they grow, and other causes at present unknown, and which would form an interesting subject of enquiry for those who have

* *Dendrobium bursigerum*, Lindl.; *Cont. Ind. Orch.*, ii., p. 17.—Aff. Dendrobio secundo; racemis secundis plurimifloris; sepalis tepalisque bene acutissimo acuminatis; perula ampla curva; labello ligulato basi subcordato antice acuto limbis impositis; area xanthina elongata; lamellis sub angulo confluentibus membranaceis supra medium postice in lineam unam elevatam excurrentibus. Philippine Islands. *H. G. Rchb. f.*

* *Cirrhopetalum ornatissimum*, n. sp.—Pseudobulbo ovoideo tri-tetragono: folio cuneato oblongoligulato obtuso; peduncule apice umbellato (uni) quinquefloro: bracteis ligulatis acutis ovaria pedicellata non æquantibus; sepalo impari triangulo oblongo cucullato limbo lamelligero; sepalis lateralibus ligulato acuminatis longissimis liberis; tepalis falcatis apice lamellato pedicellatis; labello carnoso curvo ligulato a lateribus compresso utrinque lateri linea arguta; columna crassa utrinque obtusangulo; apice utrinque angulata; angulo aristato. *H. G. Rchb. f.*

† *Senecio lagopus*, Raoul, *Choix Pl. N. Zeal.*, p. 21, t. 17; Hook., *Handbook N. Zeal. Flora*, p. 158.

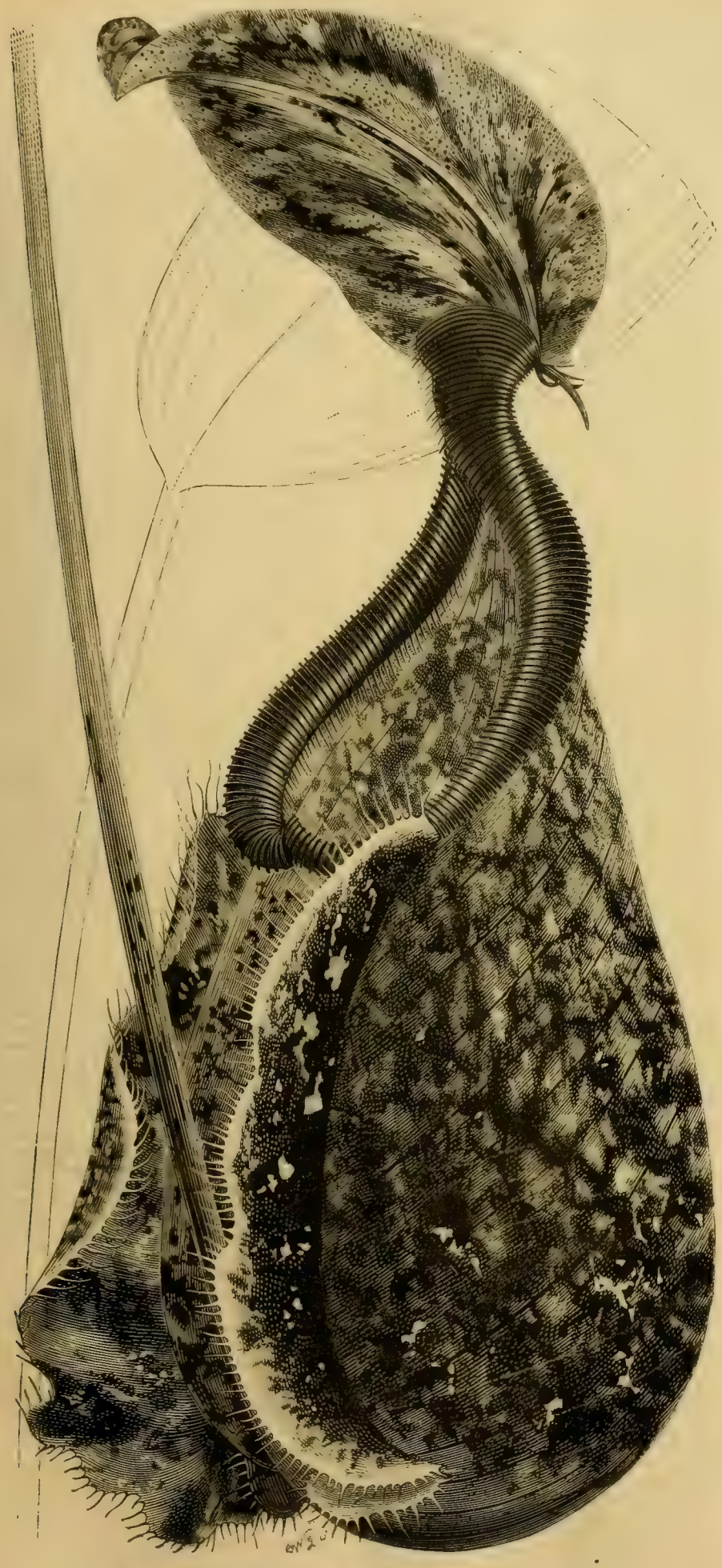


Fig. 69.—Nepenthes Rafflesiana, var. insignis: colour purplish-brown.

the opportunity of studying the plants in their native haunts. Our illustrations of the two forms now figured were taken in the nursery of Mr. W. Bull at Chelsea. Both were imported direct from Borneo, and one or both—unless we are mistaken—are forms of N. Rafflesiana. The pitchers alone are not sufficient to decide this point, as these organs are notoriously variable, even on the same plant, at different stages of growth. Nevertheless for horticultural purposes specific distinctions, as understood by the botanist, are not always those that are of the greatest moment. While, therefore, we have little doubt that one at least of the forms now illustrated is a variety of N. Rafflesiana, we may add that to our knowledge there are no named varieties in cultivation, or in preservation in the herbaria to which we have had access, which correspond to these forms. They are distinct enough and handsome enough to bear for garden purposes distinct names. We propose, then, to call the larger of the two (fig. 69) *N. Rafflesiana var. insignis*. This has robust cylindrical stems, covered when young with white chaffy scales. The leaves measure about 18 by 3 inches, and have relatively short (3 inches), deeply channelled leaf-stalks, and very thick oblong leaves, rounded at the base, abruptly acute at the otherwise rounded apex, and with remote and obscure veins. The pitchers are remarkably handsome, about 9 inches in length by 4 in breadth; green, heavily mottled with purplish-brown spots, and thickly beset with small brownish stelliform hairs. In form they are obliquely flask-shaped, gradually tapering towards the top, marked at the back with a prominent midrib and with two broad sharply-toothed wings in front. The rim surrounding the mouth is deeply and evenly ribbed, the ribs being some of them chocolate-brown, others paler green, the free ends of the ribs end in sharp points. At the upper end the rim is prolonged into a long stalk, flattened from side to side, garnished with formidable teeth and supporting a large ovate oblong lid spreading horizontally, marked with two prominent nerves, and with a toothed spur at the base. The throat of the pitcher is glaucous green and the under-side of the lid green, mottled with purplish-brown blotches and minute spots.

The second illustration (fig. 70, p. 429), represents a variety even more removed from the typical Rafflesiana than the preceding. Owing to the dark brown nearly uniform or "self colour" of the pitchers, we propose for it the name of *N. Rafflesiana var. nigro-purpurea*. It is so distinct that when it flowers we shall not be surprised if it prove a distinct species altogether. Its stem is cylindric, the leathery glabrescent leaves are acute at both ends, with obscure and remote venation and with a rather long-channelled stem-clasping stalk. The pitchers measure about 6 by 2½ inches, and are of a dull purplish-brown colour with a few paler spots, and a few brownish star-like hairs. In form they are bag-shaped, distended not only at the base but nearly to the top with two membranous, incurved toothed wings; mouth obliquely ovate, prolonged at the back into a flattened stalk, supporting the lid. The rim consists of numerous closely set ribs, some purple, others whitish, the free ends sharply pointed. The lid measures 2 by 1¾ inches, is ovate oblong, spreading, purple, mottled on the under-surface. This is also from Borneo, and is quite different from any Nepenthes known to us. *M. T. M.*

HUGHENDEN.

A delightful little combe enters the valley of the Wick at High Wycombe, and every chairmaker filling his basket with Mushrooms and his lungs with pure air before the shafts begin to smoke may see two buildings rising above the mist in the meadows; one of these is West Wycombe church, on its hill straight up the main valley; and the other is Hughenden, in the lesser valley. Hughenden, whose first syllable of uncertain origin has been spelt Hych or Hitch, and whose second is derived from "den," a deep valley, belonged, before the Conquest, to Queen Edith, and after it to various persons successively, including the late Lord Beaconsfield, whose father, Isaac Disraeli, bought the estate in 1846 of the executors of John Norris, Esq.

A more delightful, healthful, and retired spot could hardly be found even in Buckinghamshire; and here, on a dry site, half-way up the side of a chalk hill, perfectly sheltered by woods on the north, and open to the sun, with a delightful park stretched below the lawn, Lord Beaconsfield might have been attended by the three best doctors for old age—quiet, diet, and repose. He might have lived, one cannot

doubt, to be really old, like his grandfather, who died at the age of ninety-one, or his father, who was cut down as the scythe sweeps through young grass, by an accidental ailment, quite prematurely, at eighty-two. He was seized with an epidemic and died unconscious to the last of his danger. Lord Beaconsfield died at the harder post of a general repulsed, not beaten. He occupied a charming residence, a capital red brick house well stained by time, and high (fig. 71, p. 432), having been raised a storey by himself many years ago; a beautiful little park and grounds of 300 acres, wood and grass together, fine Beeches, and a trout stream, which means always a bright stream, running through the midst and watering several sorts of trees which are not native to the Chilterns. We read in Holy Writ of streams brought out of the rock and running down like rivers, but it is a drawback of the chalk formation that an artificial provision of water by means of tanks must usually be resorted to and therefore the never-failing run of water at Hughenden is literally a "stream in the desert," "the streams whereof make glad."

After calling on Sir Samuel Wilson, the present occupier of the mansion, who is most kind in letting this historic residence be seen, I passed through the grounds with the gardener, Mr. Lewis, for my guide. There is a good well sheltered lawn on the south side of the house, well hedged and planted on the exposed side, and open towards High Wycombe, which forms a pleasing living point in the landscape down the valley, the woods of Wycombe Abbey rising beyond. The late Earl was particularly fond of arboriculture and of forestry. In his youth he had travelled much in the East and in Germany, as all who remember Esper George and the mediatised Margraves of *Vivian Grey* may remember; and some of the lovely shrubs in his grounds are the mute witnesses of those eager wanderings. There are Cedars from seed which he brought home from Lebanon—how he must have loved them! A love of trees and of planting was one of his domestic characteristics. His Beech woods are among the finest that shed their mast on the Chiltern Hills, and in his German Forest, as he called his favourite wood, he disliked seeing gaps where trees ought to grow, and he would order them to be filled at once. He was one of those who have a *penchant* for planting, while others have a fancy for felling; and in the practice of arboriculture the planter and tree-cutter are both necessary. I have known an absurd old gentleman whose woods were in a terrible mess through a superstitious refusal to cut down and to plant each in proper season. I was told, as a pleasing trait in his character, that if Lord Beaconsfield required an attendant in the woods, though he generally rambled alone, he would never allow him to remain standing when he sat down. However humble his condition might be, the Premier, when he was Premier, and had not been felled level with the ground—for no man ever stubbed him up quite so as to prevent his springing again—would make his companion sit down too.

The German Forest is the large sheltering Beech wood on the north of the house, reaching almost to its threshold, and among its glades and green paths the late owner of Hughenden had loved to stroll through the thirty-five years that he could call this ancient seat his own. In 1872, in the darkest hour of his life, his walks became solitary at the death of the partner of the thirty-three previous years. Quitting the south side of the lawn by some steps, we followed a favourite walk of this faithful couple, leading to a spot where seats had been provided for the enjoyment of a pleasing view of the Wycombe Valley and the little town—which, by the way, honoured itself by the presentation of a handsome arm-chair, which I very much admired in the house. From the cheerful spot where these seats are placed the town is an object of special interest, as a populated site always must be in any landscape. An obelisk to the memory of Isaac Disraeli stands on an adjacent hill on the estate, and is reached from this spot by following a little chalk combe which you may enter on quitting the grounds by a private gate. The seats I have referred to were formed by cutting down two Beeches about 3 feet from the ground, one for her ladyship, the other for her most devoted "Dizzy," as she would sometimes call him. I measured the distance between the two shortened stems or stumps which were used as seats by the Premier and his better half—that "best of wives and most severe critic"—and found them exactly 5 yards further apart than Milton placed Adam and Eve in Paradise, when she told her spouse the story of the Apple. I suppose 5 yards may be a well-wedded distance—near enough for conversation—and 50 yards is not always too far, nor even 500 for that matter. The two seats have been neglected now for years, and Ivy has grown thickly over them both, while some seedling Beeches have sprung up in front and thrown their blind over the view which they once commanded.

Probably the "Golden Gates" at the end of the carriage drive, at the entrance to the grounds, obtained their name from the region whence the seedling Cedars were derived. They are handsome and tasteful. The drive all through the park is the narrowest of carriage drives, as if the owner had remembered the scarcity of good pasture, or park land, in the Chiltern district. The trout stream, crossed in driving from the lodge on the Aylesbury road, and then running on the right hand along the bottom of the park and valley, is full of trout. It was just here that one of the labourers met the carriage one evening coming up the hill, and asked the coachman, "How is the old man?" "I am quite well, thank you," said Lord Beaconsfield, putting out his head. He was a genial and just man in the domestic circle, and kept his servants long. There are many faces that will brighten for years to come when his name is mentioned. He was universally beloved by colleagues, friends, secretaries, servants. Tenants and cottagers esteemed him, though it was not his practice to call frequently at farmhouse or cottage as he walked about, nor to engage much in conversation in his strolls. It was understood among his neighbours that he could "talk at times," as a young reaper in a cornfield near the house remarked, with a beaming face. He knew him well by sight, he said, but free converse was not his habit as a rule, at Hughenden. In those latter years he loved to wander alone. He would often sit on the steps of the verandah, on the south side of the house, waiting for the morning post-bag. He sat here literally beneath his own Vine, which trails above—a rather unusual but very pretty creeper. Close by on the lawn is a flourishing Abies nobilis, planted by the Queen December 15, 1877. The Prince of Wales planted a Thuia here January 13, 1880. Jasmines adorn the same verandah; a Clianthus, a tender plant with bright green leaves, is doing well against the house. A number of Yews, Spruces, and other evergreens grow close to the house on the east side, forming an impenetrable bank. The principal entrance is on the north side, where a lawn, around which the carriage drive turns, is thickly studded with specimen trees, the Cedar of Lebanon, Wellingtonia, and a handsome Pinus Pinsapo. During the ownership of the late resident a parapet wall was carried up, at the top of the house, which is now a lofty, well-proportioned, three-storeyed mansion with vases and ornaments on the lawn below and on the roof above, none of which, I am glad to say, are of terra-cotta. Good taste has prevailed here, and good management on the estate—I believe there are about 5000 acres of land—and each cottage boasts a tank, an oven, and a porch!

At the church in the park the proofs of public esteem attract melancholy interest. Memorial windows have been erected, one by the undergraduates of the University of Oxford, "To the glory of God and to the memory of the Right Honourable Benjamin Disraeli, Earl of Beaconsfield, K.G., late Prime Minister of England;" another by the executors, Lord Rowton, Sir Nathaniel Rothschild, and Sir Philip Rose; and one from the general fund for the restoration of the church. In a seat in the chancel an inlaid brass records that it was occupied by him who, under Heaven, is the centre of all interest here. Above hangs the banner of a Knight of the Garter, a cross of Violets and Cowslips—Primroses they should have been, since that was his favourite flower—rests on the seat; and the Queen's most appropriate and enduring memorial offering—a medallion on the wall immediately over the accustomed seat—shows the likeness of her devoted minister in bas-relief, with this inscription—"To the dear and honoured memory of Benjamin, Earl of Beaconsfield, K.G., this memorial, placed by his grateful Sovereign and friend, Victoria R.I., February 27, 1882. 'Kings love him that speaketh right:' Prov. xvi., 13." Outside the church, on the east side, the coffins of Lord Beaconsfield and several of his family are laid in a vault passing beneath the chancel. He was born, according to the inscription at the entrance, December 21, 1804, died April 19, 1881. Mary Ann Disraeli, "for thirty-three years the wife" of the "Lord of the Manor," died in 1872. James Disraeli, one of Her Majesty's Commissioners of Inland Revenue, and Mrs. S. Brydges Williams, also lie here.

Standing at this tomb, newly strewn with flowers by faithful hands, as I am told it is almost daily, it is pleasant to reflect that one who towered so high in mental powers should have set the world the example of a most sweet and amiable temper. One might gossip through several columns of his personal influence and attractions, but a single anecdote must suffice of two watermen who rowed Mr. and Mrs. Disraeli some miles up the Thames by Twickenham with a friend, an entertainer for the day, who related the story to me. The watermen before that trip had thought that every "aristocrat" and Tory was a sort of Blue Beard preying upon common people. Their eyes were opened in the company they kept that day; and years afterwards, when they had become partners in a prosperous business, they came to Hughenden and attended Lord Beaconsfield's funeral. It can only be by goodness as well as genius that a man can attract to himself what Macbeth in his despair declared he must not look to have—"all that should accompany old age, as honour, love, obedience, troops of friends." *H. E.*

HARDY ORCHIDS.

(*Concluded from p.* 397.)

**Epipactis.*—This is an interesting genus of several species, some of which are British, and there are a few which have been cultivated for some time. E. latifolia is a British plant, growing about 2 feet high, with the radical leaves ovate, while those of the stem are narrow. Flowers in loose one-sided racemes, brownish-green, appearing in July. E. palustris, also British, and more frequent. Stem not so tall as the last, and the leaves narrower. Flowers in dense racemes with the sepals greenish-purple, and the petals and labellum white. This is certainly a very pretty plant, flowering with the last. E. gigantea is a very showy North American species, growing as much as 3 feet high, with long dense spikes of rosy-purple flowers 1 inch across; a most effective plant, and, no doubt, quite hardy. E. rubiginosa grows from 2—3 feet high, with long narrow leaves; flowers in dense spikes, of a reddish-purple colour, and lasting a considerable time. This is a decidedly handsome plant, and quite hardy. There are several other pecies which should find a place in our gardens.

†**Goodyeras.*—This is a genus of singular little Orchids, allied to the more gorgeous Anæctochilus, although some of them nearly equal in beauty those of the latter genus. G. Menziesii is a rare species, found in the Western United States, with large ovate, wavy leaves, of a deep velvety green, marbled with paler green, spotted and splashed with white, and small racemes of white flowers; but the chief beauty is in the foliage. G. pubescens, known commonly as the "rattlesnake Plantain," has handsome bright green velvety leaves, marbled and veined with a paler colour, and spikes of small white flowers. These two species are of easy culture; I saw them in excellent state last year at Mr. Ware's, of Tottenham. G. repens is a rare British species, occurring only in the North of Scotland, although it is widely distributed throughout Northern Europe, Asia, and America. It has a creeping rootstock, with fleshy ovate deep green leaves, and one-sided terminal spikes of small greenish-white flowers. The late firm of Rollissons, of Tooting, sent out in 1877 a very lovely species, named G. Rollissoni, which had very handsome foliage. It was very nearly hardy, and no doubt could be easily kept in a frame. It would be interesting to know whether it is still in cultivation. The Goodyeras enjoy abundance of moisture during the summer, but should be comparatively dry when at rest, and if they are well grown they are charming little plants.

**Gymnadenia conopsea* is a pretty little British plant, also widely distributed throughout Europe and North America. The stem grows from 9 to 12 inches high, with narrow leaves and terminal spikes of small rosy-purple sweetly-scented flowers. There is also a Swiss and South European species, G. odoratissima, of rather stronger growth, and the flowers are larger, of a pale rose colour, very fragrant. They are both pretty when established, which is an easy matter.

Habenaria.—This is a very extensive genus, almost ubiquitous in its distribution, but the species are most numerous in India and Africa; several beautiful kinds occur in North America, while not less than three are found wild in this country, viz., H. bifolia and H.

* The * indicates species preferring a loamy soil; the † denotes species requiring protection from wet when at rest.

chlorantha, known as the "Butterfly Orchises," and H. viridis, the "Frog Orchis." H. bifolia has a stem from 12—18 inches high, with two oblong blunt leaves at the base and a few bracts above. The flowers are closely set in a spike terminating the stem, white, with long spurs, and extremely pretty. H. chlorantha is very similar; the flowers are larger, and the throat of the nectary is wider; otherwise they are indistinct. These two plants will also thrive in ordinary border soil, but the species described below delight in peaty soil with a small quantity of loam added. If the surface of the soil is covered with moss it will be beneficial, as they enjoy a cool damp situation when active. H. blephariglottis, a lovely North American species, very common in several States in peaty bogs; stem 12—18 inches high, with oblong-lanceolate leaves; flowers in dense spikes, pure white, with copiously fringed labellum, and sweetly scented. H. ciliaris, very plentiful in New Jersey. It grows from 1—2 feet high, with long bold spikes of bright orange flowers, nearly an inch across, with a very conspicuous fringe on the lip. H. cristata, found in the Northern and Eastern States, but not so commonly as the two last; stem a foot high, with lanceolate leaves; flowers in crowded spikes, shorter than the inflorescence of the last, of a deep golden-yellow colour, and deeply fringed. H. fimbriata, found in the Eastern States, growing from 1—2 feet high, with long spikes of flowers, varying in colour from rosy-purple to crimson, a very effective plant. H. orbiculata, found in the Eastern States, and growing quite 2 feet high, with large ovate-oblong leaves and long loose spikes of greenish-white flowers. H. psycodes also plentiful in the Northern and Eastern States, and growing from 12—18 inches high; flowers in dense terminal spikes from 6—10 inches long, of a rich purple colour, and very fragrant. These are handsome species and are of most easy culture in a damp shady position, flowering during June and July, and to them a host of others equally beautiful might be added, among which are H. tridentata, H. Hookeri, lacera, ciliata, elegans, leucophæa, and nivea.

**Ophrys.* — This is also a very extensive genus of plants, many of which are by no means inconspicuous as garden flowers, while all are peculiar. They are particularly strong in the Mediterranean region, and some of them are very attractive and but little known. O. apifera (the common Bee Orchis) grows about 6 inches high, with narrow leaves and small spikes of rosy-lilac flowers, with a broad convex lip of a rich velvety brown. O. aranifera (common Spider Orchis) grows about the same height, with spikes of small light-brown flowers. O. muscifera (the Fly Orchis) has spikes of purplish-brown flowers, with a conspicuous oblong 3-lobed lip of a deeper colour, with pale markings in the centre. O. lutea, a very pretty species from the Mediterranean region, growing from 9—12 inches high with full spikes of flowers of a soft yellow colour, with purple markings appearing early in April, while those described above flower in May and June. Their peculiar forms are remarkable, while the interest attached to the methods by which fertilisation is effected is abundant.

**Orchis.*—This genus also includes a large number of terrestrial Orchids, having its headquarters in Europe and North Asia, with a very few species in North, America. They are all more or less handsome plants with leafy stems and bold spikes of flowers, richly coloured, and many of them will thrive in ordinary borders if damp. O. foliosa is a splendid kind, from Madeira, stem 2—3 feet high, with long lanceolate, recurved leaves, and terminated with dense spikes of rich purple flowers, with a broad 3-lobed lip; appearing during May and June, forming a very conspicuous object. O. fusca is a handsome British species growing from 12—18 inches high, with dense spikes of brown and yellow flowers, with a copiously dark spotted lip. O. latifolia is very similar to maculata; which is one of our commonest species, varying very materially in height, with dense spikes of lilac-purple flowers, with the lip freely spotted. O. maculata superba is a very handsome variety, with thickly spotted foliage, and very large spikes of flowers of a purplish-crimson colour. In the North this plant grows most luxuriantly, and it was a grand feature in the garden of the late Miss Hope, of Wardie Lodge, Edinburgh, with many other good plants. O. mascula, a showy native species with loose spikes of bright pinkish-purple spotted flowers, sometimes varying to a bright flesh colour, and a grand plant under cultivation. O. militaris is another British plant of very attractive appearance. It has dense spikes of purple flowers, with deeper coloured markings, and a prominent lip. This plant is found in the counties bordering on the Thames, but is by no means common. O. pyramidalis is also British, with spikes of small pink flowers, with a long and very slender spur. O. spectabilis is a dwarf-growing North American species; stem 9—12 inches high, with lanceolate leaves, and closely set spikes of light purple flowers with a conspicuous white lip. All the foregoing are pretty plants, and to them might be added many others of equal beauty and merit. *Orchidophile.*

FRUIT NOTES.

Pears Marie Louise and Glou Morceau.—There are few gardens of any extent, I should imagine, without these excellent dessert Pears, but to those of your readers who have not already included them in their collection (which without them is incomplete) I would say, now that the time for ordering and planting fruit trees has arrived, order them at once. If the garden is small, a couple of trees of each variety will be sufficient, and for a medium-sized garden four trees of each will be ample. They are both vigorous-growing and free-bearing varieties, producing large handsome fruit of delicious flavour. We have about half-a-dozen trees of each variety here which occupy more or less different aspects—some horizontally, and others pyramidally trained. Those subjected to the former mode of training, and occupying a due west wall, are thus, as in previous years, heavily cropped; and, although the results from the pyramidally trained trees are fairly satisfactory, it is only when grown and trained against south and west walls that really good results are obtained, and an annual crop secured. *H. W. Ward, Longford Castle.*

Coe's Golden Drop Plum.—Too much cannot well be said in praise of this fine late dessert Plum. The fruit (the colour and shape of which are described by the name) is large, rich, and juicy, and hangs well on the trees. The constitution of the tree is good, and it is also a free-bearing variety. We have several trees of it here growing against south, east, and west walls—a circumstance which causes an interval of several days to elapse in the ripening of the fruit on the trees in the different situations, thus prolonging the supply of fruit a couple of weeks. This is a fact that should not be lost sight of intending planters. In short, Coe's Golden Drop Plum is a sure bearing variety when planted in positions such as above indicated; and on this account, together with its other good qualities, it is, I think, deserving of special notice in the *Gardeners' Chronicle* just now that the time of rooting up barren trees and planting young ones is at hand. *H. W. W.*

On Planting Fruit Trees.—The planting of fruit trees is an operation that will be carried out on a more or less extensive scale in the majority of gardens during the next and subsequent months; therefore a few remarks respecting the proper mode of procedure may not be unacceptable to those of your readers who purpose proceeding forthwith with this operation. I may as well say at once that my remarks on the subject will be brief, but I trust sufficiently clear to be instructive on the matter under consideration. If success in hardy fruit culture is to be attained the cultivator must, as in other branches of horticulture where the same object is aimed at, commence at the beginning, and give the young trees a proper start, and this is not to be done in a haphazard way. Instead of digging out holes barely large enough to squeeze the roots of the trees into make them for wall trees half the size of a 10-feet circle (the wall forming the division of the latter), and 4 feet deep, including 1 foot of brick-bats finely broken on the top for drainage: this should be covered with turves, grassy side down, and the hole then filled, if to be had, with good loam, to which may be added one-fourth of old lime rubble, making the soil into a convex mound and sufficiently high to allow of it subsiding to the proper level later on. Then plant the trees in the ordinary way, spreading the roots out in every direction, and at the same time cutting away the points of any damaged or strong-growing ones, and when the tree is partly planted take hold of it by the stem and give it a gentle pull and shake upwards, in order to let the soil well among the roots, and complete the planting process (6 inches of soil over the roots will be ample) by putting a couple of barrowfuls of rotten dung around each tree as a mulching, which will not only prevent frost from reaching the roots but also maintain the latter in a more equable condition. Thus planted, and with judicious after-treatment, success is almost sure to follow. I need scarcely add that the leading shoots of the individual trees should, for the present, until the soil has subsided, only be tacked with nails and shreds loosely to the walls, and that these remarks are made on the assumption that the natural soil and drainage are unsuitable for the growth of fruit trees. And I would also remark that for young standard trees I would make holes (circular ones) as above, and 5 feet in diameter, and put a stiff stake to each tree when planted, as recommended above, to prevent its swaying with the wind. *H. W. W.*

Blenheim Orange Apple.—Notwithstanding the scarcity of Apples in many places, it is satisfactory to know that there are some good specimens to be seen in the country. The largest and finest we have seen this season is a sample of Blenheim Orange at Chiswick, which measures 13 inches in circumference.

LIST OF GARDEN ORCHIDS.

(*Continued from p.* 365.)

28. Trias, Lindl., *Gen. and Sp. Orch. Pl.*, p. 60—An Indian genus of three small-flowered species, differing from Bulbophyllum in having a long appendage to the anther.

1. T. oblonga, Lindl., *Gen. and Sp. Orch. Pl.*, p. 60; Wall., *Pl. Asiat. Rar.*, i., t. 70. *Bulbophyllum oblongum*, Rchb. f., *Walp. Ann.*, vi., p. 249.—India. Cultivated at Kew in 1862. A small plant, having solitary yellowish flowers, with relatively large sepals and small labellum and petals.

"T. pallidiflora" is a name I find in the Kew list, but it does not appear to be a published one.

2. T. picta, Parish MSS. *Bulbophyllum* (*Trias*) *picta*, Parish and Rchb. f., *Trans. Linn. Soc.*, xxx., p. 150.—Moulmein. Introduced by Mr. Parish and cultivated at Kew.

29. Osyriciera, Blume, *Bijdr. tot Fl. Nederl. Ind.*, p. 307, t. 58.—One Japanese species, differing from Bulbophyllum in having a ventricose labellum and a circular appendage to the anther.

30. Drymoda, Lindl., *Sert. Orch.*, t. 8.—Lateral sepals separated from the posterior by a long basal extension of the column. Pollinia in a globose mass; scape 1-flowered. Limited to the following species:—

1. D. picta, Lindl., *Sert. Orch.*, t. 8; *Bot. Mag.*, t. 5904; *Gard. Chron.* 1873, p. 363.—Malayan Peninsula. Originally discovered by William Griffith, from whose drawings Lindley founded the genus. Introduced alive by the Rev. Mr. Parish in 1870, and flowered at Kew in 1871. A very curious and elegant little Orchid. Small pseudobulbs discoid and appressed to the object on which they grow; leaf unknown; flowers yellowish-white and purple.

31. Monomeria, Lindl., *Gen. and Sp. Orch. Pl.*, p. 61.—Lateral sepals broad, separated from the posterior by a long basal extension of the column. Pollinia in a globose mass. Scape tall, terminating in a loose raceme. Two Asiatic species, apparently not cultivated hitherto. Planchon, in *Hortus Donatensis*, p. 189, has a Monomeria nitida, Loddiges, India, of which I can find no description.

32. Dendrochilum, Blume, *Bijdr. tot Fl. Nederl. Ind.*, p. 398, as to section 1.—Sepals equal, spreading. Pollinia four, ovoid, distinct. Pseudobulbs narrow, seated along a stem-like caudex, one-leaved. Scapes slender; flowers small, racemose, liparoid. The species referred to have inconspicuous flowers. See Platyclinis, 16.

1. D. aurantiacum, Blume, *Bijdr. tot Fl. Nederl. Ind.*, p. 398; Lindl., *Gen. and Sp. Orch. Pl.*, p. 34.—Java. Cultivated at Buitenzorg in 1866.
2. D. pallidiflavens, Blume, *Bijdr. tot Fl. Nederl. Ind.*, p. 399, t. 52; Lindl., *Gen. and Sp. Orch. Pl.*, p. 34.—Java. Cultivated at Buitenzorg in 1866.

33. Panisea, Lindl., *Gen. and Sp. Orch. Pl.*, p. 44, as a section of Cœlogyne; *Fol. Orch.* 1854, *pro parte.*—Sepals nearly equal, somewhat spreading. Labellum contracted at the base into a long inflexed claw. Pollinia 4, ovoid, distinct. Pseudobulbs narrow, crowded, 1—2 leaved. Scapes slender, few-flowered. Androgyne is reduced to this genus. One or two species inhabiting India. P. uniflora is referred to Cœlogyne.

*** Pseudobulbs 1-leaved. Scape tall, loosely several-flowered. Pollinia 2, globose, furrowed or entire.

34. ACROCHÆNE, Lindl., *Fol. Orch.* 1853.—Chin of the sepals short or saccate. Labellum jointed to the foot of the column. Anther almost 1-celled. Pollinia connected by a granular appendage. Pseudobulbs bearing one coriaceous leaf. One species, a native of India.

35. CHRYSOGLOSSUM, Blume, *Bijdr. tot Fl. Nederl. Ind.*, p. 337.—Chin of the sepals short or saccate. Labellum continuous with the base of the column. Anther 2-celled. Pollinia without appendages. Pseudobulbs often slender, 1-leaved; leaf folded. Three species inhabiting the Malayan Archipelago, and one Sikkim, in India. Flower inconspicuous. Diglyphis and Diglyphosa are referred hither.

1. C. LATIFOLIA, Benth., in Benth. and Hook. *Gen. Plant.*, iii., ined. *Diglyphosa latifolia*, Blume, *Bijdr. tot Fl. Nederl. Ind.*, p. 337; *Coll. Orch. Arch. Ind.*, t. 55 (*Diglyphis* in letterpress); Rchb. f., *Xenia*, i., p. 207, t. 80.—Java. Cultivated in the Buitenzorg Botanic Garden, 1866.
2. C. ORNATUM, Blume, *Bijdr. tot Fl. Nederl. Ind.*, p. 338; Lindl., *Gen. and Sp. Orch. Pl.*, p. 14.—Java. Cultivated at Buitenzorg in 1866.
3. C. VILLOSUM, Blume, *Bijdr. tot Fl. Nederl. Ind.*, p. 338, t. 7; Lindl., *Gen. and Sp. Orch. Pl.*, p. 14; De Vr., *Ill. d'Orch.*—Java. Cultivated at Buitenzorg in 1866.

36. COLLABIUM, Blume, *Bijdr. tot Fl. Nederl. Ind.*, p. 357.—Chin of the sepals long, spur-like, otherwise like Chrysoglossum. The only species.

1. C. NEBULOSUM, Blume, *Bijdr. tot. Fl. Nederl. Ind.*, p. 357; Lindl., *Gen. and Sp. Orch. Pl.*, p. 96; Miq., *Choix*, t. 26.—Java. Cultivated at Buitenzorg in 1866.
2. C. SIMPLEX, Rchb. f., *Gard. Chron.*, n.s., xv., p. 462.—Borneo. Cultivated by Messrs. Veitch in 1881. Leaves ample, light green, with dark green blotches. Flowers in a raceme like a Eulophia; greenish-yellow, purple and white.

Subtribe v.—*Ericæ.*

Stem leafy or with pseudobulbs, or rarely short, and having the leaves in two rows. Peduncles or scapes lateral or proceeding from the rhizome distinct from leaf-bearing pseudobulb, rarely apparently terminal. Column almost always extended at the base into a foot. Pollinia eight, four in each cell, clustered, often flattened, acute or acuminate, or produced in short caudicles more or less cohering by a little viscous or granular substance.

37. CŒLIA, Lindl., *Gen. and Sp. Orch. Pl.*, p. 36; *Bot. Reg.* 1842, t. 36.—Leaves long, narrow, more or less folded and veined. Scape densely racemose, proceeding from the rhizome, apart from the leaf-bearing pseudobulb. Column produced into a short foot. Capsule 3-winged. About four or five species, inhabiting the West Indies and Central America. Bothriochilus belongs here.

1. C. BAUERANA, Lindl., *Gen. and Sp. Orch. Pl.*, p. 36; *Bot. Reg.* 1842, t. 36; *Gard. Chron.* 1842, p. 406. *C. alba* and *C. glacialis*, Hort. *Epidendrum tripterum*, Smith, *Ic. Pict.*, t. 14. *Cymbidium tripterum*, Swartz, *N. Act. Ups.*, vi., p. 70. *C. triptera*, Don.—West Indies and Mexico. Flowers small, white, but very sweet-scented. No Hawthorn hedge, Lindley says, is more fragrant than a bed of this Cœlia. Hort. Kew.
2. C. BELLA, Rchb. f., *Walp. Ann.*, vi., p. 218. *Bifrenaria bella*, Lemaire, *Jard. Fleur.*, t. 325. *Bothriochilus bellus*, Lemaire, *Ill. Hort.*, iii., Misc., p. 30.—Guatemala. Discovered and introduced by G. Ure Skinner. Flowers rather large, fragrant, rose, white and yellow, two or three together on a short scape, clothed with large bracts. Hort. Kew.
3. C. MACROSTACHYA, Lindl., in Benth. *Pl. Hartw.*, p. 92; *Journ. Hort. Soc. Lond.*, iv., p. 115, with a woodcut; *Bot. Mag.*, t. 4712; *Fl. des Serres*, t. 900, and *Jard. Fleur.*, t. 423—both copied from *Bot. Mag.*; *Rev. Hort.* 1878, p. 210, with a coloured figure; *Gard. Chron.*, n.s., x., p. 189.—Guatemala. Discovered and introduced by Hartweg about 1843. Pseudobulbs spherical, smooth; leaves ample; flowers small and numerous, bright rose, in dense spikes 6—8 inches long. A striking plant. Hort. Kew. *W. B. H.*

(*To be continued.*)

BRANCHED SPIKES OF RIB-GRASS. — Messrs. Laird & Sinclair send us fine specimens of a branched spike of Plantago lanceolata, in which the ordinary cylindrical flower-spike is replaced by a close pyramid of branches, forming a conical dense mass of flowers. Such varieties are not uncommon, but are always interesting.

FORESTRY.

A SUBSTITUTE FOR LARCH.—I have read the correspondence that has taken place relative to a substitute, under the assumption that the Larch is dying out, and that its cultivation ought therefore to be lessened or abandoned. Now there is not the least doubt that when planted in some uncongenial soils and situations disease is engendered if not encouraged, and likewise from a variety of other causes, such as planting too large in the first instance, or from crowded seed-beds, or not thinning soon enough; but I entirely differ from those who think that Larch is "doomed," for according to my experience the demand for it is greater than ever, and in this and adjoining counties there are innumerable large plantations of all ages in a most healthy and flourishing condition. The only way to get at some definite conclusion would be for those who own or have the care of Larch plantations throughout the United Kingdom to kindly make a return to the *Gardeners' Chronicle* as to their age and present condition, and if diseased, stating particulars as to soil, situation, &c. It would then be seen where disease is most prevalent, and perhaps afford some clue as to its origin, character, and cure.

With respect to a substitute for Larch nothing can compare with it, for many reasons. Those who suggest Abies nobilis, Taxodium sempervirens, Abies Douglasii, or Thuia Lobbii, can hardly speak from experience, as neither are adapted for extensive planting under the same circumstances and conditions as Larch. Pinus Laricio, it is true, produces good timber when allowed plenty of room, but when planted as thickly as Larch the poles would not be better than Scotch Firs, nor so clean and straight. It is to be hoped a substitute for Larch will not be required, for no doubt since its introduction in 1629 it has been of incalculable benefit to this country, and ought not to be lightly discarded. *W. H. Rogers, Red Lodge Nursery, Southampton.*

The Rosery.

A ROSELESS AUTUMN.—This is the nearest approach to a Roseless autumn that we have experienced here for many years. Only last year, if we remember rightly, some of our correspondents were suggesting Rose shows for August. He would indeed have been a bold and fervid rosarian who ventured to suggest the holding of such this August or September. Not but what one might be held from the products of Roses under glass almost any month in the year: so important and profitable has the cutting of Roses under glass become, and so surely has their culture in this way been extended, that Roses are forthcoming at all seasons. Roses, especially Teas, are also grown extensively on walls, and from these, or warm aspects, Roses might be gathered, are in fact being gathered, in plenty this autumntide. The wall culture of Tea Roses is another thing that is extending fast, and is likely to reach to most unexpected dimensions in the near future, for it is found to be more profitable as a rule than fruit culture. Neither is the cause of the superior value of Roses over fruit walls far to seek. Nearly all fruits, with the exception of Peaches, Nectarines, and Apricots—and these three are most precarious crops in the open air in our climate—can be easily grown in climates superior to ours, and cheaply and safely imported to our markets. But Roses cannot be better grown anywhere than in this country, neither will they bear any long journey with impunity. Hence the chief supply of Roses must be grown at home; and as to the demand, it seems insatiable for Roses of the best quality, and the supply in the article of superior Roses is never likely to exceed the demand.

But it is not of Roses grown under glass or on walls that we write, when we venture to designate this autumn as Roseless. Nor indeed of Tea Roses at all: this has in fact been emphatically a season of and for Tea Roses. Not only have these been more numerous than usual, but also of higher quality. Not a few of the Teas have bloomed so profusely and so persistently throughout the season, that we are almost exhausted this autumntide. But such persistent growers and bloomers as Gloire de Dijon, Niphetos, and others are still furnishing good supplies of bloom, all the more prominent and striking because of the singular lack of it among perpetuals. Another Rose, Albert, a Bourbon, deserves most honourable mention this autumntide. This Rose is mostly neglected and despised through June and July. Its flowers are coarse, deformed, hard-hearted, with little, or even at times disagreeable, odour. But in August and September few Roses are more perfect in form or soft and chaste in colour, or more useful and welcome to the rosarian, than the Souvenir de la Malmaison, Homer, Adam, Bougère, and others, in warm sites or on walls, have yielded a good many blooms. But among perpetuals in private gardens the only one we have seen this autumn that really merited its name was Boule de Neige. The old Jules Margottin came next to it in merit. Of course many others produced flowers, but these were few in quantity, and mostly very inferior in quality; and so scant has been the Rose harvest among perpetuals, especially in private gardens in this neighbourhood, this season, as to justify its being designated a Roseless autumn.

It is somewhat difficult to account for this, or, indeed, for the conduct of Roses throughout the season. That season opened with great promise. There were few or no casualties during the winter. The Roses broke like trees in the spring. The latter continued so mild as very much to mix and complicate the vitally important question of when and how far to prune. One thing was probably too readily taken for granted, and that was, that the roots were in such vigorous action as to be able to reproduce any needful amount of top with little loss of time. The theory of the reciprocal action between root and branches was doubtless carried rather too far in practice. Certain it is that the Roses as a rule broke slowly after pruning. What proved rather more surprising and provoking to many rosarians was the fact that the buds broke weakly as well as slowly. So much was this the case that not a few rosarians, when they saw the "breaks" that succeeded pruning, began to regret that they did not prune earlier, or that they pruned at all. We have heard of one very successful Rose grower who adopted the latter alternative, and succeeded in astonishing all his neighbours with an early bloom of more than average excellence. We have not heard how he is off for flowers this autumn. Possibly he will inform us, should he see this number of the *Gardeners' Chronicle*. Reasoning from analogy, we should think his autumn harvest of Roses would prove better and more plentiful than his neighbours'. We know that his first blooms were so early as to throw him out of all the late June and July shows. Such being the case, his plants would break earlier than those later pruned, and probably result in a more plentiful supply of Roses this autumn.

Be that as it may, there can hardly be a question but what the abnormal development of the Roses before pruning, and the consequent lateness (according to the condition of the plants) of the latter operation, are the causes of the present comparative paucity of Roses.

A third factor, that of the weather, has doubtless also had its influence in the same direction. The season has, on the whole, been cool and sunless compared with our normal amount of warmth and direct sunshine. Hence after blooming once fairly well the plants rested much longer than usual before breaking afresh; even before the first bloom faded cool, wet, and comparatively sunless weather had set in. The check thus imposed on growth either prevented the Roses breaking at all or caused them to break so weakly that blooms were impossible. Another point must be taken into consideration in discussing the probable causes of the paucity of bloom this autumn. Very few Roses have been seen at their best this season. There has been no lack of fair flowers, but comparatively few sensational ones. Seldom has a season passed that has witnessed so few in every way perfect flowers as that of 1882. Jurors at Rose shows, as well as the more experienced exhibitors and visitors are generally agreed on this point. Another proof—were further proof wanted to the same effect—would be found in the exceptional number of Tea Roses found in winning stands. As the number of Tea Roses increase, and their quality improves, no doubt they will be more liberally

intermixed with perpetuals in general collections; but this season they seem to have been more largely employed than usual on account of the scarcity of perfect bloom in the other classes. In many cases the prize collections would be nowhere but for the number and excellence of their Tea Roses; the latter have, in fact, been emphatically the Roses of the season. Such Roses as President, Devoniensis, Souvenir d'Elise, Marie van Houtte, Niphetos, have been specially conspicuous on many a winning stand. Teas have also been more numerous as well as of higher quality than usual. Few or none were killed by the winter, and being more excitable than perpetuals, they lost less time in breaking, and have grown and flowered with a profusion unknown to most seasons. They seem also to like dull weather, and bear wet better than other Roses.

On the whole, the Rose season has not been a specially brilliant one; much of its brilliance has come through the Teas, and these have not only helped to sustain its character all through, but have done much to prevent its being known and remembered as one of the most indifferent as well as the shortest Rose season on record. Possibly, after all, a winter of average severity is better for Roses than one almost without frost to be succeeded by a summer with little more than a month's sunshine in it. Such unnatural transformations as summer into winter, and winter mildly mixed up with and diffused throughout the succeeding summer, have doubtless been chiefly to blame for shortening the period and lowering the quality of our general Rose harvests, as might have been foreseen, though hardly provided against. *East Anglia.*



Fig. 70.—Nepenthes nigro-purpurea. (see p. 425.)

Red-fruited Ivy.—In a recent number of the *Revue Horticole* M. Ed. André mentions having seen, in a nursery at Nice, an Ivy differing from those ordinarily cultivated in the foliage, but more particularly in the berries, as red as those of the Pyracantha. We await the introduction of this novelty with interest.

LIFTING AND STORING OF POTATOS.

In my pamphlet* on the Potato disease I have urged the necessity of not lifting the Potatos sooner than about two or three weeks after the complete withering of all the leaves in the Potato field, because the tubers, when taken earlier out of the ground, will inevitably be covered more or less with the millions and millions of spores from the tops of the Potatos, if the disease has spread to any great extent. About a week after the lifting a portion of the Potatos will, under such circumstances, suddenly appear to be diseased, viz., all of those tubers whose skins have been penetrated by the sprouting threads of the spores. The term for the development of the disease from the sowing of the spores until the disease becomes visible in the shape of brown spots on the tubers, is dependent on temperature. With a temperature of 72° Fahr. it takes only five days, with 62° it takes seven days, and with a lower temperatu re it takes a considerably longer time.

As to the extent of the damage occasioned by early lifting it is dependent on :—

1. The quantity of spores attached to the leaves at the time of lifting. This is self-evident.

2. The weather during the lifting. In rainy weather the danger is the greatest, because more spores are detached by the rain than by the dry wind, and because the descending spores are more easily caught and retained by a wet Potato than by a dry one. I must, however, add, that during rain the danger is by degrees getting less and less, because the spores are washed down by the rain much faster than they can be produced again. Consequently the quantity of the spores in the leaves is fast diminishing during a heavy rain, and I have observed instances where the spots on the leaves after heavy rainfall have not contained more than a hundredth part of the ordinary number of spores—an observation which is easily made by counting the number of spores by means of a microscope, the spores being for that purpose suspended in water. If, in the meantime, the rain has ceased from twelve to twenty-four hours, the number of spores will again, by proper temperature, be nearly the same, because the spawn of the fungus has not been damaged by the rain.

3. Lastly, the extent of the damage will be dependent on the condition of the skin of the tubers. In some Potatos the skin is more thick and tight than in others, and this is the principal reason why some varieties suffer much less from the disease than others. Upon the whole it is only a small proportion of the spores that will succeed in forcing their sprouting threads through the skins of the tubers. The highest proportion of penetrating spores I have observed is one to thirty-three; generally it is much less, and by preserving Potatos in a dry room for some weeks not one of a thousand spores growing on the surface of them will succeed in penetrating the skin. By proper precautions it is possible to measure out the relative disease-resisting powers of different Potatos in the course of eight days. Generally speaking, however, there is always a great risk in digging Potatos when the living spores are still attached to the leaves. A loss of 20, 30, 40 per cent. of the produce may very easily be the consequence of too early lifting. Cases of that kind will be found in the pamphlet recently mentioned. Allow me here to propose a little experiment, which every grower can make with very little pains, and which is very well calculated to show the great danger in taking the Potatos out of the ground, when the spores are still on the leaves. Go out in a Potato field where there are plenty of spore-bearing spots in the leaves, the spores with their threads will be seen as a dust-like whitish covering on the under-side of the foliage round the blotches; take out of the ground four or five sound Potatos, cut them in two, and expose them only one minute to the air in the Potato field beneath the plants, wrap them up in your handkerchief, take them into your room, place them in a little jar, and cover this jar with a lid. The consequence (if indeed there were plenty of spores in the leaves) will be that, most likely, not one of the tubers will escape the disease. If the temperature in the room is 72° Fahr., you will see that the mould begins to be visible at the end of two days; if 68° it takes three days, if 63° four days, if 59° five days, if 54° ten days. I made this experiment some days ago in

* *How to Overcome the Potato Disease.* Edinburgh and Glasgow: John Menzies & Co.

Paris; the result was that seven out of eight pieces of cut Potatos became diseased. Whole Potatos will by far not suffer so much as cut ones, nevertheless it is evident from this experiment that, with unfavourable circumstances, untimely lifted Potatos may be spoiled in the course of one minute.

In the ground, on the contrary, the tubers will to some extent be protected by the earth covering above them, and all those tubers that are covered by 4 inches of settled earth will be very nearly fully protected; therefore the protective moulding described in my pamphlet demands a covering of the upper surface of the uppermost tubers by a layer of earth 5 inches thick to begin with, settling, however, by-and-bye to about 4 inches.

The instance cited is not the only one I can refer to. In one experiment of Potato lifting not one of the accidentally cut tubers escaped the disease; at the same time the whole of the unbruised Potatos became diseased to the extent of 16 per cent. as a consequence of too early lifting. In other instances 20, 26, 27, and 41 per cent. of the whole tubers became visibly diseased in the course of seven or twelve days, only because they were lifted too early, while there were still plenty of spores in the leaves. They had been exposed to the air in the field only for one or two hours. The reason why cut tubers catch the disease much easier than whole ones is principally due to two circumstances: 1, because the sappy cut surface will retain every spore descending on it; 2, because the sprouting spores have no corky layer to penetrate, as in the case with uncut Potatos.

As to cut Potatos, the grower has a very easy and practical means to ascertain whether the safe time for lifting his Potatos has arrived or not. Let him only take some sound Potatos, which he has preserved in his house for some time, go out in the Potato field, cut them there, and place them under the Potato tops for a quarter of an hour, the cut surfaces turned upwards If, then, he take these pieces home and expose them to a proper temperature in the manner described, he will, in the course of two or three or four days, according to the temperature in the room, be able to judge whether he can safely commence the lifting If none of them become diseased, there is not the least danger to be feared. He might, however, also proceed in another way, viz., by taking home from different plants in the field some diseased tops, with which he brushes some cut tubers. The first manner of proceeding is, however, somewhat more secure. The fact is that, even if the spores have died out in the field in question, there might at a little distance be some other field with later Potatos bearing plenty of living spores. If this field should happen to be very near, there might be some danger in lifting, if the wind is blowing from this field towards the field in question, because the quantity of spores which a diseased field may contain is so enormous. A single Potato plant fully covered with disease spots may contain twenty to fifty millions of spores. This calculation is based on observations under the microscope made in the manner already alluded to. In the meantime it is evident that the danger occasioned by spores from another field is very much less than if the spores were attached to the very plants to be dug, and it is very possible that in reality the risk is so little that from a practical point of view it may be considered as being of no consequence. But, at all events, this can be tested in the way proposed.

The disease developing after lifting the Potatos I have termed the "after sickness." I do not think that this expression has been used before, but a new idea demands a new expression, and perhaps the word used may be serviceable. In fact, it is necessary to distinguish between:—

1. The disease developed in the ground till the time of lifting, which can be evaded by protective moulding.

2. The disease developed after lifting the tubers (the after-sickness), which again may be subdivided into two, viz.:—*a*, the sudden attack sustained by the tubers at the very act of lifting (the most fatal moment in the life of the tubers as regards the disease), but which, however, may be fully evaded by late lifting; *b*, the disease gradually developed in pits and store-rooms, occasioned by diseased spore-bearing tubers.

I shall conclude by adding a few words on this last phase of the disease, the one developed during the storing of the Potatos. From what I have said of cut Potatos it naturally follows that every Potato cut or bruised by the implements must be separated from the whole ones. In reality cut Potatos not only catch the disease more readily, but, generally speaking, they also produce spores much easier, and in each case they produce very much larger quantities than do whole unbruised tubers. From these facts it is obvious that cut or bruised Potatos are very dangerous propagators of the disease in store-rooms and pits, and that it is of very great importance to separate them from the whole ones at the time of lifting.

I have already urged the necessity of late lifting, for a reason which in itself is quite sufficient; but there is still one more very powerful reason for late lifting, viz., the following:—If you lift early the temperature will be more elevated, but with high temperature the disease developes with very much greater energy and rapidity than with low temperature, and, in fact, the risk in storing Potatos when exposed to a common sitting-room temperature is very great if special precautions have not been taken. I know this from different experiments. In one instance, beginning with 1 per cent. of diseased tubers, the lot became damaged to the extent of more than 80 per cent., because they were exposed to a sitting-room temperature, while a portion of the same lot kept under low temperature suffered very little damage.

J. L. Jensen, Rue Perronet, Neuilly, Paris.

(To be continued.)

THE NEWTON NURSERIES.

ONE large well ordered nursery is of necessity very like other establishments of the same class elsewhere, and hence the record of a visit to one is apt to become a mere amplification of a trade catalogue, and to convey no distinctive notion to the reader. Let it be therefore assumed—not assumed only, but asserted—that in Messrs. James Dickson's nursery at Chester will be found just that large and varied assortment of plants of all descriptions which it might be anticipated would be found in a nursery of such magnitude, and one which has enjoyed for so many years so well earned a reputation. But apart from these generalities there are certain features pertaining to the locality in which the nursery is placed, and certain elements depending on the local requirements of the trade, which confer a certain distinctive stamp on the establishment, and on some of these we propose to comment briefly.

The situation of the nursery is not exactly what one would choose, if choice were available. Proximity to a large town has its advantages, but the disadvantages in the way of smoke are obvious. Again, neither the soil nor the low-lying, level, wind-swept surface, nor the climate is such as would be recommended. On the other hand, the commercial advantages in the way of transit are great, and the local conditions are favourable to the purchaser. The buyer can see at a glance what is likely to thrive under similar conditions, and may often justly draw the inference that what does well here will do better elsewhere. Much less disappointment is likely to arise than in the opposite case, where plants are bought from a nursery exceptionally favoured as to soil and climate, and transferred to a less favoured spot. In addition to the usual resources of a first-class establishment, this nursery appears especially rich in Hollies, Conifers, hardy shrubs and trees, both evergreen and deciduous, and fruit trees. Roses are grown on a very large scale, a statement that makes no demand on the credulity, though our engagements did not permit us to see them, for the reputation of the firm in this matter is beyond question. Young pot-Vines grown on from eyes had done so well that a growth of 28 feet in one year has been noted, though as a rule this growth is checked before any such length is attained. Pot Figs are also done remarkably well.

In another house we were much interested by seeing a collection of the species of Fuchsia, such as alpestris, syringiflora, the true coccinea, lycoides thymifolia, and many more, the like of which we have not seen since the days of Wilson Saunders at Reigate. Here, too, the so-called "Zulu Nut"—Cyperus esculentus—was flourishing. This plant affords an instance of the inconvenience of new, and especially of popular names. Cyperus esculentus and its properties have been known almost as long as anything botanical has been known, but who could recognise it under the name Zulu Nut? It is not distinctively of Zulu origin, and it certainly is not a nut.

Intent rather upon ascertaining the nature of the climate and soil, as evinced by the plants outdoors, we paid more attention in our hurried visit to certain classes of plants than to others. Hollies, especially Hodgins' variety, and Golden Queen, seem to be especially fine. Hardy Conifers are represented by very large quantities of healthy stock; as their names are too numerous to mention, it may be more profitable to hint, that while most of the ordinary kinds do well, some, like the Douglas Fir, do not thrive in this locality. Pinus insignis proves too tender, and this caused us to be surprised at the quantities of young plants of Cupressus macrocarpa. For planting on a large scale, the Corsican Pine (P. Laricio) is found to be better even than the Black Austrian, and might be recommended where the Larch fails. The seedlings, however, are difficult to transplant, considerable loss and hence increased cost being incurred in the operation. The Japanese Conifers seem to be quite hardy here, as also the elegant Fitzroya patagonica. Among the varieties of Cupressus Lawsoniana is one called Silver Queen, a distinct and beautiful addition to the variegated forms of the same character as the variety known as alba spica, but more diffusedly variegated and of brighter colour. The creamy-white variegation is uniform over the whole plant, and, we were assured, maintains its colour even in winter. We saw lines of the plant of one, two, three, and four years old respectively, and in all the habit and the coloration were as nearly identical as possible.

Ghent Azaleas and A. mollis do well in the loamy soil here. Choisya ternata succumbs not to a Cheshire winter, and thus maintains its character as a most desirable shrub. Diplopappus chrysophyllus, so remarkable for its yellow Heath-like foliage, proves hardy, and even Veronica Traversii flourishes, though we suspect a hard winter would prove too much for its endurance. Among the varieties of Euonymus, Messrs. Dickson called our attention to a new form of E. radicans, which they propose to send out shortly; the leaves are larger, bolder, and the variegation clearer and more defined than in the common form. We saw it both under glass and in the open air, and were struck with its distinctness.

To meet the growing fancy for herbaceous and alpine plants, Messrs. Dickson cultivate a very large and choice collection—one of the most select, indeed, we have seen in any nursery. They are grown all ways—on the flat, in borders, in pots sunk in coal ashes, in frames, on the rockeries; and the rockeries are of different sizes, formations and aspects, but chiefly of porous sandstone. Every encouragement therefore is given to the plants, so that if they will not be contented with any one of the situations provided for them here, it may be assumed that they are of little value for the locality. Our visit was paid early in September, when yellow Composites were predominant. Here, as elsewhere, the following three stand out in their class:—Helenium autumnale (it must be remembered, however, that there are several forms of this, some much better than others), Coreopsis lanceolata, and Harpalium rigidum. Rudbeckia bicolor was also very showy. Several things here, as elsewhere, were flowering out of season, such as several of the Primulas, the beautiful white-flowered Cooperia Drummondi, various Cyclamens, and others. The collection of Saxifrages is very large; few of course were in bloom in September, but some are striking from their foliage and habit at all seasons, such are S. diapensioides, with its dense hard hummocks; S. valdensis, S. catalonica, with its long leaves edged with white; S. conifera, with its cones of pointed leaves. Sempervivum Laggeri is very similar to S. arachnoideum, but somewhat bolder in character. S. spinulosum is very distinct in its spine-tipped leaves. Phyteuma comosum is not a plant one sees every day, nor yet Cornus canadensis—both were in bloom on the rockwork here. The Cotoneaster vulgaris, one of the very rarest of British plants, has a safe home here, and we were glad to learn from Mr. Shortt, who is connected with this department of the nursery, that the plant still exists in a wild state on the Great Orme's Head, where we trust it will long remain inaccessible to ignorant 'Arries and ruthless collectors. Linnæa borealis thrives here on the flat; indeed, we believe the difficulties experienced in the cultivation of this plant are not nearly so great as is usually supposed—in fact, one must be a botanist to appreciate such a plant, and when that qualification is wanting no doubt it is difficult to grow a good many things; meantime the let-it-alone principle is applicable here, as in so many other cases. Pentste-

mon Lobbianus is remarkable for its half shrubby habit, and still more so for its yellow flowers, flowers of that colour being rare among Pentstemons, though the colour is frequent enough in its allies, *e.g.*, in Verbascums and Linarias. Statice Bonduelli, one of the most distinct and pretty of dwarf rock plants, was in full bloom; it is just one of those subjects which please the connoisseur—elegant in foliage, pretty in colour, neat in habit, and withal so uncommon in appearance.

The collection of hardy Ferns is very complete, and their beauty and interest undeniable, but as the Fern lovers have given them names with as many unpronounceable syllables as a Welsh village, we must spare our space and the reader's patience too. Indeed, as we have no intention of writing a catalogue, we shall bring our notes to an end with the advice to those concerned, to pay this nursery a visit whenever opportunity offers. All sorts of tastes and requirements are catered for, and he must be dull indeed who does not find something—a great deal—to interest him in this fine establishment. *The Rambler.*

The Kitchen Garden.

Late Potatos should, if not already done, be taken up forthwith. All those fit for table use should be picked up first when dry, and stored by themselves in narrow pits on high ground if convenient—say, from 3 to 4 feet wide—taking care that the base of the pit is higher than the level of any water which would be likely to collect about them; and in order to guard against the possibility of water at any time rising to the level of the pits a track should be made, if considered necessary, around them for the purpose of carrying it away. We find our late Potatos keep very well formed into ridges, under which some dry Fern is placed from 3 to 4 feet high from the base to the top of the ridge, and covered first with dry Fern, and subsequently with as many inches of soil as the nature of the weather may render necessary to prevent the tubers from being injured by frost. The Fern being of a light open nature, and not so likely to decay as straw, will admit of the escape of gases arising from fermentation necessarily ensuing from the massing together of the tubers, and which is more or less in quantity according to the condition of the tubers at the time of being ridged. This, however, will have ceased before it will be necessary to add a covering of soil to the Fern. The Potato ridge should be covered as the building of the latter is proceeded with, in order not to expose the tubers intended for table use longer than is absolutely necessary, as it would have a tendency to turn them green. With those intended for seed, which should also be pitted, this does not matter, indeed some people expose them intentionally for that purpose, as the tubers are calculated to keep better through the skin being rendered almost impervious to damp by exposure to the weather.

Ordinary Work.—Let Celery be well earthed up, so that in the event of frost as little of the stems as possible consistent with keeping the soil out of the hearts of the plants be exposed to the influence of frost. With this object in view it will be advisable—indeed necessary—to be provided with a good stock of dry Fern with which to protect such things as Lettuce, Endive, Celery, &c., from the effects of frost. Cauliflowers and Broccoli, too, which are now coming in should be either lifted and stored away out of the reach of frost, or have the leaves bent over the head, which will effectually protect them from injury from a few degrees of frost. Any blanks which have taken place in the ranks of recently-planted Cabbages should be filled up forthwith with plants of the respective varieties taken from the nursery bed. Look well after grubs, which are very destructive to the roots of these subjects, their presence at the roots of the individual plants being indicated by the leaves of the latter becoming sickly-looking and flabby. This should lead to the finding and destruction of the enemy, and, as before stated, the making good of the blanks thus created.

Tomatos, which are very susceptible to the effects of frost, have, owing to the dry condition of the fruits and foliage, escaped injury from the 2° of frost which we had here on the nights of the 14th and 15th inst.; therefore, seeing that we may be visited with a sharp frost any night now, all fruit commencing to colour should be gathered forthwith, and spread upon the staging or a few boards in a late vinery, or in any place, even suspended in a stokehole, where they would have a dry warm current of fresh air. Any blanks that may exist in autumn-sown Onions should now be filled up with plants thinned out from thick patches of the respective varieties. The transplanting, where necessary, is best done on a dull day, and when the ground is moist; the plants then not only draw better, but can be transplanted more expeditiously and receive less check in consequence. This done, run the Dutch hoe between the rows, with a view to obliterating foot-prints, &c. Where the necessary quantities of herbs have not already been cut and dried, as recommended in a previous Calendar, no time should be lost in doing so, lest the plants get cut down by frost—that is, if they are not so injured in the meantime. The collecting of a good stock of French Beans and Scarlet Runners for seed, and the placing of them in an early vinery, Peach-house, or a dry shed to harden before being shelled, should be seen to without further delay. Peas for this purpose will have been already harvested, labelled, and put away in their proper place until required for use. Beetroots which were planted at the foot of a south wall for seed in the spring should now, if not already done, be taken up, tied together in small quantities and suspended in a stokehole or dry shed for a few weeks before being threshed or "rubbed out."

Frame Ground.—As yet the subjects in this department have not had the sashes or shutters placed over them, the nature of the weather being such as not to necessitate their being covered, but both are in readiness for placing over the plants should the appearance of the sky indicate the approach of inclement weather. From the time that plants of this description (Cauliflower, Lettuce, &c.) are planted in their winter quarters until they are finally transplanted in the spring they should have all the air that it is possible to give them during favourable weather, in order to ensure a sturdy growth in the plants, which will enable them the better to withstand the effects of winter.

Forcing Department. — French Beans which were sown the first week of the current month will ere this have had the points nipped out, and the plants earthed-up to the rim of the pot. The plants should be kept near the glass to prevent them from making a weakly growth, and be syringed overhead night and morning during sunny days, and a night temperature of from 55° to 60° will be congenial to the well-being of the plants. Make another sowing (Cooling's Ne Plus Ultra is an excellent variety for early forcing) in quantity, according to the accommodation at command, and the demand for the same in each individual establishment, in the manner advised in my Calendar of the 2d inst. Tomato planting, where grown for fruiting during the winter and spring, whether in pots or planted in a bed, must have attention in the way of thinning, stopping, and training of the shoots and leaves: the latter should be kept well within bound. *H. W. Ward, Longford Castle, Wilts.*

NOTES ON VEGETABLES.

A Giant Red Cabbage.—We have lately been forwarded a giant red Cabbage by our correspondent, Mr. Ward, from the Earl of Radnor's garden, Longford Castle, Wilts, weighing close upon a quarter of a hundredweight, and we are informed that this is not by any means the largest or heaviest specimen of the kind in that fine garden. The head was beautifully formed, conical, and as hard as a deal board. We are informed that the plants were raised from seeds sown at the end of July, 1881.

Peaches and Nectarines.

Trees in early houses will now be gradually losing their leaves, and the young wood will be taking on that brown ripened appearance so essential to a good crop of fruit next season. Although losing their foliage do not on any account allow them to get dry at the roots—a thing I have often seen done, and which in my opinion is often the cause of buds dropping when the trees are started. Still keep a little fire-heat on succession-houses, with a free circulation of air on night and day to assist in thoroughly ripening the wood, and the same treatment may be applied to late houses in which the fruit is ripening; it will improve the quality of the fruit very much, as we have had but very little sun of late, consequently late Peaches are deficient in flavour. As soon as the fruit is gathered give the trees a thorough thinning according to directions already given. *J. Wallis, Keele Gardens, Sept.* 26.

Plants and their Culture.

Stoves.—It is an excellent plan to give these houses a thorough overhauling at this season of the year, previous to the stock of plants (that may be now distributed throughout other houses) being brought into their winter quarters. Both paint and glass will be all the better for a good cleansing; all the plants also should be closely gone over in search of insects, and the remedies recommended in previous Calendars applied according to circumstances. Give close attention, especially to the climbers; these can be much more effectually cleansed, thinned out, and re-arranged when a general investigation is being carried out. Do not spare any scrubby, bony old plants, that are past their best, many of which are not worth the room they occupy, but rather give place to healthy, vigorous young plants which will yield a far more satisfactory return. In order to economise space, any climbers that have been trained to wire trellises may be removed, and then entwined around some sticks stuck around the pot in an upright position. The re-grouping of the plants should be carried out with an eye to the production of good effect as much as possible. This can now be better carried out than during the summer, several plants then requiring more protection from direct sunshine than others do, consequently they should be arranged accordingly. The grouping of plants in an effective manner is obviously overlooked in many instances; this ought not to be the case, especially during the coming season of the year, when the stoves should be the most attractive department of the plant-houses. Through these points not being studied, and also for want of better judgment in the selection of plants to suit the circumstances, the growth of stove plants has frequently become unpopular, and eventually discontinued altogether. Shading should now be entirely dispensed with, watching for a favourable opportunity to thoroughly dry the blinds before storing them for the winter. The night temperature should be slightly reduced as the nights lengthen. If the temperature is at 65° in the morning, the fire should be moved on a bit in dull weather, so that a crack of air can be given for a little while at the least. Continue to close with a good high temperature on all favourable occasions; this will be refreshing to the plants after bright sunshine. Give a good syringing at such times, but discontinue the same late in the afternoon. Damping down the floors and stages should still be practised, the more so when the fires have to be quickened to maintain the required temperature. Remove all stale and decaying foliage as soon as it appears, to prevent the spread of the same, especially in the case of dense growing plants.

Greenhouses.—The favourable weather just lately has been beneficial to the hardening of the growths of all the hard-wooded section of these plants. Housing should not, however, be delayed beyond the end of the month. When this is being done give an eye to the drainage and wash all the pots, so that everything may be clean and sweet, having previously given the house a good cleansing. In arranging the plants endeavour to keep them as near the glass as possible; elevating on pots will secure this easily. Avoid overcrowding all hard-wooded plants; if this cannot be satisfactorily done it will be far better to reduce the quantity than to sacrifice quality. Leave air on all night (both top and bottom) when the weather is favourable, and increase the same as much as possible during the day-time. For the want of a better place, we have to house our Indian Azaleas in the vineries; where this has to be done it will be much the safer plan to give two or three fumigations when this is completed, as a safeguard against thrips, which may be lurking in both the plants and the Vines also. Chrysanthemums should be safe outside for another week or two. Watch these closely for mildew, which with us is very prevalent this season. Now that they are fast swelling their flower-buds, the supply of liquid-manure or other stimulants should be constantly resorted to. *James Hudson, Gunnersbury House Gardens, Acton, Sept.* 26.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Oct. 2	Sale of Dutch Bulbs, at Stevens' Rooms. Sale of Dutch Bulbs, at the Mart, by Protheroe & Morris.
TUESDAY,	Oct. 3	Sale of Poultry and Pigeons at Stevens' Rooms. Sale of Plants, at Woodroffe's Nursery, Hanover Road, by Protheroe & Morris.
WEDNESDAY,	Oct. 4	Sale of Dutch Bulbs, at Stevens' Rooms.
THURSDAY,	Oct. 5	Sale of Orchids from Mr. F. Sander, at Stevens' Rooms. Sale of Greenhouse Plants, &c., at Ponsford's Nursery, Brixton, by Protheroe & Morris. Sale of Freehold Property, *re* Osborn, deceased, at the Mart, by Protheroe & Morris.
SATURDAY,	Oct. 7	Sale of Dutch Bulbs, at Stevens' Rooms.

THE rapid change of colour in the foliage of trees reminds us that we are once more upon the eve of the PLANTING SEASON. So little real progress appears to have been made of late years towards improving the condition and utilising the variety of hardy flowering trees and shrubs that it seems desirable to offer a few seasonable remarks upon the subject. The great boundary lines of extensive private grounds, or the more circumscribed outline of the suburban garden—it matters not which—together with the beds of flowering shrubs and coniferous specimens, are, broadly speaking, the most important and conspicuous features in every pleasure garden, whether it be public or private. Make the outline attractive, and introduce sufficient material of a pleasing and natural looking character to break up the whole area of a garden, and the internal adornment becomes a matter of easy accomplishment. At present the great bulk of our shrubbery beds and borders is composed of a few kinds of trees or plants, and these by no means the best that might be chosen. In the formation of new grounds, and in the planting of new beds or borders, we are prone to plant thickly for sake of that first effect which is gradually on the wane ever afterwards. In a very short time there are dense masses of shrubs so interwoven that anything like individuality is beyond recognition. A time, however, comes when procrastination cannot be longer indulged in, and thinning and replanting are commenced with vigour. But, at what cost! Many of the finest and most costly specimens are spoilt, and are henceforth only fit to occupy obscure positions in outlying shrubberies, if, indeed, they survive the shift. The shrubberies look worse than they did before, and remain so for a long time afterwards. But it seldom occurs to those who ought to be most interested that these matters are easily controlled. In how many cases do we neglect to begin transplanting until the winter has fairly set in, and probably the thermometer has once or twice registered a dozen or more degrees of frost? And in how few cases is there the smallest preparation made beforehand. Few gardeners at the present day are allowed anything like an adequate staff of men to carry on the ordinary routine duties of a garden as they should be, much less to proceed with extensive alterations. Hampered in this way the work of transplanting is put off from time to time until the season is far advanced, and the plants, and possibly the gardener, suffer in consequence.

As we regard the month of October and the early part of November as the best times of the year for removing shrubs and plants such as we are here referring to, would it not be judicious, would it not be profitable, to increase the garden staff for a few weeks during the planting season? Were the lines upon which gardens are conducted a little more elastic, were they less arbitrary, considerable good would result from the change, and possibly without adding anything to the annual expense of the garden. It should not be hard to understand that a gardener furnished with extra hands during a spell of fine weather in autumn would have his work so well in hand that he might possibly make an equivalent reduction some time afterwards.

These suggestions are not put forward in behalf of any single interest, but in behalf of all. The owner will be the gainer in the end. The percentage of deaths in the plants or trees that are removed will be a mere bagatelle compared to what it would be if the work was carried out during inclement weather. The same remarks apply to plants purchased from the nursery; orders are deferred until the last moment, and the nurseryman has to lift the plants irrespective of weather. We write with some knowledge of the rules of private establishments, and we know that leaf-sweeping and cover-beating are in many cases considered of more importance



FIG. 71.—HUGHENDEN MANOR: THE RESIDENCE OF THE LATE EARL OF BEACONSFIELD. (SEE P. 425.)

than the planting or transplanting of valuable trees and shrubs at the proper time. Those who act thus cannot surely form a correct estimate of the cost. The labour side of the question is an important matter, but the subject does not end here. If we look at the material of which many borders are composed we are certainly supplied with more food for reflection. We have done many foolish things in gardens under the name of art or science, or at the dictates of fashion, but perhaps the culminating point was reached when we introduced the lamentable system of surrounding beautiful enclosed gardens with broad bands of Laurel. In the genial climate of the South and West of England—in Hants, Dorset, and Devonshire—



FIG. 72.—HAWARDEN CASTLE: THE RESIDENCE OF THE RIGHT HON. W. E. GLADSTONE, M.P. (SEE P. 436.)

this so-called adornment — in reality garden mimicry—prevails to an extent that would hardly be credited. In very extensive grounds there may be the excuse that the aim is to introduce variety, but in moderate-sized places such "examples of art" cut a sorry figure indeed. In the beautiful county of Devon, which is so regularly diversified by hill and dale, those formal trimmed belts of common Laurel may be frequently seen usurping the position of the choicest flowering shrubs. What are they in character with? Certainly not with the natural surroundings, the sloping verdant hillsides, the drooping branches of the Lime, nor the spreading boughs of the Cedar, nor even the rigid forms of the Pine, for these are trimmed after Nature's own fashion, and have nothing in common with the flat surfaces referred to. Fancy a sweeping bank that might be furnished with graceful subtropicals in summer, and with flowering shrubs the rest of the season, covered with Laurels cut flat as a pancake! And yet Laurels are useful and even pretty in their places. A clump grown naturally upon a bank or projecting from a shrubbery overgrown by taller trees is very handsome when in flower. But thousands of these plants are wanted for game coverts, and a great many are sorely needed for planting by woodland walks, where they should only be trimmed to keep them within bounds. To renovate borders of this kind would be like altering the character of the garden or the outline of the grounds. It would create fresh interest and infuse fresh life into the daily avocations of the gardener, and, better still, it would furnish a source of new pleasure and enjoyment to the owner. The preparation of the border would have to be considered and dealt with in the best way possible. Such accumulations of refuse as are usually found about gardens would make a very good dressing, and should be well incorporated with the existing soil. We would contrive to plant during favourable weather, but we must first see what there is obtainable in the way of trees and shrubs. Flowering trees and shrubs should form the staple element of the material, with a sufficient number of evergreens intermixed to give the border a lively appearance in winter. In case a bold background is required the finer forms of Cupressus, Abies Morinda, Cedrus Deodara, Thuiopsis borealis, and such-like would answer well, intermixed with flowering Chestnuts, Thorns, including Paul's double Scarlet, Magnolias, Acer Negundo variegatum and A. polymorphum rubrum, Lilacs, Laburnums, the feathered Sumach, Pyrus Malus floribunda, monthly and other Roses trained as pillar plants and Honeysuckles trained in a similar fashion; Polygonum cuspidatum, planted on raised positions at the curves of the border; Escallonia macrantha, with common Roses planted to trail over it; Berberis Darwinii, Buddleia globosa, Deutzia crenata fl.-pl., the finer kinds of hybrid Rhododendrons, Weigelas, Hydrangea paniculata grandiflora, Pavia macrostachya, Althæa frutex, Spiræa Thunbergi, sibirica, palmata and S. elegans; Ceanothus azureus and grandiflorus, hardy Fuchsias, Gaultheria Shallon, and hosts of flowering shrubs and plants that would come in for the margin of the border. Dense breadths of shrubs lose interest and are monotonous to look upon constantly, therefore space should be left for planting Foxgloves and single Dahlias, or some of the finer yellow Composites, among them, the former for early summer and the latter for autumn effect. In isolated beds we would plant masses of the same kind of plant. For example, we would surround a Copper Beech with a broad belt of yellow Ghent Azalea, and plant various other colours in groups or masses, in company with beds of Kalmias, Rhododendrons of the hirsutum type,

the Gum Cistus, Andromedas, hardy Heaths, and Ledums. To these may be added Azalea amœna and A. indica, which we have seen in wonderful condition out-of-doors in Devonshire, but notably at Somerley, Lord NORMANTON'S fine garden, near Ringwood, Hants. All that Azaleas require from us is to give them a sheltered, well drained situation, and a properly prepared compost to grow in, and they will furnish us with quantities of flowers in the open garden as well as indoors. Beds of the above description properly disposed over a large tract of pleasure garden afford variety and freshness, and, what is more, the supplies of cut flowers are greatly augmented. In districts where fuel is expensive and the climate is favourable, forcing operations may be very considerably diminished by giving more attention to the selection and planting of choice hardy flowering trees and shrubs.

—— OUR BELGIAN VISITORS. — The pleasant visit of our Belgian friends will be in the remembrance of many. Detailed accounts of their impressions, for the most part favourable, of English horticulture are in course of publication in various Belgian and French periodicals. When completed we may allude at more length to the friendly criticisms of our *confrères*, meanwhile we may say that they were not favourably impressed with our market gardens; they were disgusted, as well they might be, with Covent Garden Market; and they did not relish the dry bread, *même trés rassis*, at SIMPSON'S, a well-known restaurant.

—— CROCUS MOULD.—M. PRILLIEUX, in a recent communication to the Academy of Sciences of Paris, describes the course of the disease. In the first place yellow spots appear upon the corm, disorganisation goes on rapidly, and the corm becomes a mass of pulp, between the disaggregated cells of which the threads of the fungus (Rhizoctonia) ramify, absorb the nutritive matter, and destroy the tissues.

—— THE STORY OF THE PRESERVATION OF EPPING FOREST is a good story, told by Mr. BEDFORD, who in many ways may be styled the hero of the fight. After eleven years' hard work in the cause Mr. BEDFORD has earned a right to triumph in his success—a success which has ensured to the public use more than 5000 acres of the most picturesque and interesting forest land. All credit to those who conceived the plan of rescuing it from enclosers—all honour to those who have so thoroughly carried it out! To those who remember Mr. AYRTON'S rule, and his treatment of landscape gardeners, botanists, and artists, the account here given of his procedure with reference to Epping Forest will, however new it may be, not be matter of surprise.

—— GLOBE ARTICHOKES. — These are usually treated as biennials, but in Russia it appears, from a correspondent of the *Revue Horticole*, they sow the seed and gather the flower-heads the same year. The way in which, as it is alleged, this is done is curious. The seedling plants are buried in snow for six or eight days, until the tips of the roots become black or greyish; the plants are then potted and kept in the greenhouse until the middle of May, when they are planted out in the open air, and flower the same season. Seedlings not so treated grow well, but do not flower till the second year. This is an experiment which, if it be confirmed, might be tried with other things besides Artichokes, but we should like to have ocular evidence of the fact first. Meanwhile in this country we are not obliged to freeze or chill our Artichoke seedlings to get them to flower the first year.

—— THE WOOLHOPE CLUB.—The fungus foray will be held at Credenhill Camp, near Hereford, on Thursday, October 5. The fungus dinner will be held at the Green Dragon, Hereford, at 4.30 P.M. on the same day. Mr. CAM, St. Owen Street, will give a reception at 8 P.M., after the dinner. After dinner, or at the evening meetings, papers will be read on the following subjects:—"Puff-balls," by M. C. COOKE, M.A., LL.D., &c.; "The Meaning of British Birds' Names," by HENRY T. WHARTON, M.A. (Oxon., F.Z.S., Member of the British Ornithologists' Union, &c.; "The Breconshire Raptores," by Mr. E. CAMBRIDGE PHILLIPS; "A Revised List of British Discomycetes, with some Suggestions as to their Classification; and on the "Polymorphism of Rhytisma radicale, Cke.," by Mr. WM. PHILLIPS, F.L.S., &c. "A New British Venturia;" and "Notes on Glœocapsa sanguinæa," by the Rev. J. E. VIZE, M.A. "Experiments on the Physiology of the Uredines;" and on the "Classification of Uredines," by Mr. C. B. PLOWRIGHT. "The Structure and Appearance of Lichen Jolithus, Linn.," by Mr. EDWIN LEES, F.L.S., &c. A series of enlarged microscopic drawings, by Miss FLORENCE M. REID; and a collection of other interesting microscopic objects will be exhibited by Mr. BLASHILL, the President.

—— BEDDING OUT.—One of the simplest devices we have seen this season was at Eaton Hall, where a gigantic and ornamental W is marked out on the lawn by means of a line of deep purple Coleus Verschaffelti edged with Golden Feather. The terrace beds, in simple geometric design, consist of a central mass of zonal Pelargoniums surrounded by a silver-leaved variety, outside which is a line of blue Lobelia, the whole edged with Golden Feather. Tropæolum Vesuvius is also used with telling effect in some beds.

—— A GIANT COCKSCOMB.—A correspondent kindly sends us a fine specimen Cockscomb measuring 2 feet 1 inch from tip to tip, and with a stem not over 7 inches in length. The comb was well formed and fairly well coloured. There are, however, several others on record very much larger. At p. 399 of our volume for 1881 (July—December) there is an account of one grown by Mr. KENT, gardener to F. LANE, Esq., Grove House, Highgate, which measured 2 feet 10 inches from tip to tip, and 18 inches in its greatest breadth, and 13 inches from the top of the pot to the top of the plant. Some time previously the Messrs. VEITCH furnished us with a specimen measuring 2 feet 9 inches from tip to tip and 18½ inches in its greatest breadth, the colour and texture of the comb being beautiful. An account of this specimen will be found in the same volume, at p. 333.

—— SEEDLING CAMPANULA.—Mr. BURBIDGE sends us from Trinity College Garden flowers of a seedling from Campanula pyramidalis, in which the tips of the petals cohere, forming a balloon-like flower, and also resembling the slashed sleeve of a lady's dress. It shows in this matter its relationship to Phyteuma.

—— NYMPHÆAS AT EATON HALL. — How seldom one sees tropical aquatic plants properly grown, or even grown at all, now-a-days. Eaton Hall, near Chester, is one of the places where Nymphæas are still grown, and they are so beautiful that the wonder is they should be so much neglected. One explanation probably is that they are of little use for cutting or decorative purposes. Without undervaluing flowers put to such uses, the plant-lover will always prefer to see his favourites growing. The sight of plants in healthy growth is a much more satisfactory experience than the inspection of plants bought and used as so much furniture or millinery, of which any amount may be had for money. The aquarium at Eaton consists of a central oblong tank, well stocked with Nymphæas of various colours, and with the side-stages furnished with Palms, Ferns, Panicum variegatum, &c.

—— ARRESTED GROWTH IN LEAVES OF BEECH. —Colonel TOTTENHAM sends us from Ireland leaves of a Beech tree which were partially expanded on May 15, when a thunderstorm occurred, the lightning appearing to fall upon the tree. The case is very curious, as the leaves and young wood seem to be uninjured. It is as if growth had been paralysed, but as no injury is apparent we doubt if the lightning had anything to do with it. We have seen similar conditions in recently transplanted trees, particularly such as have been moved when beginning to unfold their leaves.

—— SEEDLING DAHLIAS. — Whatever may be the future of single Dahlias, it appears certain that raisers of double ones are determined not to abandon their favourites. Messrs. RAWLINGS BROS., Romford, send us samples of two seedling double Dahlias of exquisite form and colour, called respectively John Henshaw (crimson) and Harrison Weir (yellow). The crimson is a very attractive flower, shading to purple at the centre, and the petals veined with light purple underneath. The yellow is also a good flower, but it is hardly so well formed as the crimson one. The lower rows of petals are of a deep yellow, shading to canary colour at the edges, and the centre of the flower is also of a light canary colour. The flowers are very good samples of their type.

—— PTELEA TRIFOLIATA.—About the last place in the world one would expect to find a tree of this species is in Printing House Square, in front of the *Times* printing-office. The tree is of considerable size (for the species), and is evidently many years old. The trunk has been injured, but with a little care it might be preserved for years to come. In habit Ptelea is more shrubby than tree-like. Its foliage is like that of the Laburnum, but turns (in the country) to a bright yellow before it falls. The flowers are not very conspicuous, but they are succeeded by winged seed-vessels resembling those of the Elm. From their bitter taste it has been suggested that they might be employed in place of Hops. The tree is of North American origin, but was introduced here, so the catalogues say, in 1704. A figure of this shrub, which deserves a place as an ornamental plant from the profusion with which it bears its seed-vessels, was given in the *Gardeners' Chronicle*, vol. xiii., 1880, p. 369.

—— DROUGHT IN THE SOUTH OF FRANCE. — Correspondents write that till lately the drought along the Riviera has been exceptionally severe even in that so-called rainless region. Writing a week or two since from Antibes, M. NAUDIN says that the quantity of rain that had fallen in spring was only half the average quantity; in June there was only 1 millimetre of rain; in July 9 mil. 7 spread over four days—not sufficient to wet the surface; in August there fell only 2 mil. 3 of rain. Thus during the three summer months, with a burning sun, the whole quantity of rain was 13 millimetres—that is to say, only about half an inch of rain in three months—0 inch 5118! English winter residents will, on their return to the South, find their gardens literally roasted where the water supply has been deficient.

—— DETACHED HOUSES FOR FORCING PURPOSES.—The relative advantages of detached houses for forcing purposes as contrasted with ranges might fairly be studied, we imagine, in an establishment like that at Eaton Hall, presided over with such method and ability by Mr. SELWOOD. We shrink from mentioning the number of pits and houses, hip-roofed, span-roofed, and "lean-to's," in this fine garden. Very many are detached, others form part of two semicircular ranges. In addition to a perfect little town of glass houses, there is a long semicircular corridor filled with Acacias, Chorozemas, Tea Roses, Fuchsias, Tacsonias, and the like—a corridor which from its size and beauty is most remarkable. We gave an illustration of it in our volume for 1875 (vol. iii., p. 17). Grapes were hanging when we visited the establishment recently — the Alicantes, Lady Downe's, and Madresfield Court bearing fine crops of even bunches. The last named was especially fine. Mr. SELWOOD speaks well of Hale's Early Peach. Of Strawberries he prefers Underhill's Sir Harry for forcing, when it can be had true. It is open to the objection, however, that it does not produce runners freely. A Melon called Conqueror of Europe is highly thought of.

—— ANTHURIUM ACAULE. — The time is now approaching when foliage plants of all kinds will be more in request with private gardeners for indoor work than they have been for some months past. Anything like elaborate furnishing is not generally looked for so long as the parterre and flower garden are gay, and subtropical beds present so many striking examples of leafage. Presently we shall have cold nights, and the beauty of foliage and flowers in the outdoor garden will be gone, and then gardeners will be called upon to supply an extra contingent of plants for indoor furnishing. We therefore draw attention to the peculiar merit of this plant for the purpose. It has large bright green leaves, spreading over the rim of the pot, and as the plant is stemless the full beauty and development of the leaves are under the eye, unlike many other plants whose beauties are not fully realised in a sitting-room.

—— WOOD FOR BOOK COVERS.—A new application of wood veneers has lately been introduced by Mr. M. WILMERSDORFFER, of 72, Finsbury Pavement. It consists of thin shavings, or veneers, of various woods inlaid somewhat like Tunbridge ware, but produced at such a cheap rate as to be applicable for papering walls, for dados, dadolines, &c., or even for bookbinding. For this last purpose the invention seems peculiarly adapted, some of the designs for book-covers that we recently saw being very tasteful. The woods mostly used are American Black Walnut, Lime, Oak, Holly, &c., but all known woods can be worked into the designs. The veneers are very thin, so that a large number can be taken from one block; this accounts for the cheapness with which they can be supplied. After being fixed upon the wood they can be either rubbed down with oil or French-polished.

—— LARGE-LEAVED BEGONIAS.—One of the most useful ways of covering the wall of a stove is to grow on it Adiantums and Selaginella intermixed with fine-leaved Begonias, the peaty soil and the plants being confined by wide meshed wire-netting which is very soon concealed by the growth of the plants. These fine-leaved Begonias seem more appropriately grown in natural ferneries, and in the position we have mentioned, than in any other way.

—— PAVIAS.—Horse Chestnuts blooming beautifully in August would naturally attract attention, and though Pavias are not exactly Horse Chestnuts, they are closely allied, and except for their more shrub-like appearance might easily be mistaken for the better known tree. At The Wilderness, Earley, there were in bloom lately several fine masses of the charming variety called there Pavia pumila. These grow from 8 to 10 feet in height, have broad-lobed leafage, and when in bloom produce most freely long spikes of elegantly formed white flowers. These spikes varied at Earley from 8 to 12 inches in length; the individual flowers, thickly set in the spikes, are trumpet-shaped, and about an inch in length, whilst from each one projects several white pollen-bearing anthers about an inch beyond the flower, each one carrying a red anther. The spikes, when fully expanded, are singularly graceful. In a garden so full of interesting shrubs and trees these Pavias were, at the time of our visit, by far the most attractive.

—— OPHIOPOGON JABURAN FOLIIS VARIEGATIS.—One of the most useful of plants for a cold greenhouse. It has, however, this additional merit, that it will succeed in any temperature short of hot stove treatment, in which the colour of its leaves would not take on their natural brightness. The leaves are narrow, grass-like, the centres of each being ribbed with dark green, edged with white. The flowers are produced in spikes of a purplish-blue shade, which are well thrown up above the leaves, and with which they are in pleasing contrast. The points of the leaves droop slightly. We have seen the plant cultivated and used in many ways, but there is still room to extend its sphere of usefulness. In private gardens there is a future before it if it were only known what could be done with it in the way of furnishing. For filling tall round stands, or *jardinières*, pans of it of suitable width should be grown, and these when the plants are in flower have an effect which is not easily improved upon for a sitting-room.

—— THE QUINCE.—It seems strange that so few people plant the Quince as an ornamental tree. When in blossom its flowers are of the most delicate shades, and its large soft-looking leaves have a freshness about them that one cannot help admiring. But it has other qualities also. The juice of its fruits is most valuable for mixing with Apples in the spring, when the latter are somewhat flat in flavour; and if no one else about a gentleman's place is pleased to see them, the cook is.

—— THE FRUIT CROPS.—While a great many complain of the scarcity of Pears and Apples, there are some who appear to be better off. Lately we saw, between Kew and Brentford, an orchard with the trees well furnished with fruits. The crop did not appear to be general, and it would, we think, be worth while to enquire into the cause—whether it rests with variety (which is most likely), or whether it is attributable to some peculiarity of soil.

—— PLUMBAGO CAPENSIS IN AUTUMN.—So many crave after novelty now-a-days, and so many people imitate each other without knowing exactly the reason why, that those who might furnish their greenhouses and conservatories with beautiful creepers either have only bare wood and glass to look at or sickly unattractive plants. The great thing is for people to plant such plants as are likely to succeed with them under certain cultural conditions and in certain situations. It seems difficult to instruct the untutored class of gardeners in the right way and to their own advantage. We thought of this a short time ago, when we saw a brilliant show of this charming creeping plant in Lord POLTIMORE'S conservatory in Devonshire, and again only a few days ago at Syon House, where it hangs from the roof of the large conservatory, a mass of azure-blue flowers. This is a creeper that every amateur may undertake to grow with a good heart.

—— AN ODD ENCROACHMENT.—Mr. G. BRISCOE EYRE, one of the New Forest verderers, has just published a paper upon the common rights of that vast Crown property, in which he points out that in many parts of the Forest the cones of the Scotch Fir are left either purposely or negligently to spread over the surface of the adjoining verdure, and the seeds taking root presently develope a dense growth of young Firs, which in time destroy the herbage, and so far render the grazing rights of the commoners valueless. Surely it should not be difficult to deal with an encroachment of this sort, as, in the first place, if children were permitted to gather up the cones at stated periods they would become useful to the poor and would be incapable of doing mischief. Still farther, the seedling plants might soon be destroyed wholesale by means of scythes or fagging-hooks. In any case, the verderers ought to be able to deal with an enemy of this kind without difficulty if it is really an enemy, which we doubt.

—— ERIGERON MUCRONATUM.—This pretty Daisy-flowered plant is well known to all lovers of hardy herbaceous plants, but we have never seen it used with such excellent effect as it is in Mrs. HARRISON'S charming garden at Weybridge, which we had the pleasure of wandering through the other day; there it formed an edging to a large bed. Its compact bushy, yet slender habit, studded with a perfect mass of Daisies, reminds one of BURNS'

"Wee, modest, crimson-tipped flow'r,"

and renders it peculiarly charming. The flowers more nearly resemble the deeper-coloured common field Daisy than any other plant. Being perfectly hardy, easy of growth, and pretty, it should be largely cultivated as a decorative bedding plant.

—— HYDRANGEA PANICULATA GRANDIFLORA.—No one who has not seen this magnificent plant in flower can form any idea of its great value and exceeding beauty. The old well-known Hydrangea japonica is a marvellously fine plant, but this comparatively new aspirant is in every way superior and entirely distinct. The plant is a hardy shrub of the very freest growth, the most graceful habit, and remarkably free flowering. It forces freely: plants taken up from the open ground and potted in autumn may be had in flower at any period after April the following year. Mr. WILLS has used many hundreds of it during the past season in his grand decorations, and no plant has been more admired. For the shrubbery border it is at this season the most charming of all objects; never have we seen it finer, however, or shown off to better effect than in the beautiful grounds at Duneevan, Weybridge, the residence of JAMES MCINTOSH, Esq. Here Mr. MCINTOSH has them planted amongst the Rhododendrons, the deep green foliage of which makes a capital background for the glorious white panicles of the Hydrangea flowers; several of the plants were nearly 6 feet in height, and bearing numbers of panicles about 18 inches in length. It should be planted in every garden.

—— GYNURA AURANTIACA.—This new foliage plant is now to be seen in fine condition in the open ground at Gunnersbury Park. The large and somewhat woolly leaves are of a dull green, very beautifully tinted with purple, very handsome, striking and unique. It makes a grand subject for [subtropical work, and will no doubt prove very effective in all flower garden arrangements. It is said to be quite hardy, but if it will stand through the winter in the open ground it can hardly be expected to maintain its rich leaf coloration. If the plants were lifted in the autumn and potted, we should think it will make a fine and telling subject in the conservatory during the winter months. It is undoubtedly a fine hot-weather plant, and at Gunnersbury Park it is growing in a full exposure to the sun. Whether it can be propagated freely remains to be seen.

—— PRINCE ALBERT APPLE.—Were anything wanting to demonstrate the free-cropping qualities of that fine but too little known Apple, Lane's Prince Albert, we might refer with confidence to a drift or bed of young trees of this variety now growing in one of Messrs. LANE & SON'S outlying nurseries at Potten End, near Berkhamsted, and which, though not more than 5 to 6 feet in height—young stock plants, in fact—bear many of them over a dozen fine well-swelled handsome fruit, a large proportion of the entire bed of some 1800 plants averaging eight or ten fruits each, scarcely a plant being unproductive. It seems so hardy that none of our uncongenial seasons prevent it from producing a crop of some kind, and that a very heavy one when the climatal conditions are at all favourable. No doubt the bed in question is, to some extent, sheltered, and hence the extraordinary crop which it has this year produced, but the same tendency is seen everywhere and under all circumstances. We have never seen so striking a picture as was presented some day or two since by this bed of Prince Albert Apple, when the Apples hung like "ropes of Onions." Owing, we suppose, to its not having been sufficiently exhibited, or to some mishap or other, this fine Apple, which has been grown for many years with never-failing success by Mr. LANE, has not been made so widely known as it should have been until within the last few years, when the issue of a coloured plate in the *Florist and Pomologist*, and the exhibition of the fruit on some few occasions at the South Kensington meeting, have led to its more general recognition amongst fruit growers. Still it is not half enough known, for when its merits come to be appreciated at their true worth it cannot fail to be recognised as a variety fit to take its place by the side of such sterling sorts as Stone's Apple, Warner's King, Stirling Castle, Ecklinville, &c. The fruit are usually of large size, solid in substance, handsome in appearance, and excellent as regards cooking properties. When in addition to these high qualities one is able to say that it ranks amongst the hardiest of the hardy denizens of the orchard, what more can be advanced in its praise? We have ourselves often witnessed these characteristics of hardiness and productiveness, for in a large hillside orchard, wherein Mr. LANE cultivates most of the leading sorts grown for market purposes, this variety has stood altogether uninjured when many of the popular favourites, notably the Dumelow's Seedling, can scarcely be kept in existence during depressing periods, such as the last two or three seasons have proved to be. On all points, then, Lane's Prince Albert may claim a place amongst the very few first-class kitchen Apples. If any one should doubt its merits, especially its fertility, let him take a pilgrimage to Potten End—he must go soon, as the autumn is far advanced, and the fruits must be gathered—and we feel sure he will come away convinced that we hsve not said one word too much in its favour.

—— BEGONIA KNOWSLEYANA.—Whether this is a new variety raised at Knowsley, or whether it is named so from having been brought from Knowsley, we do not know, but it represents a very free-blooming and useful variety, which Mr. ROBERTS is growing at Gunnersbury Park. It has the same general character and habit of growth as B. insignis, but is decidedly freer to flower, and it is an excellent winter blooming Begonia. It is Mr. ROBERTS' intention to grow it largely for its obvious good qualities.

—— SUGAR IN WINES.—A few weeks since a report was published by the National Society of Agriculture in France with respect to the use of sugar in wines. It appears that, in consequence of continued cold, which has been so prevalent in some of the wine districts, the Grapes have been so deficient in saccharine matter that it was necessary in some way to supply the deficiency, and it became a matter of great consequence to determine what that substitute should be, and especially that it should not be too

expensive. It was found on comparison that crystallised sugar was far preferable to glucose, but then the *droit* on sugar was a great obstacle. By way of meeting the views of the wine growers it was proposed to submit the sugar to a process under the name of *denaturalisation*, of which, however, just fears were entertained. What the process may be we have been unable to ascertain. The whole matter is not without interest, whether in a commercial or economical point of view. And without entering into the chemical details it will not be uninteresting to call attention to the report, whose full title we add below.*

—— CHINA GRASS.—We learn from some notes on Paris fashions in a recent number of a fashionable journal that "a novelty in materials is made of China-grass fibre [Bœhmeria nivea], such as was once only used for pocket-handkerchiefs. It is at Zittau, in Saxony, where this new material is made, and is, it is believed, the only one of its kind in Europe. From the fibre-stalks of China-grass, which is a kind of Nettle, a material is made which is as fine and brilliant as silk. It can also be dyed in every colour. It may be used as a substitute both for silk and wool, and is especially adapted to make fringes and lace." From this it would seem that China-grass is again being brought forward as a textile.

—— SINGLE DAHLIAS.—Among the new varieties of these popular flowers one named Painted Lady is well-deserving of notice; it has pale pink flowers flaked with lilac, and is very pretty and effective. Avalanche, white tinted with pink, is a very chaste and pleasing variety; and now that these Dahlias are being so much grown for cutting purposes they should be in choice collections. They have each excellent habits of growth.

—— THE WEATHER.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending Sept. 25, issued by the Meteorological Office, London:—The weather has been for the most part cloudy or dull in all districts, although, except in the south and south-west of England and west of Scotland, but little rain has fallen. The temperature has been several degrees higher than during last week, but has continued slightly below the mean in most parts of the kingdom. The maxima were generally registered on the last day of the period, and over south and central England were as high as 68°. The minima, which were not nearly so low as those of last week, varied from 37° in "England, N.W." to 43° in "Scotland, E." The rainfall has been a little more than the mean in the south and south-west of England, but in all other districts a deficit is reported. Bright sunshine shows a very considerable decrease everywhere, the greatest percentage being 31, in "England, E.," and the least only 2, in "Scotland, E." Depressions observed:—During the earlier part of this period the barometer was highest to the westward of our islands, while two depressions travelled slowly in a westerly and south-westerly direction over the Netherlands, the Channel, and France. The wind consequently varied between north and north-east, and blew freshly on our east and south-east coasts. By the 23d, however, the conditions had changed, and an irregularly-shaped anti-cyclone was shown over the North of France and South of England, while the wind had shifted to south-west or south generally. From this time until the close of the period the barometer, though falling, was comparatively high over France and our south-eastern coasts, and low in the west, while some small depressions appeared, with increasing southerly or south-easterly winds.

—— GARDENING APPOINTMENTS.—Mr. WM. BLOMILY (who is well known about Liverpool as a plant grower and exhibitor), after twelve years' stay at Oaklands with the late HENRY CROSSFIELD, Esq., has been recently appointed as Head Gardener to Mrs. WM. CROSSFIELD at Annersley, in the same neighbourhood.—Mr. LEIGHTON has been appointed to the Curatorship of the Botanic Garden, King William's Town. Mr. LEIGHTON was previously in the nursery of Mr. JOHNSON, of Rondebosch, Cape Town.—Mr. JAMES BROWN, Foreman in the Gardens, Blythswood, for the last five and a half years, succeeds the late Mr. INGRAM, as Gardener to Lady ANNE SPIERS, at Elderslie.

* *Rapport sur le sucrage des vins avec réduction des droits, présenté au nom d'une commission spéciale, par* Mr. J. B. Dumas, Société Nationale d'Agriculture de France. Mai, 1882.

HAWARDEN.

THE environs of Chester, on the whole, are not remarkable for beauty; the surface is too flat, the uniformity of pasture-land and the monotonous character of the deciduous trees too marked for picturesqueness. Not far off, indeed, are the "Sands of Dee," but they require the aid of the poet and the resources of the naturalist to render them interesting. The approach to Hawarden partakes of the same rather uninviting character. The traveller is in Wales, according to the geography books and maps, but he is about as much in the Wales of his imagination as he who climbs Primrose Hill is on the "frosty Caucasus." Shortly before arriving at the entrance lodge, however, trees begin to make their appearance. Once inside the precincts of the grounds, and the contrast between the flat, tame scenery outside, and the richly wooded undulations within, becomes very remarkable.

Mr. Gladstone's tree-felling proclivities are well known, and, no doubt, some of those who do not sympathise with his views of things conjure up for themselves visions of the ruthless destruction of noble trees, and of iconoclastic uprooting of secular timber. Very different would be his impressions were he privileged to visit these beautiful grounds. Jealous conservatism, pushed as it unfortunately too often is by the owners of fine estates to an excess, reigns here, at least in the pleasure grounds, in place of the ruthless destruction pictured by the imagination of political antagonists. Many of the trees, indeed, would have been the better for timely thinning long ago. Some now hastening to decay might have preserved their beauty for a generation or two longer, but on the whole the trees are so nobly developed, and those that are past their prime, even those that have been riven by the lightning flash or torn by the gale, are so grand and massive in their decay that it is easy to understand why the woodman is forbidden to touch a single bough, even apart from any personal associations there may be attaching to them. Beech and Oak constitute the staple of the woods, and there are grand specimens of both. The Beech crowning one slope by the side of a drive are remarkable for the regularly parallel direction between the lower branches and the slope of the bank. Writers on botany and tree growth have, of course, noticed this peculiarity, but it rarely happens that so good an example of it is to be seen as at Hawarden.

Finely situated on a commanding knoll stands the ruined tower of the old Castle—this does suggest Wales, by-the-bye—and from its summit a noble view is obtained over the pleasure-grounds and woods, the flat farm-lands, the Sands of Dee, the town of Chester, and on another side the Welsh hills. Glimpses of tall chimneys, faintly seen, with thin wreaths of smoke so far off that one might be excused for treating them as clouds, suggest the mineral wealth of coal that lies at no great distance. Together with the substantial modern castellated residence close by, these several elements in the scenery—feudal castles, rich woods, noble mansions, fertile fields, railways, coal pits, and factories—furnish, as it were, an epitome of England and of England's history. It seems but to want a view of distant sails and steamships to complete the picture; and these, we make no doubt, on a clear day, are also quite within the range of vision. Fit surroundings for a great statesman—fit place of repose for the wearied Parliamentarian or the thoughtful student.

Amid such scenery and such associations a flower garden is hardly a necessity. As our illustration shows (see fig. 72, p. 433), it is in accordance with the architectural character of the building, consisting of geometric beds on turf and gravel close to the windows of the mansion, but presenting no special features of interest. In the more practical department — for statesmen like jurymen must dine—the management is confided to Mr. Forsyth, who has at his disposal a new range with a central pavilion recently erected by Boulton & Paul, of Norwich. The houses are light, easily ventilated, and apparently well adapted to their purpose; at any rate, the Peaches have made rapid and satisfactory growth, "Royal George" being deservedly relied on as a "sure cropper." The Vines are old, having been built over during the construction of the new range. During a hard winter they were all exposed, but suffered no injury. Some of the roots are outside, others inside the house. Sweet-scented Pelargoniums of the quercifolium section are deservedly great favourites, and are grown in quantities. For forcing purposes President and Vicomtesse Héricart de Thury are the Strawberries most relied on. Peaches and Apricots out-of-doors, strange to say, had yielded a good crop this season, but Apples and Pears were not so obliging: some, such as King of the Pippins and Cellini Pippin, have done their best to relieve the general failure.

No man is a hero to his valet it is said, and somewhat on this principle must it have been, we presume, that a country lad, of say some twelve summers, of whom we asked the way, volunteered the information that he did not think much of the owner of Hawarden, more especially when compared with a neighbouring nobleman. Pressed for his reasons the answer came, "He don't breed pheasants." From what different standpoints are we judged!

EARLY AND LATE GRAPE CULTURE IN POTS.

THE cultivation of the Grape Vine is a subject in which nearly all classes of the community are interested. This being so, it might be expected that horticulturists, and especially those of the amateur class, would give more attention to the culture of Grapes in pots. There is no reason why the owner of a small vinery or plant-house should not enjoy his bunch of early and late Grapes, or both, with the assistance of a few simple directions. From general observation, it appears that few people (the forcing contingent of gardeners excepted) attempt Grape growing in pots either as a market investment or for private use. To ignore a system that might be made useful as well as profitable, is hardly in keeping with the enterprise of the age. Firstly—and this is a very important point to be remembered in discussing the subject—we only recommend Grape growing in this way to practical gardeners, as a useful auxiliary to the main supply, as economising space in most cases, or as an important reserve force in the case of exhausted Vines. Probably our very best practitioners do not avail themselves as often as they might of this invaluable aid in Grape growing. Whether we have learned to despise the produce of pot-Vines through seeing or hearing so much of big bunches, or whether we take a mistaken view of the commercial side of the question, are points which it would be worth while investigating; one thing, however, is perfectly clear, and that is, that pot-Vines are less sought after, even for early forcing, than they used to be. The drain upon permanent Vines that are forced year after year might well be obviated by forcing from a dozen to a score of good strong Vines in pots. Our point is that the great bulk of private families are by no means exacting in regard to a supply of early Grapes, and that a few bunches would suffice to satisfy the expectations of many until Vine forcing could be undertaken with greater certainty of success. To have ripe Grapes early in April, the Vines must be started about the first days of November. We are aware that ripe Grapes have been produced in less time even than this—and good ones too; but the process is not a lasting one; it is the pace that kills in early forcing. Instead, therefore, of forcing a large house of Vines at that unpropitious season, it would be a saving in every respect to obtain a few pot-Vines for early work, which would yield a few dishes of Grapes, sufficient to meet all ordinary demands until larger supplies came in abundantly under a more natural and less exhaustive system of forcing. Commercially speaking, everything is in favour of forcing the Vines in pots. The cost of a dozen Vines, extra strong—to use a common phrase—would not exceed from £6 to £9, and if we take the average yield at 4 lb. of fruit each, a by no means extravagant estimate, we have a sum total of 48 lb. of fruit, representing a money value to a "private employer" of not less than from £25 to £30. The cost of fuel and labour may be urged as an item to be deducted from this sum; but permanent Vines, although they respond more freely to the action of heat—in other words, make quicker progress—require nearly as much labour, if they do not want exactly the same amount of warmth. We must, however, remember that for a considerable time after starting the pot-Vines they take up little or no space, and that plant forcing, and very often Strawberry forcing also, is carried on in the same house. We have, therefore, in this respect a clear case in favour of the pot-Vines. But we have undertaken further to show that they are useful as auxiliaries at all seasons of the year, but more especially in cases where old Vines are being

renewed with young ones. We will suppose a range of vineries about to be renewed with young Vines (it matters not whether it be one vinery or twenty, as far as the principle is concerned), the Vines are planted at the usual distances apart, and at the end of the first season there is not the value of a shilling to the good to assist in defraying the cost of planting, nor a bunch of Grapes if such a thing is asked for. Again, we direct attention to the Vines in pots, and suppose that a number sufficient to put one between every two of the permanent rods is obtained, we shall have something that is interesting, something that is useful, and something that is profitable, coming forward the first season. We are not now treating of early forcing, so we expect nearly double the crop from these Vines, and we also, by a little management, expect a good price for them, or, in case they are required for home consumption, they are still more valuable and highly appreciated. Any drastic reforms carried out in gardens usually entail the loss of a season's crop, and if steps can be taken to modify or ameliorate this state of things it is better and more satisfactory to all concerned. Every private gentleman who is the owner of a garden likes to eat his own Grapes, and to see them growing. You may make almost any change you like in a garden short of cutting down a big Oak, or some other favourite tree—in short, a gardener is very much what *Punch* described him some time ago—he is master of the garden, "but not exactly a tyrant!" But he must not cut off the supply of Grapes, or any portion of the supply, without very substantial reasons. Therefore, while it may be—and, unfortunately for gardeners, it very often is—an absolute necessity to replant vineries with young Vines, there seems no sound or valid reason why the supply of Grapes should be cut off altogether. It is rather an uncommon, not to say an exceptional thing, for gardeners to grow a supply of late Grapes from Vines in pots. It would, indeed, appear as if we accepted as a fact that only such kinds as Black Hamburgh and Foster's Seedling are suitable for fruiting in pots—whereas the contrary is in reality the case, many of the late varieties of Vines being much more prolific when grown in pots than when planted out. Foremost among them is Black Alicante, which will sustain and finish a crop of from six to eight good sized bunches upon a single rod. Gros Colmar is scarcely less fruitful, and even Barbarossa, which is a shy bearer, would astonish many people who have not tried to fruit it in pots. Trebbiano is the best white late variety to fruit in pots, and is a heavy bearer. These suggestions—practical, not theoretical—are thrown out for the benefit of all whom it may concern. We can only remind the practical gardener of what he may do in the event of certain contingencies. But there is a more numerous class, namely, market growers and amateurs, who need teaching, and who are ready to act upon a hint. Now is the time to obtain a stock of fruiting Vines, or at least to make a selection. In the course of a few weeks the best Vines of the season will have been secured—the early bird catches the early worm. *W. H.*

Orchid Notes and Gleanings.

We have now in bloom Cattleya guttata with eight and C. guttata Leopoldi with six blooms, on plants imported last year; also, among many others, one of the finest forms of Odontoglossum Alexandræ that is to be met with. The flowers are very large, having much light mauve hue all over them. The shape of the flower is more in the way of that of the Odontoglossum Pescatorei, having one large round red blotch on the upper sepal, and three similar blotches on the labellum, the column being very large and dark red above; the spike bears fourteen flowers. We have also at present in bloom Odontoglossum Phalænopsis and gloriosum, this latter a small plant with one spike bearing more than forty flowers. *E. Vervaet et Cie., Ghent.*

Odontoglossum histrionicum (*Rchb. f.*) bellum, *n. var.*—Very fine, indeed! It comes near Mr. W. Bull's typical plant, but all the tints are lighter, the yellow very much so. The anterior part of the lip is white, not yellow, and there are a few very narrow and long chocolate marginal blotches on the petals. It is, I believe, unique, and I am greatly obliged to Messrs. Heath & Son, Exotic Nurseries, College Road, Cheltenham, for sending it. It is quite refreshing to see such an elegant beauty after having been bored with innumerable varieties of Odontoglossum crispum to be named. *H. G. Rchb. f.*

Houlletia chrysantha, Linden and André* (fig. 73).—This exceedingly handsome and very distinct species has just flowered at Kew, and as the description and figure of it in *L'Illustration Horticole* are both very inaccurate, I have thought that a correct description and a moderately accurate figure might not be out of place here:—Pseudobulbs elongate-ovoid or pyriform, 2 inches long, ¾ inch thick. Leaf solitary; petiole 3—5 inches long, terete, light green, the lower half concealed by two or three closely appressed brown sheaths; lamina growing to a foot in length, and 3½ inches in breadth, narrow elliptic, acute at apex and base, plicate, light green. Peduncle pendulous, 6 inches or more long, purple-brown, with a few distant pale greenish appressed sheaths, ½ inch long, obtuse at apex, and somewhat gibbous on the back. Raceme 4—5 flowered, bracts like the sheaths of the peduncle, embracing the ½-inch long pedicel of the ovary, which is curved, 1½ inch long, terete, and rough from numerous minute black points on a green ground. Flower 1½ inch in diameter, golden-yellow, spotted on the inside of the sepals



Fig. 73.—Houlletia chrysantha.

and petals with blood-red, the base of the lip with a blackish-red blotch covering the indistinct crest, a few spots in front of it, and some streaks up the front portion of the basal lobes, of a brownish-red. Sepals very concave, obtuse or slightly emarginate, the dorsal one oblong, the lateral ones elliptic, united at base for one-third their length. Petals rhombic-obovate, concave. Labellum broad for a Houlletia, 3-lobed, the lateral lobes basal, erect, 8 lines long, 4 lines broad, dolabriform, with an acute tooth at the hinder apex, thickened and somewhat tubercled in the middle, from whence a strong keel runs down to the base; an indistinct transverse crest with a small tubercle in front of it occupies the base of the lip, and in front of the base of the middle lobe is a broad, truncate, erect or slightly incurved transverse plate; middle lobe ½ inch long, flat, broadly cuneate at the base, very broadly rounded at apex with two curved retrorse processes behind. Column pale greenish, rostellum sigmoid-curved. *N. E. Brown, Kew.*

Orchids at Clovenfords.—When at Tweed Vineyard the other day I was much struck with some Odontoglossums I saw there, coming into flower. One, O. Alexandræ, had four spikes, all branching, and bearing in all 103 flowers; another of the same variety had forty-five flowers on one spike. A plant of O. Andersonianum had two strong spikes, one with twenty-five flowers on it, the other promising to be as strong. I never saw so many Odontoglossum Alexandræ bearing branched spikes in one house before. *D. K.*

Dendrobium formosum (*Roxb.*) sulphuratum, *Hook.*—An elegant variety. The throat of the lip, in lieu of being of the richest orange colour, shows a very clear sulphur-yellow. "It is the only plant seen by our collector in Upper Burmah," is the remark of Messrs. Heath & Son, Exotic Nurseries, College Road, Cheltenham, when sending to me a couple of giant flowers. *H. G. Rchb. f.*

Sale of Dr. Paterson's Orchids.—Over eight hundred pounds were realised at the sale of a selection from Dr. Paterson's collection of Orchids in Edinburgh on the 14th inst. Many of the plants were exceedingly fine specimens of their kind, and these realised good prices, the buyers coming principally from the south of the Tweed.

FLOWERS IN SEASON.

From Messrs. Paul & Son, of Cheshunt, we have received a number of cut specimens of hardy perennials from their new nursery at Broxbourne, which, as we have already had occasion to mention, is to be devoted almost exclusively to alpines and hardy perennials. The collection before us is rather numerous, and we can only select for comment the most striking without heed to their rarity or otherwise; and grouping them under the heads of Composites and Labiates—for it so happens that almost all the plants sent belong to one or other of these groups. We take the names as we find them, as it would be impracticable to verify them all in the time at our disposal. Asters of the kind commonly known as "Michaelmas Daisies" are naturally the most prominent at this season.

Aster pulcherrimus is one of the most robust, with purplish hairy stems, the upper leaves sessile, lanceolate, finely saw-toothed, dark green, and rough especially on the upper surface—an unusual circumstance, as the lower surface is usually the rougher of the two, when there is any difference. The flower-heads are borne on short stout stalks in the axils of the upper leaves; each measures about 2 inches across, the linear ray-florets, being of a light lavender-grey, the disc yellow.

A. amellus var. bessarabicus.—A tall growing robust kind with purplish stems covered with appressed bristly hairs, upper leaves sessile, obovate lanceolate, tapering at the base, entire, dark green, paler beneath, rough on both surfaces, the network of veins more open than in some species. The flower-heads are solitary, or nearly so, on the tops of the stalks, each rather less than 2 inches across, of numerous lavender-blue ray-florets surrounding a yellow centre. Virgil, who certainly did not know that his description would apply equally well to half a hundred other kinds, nevertheless picks out the salient characteristics—"Aureus ipse;" note the "ipse," that is, the florets of the disc—the practical working parts of the flower, which he goes on to tell us are surrounded with a great number of leaves, which are purple like Violets:

> ". . . . sed in foliis quæ plurima circum
> Funduntur, Violæ sublucet purpura nigræ."

We give our gardener-poet's interpretation:—

> "A flower there is, in meadows oft espied,
> Yclept 'Amellus' round the country side,
> A plant right easy to be found, sithence
> From one small tuft it rears a forest dense.
> The disc of gold, the countless petal rays
> Of deepest violet shot with purple haze."
>
> *R. D. Blackmore.*

Nobody doubts nowadays that Virgil intended an Aster, and we claim him for a botanist because he so perfectly describes the ways in which Asters branch—

> "Namque uno ingentam tollit de cespite silvam"
> ("From one small tuft it rears a forest dense;")

and then he goes on to tell us—

> "Asper in ore sapor"
> ("But acrid is the flavour on the tongue")

—and so it is: we have just tasted Mr. Paul's specimen, and we can confirm the bard of Mantua on this point. Moreover, we claim him for a Darwinian—

* *Houlletia chrysantha*, Linden and André in *L'Illustration Horticole*, xviii., p. 138, t. 71.

for does he not clearly recognise the different significance of disc florets and ray florets? Note again the "ipse" as contrasted with the "foliis." But to turn to practical detail, it is worth noting the comparatively broad stiff leafy scales outside the ray florets, as they, too, are characteristic.

ASTER SHORTII. — A slender growing species, slightly hairy, with spreading wiry branches, the upper leaves oblong lanceolate, with a very short stalk, those on the flowering branches much smaller; the flower-heads numerous, in clusters at the ends of the branches; the flower-heads themselves small, ½ inch across, with a bell-shaped involucre of numerous tiny oblong green scales, the ray pale blue, the disc yellow.

ASTER LONGIFOLIUS VAR. FORMOSUS.—Of similar habit to the last but more robust, glabrous, with sessile lanceolate leaves. Flower-heads ¾ inch across, more densely crowded than in the preceding, and on ascending not spreading stalks.

CHRYSANTHEMUM LACUSTRE, OR MAXIMUM.—The tallest and biggest of the Ox-eye Daisies, with fleshy lanceolate coarsely toothed leaves and large flower-heads 3 inches across on the top of long naked stalks. The involucre is broadly cup-shaped, depressed at the base, where it joins the dilated end of the stalk, and consisting of many rows of closely packed broadly lance-shaped green scales, the inner brown and membranous at the tips, ray white, disc yellow, flat. Note that the Chrysanthemums are destitute of the white silky pappus so characteristic of Asters, and indeed of Composites generally and of Pyrethrums proper. This point, indeed, serves more or less perfectly to distinguish Pyrethrum from Chrysanthemum.

CHRYSANTHEMUM ULIGINOSUM. — Having no pappus this should not, as it usually is in gardens, be called Pyrethrum. The plant is tall, almost shrubby in habit, with loose ascending branches covered with fine hairs. The leaves are lanceolate, remotely toothed with two larger spreading teeth at the base. The flower-heads are somewhat panicled at the ends of the branches, with flower-heads 3 inches across. The involucre broadly is cup-shaped, flat at the base, with numerous green scales, the inner brown and membranous, ray white, disc raised, yellow.

CHRYSANTHEMUM SPECIOSUM. — Evidently a Chrysanthemum, not a Pyrethrum, with pungent, Tansy-like odour; of medium stature, much branched, and more or less hoary. The leaves have long stalks; in outline they are broadly ovate, pinnately cut to the second degree (bi-pinnatisect), the segments broadish oblong. The flower-heads are solitary, on the end of erect branches, with a few small leaves. They measure about 1½ inch across, and are surrounded by a flat involucre of many oblong scales, the innermost membranous, brown; ray-florets white or flushed with rose, disc raised, yellow.

ANTHEMIS TRIUMFETTI is of similar character to the above, but with finer cut leaves, the ultimate segments oblong, serrated. The white ray-florets ultimately turn back, to expose the yellow disc.

STOKESIA CYANEA.—A most characteristic plant, and one of great beauty. It is of dwarf habit, with robust stems, glabrous below, fluffy above, the upper leaves are somewhat fleshy, glabrous, lanceolate, toothed near the base, elsewhere entire, with a very prominent midrib, and obscure and scanty lateral nerves; moreover, they are studded with translucent spots like a Myrtle. The flower-heads are solitary or few in number towards the ends of the branches, and invested by a large number of bracts, which pass in a manner quite delightful to the morphologist from *bonâ fide* leaves to comb-like bracts, and eventually to membranous scales. The flower-heads measure 3 inches and more across, and remind one somewhat of those of the Globe Artichoke or of a great Centaurea. The florets are all violet-blue, tubular, with a narrow tube and five linear segments; but in the outer florets the five linear segments are all turned to one side and expanded into a broad five-toothed strap, simulating that of a true ligulate Composite, though in truth belonging to quite another division. Again, the ray-florets, instead of being neuter or female only, as they usually are, are here perfectly organised. Here, then, we have a Composite in process of modification from a regular type to one that is irregular. On Darwinian principles, as on those of "division of labour," the botanist of the next epoch should find the Stokesia with the outer florets barren, and the ligulate tendency even more developed. But apart from transcendental speculation, the fact remains that it is a most interesting link between various groups of this vast order, and, what is of more importance still for garden purposes, a beautiful plant for the foremost part of the herbaceous border.

HELIANTHUS STRUMOSUS, Hort. Paul (? Linn. and Asa Gray).—A tall species, loosely branched, with long intervals between the leaves, rough. Upper leaves opposite, lanceolate, triply nerved, finely serrated. Flower-heads 2½ inches across. Involucre broadly bell-shaped, of numerous lanceolate, blackish leafy segments. Ray-florets numerous, rich yellow, like the yolk of an egg; disc flattish, black. Two sharply pointed white scales represent the pappus of the disc-florets. This is like H. rigidus. Others of the same genus, are H. multiflorus, H. decapetalus (so called because it has always (?) more than ten ray-florets), H. giganteus (so called because for a Sunflower it is of modest proportions), H. Maximilianus, with purplish stems—of these and many others the characters are not to be given in words, or the description would be tedious if it could. Correct nomenclature is not easily attained for these plants; the only way is to compare them with the standard types at Kew, but even then the characters are so altered by cultivation that perplexity is increased rather than otherwise. It appears that the wild form of the H. multiflorus is not known with certainty, for A. Gray says, with a mark of uncertainty, that it owes its origin to H. decapetalus. He also at one time considered it probable that the Jerusalem Artichoke—H. tuberosus—sprang from H. doronicoides, but see Decaisne, in *Flore des Serres*, 1881; Asa Gray in *Gard. Chron.* 1877, p. 472.

ANDRYALA VARIA. — A Hieracium-like plant, of 1—3 feet in height, densely clothed with soft, woolly pubescence, with longish hairs intermixed. Each of these hairs is capped by a small globose yellow gland. Upper leaves sessile, lanceolate, entire. Flower-heads solitary, on long naked stalks, each 1½ inch across, surrounded by an involucre of numerous green scales. Florets all ligulate and yellow.

GARDOQUIA BETONICOIDES.—A Labiate with stems 1—2 feet high, covered with grey pubescence. Leaves small, stalked, cordate ovate, crenated. Flowers rosy-lilac, in terminal dense spike-like clusters. The long tubular calyces are divided into five sharp points, which as the fruit ripens become of a rich violet-purple colour. Is the colour a source of attraction to birds or insects to visit the flower, and so secure the dispersal of the seeds?

DRACOCEPHALUM ALTAICUM. — A handsome shrubby species, with slender branches slightly hairy; leaves small, oblong, tapering to the base, serrate or entire. Flowers in spiked whorls towards the end of the branches. Calyx about three quarters of an inch long, tubular cylindric, reddish-lilac, with five ovate green teeth. Corolla double the length of the calyx, pale blue. A desirable plant for the front portion of the border or for the rockery.

VIOLA MUMBYANA.—A pretty Pansy, with ovate leaves and deep violet flowers, the lip paler, with darker lines.

ANEMONES are now blooming here (Dublin) by the hundred from seed-beds sown in April last; the flowers and buds are now very bright, and useful for cutting. *F. W. B.*

HOUTTUYNIA CORDATA in bloom is perfectly hardy here (Dublin) in a dense patch 4 feet across. You will not like its "boiled-snake"-like perfume; still, when unmolested, it is a pretty thing in a damp corner. *F. W. B.* [We have no experience of boiled snakes, but should prefer to look at rather than to smell them. ED.]

AMORPHA CANESCENS.—This is a highly ornamental and interesting North American leguminous plant. It is a much dwarfer shrub than its congener, the False Indigo—Amorpha fruticosa, and is in full beauty long after that species has gone out of flower. As a hardy autumnal flowering shrub of considerable beauty it can safely be recommended for more general cultivation. The foliage is white with hoary down, the corollas are a bright amethystine-blue, and the stamens bright yellow. A good figure recently appeared in the *Botanical Magazine*. In Gray's *Manual* it is called the "Lead Plant," from its being supposed to indicate the presence of lead ore in the soil in which it grows.

HOME CORRESPONDENCE.

Tuberous Begonias as Bedding Plants.—Having a large stock of last year's seedling Begonias I resolved to fill some beds with them in the flower garden in the month of May, and the result was certainly a great success, inasmuch as I find they carry their flowers and bloom more profusely than any Pelargoniums do through wet weather, and the reason for that is that the Begonia flowers are of a pendent habit, while the Pelargonium is not. I have observed them after a heavy shower of rain, and invariably seen the majority of Pelargoniums stripped of their flowers, while I could miss very few flowers of the Begonias. In March, 1881, I procured from Messrs. Alexander Dickson & Sons, of Newtownards, a packet of seeds, which I knew was their own saving and of a capital strain. On receiving the seeds I prepared some seed-pans, giving them plenty of drainage and filled within half an inch of the top of the pans with a finely sifted compost of leaf-mould, a little loam, and some silver-sand. Smoothing the surface with a board, as I always do in sowing small seeds, I watered through a fine rose and allowed the soil to settle for a couple of hours. When I sowed the seeds I gave them no covering except a piece of blotting-paper cut the size of the pans. I prefer this to glass or anything else, as the water soaks through the blotting-paper, and enables a person to water them, should the soil become too dry, without disturbing the seeds. I placed the seed-pans in a mild hotbed, and as soon as the seedlings made their appearance I removed the paper, and gradually exposed them more and more to the light. As soon as they were fit to handle I picked off over 460 plants into boxes, and as soon as they got a little established or filled the boxes I potted them off into 4-inch pots, using a compost of two parts good fibry loam, part leaf-mould, and one part sharp sand, and shaded a few days from the sun. I shifted all from frames to a Pelargonium-house that had just been emptied for the season, and grew on, giving waterings of liquid manure occasionally. I had them all in flower in July, when I selected the choicest varieties for pot-work the following season, and the others for bedding. When they ripened their bulbs I stored pots and all as they were in a dry, warm corner of the house till spring. My collection has been anything but expensive, and the plants have many times over repaid the trouble they gave me. *J. M'Intosh, Killyon Manor, Meath.*

New Pea Duke of Albany.—At many of the horticultural shows in this neighbourhood there has been a new Pea exhibited by Mr. David Abbott, gardener to C. H. Firth, Esq., of Riverdale, near Sheffield, and named the Duke of Albany. It is the result of a cross between Hallamshire Hero and Telegraph, and partakes in a large measure of the character of the latter parent. It has been considered by many who have seen it to have much merit, and when it finds its way into "the trade" it will not only be regarded as a high-class Pea for the table, but it will be a formidable opponent in the exhibition tent. The pods average about 6 inches in length, are well filled with from nine to twelve Peas to each pod, the shells are thin, and not mere wind-bags, like so many of our large podded Peas. In flavour it is equal to Ne Plus Ultra, and it is quite as green when boiled. It grows about 6 feet high, and is an abundant cropper. *R.* [The Pea should be sent to Chiswick for trial next season. ED.]

Edinburgh International Fruit Show.—This, no doubt, was a very fine show, and much more extensive than the so-called international which preceded it at Edinburgh some seven years since, but my conclusion, like that of many others, is that the quality of fruit was superior on that occasion to what was shown recently; this was specially noticeable in the premier varieties of Black Hamburgh and Muscat of Alexandria Grapes, which, with few exceptions, were badly represented. Quantity at the late show seems to have been the dominating rule of award, and specially so in the case of the premier collection of twelve dishes of fruit, which contained splendid bunches of Barbarossa and Trebbiano Grapes in competition with grand well finished Muscat of Alexandria, Black Hamburgh, and Madresfield Court. The same rule was equally noticeable with the Pines—a very fine but quite green Charlotte Rothschild was preferred to a finely finished Queen. Regarding the number of fruit that each dish should contain, here again quantity was considered. Some dishes of Peaches were observed to be so huge and artistically arranged as to give the idea that a miniature copy of Scott's Monument had been aimed at. I referred to the schedule of prizes to see if there was in it any

protection afforded to quality against quantity, but found it contained neither guide nor protection in these all-important matters. Had the number of fruits that each dish should contain (of the better kinds) been stated, there would have been a much fairer competition. Stipulations are also desirable that fruit should be ripe and fit for table. My object in these remarks is to uphold quality as against quantity. If the same amount of cultural skill had been bestowed on Muscats and Hamburghs as was bestowed on Barbarossa and Trebbiano, they probably would not have been poorly represented in the collections of the principal prize-takers. *Looker-on.*

Sidalcea candida.—With reference to this plant, introduced by me several years since from Colorado, it is unquestionably true that it runs at the root, as Mr. Wolley-Dod so graphically describes; but my considerable experience of the plant warrants me in stating, that no one wishing to disembarrass himself of his surplus stock will find any difficulty in doing so. It does not root very deeply, and, in fact, no plant is more readily kept within any desired limit. It would be a pity if any fears on that point should restrict the cultivation of a desirable addition to hardy plants. There are several good perennials which have the defect of being too much disposed to encroach on their neighbours, notably Helianthus doronicoides, H. giganteus, Astilbe rivularis, and others; but five minutes' use of the spade in spring suffices to reduce their dimensions to a suitable size, and the remark applies with full force to the Sidalcea. *W. Thompson, Ipswich.*

Lordship Nursery.—The extent to which plant growing is carried on in the suburban districts of London would astonish many people who are not conversant with the habits of Londoners. In Mr. J. W. Hurst's nursery, Wood Green, may be seen a few specialities in the plant line, which are really well done. Of Ferns over 2000 Pteris cretica are grown, and about 700 Dicksonia antarctica, in a small state, which are hardly recognisable at this age, so fresh, green, and healthy do they look, very different indeed from the appearance of older plants. Mr. Hurst goes in for a few useful things, and on the cultivation of these he concentrates all his energy and interest. The stock of Pteris tremula is very fine, as is also that of Cyrtomium caryotideum, of which quantities are grown; and the two Dracænas congesta and rubra, true to name, are stock of the very highest excellence. There are houses filled with Primulas, seedling Begonias, small Dracænas, and a first-rate batch of Lomaria gibba, well grown and in capital condition for autumn furnishing. We noticed a good batch of the Lastrea aristata var. just beginning to show its character—a very promising lot of over 5000 plants. Dracænas Cooperi and ferrea grandis are showing from three to four red leaves, and are daily improving in colour. Several houses are filled with miscellaneous stock, Palms, Ferns; a whole houseful of Maidenhair and ornamental-leaved Begonias, besides other odds and ends of a very useful character. Out-of-doors may be seen collections of winter flowering Pelargoniums and Chrysanthemums, which will be taken in hand by-and-bye. It seems that the way to make money now-a-days out of plant-growing, is to grow large quantities of a few really useful subjects. *W. H.*

Bambusa Metake.—Although this is undoubtedly the hardiest of the Bamboos, it will not compare with Bambusa gracilis, or, as it is now more generally called, Arundinaria falcata [Is Thamnocalamus intended? ED.], which rivals all for grace and beauty, as its long slender rods arch over in a very elegant way, and the delicate green of its light slender leaves is equal to that of the best Adiantums. At one time it was supposed we had the best plants in the kingdom, but, unfortunately, they all died some years ago after flowering and seeding, and it was reported that many others lost theirs from the same cause; it is doubtful if there are any large specimens in the country now. B. Metake does well planted almost anywhere, but looks most at home near water on the banks of a pond or lake, a position for which its reed-like habit and growth specially fit it. Arundinaria falcata is equally suitable for similar situations, but being more tender requires shelter, like that afforded by tall trees or shrubs, and where it gets this it grows freely in loose sandy soil, and soon makes a number of rods. The way to propagate it is by means of cuttings made a foot or so long, and if these are put in now, and within an inch or two of the top, they strike readily when the time comes for them to start into growth. *J. Sheppard.*

Plague of Wasps.—I don't know how these pests have been in other parts of the country, but here we have had a perfect plague of them. I see one of your correspondents ("H.") from a Lancashire garden has been troubled with them, but has not been able to discover their nests. I can give him the advice given by one of our village bee-keepers, who has waged a deadly war with them this season—that is, to cut very small pieces of beef and lay them near his beehives, and then watch. As soon as the wasp has got the meat you can see it rise, and must then follow over brake, hedge, ditch, and hollow. Nothing must stop you until you track him to his den. He says it is better than fox-hunting; and any one would think so to see him tearing across fields. He has blown eighty nests up this season in all manner of places, one being over 15 inches across over the thatch of a cottage. He says he knows of twenty more now, but has retired from the unequal contest, not having been paid yet for his gunpowder. I pay the young men 3*d.* for each nest taken. They take them by pouring a pint of gas-tar into the hole in the evening, and dig them out in the morning. Just round the garden and orchards they have taken fifty-five nests. My friend and neighbour, Mr. Elliot, of Guy's Cliff, had a fortnight ago taken seventy, twenty-four out of a 10-acre field next to our shrubbery; that makes a total of 209 for one village. What the effect on the orchards and vineries would have been if none had been taken is something dreadful to think about. In one of the nests taken were over twenty queens. *Joseph Murdoch, The Heyes, Leek, Wootton, Warwick.*

Girth of Trees.—In the very graphic description of Bramshill Park by "H. E.," which appeared in your publication of the 23d inst., he speaks of "fine Oaks and Sweet Chestnuts, and the best Scotch Firs in England;" and he says, "we measured the best Oak and the best Fir, and found them respectively 12 feet 10 inches and 9 feet 3 inches round their trunks at 5 feet from the ground." I have been in the habit for several years of measuring in January of each year the circumference of many trees here, and I give the following dimensions of some of the largest. First, with reference to—

	1880.	1881.	1882.
Oaks :—	ft. in.	ft. in.	ft. in.
1. Narrowest place	12 5	12 7	..
At 3 ft. from ground.. ..	12 10	13 2	..
2. At 3 ft. ,, ,, ...	12 4	12 6	..

The first of these is certainly not ninety years old.

	1880.	1881.	1882.
Scotch Firs :—	ft. in.	ft. in.	ft. in.
1. At 4 ft. from ground ..	12 8	12 8	..
2. ,, ,, ..	11 3	11 4	..
3. At 3 ft. from ground ..	10 7	10 8½	..
4. ,, ,, ..	11 10	11 11	..
A Spruce at 3 ft. from ground..	7 8	7 8½	..
Silver Firs :—			
1. At 4 ft. from ground ..	10 11	11 1	11 3
2. ,, ,, ..	9 7	9 9	9 11
3. ,, ,, ..	10 4	10 6	10 6
A Horse Chestnut at 3 ft. ..	14 9	14 9	..
A Beech at 4 ft.	13 0	13 1½	13 1
An Alder at narrowest part ..	21 10	..	..
An Elm at 4 ft.	10 7	10 6	11 0

There is an Oak at Silford, 2 miles from here, and close to the Kingsley branch of the River Wey, one still growing, which measures 23 feet 6 inches in circumference at the narrowest part and 40 feet where it rises from the ground. This Oak is described in Brayley's *History of Surrey*, as the "King's Oak," and was referred to as such and used as a boundary mark in a grant of about 1250 by Bishop Henry de Blois to the Monks of Waverly. Nearly all the trees I have referred to are growing on the Lower Greensand. *J. F. B., Moor Park, Farnham.*

Early Frost.—Our thermometer registered a little more than 3° of frost on the morning of the 12th inst. The Coleus, Vegetable Marrows, Scarlet Runners, &c., are much injured—a most unusual occurrence so early in the season. *Thomas Lloyd, Spring Grove Gardens, Bewdley.*

Japan Lacquer.—The Museum at Kew has recently been enriched by a very fine collection of Japanese lacquer-work. The collection, which was obtained especially for the Museum by the Acting Consul at Hakodate, under instructions from H.M. Chargé d'Affaires at Tokiô, is extremely complete, and illustrates the whole process of manufacture. Thus, for instance, there are specimens of the trunk of the Varnish tree (Rhus vernicifera), showing the deep cuts through the bark, made in a horizontal manner and close together, by a sharp, gouge-like instrument, which is also shown, as well as several other instruments used in various branches of the collection of the lacquer or its preparation. There is also a neatly made pot for holding the lacquer as collected, constructed from a simple joint of a large Bamboo stem; a large series of lacquer as collected from the stems or as prepared, and a complete set of tools, such as fine and coarse brushes, made of human hair, rat's hair, hare's hair, &c., spatulas, burnishers, and a series of colours used in decoration. Besides these there is a very fine and instructive series of lacquer-work, from the earliest stages to the most highly finished examples, some of which are of great age, one, for example, being 120 years old, and of exquisite workmanship. The processes through which good lacquer-work passes are both tedious and numerous, the results, however, are wonderful accuracy in every detail, many of the designs, especially those representing plants and flowers, being worked with so much care as to be in many cases botanically correct; this is particularly the case with the gold-work on wood, both flattened and raised. The collection is all the more valuable because it is said that good lacquer-work is becoming more and more scarce, the demand for cheap articles in the European markets being so great as to induce lacquer-workers to turn their attention to the class of goods which meets with a ready sale, to the neglect of the more costly and consequently more carefully wrought. The value of the collection is also increased from the fact that a very elaborate account accompanies them descriptive of the collection of the juice from the Varnish trees, its subsequent manipulation, and final application. *J. R. Jackson, Museum, Kew.*

Potting-up of Winter and Spring-flowering Plants.—Plants of Salvias, Eupatoriums, Solanums, Richardias, &c., which were planted out in trenches of prepared soil last May and June, will now have become fine bushy plants, and, if not already done, should be potted up without further delay. The individual plants should be taken up with nice balls of earth adhering to their roots, and dropped into suitable-sized pots, which have been previously crocked, and a little fine soil, consisting of three-parts sandy loam and one of leaf-mould, worked round the ball so as to thoroughly fill the space between the latter and the sides of the pot. The plants so potted should then be stood in the shade for a few days until the roots have taken hold of the fresh soil, when they can be fully exposed to sunshine, and where they can have a little protection afforded them at night from the effects of frost. Especially will protection be necessary for Salvias, which should be sticked as soon as they have been potted, and Eupatoriums, as they are both very susceptible of frost, a degree or two being sufficient to nip the points of the shoots, and thus throw them back several weeks from their ordinary time of flowering. The case is quite different with the Richardias and Solanums, as a few degrees of frost, though not desirable, will not hurt them providing the roots have pushed into the new soil. *H. W. W.*

International Fruit Shows. — In the case of home international exhibitions it is generally found that the contributors from foreign countries are few or none, and therefore the term "international" seems rather far-fetched. Still, as these exhibitions are literally open to the world, it is not inapplicable. As far as exhibitors are concerned, however, we find them in abundance from both below and above the Tweed, and some few come from Wales and Ireland, so that as far as the nations which make up the United Kingdom are concerned the shows really are international. Perhaps the chief reason why Continental nations are so little represented at our international horticultural exhibitions is found in the fact that our home products are generally much ahead of what foreigners can produce. We know it is the case with regard to Grapes and some other choice fruits, it is so with vegetables, and we know full well that foreign-grown Potatos, even if from the United States, are a long way inferior to our own. It is, therefore, not probable that international fruit and vegetable shows will be largely patronised outside of our own country. So far as an exordium, but my chief object in writing is to ask, as a Southerner, why it is that Manchester and Edinburgh, rare go-ahead cities we know, should be able to organise such grand autumn horticultural shows as was last year seen at the former place and has just been held in Edinburgh. I do not think that we have ever had a grand display of products of the kinds so well shown at Edinburgh in London, but there is no reason why what can be so well done in smaller towns should not be done as well, nay, even better, in London. Have we not here in our midst all the chief horticultural associations of the nation, its horticultural Press, its chief trade houses, its most important societies, and, not least, have we not around us wealth that is fabulous, and an immense teeming population that would be only too ready to patronise a grand display of fruits, vegetables, and other garden products? In other towns a few earnest men working together organise a grand show which gardeners from all parts of the kingdom will travel hundreds of miles to see. Are there not only a few but many men in London who could organise a great exhibition in

the metropolis, and if so, why not? Is there any caste feeling here?—do personal objections to each other keep men apart?—or why is it that the genial generous man of Lancashire or the warm-hearted Scot can do so much and so well whilst Londoners do nothing? Are the very things, Press, societies, &c., that so largely exist here but elements of weakness or disunion, and hence the lack of any such great show in London? I cannot think that such is the case, but that, as in 1866, so now, if a really great effort be made London may see an international fruit and vegetable show supplemented by plants and cut flowers, such as should eclipse all previous efforts. We have in London, too, much larger buildings in which to hold a great show of this kind than other towns have. The whole world cannot show such a splendid place for a great exhibition as is the Crystal Palace; and if that be undesirable, there is the immense space of the Agricultural Hall at Islington—a building that cattle shows can crowd to excess; and a grand fruit and flower show ought to cram it with people. The fishery exhibition in the Royal Horticultural Gardens puts that place aside altogether, even if its somnolent solitudes were thought acceptable, which would hardly be the case with a body of men who were bent on making a great exhibition a brilliant and specially a financial success. Perhaps the committee of the International Potato Show might be induced to associate itself with such a movement, and if such were the case very much would be gained. The best season for the South is probably the first week in September, although that is early for hardy fruits generally but quite late enough for Grapes, and especially for cut flowers. Here are suggestions that ought to commend themselves to the men of "light and leading" in the metropolitan world of horticulture: who will begin to give them some practical application? Don't begin asking who it is that makes them—that is of not the slightest consequence. Good ideas are as worthy of consideration if from a plebeian as from a peer, and those I have put forth may well stand on their merits. Let candid critics keep their buckets of cold water at home, it is only those who have warm hearts and sanguine temperaments whose aid is invoked. *One of These.*

Sequoia sempervirens at Penrhyn Castle.—Noticeable amongst the new and rarer Coniferæ here are some unusually fine specimens of Sequoia sempervirens, the healthy appearance and rapid growth of which proclaims this tree as eminently adapted for mild maritime situations. The largest tree of this kind occupies a prominent position near the carriage drive leading from the Castle to the grand entrance, the dimensions of which are as follows:—Height, 57 feet; girth of stem at 1 foot up, 11 feet 8 inches; girth of stem at 5 feet, 9 feet; diameter of spread of branches, 30 feet. This is a beautiful specimen, richly clothed with glaucous foliage, but growing on rather an exposed situation it had the misfortune to lose its leader during a storm. This is, however, being rapidly replaced by a side branch. Growing at a short distance from this tree, but not visible from the drive, are two others of the same kind, measuring respectively 70 feet and 78 feet in height. Though of much greater height, neither of these specimens can compare with No. 1 either in girth or spread of branches, which may be attributed to their confined positions, as they are on all sides sheltered by taller trees. The soil is sandy loam, resting on shaly slate rock. This tree cannot be recommended for bleak and exposed situations, for in consequence of its continuing to grow so late in the autumn the young shoots frequently suffer from frost or cold cutting winds. From specimens of the wood, included in a collection of the different kinds grown on this estate, it resembles that grown in its native country, being close grained and of a colour resembling the finest mahogany. *D.*

Tomato President Garfield.—Of the several new varieties of Tomatos which have been distributed during recent years none which we have tried grows so large as this kind. In size and form it is monstrous; on plants we have which are bearing heavy crops many of the individual fruits, which hung in large clusters, weigh 1½ lb. When well grown it is of a beautiful bright crimson in colour, but in consequence of its shape it cannot be termed handsome, for it is somewhat flattened and oblong, and has an irregular and undulated outline, which causes it to appear coarse. Very different in this respect is it to that excellent variety, Stamfordian, which is one of the very best for kitchen use, and unsurpassed for exhibition. We have it growing side by side with the President, bearing heavy crops; and although the fruit is not so heavy it colours equally well, and being perfectly formed we prefer it to the new one. No choice vegetable pays better for liberal treatment than does the Tomato, and no other is more easily grown; it is well that it is so, for it has become, as it deserves to be, generally appreciated, and a constant supply is now expected to be kept up in most establishments. This is an easy matter where the means are provided. We find the following simple system of cultivation—which, if I remember correctly, has been previously fully described by Mr. Roberts, of Gunnersbury—a good one, viz., to plant out in well prepared borders, composed of turfy loam and well rotted manure, and train the plants as single cordons, keeping the side shoots pinched in, but allowing the main stems to reach the summit of the trellis before being stopped. When treated in this way, and the watering and ventilation properly attended to, they will produce fruit at nearly every joint, and with a good length of trellis will yield a succession of fruit over a lengthened time. For a winter supply we grow the plants in pots, not from preference, but because it is most convenient for us to do so. The pots are arranged on a bed in rows, and not overcrowded, the plants being trained to long stakes and treated as cordons. When the roots protrude through the holes in the pots, which they readily do, a coating of manure is placed over the surface of the bed, between the pots; this is quickly filled with active roots, and the plants greatly benefited thereby. An easy way of producing a good summer supply, which was, I believe, well carried out by Mr. Miller, late of Clumber, is to plant out in frames or pits, and to train thinly on the surface of the bed of soil in a similar manner to that in which Melons are grown. Superfluous shoots should be cut out and the fruit is improved by being supported, and also keeps clean. *Thomas Coomber, Kendal Gardens, Monmouth.*

Exhibition Potatos.—I cannot but think that neither your correspondents, "G. B. G." or "A.D." has fairly represented this question. I merely suggest an opinion, carefully formed, after many years' practical experience in growing, buying, and selling the various sorts that are now in commerce. It must certainly be evident to all impartial judges that we have had too much, by far, of late in the way of new Potatos. For instance, many varieties which always pose in exhibition collections are close-grained, although of beautiful shape, and consequently poor cookers. On the other hand, there are many varieties indifferent in shape, but of splendid quality. Were I asked—"Which is the best Potato?" I should reply, Schoolmaster, and next to this Queen of the Valley. This latter sort is destined to become increasingly popular. For trade purposes novelties are introduced which are absolutely worthless, although sometimes a really good sort among many inferior ones comes to light. Every grower must, ot course, consult his own particular taste as to a good table Potato, and select his variety accordingly. "G. B. G." scores well when he says—"Unless they are cooked how am I, or anybody else, judging by appearances, to know whether they possess good cooking qualities or not?" What we want in our Potato exhibitions is, not all beauty and size, but first of all good table quality. I am aware that to the exhibition of cooked samples many objections and inconveniences are urged, but I venture to say that three-fourths of the sorts now shown regularly on our exhibition tables would be at once consigned to oblivion were their respective merits in cooking fairly ascertained. *E. P. B.*

Judging Grapes.—Will Mr. William Thomson, of Clovenfords, or some other gardeners of long standing, give the public their experience in judging Grapes at large shows, say fifteen or twenty years ago? I remember Mr. Thomson fixing a rule how to judge Grapes—so many points for size of berry, so many for flavour and finish, also size of bunch with the above points combined. It would be a great boon to gardeners to know how to proceed, as many would show the Hamburgh, but think it of no use competing against large varieties. *X.*

Cunonia capensis—There is a large plant of this ornamental shrub growing in a tub here which has been here many years, and has had to be cut back hard many times to keep it within bounds in the greenhouse it is growing in. It will not flower for two years after being cut back hard. *A. George, Bicton, Devon.*

White Everlasting Pea.—If "Ignoramus" (see p. 410) were to fertilise a few of the flowers himself with pollen from white flowers, taking care that in each case they should be those that had not been previously visited by insects, and then carefully tie a bit of fine gauze round the flowers so fertilised, removing it when they become quite withered, he would probably obtain seed that would reproduce the parent strain. *F. G.*

CHESHUNT HYBRID ROSE.—Are we quite certain that we make the most of this lovely Rose for forcing? Nearly all the Teas are white, or yellow, and therefore in the early part of the year the rich carmine shade of this Rose would furnish a colour that is almost, if not altogether, absent in Roses. It is of such a vigorous habit that the greatest tyro may undertake to grow it. It is largely grown in Devonshire upon open walls, and yields quantities of cut blooms early in the season.

Reports of Societies.

International Potato Exhibition: *Crystal Palace.*—In concluding our report upon this fine exhibition from p. 408 of our last issue, we have now to notice the new varieties, of which a large number were exhibited; the judges, however, were very sparing in awarding Certificates, as will be seen from a perusal of our report.

New Varieties.—Under this heading come all those kinds shown in the class for varieties put into commerce during the past winter season, and for which liberal prizes in six amounts were offered by Messrs. Hooper & Co., Covent Garden. The hero of the class, and, indeed, as a new variety of the show, was Reading Russet, for this beautiful pale red round kind, splendidly shown by Mr. Miller, took the 1st prize; Mr. P. McKinlay with it took the 2d; and Mr. Ellington with it again took the 4th, Mr. McKinlay taking the 3d prize with Sutton's Prizetaker, a pale, long red kidney, known to be of good table quality; Mr. Kerr came 5th with Queen of the South, a white smooth kidney, not unlike small forms of Magnum Bonum; and Mr. Pickwick was 6th with Carter's Cleopatra, a flat kidney, that very closely resembles King of Potatos. Of other handsome kinds shown, though not quite so bright, were Cosmopolitan, Queen of the Valley, and Adirondack, the two latter American kinds, reddish in colour, singularly handsome, and very productive. Cosmopolitan is a fine long white kidney, that will be prominent when more widely grown. We included in a select list of show kinds early in the year, Reading Russet as one of the best, and our estimate of its qualities has been amply justified. It was originally called by its raiser, Mr. Fenn, Berkshire Rose, and under that designation was often alluded to in past years in these columns.

Seedling Varieties.—There were four classes for quite new or seedling varieties not in commerce, viz., white and coloured kidneys and white and coloured rounds. White kidneys were most largely shown, but in every instance the samples fell somewhat below the fine quality seen on the show tables generally. That, however, affords but little clue to the really exact merits of seedling varieties, as they are never seen at their best until they have got into commerce and are widely grown. This year, under an arrangement made with the Council of the Royal Horticultural Society, and with the hearty approval and assistance of Mr. Barron, all seedling varieties ere being eligible to receive prizes or certificates at the International Potato Exhibition had first to be grown and fully tested at Chiswick, and that trial was admirably carried out during the past summer, some forty kinds having come before the sub-committee appointed to inspect and test them. Two visits were paid to the gardens at an interval of a month, and every sort lifted, noted, and where thought meritorious samples of each kind were cooked and tasted. Some kinds were splendid croppers but hardly distinctive, not a few so closely resembling Magnum Bonum as to render distinctness doubtful. Others, handsome and prolific, altogether wanted table flavour and quality; and, again, several that were very meritorious when lifted and cooked were not represented on the show table, or, if so, by specimens so poor as to render the award of a First-class Certificate impossible. It may be of interest to mention that the maximum number of marks was nine, viz., three for cropping and general good appearance on the ground, three for table quality when cooked, and three for form and character on the show table when presented in the respective classes by the raisers. In this way the committee hope that henceforth only really distinct and first-class kinds shall get the coveted awards of Certificates of Merit.

In the class for white kidneys the only Certificate granted was awarded to Recorder, shown by Mr. R. Dean. It is a seedling from Success × Woodstock Kidney, is a flat, long kidney, handsome, second early, short top, and very prolific; table quality excellent, and a first-rate garden Potato. This kind also received the award of 20*s.* given by Mr. P. McKinlay. Also shown were Rival (Ross), a flat oval kidney, with netted skin, not unlike Woodstock Kidney in appearance; Sanday's Seedling (Pearson), long, smooth, and handsome; Seedling No. 1 (Fenn), flattish, long round, main crop, from Victoria × Magnum Bonum; and some other kinds. Of white rounds, Certificates of Merit were awarded to Fenn's Seedling No. 3, a smallish but good-looking white round that did remarkably well at Chiswick, and which also took the money prize of 20*s.* This was named James Abbiss, in commemoraton of a former and greatly-esteemed President of the Exhibition not long since deceased. Also to Sir Walter Raleigh (Ross), a medium-sized flattish round that also turned out finely at Chiswick, and proved of splendid table quality. Lord Mayor (Dean), Laudable (Ross), and one or two other kinds were shown in this class. Of coloured kidneys the only Certificate awarded was to a handsome, flattish oval-shaped kind, Fenn's No. 1, as grown at Chiswick, where it proved a fine variety. This was named Alderman De Keyser, after the Chairman of the day, and also took the 20*s.* prize. Of other kinds in this class were Crimson King and Wiltshire Giant, handsome red kidneys, shown by Mr. Lye of Market Lavington; Dargal Beauty (Kerr), a small but pretty kind, white flushed with carmine, much like an Ashleaf, but when cooked of good flavour. Also a fellow seedling,

Sir Garnet (Kerr), quite resembling it in shape, skin, red much blotched with white. Coloured rounds were too poorly represented to receive any awards, the samples either being small, or where having size they were deep-eyed and undesirable.

Class T.—Through an oversight last week we omitted to mention this class, which added considerably to the extent of the exhibition. All the prizes were given by Mr. C. Fidler, Potato Merchant, Reading, and the competition for the various prizes well supported.

Seedling Potatos at Northampton.—A short time since I was invited by an enterprising secretary—Mr. W. Farr, of Fawsley—to send some of my seedlings to an exhibition of that ilk, in connection with the Northamptonshire Agricultural Show on the 21st inst. Of course I could not say no; so after seeing my Potatos safely ensconced in their hampers after the Crystal Palace International Show, myself and two other chiels started for Northampton, to find that town of political notoriety drest in all its best, gay with profuse bunting and triumphal arches with motto and quaint device, and an immense concourse of people, auguring well for the show, which was held on the racecourse, along with a horticultural show, also held on the racecourse, though separately. Of course we first of all proceeded to the seedling Potato tent, which we crept into through an orifice, for so early in the morning it was not open to the public, but guarded vigilantly, as it had been all night, by a special policeman! A large, well-filled stand of new seedlings, greeted us with a row of plates containing fragments of the cooked esculents surrounding the board, looking very much like the remains of a last night's festivity left to bear the morning's reflection.

Out came our note-books, and on went our glasses, when he of the smiling countenance exclaimed, "Cottage Farm, Sulhamstead, 1st prize. Who's he?" And again that noted fruit-grower down Ramsgate way sang out, "1st prize awarded to one Robert Fenn—does any one know who he is?" "By Jove, friend Ross is in the run," exclaimed t'other, with Potato on the brain. There was a lot of good grain found amongst the chaff in the seedling tent on that eventful morning. We soon set ourselves severely to criticise, and found out that the judges had been "quite up" in their work. Only one prize was given dubiously, but it *may* turn out to be right. Several samples of very promising Potatos were there that had not undergone the process of cooking, the judges being overwhelmed, I suppose, with the *embarras de richesses*. Two of these varieties left out in the cold had been awarded the highest honours at the Crystal Palace only the day before, as having borne the heat and burthen of the day at the Chiswick trials.

Now enters a man in authority. We saw it: sudden collapse; but an intuitive glance caused him of the Potato-on-the-brain to advance and premise, "Mr. Farr?" "Yes." "Mr. F., Mr. J., Mr. C." Shake of hands all round. Parley indescribable, till Mr. Farr found it compulsory to open the tent to the general public. Doubtless wisdom will come of it, for we pushed friend Jones to the front, and he took good care that Mr. Farr's pencil and notebook did not remain idle. Possibly those two would have been at it still, but we others wanted to see the shows.

I have seen a good many agricultural and horticultural exhibitions, and next to the Royal Agricultural Society and the Royal Horticultural Society these at Northampton must certainly take first rank in my estimation. There must have been as many people at the former as on any day at Reading; and as to the latter, in the tents it literally came to the saying, "you might walk on the people's heads." Where Potatos were descried we managed to wriggle through, and we saw some good examples and bad nomenclature. The schoolmaster is abroad in this respect, but we could easily see that the will was good, and the cottagers' productions generally may be highly spoken of. To penetrate through the flower tents for the purpose of correct observation was an impossibility. One marquee I peeped into contained geological and conchological specimens, but how many representatives of the other ologies I could not say, so dense was the pressure. The tent seemed unique to me, and there was also a bee tent. Let me add, as I am a farmer as well as a horticulturist, that cattle in Northamptonshire are a matter of course; some splendid animals were here in their several sections. But the horses—what shall I say short and sweet about the horses? Why, that the people hereabouts are lovers of the horse. The greater part of the show-ground was devoted to the capabilities of the horse and its rider. *R. F.*

Florists' Flowers.

NEW DAHLIAS AT THE CRYSTAL PALACE SHOW.—While new varieties of the pompon and single sections were produced in plenty, there were comparatively few of the show type, and not a single new variety in the fancy section. First-class Certificates of Merit were awarded to the following show Dahlias:—Senator, a large, full, and finely shaped flower, purple, with a deep flush of bright magenta on the surface, good petal and full high centre; Hope, pale ground, suffused with bright lilac-pink, good shape and centre and very pleasing; and to Condor, reddish buff, new in colour, fine petal, centre and outline—all from Messrs. Keynes & Co., Salisbury; to Earl of Ravensworth, pale pink flushed with purple, good shaped petal and outline, said to be a sport from Vice-President, and with the flatness peculiar to that flower, yet quite distinct in colour, from Messrs. Hackness & Son, Bedale; Beauty of the Grove, from Mr. G. Harris, Orpington, was commended for its distinct colour, or combination of colours; it has a lilac centre, the surface pink, flamed with rosy-pink, large in petal, and flat, but very pleasing to the eye. A show Dahlia, named Mrs. Tranter, came from Mr. John Walker, nurseryman, Thame; it has a dull red ground flushed with magenta, and edged with maroon; a large, full, and taking flower, but with pointed petals, which detract from its symmetry. The same award was made to the following pompon Dahlias:—Gem, very rich scarlet, perfect in shape, small, very free; Little Duchess, pale scarlet, very pretty and bright, fine shape; Isabel, bright scarlet, distinct in colour, compact, very free; Favourite, shaded crimson, perfect shape and petal, very free; and Mabel, pale lilac, tipped purple, small, fine shape, very free; all from Mr. C. Turner, Royal Nursery, Slough. To the following single Dahlias:—White Star, pure white, with the slightest tinge of blush, small, pure, and fine shape; Christine, clear pink, very pleasing, distinct, and fine shape; and Pantaloon, pale ground, suffused with pink and edged with maroon, both from Mr. T. S. Ware, Tottenham; also to Augustine, crimson, with bright orange-crimson bands on the sides of the petals; and to Evening Star, rich crimson, bright in colour, very good, both of medium size and fine shape; these came from Messrs. Keynes & Co., Salisbury. Seedling single Dahlias were largely produced, but, as might be expected, they are becoming over-large, and in danger of taking on the semi-double form.

PLANT PORTRAITS.

ACACIA LINIFOLIA, Willdenow, *Revue Horticole*, May 1.—Shrub with linear ciliolate leaves and small stalked globose heads of yellow flowers.

ACALYPHA MACAFEEANA, *Revue Horticole*, July 1, 1882 = A. Wilkesiana.

ANTHURIUM LINDENIANUM, C. Koch, *Illust. Horticole*, t. 456.—A remarkable New Grenadan species, with stalked cordate ovate dark green leaves, and stalked, oblong, rose-coloured spathes, slightly longer than the thick cylindric spadices.

APPLE SOPS IN WINE, *Florist and Pomologist*, July, 1882, t. 566.—An old Apple of moderate size, globular form, with a short stalk set in a shallow basin, a closed eye; the skin deep red, speckled; the flesh tinged with red also, hence the name. October—January.

ARISARUM PROBOSCIDEUM, Savi.; Hook. f., *Bot. Mag.*, July, t. 6634.—An Aroid with a creeping root-stock, hastate oblong leaves, stalked hooded purplish spathes, prolonged into very long tail-like processes. South Italy, Hort. Kew.

BIGNONIA VENUSTA, *Garden*, April 22.—A magnificent stove or warm greenhouse climber, with a profusion of trumpet-shaped orange flowers in clusters.

COLUMNEA KALBREYERI, Hook. f., *Bot. Mag.*, July, t. 6633.—The very remarkable and beautiful stove Gesnerad figured at pp. 44, 217. Hort. Veitch.

CYPRIPEDIUM INSIGNE VAR. MAULEI, and VAR. PUNCTATUM, *Garden*, June 24, 1882, with descriptive notice by Mr. Burbidge.

DENDROBIUM LITUIFLORUM, β FREEMANNI, *Gartenflora*, July, t. 1086.—Sepals and petals narrow, pale lilac, lip convolute, white, with a purple centre.

DRACÆNA MASSANGEANA, *Revue de l'Horticulture Belge*, August.—A form with broadly lanceolate leaves, with a central broad yellow stripe and green margins. Syn., Aletris fragrans var. It is said that the variety appeared simultaneously in two widely separated localities.

GENTIANA KESSELRINGI, Regel, *Gartenflora*, t. 1087.—A species with lanceolate leaves and terminal tufts of white funnel-shaped flowers.

IRIS KÆMPFERI VARS., *Garden*, June 17, 1882.

KALMIA LATIFOLIA, *Garden*, July 1, 1882.

NERINE EXCELLENS ×, Moore, *Florist and Pomologist*, August, t. 557.—Flowers rather large for the genus, soft rosy-pink, segments narrow, with a carmine-coloured rib down the centre of each segment. Said to be a hybrid, but the parentage is not given. Hort. Bull.

PELARGONIUM BELLE DE JOUR, Lemoine; Moore, in *Florist and Pomologist*, July, t. 565.—A seedling from Lucie Lemoine, crossed by the old double album plenum; flowers pure white, broad, semi-double, and regular, continuous flowering.

PELARGONIUM MIGNONETTE, Lemoine; Moore, in *Florist and Pomologist*, July, t. 565.—A seedling raised by M. Lemoine, and belonging to the Regal section. Flowers regular, in dense trusses, petals carmine-rose, with a white crisped edge, upper petals with a maroon blotch.

PHALÆNOPSIS STUARTIANA, Rchb. f., *Florist*, April, 1882.—A finer specimen than that figured in the *Magazine*.

PLUM HARRIET, T. F. Rivers, *Florist and Pomologist*, August, t. 568.—A Plum said to be later than the Transparent Gage, and a better bearer. It is a seedling, not yet distributed, with full-sized globose fruit, marked by a deep suture, yellow, marbled with red. Flesh yellow, of good flavour.

ROSES, SAFRANO, *Journal des Roses*, July; RUGOSA, id., June.

SCABIOSA CAUCASICA (M. B.) VAR. HETEROPHYLLA (Led.), *Gartenflora*, June, t. 1084.—A form with pinnatifid leaves, the lobes very narrow, the terminal one larger, all hairy. Flower-heads 2 inches across, rosy-lilac. Caucasus.

STREPTOCARPUS PARVIFLORUS, E. Meyer; Hook. f., in *Bot. Mag.*, t. 6636.—A Gesneraceous plant from Cape Colony, with numerous oblong-lanceolate rugose subsessile leaves, and erect many-flowered scapes; flowers tubular, white, 5-lobed.

TULIPA BORSZCOWI, Regel. Baker, in *Bot. Mag.*, July, t. 6635.—A pretty species from Turkestan, with bulb-scales pilose within, stem and oblong leaves glaucous; flowers solitary, segments oblong acute, the outer reddish-brown with a yellow edge, the inner wholly yellow. Hort. Kew.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON

FOR THE WEEK ENDING WEDNESDAY, SEPT. 27, 1882.

MONTH AND DAY.	BAROMETER. Mean Reading Reduced to 32° Fahr.	BAROMETER. Departure from Average of 18 years.	TEMPERATURE OF THE AIR. Highest.	Lowest.	Range.	Mean for Day	Departure of Mean from Average of 50 years	Hygrometrical Deductions from Glaisher's Tables 6th Edition. Dew Point.	Degree of Humidity. Sat = 100	WIND. Average Direction.	RAINFALL.
Sept.	In.	In.	°	°	°	°	°	°			In.
21	29.63	−0.17	59.1	17.5	11.6	53.0	−2.5	49.8	89	N : NE	0.03
22	29.75	−0.04	64.5	48.0	16.5	54.8	−0.5	47.4	76	N.E. : N.N.E.	0.00
23	29.84	−0.06	58.0	42.2	15.8	50.4	−4.8	46.2	86	N.W. : NNW	0.00
24	29.82	−0.05	64.0	48.2	15.8	55.5	+0.5	50.0	82	S. : S.S.W	0.00
25	29.60	−0.15	68.0	50.0	18.0	55.2	+0.4	48.1	78	S : S.E.	0.00
26	29.25	−0.49	61.5	51.0	10.5	55.0	+0.3	52.2	91	E. : S.S.E.	0.02
27	29.19	−0.55	59.0	49.0	10.0	52.1	−2.5	48.3	87	S.E. : S.S.W.	0.05
Mean	29.58	−0.21	62.0	48.0	14.0	53.7	−1.3	48.9	83	variable	0.10

Sept. 21.—A dull, overcast morning: fine afternoon; slight showers occasionally. Fine but windy night.
— 22.—Fine bright day, sun shining brightly. Fine night, cloudless.
— 23.—Fine day, but rather misty. Fine night, calm.
— 24.—Fine day, deep blue sky. Fine night
— 25.—A dull, overcast morning. Fine bright warm day, sun shining brightly. Fine night, white clouds.
— 26.—Fine morning; dull, overcast afternoon; slight rain at 11 P.M.
— 27.—Fine bright morning, sun shining brightly, blue sky; a dull, overcast afternoon. Fine night, windy.

LONDON: *Atmospheric Pressure.*—During the week ending September 23, the reading of the barometer at the level of the sea increased from 29.98 inches by the beginning of the week to 30.01 inches by 9 A.M. on the 17th, decreased to 29.98 inches by 3 P.M. on the same day, increased to 30.04 inches by 9 A.M. on the 18th, decreased to 30.01 inches by 3 P.M., and increased to 30.02 inches by midnight on the same day, decreased to 29.70 inches by 3 P.M. on the 20th, increased to 29.83 inches by midnight on the same day, decreased to 29.80 inches by 9 A.M. on the 21st, and was 30.04 inches by the end of the week.

The mean reading for the week at the level of the

sea was 29.91 inches, being 0.16 inch higher than last week, and 0.11 inch below the average of the week.

Temperature.—The highest temperature in the week was 68°, on the 17th. On the 19th the highest was 56°. The mean of the seven high day temperatures was 61°.1.

The lowest temperature in the shade in the week was 42°.2, on the 23d; on the 18th the lowest temperature was 49°.8. The mean of the seven lowest temperatures was 47°.4.

The greatest range in one day was 20°.2, on the 17th; the smallest was 8°, on the 20th. The mean of the seven daily ranges was 13°.7.

The mean temperatures were—on the 17th, 55°.5; on the 18th, 54°.1; on the 19th, 50°.9; on the 20th, 54°.2; on the 21st, 53°; on the 22d, 54°.8; and on the 23d, 50°.4; and these were all below their averages by 1°.1, 2°.1, 5°.2, 1°.6, 2°.5, 0°.5, and 4°.8 respectively.

The mean temperature of the air for the week was 53°.3, being 0°.5 higher than last week, and 2°.5 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo, placed in the full rays of the sun, was 121°, on the 22d; the highest, on the 21st, was 63°.5. The mean of the seven readings was 90°.3.

The lowest reading of a minimum thermometer with its bulb placed on grass and fully exposed to the sky was 36°.5, on the 23d. The mean of the seven readings was 39°.2.

Rain.—Rain fell on three days, to the amount of 0.73 inch.

ENGLAND: *Temperature.*—During the week ending September 23 the highest temperatures were 70° at Hull, 69° at Sunderland, and 68° at Blackheath, and was 59°.7 at Liverpool, 61°.1 at Bolton, and 61°.9 at Bristol. The general mean was 64°.8.

The lowest temperatures in the week were 35° at Truro, 36° at Hull, and 37°.5 at Wolverhampton; the lowest temperature at Brighton was 47°.9, at Liverpool 45°.3, and at Bradford 45°.2. The general mean was 41°.7.

The greatest range of temperature in the week was larger than 29°.7 at Hull, Truro, and Cambridge; the least ranges in the week were 14°.4 at Liverpool, 14.9 at Brighton, and 18°.8 at Bradford. The general mean was 23°.1.

The mean of the seven high day temperatures exceeded 63°.7 at Cambridge, Hull, and Sunderland; and was 58°.3, or less, at Wolverhampton, Liverpool, and Bolton. The general mean was 60°.9.

The mean of the seven low night temperatures exceeded 48°.8 at Bradford, Brighton, and Liverpool, and was less than 46° at Nottingham, Wolverhampton, and Hull. The general mean was 46°.9.

The mean daily range was greatest—exceeding 17°.3—at Hull, Cambridge and Sunderland; and was smallest at Liverpool, 7°.6; at Bradford 9°.9, and at Brighton 10°.7. The general mean was 14°.

The mean temperature of the week was highest at Truro and Cambridge, 54°.2; and at Sunderland 53°.8; and was lowest at Wolverhampton, 50°.2; and at Bristol and Bolton 51°.3. The general mean was 52°.7.

Rain.—The heaviest falls were 0.78 inch at Bristol, 0°.73 inch at Blackheath, and 0.64 inch at Brighton; the lightest falls were 0.02 inch at Bradford, 0.07 inch at Leeds, and 0.10 inch at Truro and Bolton. The general mean was 0.31; it fell on two or three days, but it fell on five days at Nottingham.

SCOTLAND: *Temperature.*—During the week ending September 23, the highest temperature was 63°, at Dundee; at Leith the highest temperature was 59°. The general mean was 61°.1.

The lowest temperature in the week was 32°, at Perth; at Greenock the lowest temperature was 44°. The general mean was 38°.6.

The mean temperature in the week was highest at Leith 52°.6; and was lowest at Perth, 50°.1. The general mean was 51°.5, being 0°.8 below that of the week immediately preceding, and 1°.6 below that of the corresponding week of 1881.

Rain.—The largest fall was 0.31 inch, at Greenock; the smallest was 0.09 inch, at Leith. No rain fell at Perth. The general mean fall was 0.14 inch.

JAMES GLAISHER, F.R.S.

Answers to Correspondents.

*** Correspondents are reminded that the editorial and the publishing departments are quite separate—as, indeed, announced every week. All letters concerning advertisements should be addressed to the Publisher.

BOOKS: *Seedsman.* Some of the leading seed firms publish illustrated and descriptive catalogues which would answer your purpose. Miss Plue's *British Grasses* (Reeve & Co.) gives full descriptions and figures. Paxton's *Botanical Dictionary* gives the pronunciation of Latin words.

CRITICISM: *An Aggrieved One.* Your complaint should be addressed to the journal in which the paragraph appeared.

CUCUMBERS: *Y. H.* The insect you speak of does not appear to be of the ordinary kind that attacks Cucumbers. Send us samples of the insect carefully packed in a quill, and we will name them for you. You are mistaken in thinking that the spot on Cucumbers is the work of an insect of this kind. The Cucumber disease is easily recognised even by the smell of the plants and fruits when the disease is of long standing.

DIRECTORIES: *N. A. E.* There is no necessity to institute comparisons as to the relative merits of those included and those omitted. All head-gardeners should be included.

DUNDEE SHOW: *W. S. W.* If you saw the heaps of reports and letters on our table you would not wonder at the omission.

FUNGUS: *E. G., Ockenden.* The name of the Fungus is Clavaria vermiculata, sometimes termed Candle Fungus. It is common on lawns, short pastures, and grassy road-sides.

GRAPES: *North.* There is no mystery whatever about the condition of your Grapes. It is an aggravated case of shanking, and you explain the way in which the disease comes on accurately. Your only remedy is to improve the condition of the border, and by so doing you will also improve the state of the Vine's roots, and the crop as a natural consequence.

HOT-WATER PIPES: *Subscriber.* The hot-water pipes should be placed near the front wall, one above the other, leaving room to plant trees between them and the wall. The object of laying hot-water pipes flat on the border is to obtain a quick and equable temperature; but as you want to store bedding stuff, pipes so arranged are troublesome. Your house will be a narrow one, and the two pipes will give you abundant heat.

NAMES OF FRUITS.—In the absence of our fruit referee, we must ask the indulgence of our correspondents for a few days.

NAMES OF PLANTS: *R. M.* Cupressus nutkaensis.—*A. Y.* Cypripedium Spicerianum.—*P. Y. O.* 1, Anigosanthus rufa; 2, Hypericum grandifolium; 3, we cannot name without flowers; 4, Sequoia gigantea.—*R. Gill.* Ceanothus americanus, Polypodium taxifolium, Oncidium sphegiferum.—*Connon & Reid.* Tolpis barbata: send better specimens next time.—*L. Y. D.* Odontospermum maritimum.—*Y. E. B.* Your grass is Cynodon dactylon.—*A. Y. C.* 1, perhaps Aster horizontalis; 2, Œnothera fruticosa; 3, Veronica spicata, white var.; 4, Pulmonaria officinalis; 5, Potentilla nepalensis.—*Dall.* 1, Phygelius capensis; 2, a species of Cassia. Your Grapes are affected with thrips, and also with rust.—*E. C.* 1, Polystichum capense; 2, Platyloma cordatum; 3, Pteris cretica; 4, Adiantum, immature—perhaps A. curvatum; 5, A. decorum; 6, A. hispidulum.—*Howard Fox.* Lysimachia ephemerum.—*Y. R. Haig.* Bromus asper, Lilium elegans, var. venustum.—*A. B. C.* Your grass is a Sporobolus, but we cannot name the species from such miserable material and without knowing the country.—*Subscriber.* Asplenium fontanum.—*No name* (cardboard box). 1, Adiantum hispidulum; 2, A. fulvum; 7, Goniophlebium appendiculatum; 8, Cyrtomium falcatum; 11, Davallia, sterile only—perhaps D. bullata; 12, Niphobolus Lingua corymbiferus; 13, Pteris longifolia; 14, Asplenium Fabianum; 15, Lastrea laserpitiifolia (*alias* Polystichum concavum, and Lastrea Standishii); 19, Pteris cretica; 20, too immature; 21, Callipteris malabarica. The other numbers missing. (Tin box). 3, Polystichum triangulum; 4, Anemia villosa; 5, Polystichum capense; 6, Lastrea glabella; 9, indeterminable—fertile frond only; 10, Asplenium Colensoi; 16, Selaginella Martensii; 17, S. cuspidata; 18, Selaginella—a poor scrap, apparently of S. cæsia. The other numbers missing.—*Capt. C.* Physianthus albens, Spiræa callosa.

PEAR TREE: *A Subscriber, Aston.* Rinding fruit trees is an old practice, now almost obsolete. There would be no sense or reason in stripping the rind off the branch of any fruit tree to a depth of 5 inches.

PINE SPORT: *R. W.* We do not doubt the possibility of the occurrence, but the evidence you give is not sufficient. We have carefully examined the two plants sent to us, but have failed to trace anything like a union between them. The samples sent simply show two plants having their roots interlaced with each other, and nothing more. We notice at the extreme base of each root something that looks as if such a union might have existed, but this (assuming it to have existed) has been severed, or twisted off in some way or other.

RAPE SEED: *A.* If the seed is good it will produce a good crop if the conditions are favourable. For the rest we must refer you to what we have already said.

RUSTICUS.—Your letter has been misplaced. Please repeat your question.

SEEDLING PRIMULA: *Y. B.* Very good, but we have seen better.

VARIEGATED OAK: *Y.* The variegation is not very uncommon. Most likely it has existed in your tree for a considerable time unobserved, and has increased to an unusual extent this year. The appearance is due to an arrest of development of the colouring matter, but how brought about, and why limited to certain branches, is not understood. It may be propagated by grafting on the common Oak.

YELLOW-FRUITED RUBUS: *Y. G.* We do not know any wild species with yellow fruits. Is it a yellow-fruited Raspberry? or can it be the fruit of R. spectabilis? If you send us a specimen we will endeavour to name it for you.

ZONAL PELARGONIUMS: *W. B. M.* We do not see any very great difference between the specimens sent. The truss of the one is fine, and both pips are good of their kind.

*** Correspondents are specially requested to address, post-paid, all communications intended for publication to the "*Editor,*" and not to any member of the staff personally. The Editor would also be obliged by such communications being *written on one side only of the paper* and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Letters relating to ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the Publisher, and not to the Editor.*

CATALOGUES RECEIVED.

WILLIAM PAUL & SON, Waltham Cross, Herts—Roses, Fruit Trees, Grape Vines, Greenhouse Plants, Climbers, &c.

THOMAS BUNYARD & SONS, Ashford, Kent, and at Rye, Sussex—Bulbs and Fruit Trees.

JAMES CUTHBERT, Liverpool — Bulbs and Spring Flowering Plants.

H. THORNTON & Co., Fulham.—Dutch Flower Roots.

EDWARD WEBB & SONS, Wordsley, Stourbridge — Agricultural and other Seeds.

COMMUNICATIONS RECEIVED:—P. G.—James O'Brien.—A. D.—A. B. C.—J. R. Haig.—F. Sander & Co.—H. E.—H. W. W.—J. D.—E. J.—H. E. W.—John Broadbent.—C. F.—A. J.—J. G. (no room at present).—A. B. C (there were two correspondents who used that signature at the time you mention).—P. G. (many thanks—very crowded at present). A. D.—T. B.—H. W. W.—T. W.—H. E.—W. Watt.—F. G. (many thanks).—J. M.—Subscriber—J. N.—Seedsman.—A. G.—Rusticus.—J. F. B.—J. H.—W. A. E.—W. H. G.—C. B.—Heath & Son.—H. E.—J. F., Leeds.—R. D.—J. U. (as soon as we can find room, but we are overdone at present; we shall be glad to hear from you occasionally, nevertheless).—W. R.—R. F.—C. F.—W. G. S.—D. Kemp.—C. Ford, Hong Kong.—Subscriber (next week).—W. Thompson—G. N.—R. Fenn.—G. J. W.—J. F.—H. E. G.—John Heywood—W. H—W. B. M.—Sutton & Sons.—W. J. M.—E. Webb & Sons.—T. M.—N. E. B.—J. F.—Canon E.—G. F. W.—J. J.—T. H. S.—Native Guano Company.—J. F.—G. N.—Captain C.—J. H.—E. H.—Thomas Christy & Co.

Enquiries.

He that questioneth much shall learn much.—BACON.

SWEET-SCENTED CYCLAMEN.—Can any one inform us if sweet-scented Cyclamens can be had? If so, can they be known before they come into flower? *C. & R.*

DIED—On the 6th inst., at New Villa, Edmonton, GEORGE SMITH, aged sixty-four.

Markets.

COVENT GARDEN, September 28.

Trade quiet, with a steady demand for best wall-fruit. Prices generally unaltered. Kent Cobs easier. *James Webber, Wholesale Apple Market.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldii, doz.	12 0	24 0	Ficus elastica, each	1 6	7 0
Arbor-vitæ (golden), per dozen	6 0	18 0	Foliage Plants, various, each	2 0	10 6
— (common), dozen	6 0	12 0	Fuchsias, per dozen	4 0	9 0
Asters, per dozen	4 0	12 0	Genista, per doz.	8 0	12 0
Begonias, per doz.	6 0	12 0	Heliotrope, per doz.	3 0	6 0
Chrysanthems., doz.	6 0	18 0	Hydrangea, doz.	9 0	12 0
Coleus, per dozen	4 0	6 0	Lilium, in var., doz.	18 0	42 0
Cyperus, per dozen	6 0	12 0	Marguerite Daisy, per dozen	6 0	12 0
Dracæna terminalis	30 0	60 0	Myrtles, per doz.	6 0	12 0
— viridis, per doz.	12 0	24 0	Palms in variety, each	2 6	21 0
Euonymus, various, per dozen	6 0	18 0	Pelargoniums, doz.	6 0	12 0
Evergreens, in var., per dozen	6 0	24 0	— scarlet, per doz.	2 6	6 0
Ferns, in var., dozen	4 0	18 0	Solanum per doz.	9 0	12 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 blooms	0 2	0 4	Lilium various, 12 bl.	3 0	6 0
Arum Lilies, per doz.	4 0	6 0	Marguerites, 12 bun.	4 0	6 0
Asters, 12 bunches	4 0	9 0	Mignonette, 12 bun.	1 6	4 0
Bouvardias, per bun.	0 9	1 0	Pansies, 12 bunches	1 0	3 0
Calceolaria, 12 bun.	6 0	12 0	Phlox, 12 bunches	3 0	6 0
Camellias, per dozen	3 0	6 0	Pelargoniums, 12 sprays	0 0	1 0
Carnations, 12 bun.	2 0	3 0	— zonal, 12 sprays	0 3	0 6
Chrysanth., 12 bun.	4 0	12 0	Primula, double, per bunch	1 0	1 6
Cornflower, 12 bun.	2 0	4 0	Roses (indoor), doz.	1 0	3 0
Dahlias, 12 bunches	3 0	6 6	— (outdoor), doz.	0 4	0 9
Eucharis, per doz.	4 0	6 0	— Coloured, doz.	1 0	2 0
Fuchsias, 12 bunches	6 0	8 0	Stephanotis, 12 spr.	3 0	6 0
Gardenias, 12 blms.	3 0	6 0	Sunflower, 12 blooms	0 6	2 0
Gladioli, 12 bun.	6 0	12 0	Sweet Peas, 12 bun.	2 0	6 0
— brenchleyensis, 12 sprays	1 6	3 0	Tropæolum, 12 bun.	1 0	2 0
Heliotropes, 12 sp.	0 6	1 0	Violets, 12 bunches	1 0	1 3
Lapageria, white, 12 blooms	3 0	4 0	— French Czar, bun.	0 9	1 0
— red, 12 blooms	1 0	3 0	White Jasmine, 12 bunches	4 0	9 0
Lilac (French), bun.	9 0	10 0			

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, ½-sieve	.. 0– 5 0	Melons, each	.. 2 0– 4 0
Aubergines, per doz.	4 0– ..	Peaches, per dozen	.. 2 0– 8 0
Cobs, 100 lb.	..45 0–50 0	Pears, per dozen	.. 1 0– 2 0
Figs, per dozen	.. 0 6– 1 0	Pine-apples, Eng., lb.	3 0– 4 0
Grapes, per lb	.. 0 0– 2 0	Plums, ½-sieve	.. 5 0– 8 0
Lemons, per 100	— 0 0–10 0		

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe, per doz.	.. 3 0– 6 0	Herbs, per bunch	.. 0 2– 0 4
Beans, French, English grown, p. lb.	0 8– ..	Horse Radish, bund.	4 0– —
Beet, per doz.	— 1 0– ..	Lettuces, Cabbage, per score	.. 1 6– ..
Cabbages, per doz.	— 1 0– 2 0	Mint, green, bunch	.. 0 4– ..
Carrots, per bunch	.. 0 4– 0 6	Mushrooms, p. baskt.	1 6– 3 0
Cauliflowers, English, dozen	.. 2 0– 4 0	Onions, per bushel	.. 4 0– ..
Celery, per head, per bundle	.. 0 4– .. .. 1 6– ..	— Spring, per bun.	0 6– ..
Cucumbers, each	.. 0 6– 1 0	Parsley, per bunch	.. 0 4– ..
Endive, per doz.	.. 2 6– ..	Radishes, per doz.	.. 1 6– ..
Garlic, per lb.	— 1 0– ..	Small salading, pun.	0 4– ..
		Spinach, per bushel	3 0– ..
		Tomatos, per doz	.. 2 0– ..
		Vegt. Marrows, doz.	3 0– ..

POTATOS :—Magnum Bonums, 90s. to 100s. ; Regents, 80s. to 90s. ; Myatt's, 100s. to 110s. per ton.

SEEDS.

LONDON : *Sept.* 27.—Messrs. John Shaw & Sons, of 37, Mark Lane, report that rather more business has lately been passing in field seeds. The small quantity remaining over of yearling Clover seed continues in favour, and quotations for same are advancing. For Trifolium incarnatum there is an improved inquiry. Choice winter Tares are not now over plentiful, nevertheless values are easier. Imported Italian is neglected, the prices demanded being above the views of English buyers. For large blue Peas there is a ready sale.

CORN.

At Mark Lane on Monday sales of English Wheat were not readily effected at 1*s.* to 2*s.* decline on the week ; foreign was difficult to sell at a similar decline. Malting barley was in moderate supply, and good qualities firm ; grinding descriptions dull, and 6*d.* lower. No change occurred in the value of Beans or Peas. Maize ruled 6*d.* to 1*s.* lower than on this day week. Oats ruled heavy at 3*d.* to 6*d.* under the currency of Monday se'nnight. Flour was quoted at a reduction of 6*d.* to 1*s.* per sack.—On Wednesday English supplies of Wheat were light, but foreign liberal. Little was done, though there were sellers at easier rates. Flour dull, with a downward tendency. Both malting and grinding Barley were purchasable on easier terms. Oats were again 3*d.* lower, with a dull sale. Of Beans and Peas supplies were light and prices steady. Maize was weak. —Average prices of corn for the week ending Sept. 23 : —Wheat, 42*s.* 1*d.* ; Barley, 36*s.* 1*d.* ; Oats, 21*s.* 4*d.* For the corresponding period last year :—Wheat, 48*s.* 5*d.* ; Barley, 35*s.* ; Oats, 21*s.* 6*d.*

CATTLE.

At the Metropolitan Market on Monday supplies were more than adequate to the slack demand. Prices ruled mostly 2*d.* per stone lower for good qualities, a larger reduction having to be conceded for inferior. Sheep, without being quotably reduced, tended in favour of buyers. Calves about maintained late value for best English, second qualities and foreign ruling lower. Quotations :—Beasts, 4*s.* to 5*s.* 2*d.*, and 5*s.* 6*d.* to 6*s.* ; calves, 5*s.* to 6*s.* ; sheep, 5*s.* 6*d.* to 6*s.*, and 6*s.* 6*d.* to 7*s.* 2*d.*—Thursday's cattle trade was quiet, with no particular feature. Both beasts and sheep sold slowly, prices remaining about the same as above quoted. Calves were dull and lower.

HAY.

Tuesday's Whitechapel Market report states that fair supplies were on offer of hay and Clover, but of straw shorter, prices being as follows :—Prime old Clover, 120*s.* to 140*s.* ; inferior, 75*s.* to 80*s.* ; new, 90*s.* to 100*s.* ; prime old meadow hay, 100*s.* to 112*s.* ; inferior, 55*s.* to 90*s.* ; new, 70*s.* to 100*s.* ; and straw, 30*s.* to 44*s.* per load. —On Thursday there was a rather large supply on sale, but trade was dull. Clover was easier, but straw was scarce and dearer.—Cumberland Market quotations :—Superior old meadow hay, 100*s.* to 114*s.* ; inferior, 80*s.* to 92*s.* ; new, 65*s.* to 92*s.* ; superior old Clover, 132*s.* to 140*s.* ; inferior, 100*s.* to 114*s.* ; new, 84*s.* to 108*s.* ; and straw, 40*s.* to 44*s.* per load.

POTATOS.

The Borough and Spitalfields Markets reports note a fair supply and good demand at about late rates. The imports into London last week were 3983 bags from Hamburgh, 204 bags from Bremen, and 7 from Rotterdam.

COALS.

The following are the prices current at market during the week :—Ravensworth West Hartley, 15*s.* ; East Wylam, 17*s.* ; Percy West Hartley, 14*s.* 3*d.* ; Walls End —Hetton, 20*s.* and 21*s.* ; Hetton Lyons, 17*s.* 6*d.* and 18*s.* 6*d.* ; Lambton, 19*s.* 6*d.* and 20*s.* 6*d.* ; Wear, 17*s.* 3*d.* and 18*s.* 6*d.* ; Tees, 21*s.*

Government Stock.—Consols closed on Monday at 100⅜ to 100¼ for delivery, and 100¼ to 100⅜ for the account. Tuesday's quotations were 100¼ to 100⅜ for delivery, and 100⅜ to 100½ for the account. The closing figures of Wednesday were 100⅜ to 100½ for delivery, and 100$\frac{3}{16}$ to 100$\frac{5}{16}$ for the account. The final quotations of Thursday were 100⅜ to 100½ for delivery, and 100¼ to 100⅜ for the account.

All the Season.

OUR CHRYSANTHEMUMS.

Thousands do come and see, and all are surprised at the extent, completeness, and health of our stock, covering a space of not less than three-quarters of an acre. Two persons are wholly engaged amongst them.

ULIGINOSUM (a species), now beautifully in bloom, and quite æsthetic. Plants, 6*d.* each ; 4*s.* per dozen.

Also all the **Early-flowering Varieties.** Twelve good kinds, full of flower, 4*s.* ; Cuttings, 1*s.* 6*d.*

Our selection, in all good Named Varieties, strong plants, showing bloom-buds, 3s. 6d. dozen ; 25s. 100 ; 600 varieties complete for £6 ; Cuttings, £2.

50 New Varieties, 6*s.* doz. ; Cuttings, 2*s.* ; the Set for 22*s.*

We also have the entire collection in 1300 specimen plants in splendid condition solely for trial and stock, and there is every probability that we shall have much the finest and the most complete display of this family ever seen either in this or any other country during the coming season.

Our **ILLUSTRATED CATALOGUE,** describing correctly 650 exhibition varieties, will shortly be ready, and sent post-free, containing a short but practical treatise, "How to Grow and Attain nearly Perfection."

The *Journal of Horticulture*, May 25, 1882, says :—"In the almost innumerable ranges of pits are fine collections of Dahlias, especially the single varieties which Mr. Cannell has done so much to popularise, are represented by very large stocks. Single and double Pyrethrums, too, which are now becoming so deservedly popular, are here grown in thousands. Herbaceous and spring flowers are grown in large numbers, and all the best varieties in each class of Chrysanthemums, about 600 varieties, are grown ; and an admirable system is adopted of placing each variety in groups by themselves for keeping them true to name. Altogether the wonderful collections of plants to be found in these nurseries are both a surprise and delight to the visitor, and testify more eloquently than words can do to Messrs. Cannell's energy."

Our **"Real Manure"** is indispensable, and should be applied at once if fine flowers are desired.

From J. COULBORN, Esq., *Lily Villa, Victoria Park, Manchester, April* 19, 1882.—"My gardener, who thought my ordering 'Real Manure' quite superfluous, saying 'Every gardener had his own, and one does as good as another,' came to me yesterday, saying I was quite right in insisting he should try yours ; and that in the ten days he had used it for certain plants as I directed he could see a marked improvement. He is quite a convert."

Show Boxes, Cups, Tubes, Ivory Tweezers, every requisite and all necessary appliances for the production of Exhibition blooms.

NEW DOUBLE VIOLET
"SWANLEY WHITE."

We have much pleasure in offering this splendid Violet, which in truth is the only variety where the word double white can be correctly applied, and we guarantee that it will shortly become the most popular kind in cultivation. It has been figured both in the *Gardeners' Chronicle*, and *Florist and Pomologist*, and is pronounced by all to be a grand acquisition. Plants full of flower bud 7*s.* 6*d.* each, £3 10*s.* per dozen.

For full particulars see CATALOGUE, sent post-free.

Extract from JOURNAL OF HORTICULTURE, *March* 9, 1882. —"'We send you one bloom of Swanley White Violet ; this must be the best of all Whites'—so write Messrs. H. Cannell, and the flower we received is certainly by far the finest of its kind we have seen. It was exactly 1½ inch in diameter, and contained forty petals, imbricated, and constituting a neat and well-formed flower."

The GARDENERS' CHRONICLE, *March* 18, says :—"Swanley White Violet is the finest double white variety yet introduced."

The GARDEN, *March* 18, also says :—"Violet Swanley White is the best of all the double whites."

Rev. REYNOLDS HOLE says :—"Your Violet is indeed a thing of beauty and a joy for ever."

Rev. H. H. CREWE says :—"Thanks for the sight of the Violet. It is a beautiful flower ; a first-rate thing."

From Mr. D. T. FISH, *Hardwicke House, Bury St. Edmunds*—"Many thanks for your Violet Swanley Gem. It is assuredly the finest double white Violet I have seen."

From Mr. WESTLAND, *The Gardens, Witley Court, Stourport, March* 25, 1882.—"Messrs. Cannell & Sons. Gentlemen, —Thanks for the bloom of the Swanley White Violet. If it proves a free flowerer, we have nothing to approach it in purity of colour and delicious odour."

From Mr. J. C. CLARKE, *The Gardens, Cothelstone House, Taunton, March* 25, 1882. —"Dear Sirs,—I owe you a heap of thanks for the pleasure in viewing some flowers of your double white Violet. What a nice white ; and what strong flower stems ! I have grown all the white Violets, and I am bound to say yours is the purest white I have yet seen."

H. CANNELL & SONS.

THE HOME FOR FLOWERS SWANLEY KENT.

STRAWBERRIES.—Strong roots for present planting and for fruiting next year, 4*s.* per 100. Descriptive LIST and price for plants in pots for forcing on application.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

8000 Winter-Flowering Carnations 8000

TWELVE WELL-ROOTED PLANTS, in six best varieties, by post 4*s.* ; larger, in 5*s.*, 6*s.* per dozen, 42*s.* per 100 ; in 48's, 15*s.* and 18*s.* per dozen, £5 and £6 10*s.* per 100. See CATALOGUE.
W. M. CROWE, Boleyn Nursery, Upton, Essex.

STEPHANOTIS FLORIBUNDA.—Good plants in 48's, 2*s.* each, 18*s.* per dozen, £7 per 100. Prices of larger on application.
W. M. CROWE, Boleyn Nursery, Upton, Essex.

JAMES DICKSON AND SONS, "Newton" Nurseries, Chester.
GRAPE VINES of the usual excellent quality can now be supplied, price 5*s.*, 7*s.* 6*d.*, and 10*s.* 6*d.* each ; the stronger will fruit next year either in pots or planted out.
CHRYSANTHEMUMS.—Well-grown plants of leading kinds, for immediate blooming, can be supplied at 12*s.* per dozen and upwards.
STRAWBERRIES.—By now planting transplanted runners a crop may be depended upon next year. Strong plants in large and small pots for forcing and planting can also be supplied.
AZALEAS, CAMELLIAS, WINTER FLOWERING and other PLANTS.
CATALOGUES with full particulars on application to
JAMES DICKSON AND SONS, "Newton" Nurseries, Chester.

CYCAS REVOLUTA.—A grand specimen, perfect, 6 feet high, and 10 feet wide ; price £6 6*s.* Also a fine specimen ENCEPHALARTOS LATIFRONS, £4 4*s.* W. JACKSON, Blakedown, Kidderminster.

ONE HUNDRED THOUSAND SINGLE SNOWDROPS.
50,000 Double Yellow DAFFODILS.
30,000 Double White NARCISS.
30,000 Single Pheasant-eyed NARCISS.
10,000 Orange Phœnix NARCISS (the large Double White Daffodil).
LILIUM CANDIDUM, and CHIONODOXA LUCILIÆ (The Glory of the Snow).
Prices on application to
WATKINS AND SIMPSON, Exeter Street, Strand, W.C.
All varieties of English and Dutch Bulbs.

AMERICAN WONDER PEA.—A few bushels of this New Early Dwarf Wrinkled Pea for Sale, cheap ; grown from seed received direct from the Raisers, Messrs. B. K. Bliss & Co., New York, and warranted pure.
BRINKWORTH AND SON, Reading.

FOR SALE, very cheap, about 300 AZALEA INDICA, splendid stuff, 12 to 18 inches high, same across.—W. F. BOFF, 203, Upper Street, Islington, N.

SPECIAL OFFER TO THE TRADE.

MESSRS. GREGORY & EVANS
still have on hand many thousands of ERICA HYEMALIS, ERICA GRACILIS CAFFRA, and other HEATHS, all well set with flower ; also GREVILLEA ROBUSTA, and CARNATION LA BELLE ROSE.
Prices on application.
EFFINGHAM NURSERY, ROOD, LEE, S.E.

SPECIAL TRADE OFFER.

Trained and Pyramid APPLES, grand stuff, well branched, 5 feet high, of all the most popular varieties.
24*s. per dozen.*
HEATH & SON, Exotic Nurseries, Cheltenham.

GERANIUM HENRY JACOBY, very dark, grand bedder, and for pots ; strong plants, 4*s.* per dozen ; PRIMA DONNA, a grand white, 4*s.* per dozen. EVERGREEN VIRGINIAN CREEPER, 6*s.* per dozen.
W. AND J. BROWN, Stamford.

GARDEN REQUISITES.
COCOA-NUT FIBRE REFUSE.
4*d.* per bushel ; 100 for 25*s.* ; truck (loose, about 2 tons), 40*s.* ; 4-bushel bags, 4*d.* each.
LIGHT BROWN FIBROUS PEAT, 5*s.* 6*d.* per sack ; 5 sacks, 25*s.* ; sacks, 4*d.* each.
BLACK FIBROUS PEAT, 5*s.* per sack, 5 sacks 22*s.* ; sacks, 4*d.* each.
COARSE SILVER SAND, 1*s.* 9*d.* per bushel ; 15*s.* per half ton, 26*s.* per ton ; in 2 bushel bags, 4*d.* each.
YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1*s.* per bushel.
SPHAGNUM MOSS, 8*s.* 6*d.* per sack.
Manures, Garden Sticks, Virgin Cork, Tobacco Cloth, Russia Mats, &c. Write for Free PRICE LIST.
H. G. SMYTH,
17A, Coal Yard, Drury Lane (late of Castle St., Long Acre), W.C.

12-oz. Sample Packets, free by post, 12 stamps.
FIBROUS PEAT for ORCHIDS, &c.—BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6*s.* per truck. BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, 15*s.* per ton per truck. Sample bag, 5*s.* ; 5 bags, 22*s.* 6*d.* ; 10 bags, 45*s.* Bags included. Fresh SPHAGNUM, 10*s.* 6*d.* per bag.
SILVER SAND, Coarse or Fine, 52*s.* per truck of 4 tons. Red Sandstone ROCKWORK, £5 per truck of 4 tons. GRAVEL, good colour, 25*s.* per truck of 6 tons.
WALKER AND CO., Farnborough Station, Hants.

COCOA-NUT FIBRE REFUSE, best and pure only, 4 bushel bag, 1*s.* 4*d.* ; 15 bags, 14*s.* ; 30 bags, 25*s.* ; sent to all parts. Truckloads 33*s.*, free to rail.
A. FOULON, 37, St. Mary Axe, London, E.C.

COCOA-NUT FIBRE REFUSE, newly made, as supplied to the Royal Horticultural Society and principal Nurserymen in England, in sacks at 1s. 3d. each, or 15 sacks, 15s.; 30 sacks, £1 5s., sacks included. Truck-load, loose, £1 10s., fifteen bags or more and truck-load free on to rail. Post-office order or cheque with all orders. Established 1872.—J. STEVENS AND CO., "Greyhound" Yard, and 132, High Street, Battersea, S.W.

COCOA-NUT FIBRE REFUSE, by Chubb's Patent Process, as supplied to all the Royal Gardens and principal Nurseries of Europe; useful at all seasons. Invaluable for Potting, Plunging, Forcing, Ferneries, Strawberries, Bedding-out Plants, &c.; Destroys all Slugs and Insects.

JULY 1, 1882.—In consequence of the great scarcity of husks and enormous Continental demand for our "Refuse," we are compelled from this date to advance prices as follows, and only Orders accompanied by remittance will receive attention (in rotation). We also find it necessary to caution purchasers to beware of spurious imitations and buy the genuine "Refuse" direct. Sacks, 1s. 6d. each; 10 Sacks, 13s.; 15 Sacks, 18s.; 20 Sacks, 23s.; 30 Sacks, 30s. (all Sacks included); Truck-load, free on rail, £2. Limited quantities of P.M. *Special Quality*, granulated, in sacks only, 2s. 6d. each (2 prize medals), valuable for potting and use in conservatory. Terms strictly cash with order.—To obtain the genuine article, buy direct from the Manufacturers, CHUBB, ROUND AND CO., Fibre Works, West Ferry Road, Millwall, London, E.

GARDEN REQUISITES.
As supplied to the Royal Gardens.

COCOA-NUT FIBRE REFUSE, 1s. 6d. per sack; 10 for 13s.; 15 for 18s.; 30 for 30s.; all sacks included. Trucks (loose), 33s. Selected BROWN FIBROUS PEAT, 5s. per sack; 5 for 22s. 6d. BLACK FIBROUS PEAT, 4s. 6d. per sack; 5 for 20s.; sacks 4d. each. COARSE SILVER SAND, 1s. 6d. per bushel. YELLOW FIBROUS LOAM, LEAF-MOULD, and PEAT-MOULD, each at 1s. per bushel. MANURES of all kinds. Fresh SPHAGNUM. GARDEN STICKS and LABELS. RUSSIA MATS, &c. TOBACCO CLOTH and PAPER, best in the market; CLOTH, 8d. per lb; SPECIALITÉ PAPER, imported solely by us, 1s. per lb. Write for Price LIST.

W. HERBERT AND CO., Horticultural Stores, 19, New Broad Street, E.C. (turning by Gow's, Fishmonger), one minute from Broad Street Railway Station.

LOAM, splendid Yellow Fibrous, 15s. 6d. per ton. Useful Brown PEAT, 22s. per ton, free to Bricklayers' Arms, S. E. R. Fine ORCHID PEAT, as supplied to the principal Orchid Growers. Prices on application.
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Plants Without Earth.
DUMESNIL FERTILISING MOSS grows every variety of Plants without Earth, rendering the presence of Vegetation more agreeable indoors. Pamphlet free by post. Sole Agent for the United Kingdom,
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Manufactured and Sold by
THE LIVERPOOL HORTICULTURAL COMPANY
(JOHN COWAN), LIMITED.
This is the Manure used to produce the splendid Grapes grown at the Tweed Vineyard, Clovenfords.
Full particulars on application. The Trade supplied.
All Letters to be addressed to THE MANAGER, The Vineyard and Nursery, Garston, near Liverpool.

GISHURST COMPOUND.—Used by many of the leading Gardeners, since 1859, against Red-spider, Mildew, Thrips, Greenfly, and other Blight, in solutions of from 1 to 2 oz. to the gallon of soft water, and of from 4 to 16 oz. as a winter dressing for Vines and Fruit Trees. Has outlived many preparations intended to supersede it. In Boxes, 1s., 3s., & 10s. 6d.

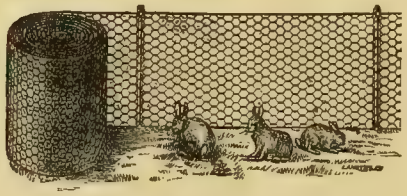
AMERICAN BLIGHT on APPLE TREES CURED by rubbing a wet hard Painter's brush on Gishurst Compound, and working the lather into the infected part

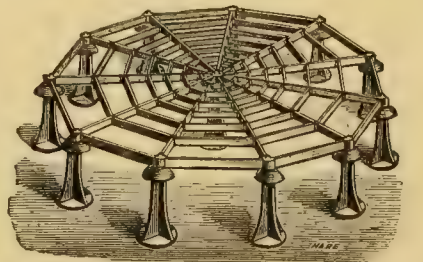
GISHURSTINE keeps feet dry, softens hard boots, preserves leather, takes a polish. In boxes, 6d. and 1s. each.—Wholesale by PRICE'S PATENT CANDLE COMPANY (Limited). Retail by Seedsmen and Oilmen. Complaints are made of difficulty in getting Gishurstine. Some leading Nurserymen have put it on their lists, others are requested to do so.

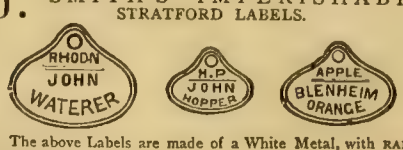
PROTECT YOUR PLANTS.
"FRIGI DOMO."
Registered Trade Mark.
"*Horticultural Society's Garden, Turnham Green.*
"Frigi Domo is now largely employed here as a protecting material instead of mats. All houses and pits to which it can be usefully applied are covered with it at night, and it is found to give entire satisfaction It lasts longer than mats, is cheaper, and keeps out frost equally well."
"*Broom House, Fulham.*
"FRIGI DOMO.—After two winters' experience of this material as a protection from frost, I have come to the conclusion that it is the best covering for pits and frames which ever came under my notice. It will keep out more frost than two mats, while it only costs the price of one: it is more tidy than loose litter, and fits more closely than straw hurdles, and it is much more manageable, for when fitted on to a roller endways, covering and uncovering can be effected in half the usual time, and there is no danger of breaking the glass. In wet weather it lies quite close to the glass, but as soon as frost sets in it becomes almost as tight as a drum, thus forming a space between it and the glass—a thing very desirable where the edges fit tightly, which they do. I believe that any greenhouse plant is perfectly safe under it until the thermometer indicates 10 deg. of frost.—J. RUST."
To be had of all Nurserymen and Florists.
FOR PRICE LIST & PARTICULARS ADDRESS
BENJAMIN EDGINGTON
2 DUKE ST LONDON BRIDGE

Geometrical Mosaic and Encaustic
TILE PAVEMENTS, for Conservatories, Verandahs, Entrance Halls, &c. Enamelled and Decorated Glazed Tiles, for Wall Linings, Fireplaces, &c.; also Patent Indestructible Terra-cotta Plant Markers. Patterns and Prices sent post-free on application.
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Patronised by
HER MAJESTY,
HIS ROYAL HIGHNESS THE PRINCE OF WALES,
15,000 OF THE NOBILITY, GENTRY, AND CLERGY.
Is extensively used for all kinds of
OUTDOOR WORK, CONSERVATORIES, Greenhouses, Frames.
CAN BE LAID ON BY UNSKILLED LABOUR.
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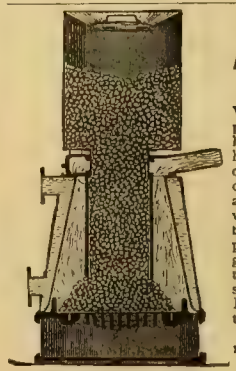
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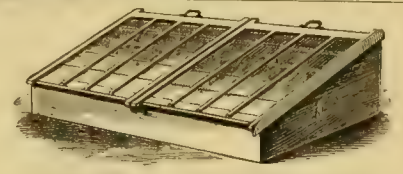
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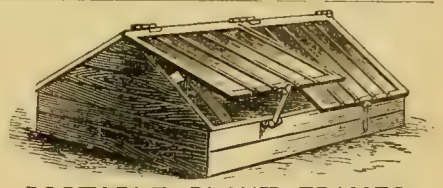


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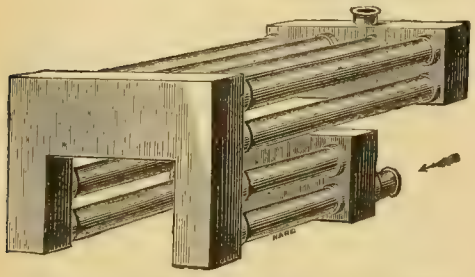
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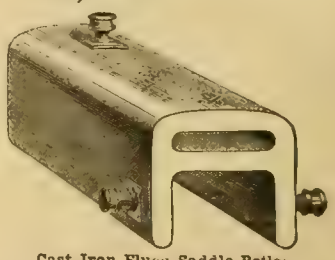
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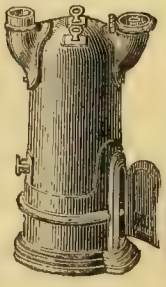
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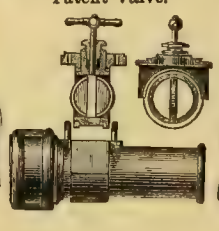


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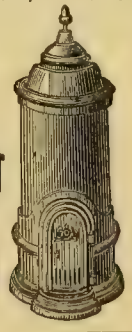
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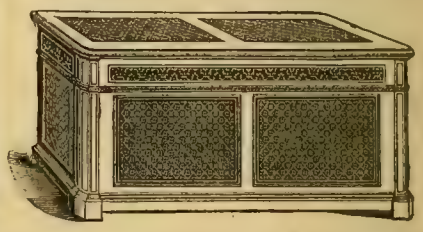
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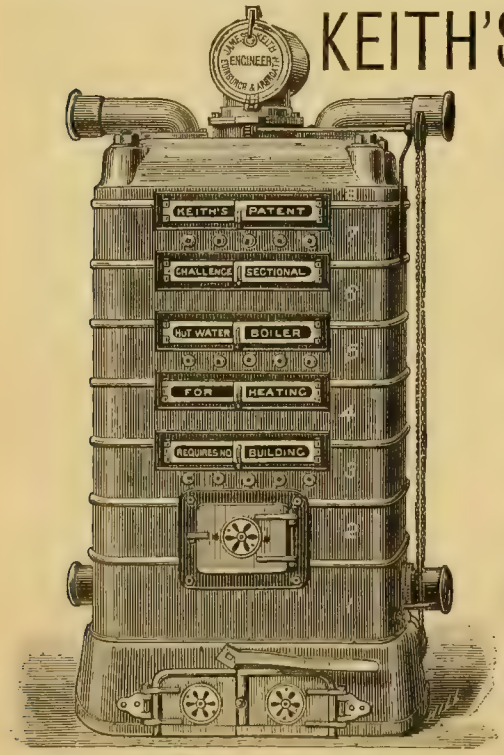
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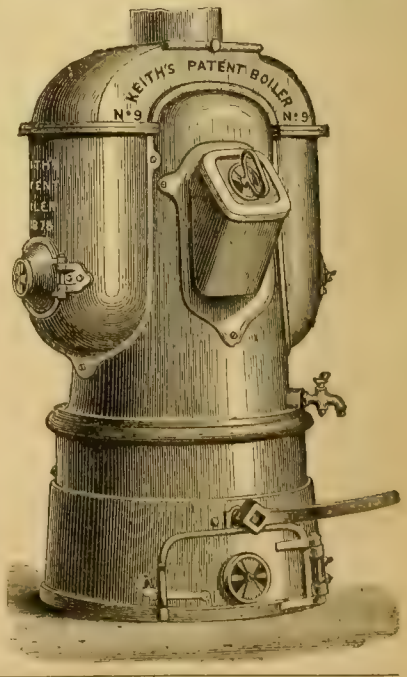
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THE

GARDENERS' CHRONICLE.

Established 1841.

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NOTICE to SUBSCRIBERS and OTHERS. The King Street, Covent Garden, Post Office being closed, Post-office Orders and Postal Orders should now be made payable at DRURY LANE.

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CARNATIONS, 331, Euston Road, N.W.

GILBERT'S CHOU DE BURGHLEY
Is one of those things that leaves all others of the Brassica tribe far in the rear, in fact a "march onwards" which seldom occurs. Enclose stamp and addressed envelope for particulars. Seed, 2s. 6d. per packet. The trade supplied on liberal terms.
R. GILBERT, Burghley Gardens, Stamford.

6000 Grape Vines.

THE LIVERPOOL HORTICULTURAL COMPANY (John Cowan) Limited, The Vineyard and Nurseries, Garston, near Liverpool, have a splendid stock of VINES, grown from eyes this year, suitable for present planting.
CATALOGUE free. The Trade supplied.
Also a large stock of TEA ROSES.

WEBB'S PRIZE COB and other FILBERT TREES, Calcot Gardens, near Reading.
Apply to Mr. COOPER, F.R.H.S., Calcot Gardens, near Reading, Berks.

Gardenia intermedia.

CLEAN HEALTHY PLANTS, in 5-inch pots, to flower this winter, 2s. each, 18s per dozen; nice plants in 60's, 9d. each, 6s. per dozen. A few large plants, about 4 feet, which will be full of flowers this winter; price on application. CATALOGUE free.
W. M. CROWE, Boleyn Nursery, Upton, Essex.

AFRICAN TUBEROSES.
Splendid sample just arrived.
HOOPER and CO., Covent Garden, London, W.C.

African Tuberoses.

HURST and SON will receive a large consignment of the above in a very few days. The bulbs will be, as last year, extremely fine.
New seed of ARECA BAUERI (Seaforthia robusta) just to hand. Special prices on application.
152, Houndsditch, London, E.

HEATH and SON are now sending out their beautiful WHITE VIOLA "THE CHAMPION," which was awarded a First-class Certificate at South Kensington on June 13, 1882. 4s. per dozen, 25s. per 100.
HEATH and SON, Exotic Nurseries, Cheltenham.

CAMELLIAS.—Large Camellias for Sale, to make room for other plants. LIST, with sizes and prices, on application.
EDW. COOLING, Mile Ash Nurseries, Derby.

SINGLE DAHLIAS.—Strong plants, established in pots for winter bloom, can now be supplied. The largest collection in the World may be seen at the Nurseries. Catalogues and every information free.
THOS. S. WARE, Hale Farm Nurseries, Tottenham, London.

Dutch, French, and other Flowering Bulbs.

JAMES DICKSON and SONS' carefully prepared CATALOGUE of their large excellent stock will be sent post-free on application. Early orders are solicited.
Seed and Bulb Warehouse, 108, Eastgate Street, Chester.

Hyacinths, Tulips, &c.

BUDDENBORG BROTHERS, Bulb Growers, House Bloemswaard, Hillegom, near Haarlem, Holland. Wholesale CATALOGUE now ready, and will be sent, post-free, on application.

SAXIFRAGA DIVERSIFOLIA.—New Seed of this most distinct Himalayan yellow-flowered species is now offered in 2s. 6d. and 3s. 6d. packets.
RODGER, McCLELLAND and CO., Nurserymen, &c., Newry.

Tea Roses.

THE LIVERPOOL HORTICULTURAL COMPANY (John Cowan), Limited, The Vineyard and Nurseries, Garston, near Liverpool, have a splendid stock of TEA ROSES in all the leading varieties.
LIST free. Price to the Trade on application.
Also a large stock of GRAPE VINES.

Early Roman Hyacinths, &c., for present Planting.

BULBOUS PLANTS of all kinds, ORCHIDS, &c.
THE NEW PLANT and BULB COMPANY beg to announce that their AUTUMN CATALOGUE is just published, post-free on application.
Lion Walk, Colchester.

LASTREA ARISTATA VARIEGATA.—Nice Seedlings, in thumb-pots, 4s. per dozen, 25s. per 100. A few hundreds of DEUTZIAS and KALOSANTHES still on hand.
J. W. HURST, Lordship Nursery, Wood Green, N.

VIOLETS (an acre).—We beg to inform the Trade that we have a vast stock of all the best varieties, in splendid condition, full of flower, both in pots and open ground. Special quotations for large quantities.
H. CANNELL and SON, The Home for Flowers, Swanley, Kent.

Grape Vines.

H. LANE and SON have a very large stock of well ripened Canes to offer. Awarded two First Prizes for Vines in Pots at the late International Show at Edinburgh, and many First Prizes at former Shows.
CATALOGUE on application.
The Nurseries, Berkhamsted, Herts.

WANTED, Manetti and Multiflora ROSE STOCKS.
H. BENNETT, Pedigree Rose Nursery, Shepperton, Walton-on-Thames.

To Nurserymen.

WANTED, in large numbers, the ovalifolium PRIVET, or other Plants of quick growth, for hedges. Please quote lowest and special price per 1000, to
Rev. E. F., Amesbury House, Bickley, Kent.

WANTED, Consignments of PINES, MELONS, PEACHES, GRAPES, CUCUMBERS, Wellington and Blenheim Orange APPLES, Marie Louise PEARS, &c.; also EUCHARIS, STEPHANOTIS, good ROSES, and other CHOICE FLOWERS.—WISE and RIDES, Fruit and Flower Salesmen, Covent Garden, W.C.

To the Trade.

WANTED, White Elephant, Vicar of Laleham and Reading Russet POTATOS. Quote prices and quantities to
C. F., 104, Friar Street, Reading.

GOLDEN EUONYMUS JAPONICA AUREA, and AUREA ELEGANTISSIMA, 12s., 20s., and 30s. per 100. HYDRANGEA PANICULATA GRANDIFLORA, very strong, 50s. per 100. About 300 AZALEA INDICA, splendid stuff, well set, very cheap
W. F. BOFF, 203, Upper Street, Islington, N.

Christmas Roses.

BUDDENBORG BROTHERS, Bulb Growers, Hillegom, near Haarlem, Holland, are now booking orders for the above. Prices will be given on application.

LAPAGERIA ALBA, well-rooted plants, 10s. 6d., 15s. and 21s. A few extra specimens, size and price on application.
LAPAGERIA RUBRA, superb, 7s. 6d., 10s. 6d. and 15s. A few extra-sized specimens, size and prices on application.
W. HOWARD, Southgate, N.

TWO HUNDRED THOUSAND HERBACEOUS and ALPINE PLANTS for Borders, Rockwork, &c. See Descriptive LIST, giving colour, height, time of flowering, &c., free by post for 1d. stamp.
Selection of 100 good showy varieties for 25s.
R. SMITH and CO., Nurserymen and Seed Merchants, Worcester.

The White Cactus Dahlia,

CONSTANCE.—Orders are now being booked for the above, for delivery in spring. 1s. 6d. each; pot roots, 2s. 6d. each. Trade terms on application.
J. R. PEARSON, Chilwell, Notts.

Special Culture of

FRUIT TREES and ROSES.—A large and select stock is now offered for sale. The Illustrated and Descriptive CATALOGUE of Fruits, post-free for threepence. The Descriptive CATALOGUE of Roses post-free.
THOMAS RIVERS and SON, The Nurseries, Sawbridgeworth, Herts.

To the Trade Only.

TEA ROSES, on own roots, extra strong, out of 4½-inch pots, £2 per 100, for cash.
MAIRIS and CO., Weston-in-Gordano, Bristol.

Strawberry Plants.—In consequence of

H. CANNELL and SON being located in the midst of hundreds of acres of the above (runners are this year unusually fine and early), they would be pleased to quote price for any quantity and any sorts.
Swanley, Kent.

CREEPERS for WALLS, TRELLISES, &c., in great variety. See Descriptive LIST. Most of these plants being in pots, may be moved now.
RICHARD SMITH and CO., Nurserymen and Seed Merchants, Worcester.

THORNS.—Strong and extra strong, clean and well-rooted. Samples and price on application to
JOS. TREMBLE and SON, Nurserymen, Victoria and Castle Nurseries, Penrith.

2000 Lilium auratum.

ERNEST RIEMSCHNEIDER
42, Hamburgh Street, Altona, Germany,
HAS JUST HARVESTED
HIS SELF-GROWN LILIES,
and will quote exceedingly Low Prices on application.

To the Trade only.

E. H. KRELAGE and SON, Nurserymen, Seedsmen, and Florists, Haarlem, Holland. The Wholesale CATALOGUE (No. 358A) of Dutch Flower Roots and Miscellaneous Bulbous and Tuberous-rooted Plants for 1882-83 is now ready, and may be had free on prepaid application, by Nurserymen, Florists and Seedsmen.

To the Trade.

STANDARD and HALF STANDARD ROSES, of good quality, at reasonable prices.
L. WOODTHORPE, Glazenwood Nurseries, Braintree.

SPECIAL TRADE OFFER.—LARCH, Native, 1-yr., very fine, £5 per 100,000; Tyrolese, 1-yr., fine, £4 10s. per 100,000. SCOTCH FIR, Native, 1-yr., fine, £5 per 100,000; 2-yr., good, £7 10s. per 100,000. Samples by post. Terms cash on delivery.
WM. WISEMAN, The Nursery, Nairn.

GRAPE VINES.—Our stock this season is unusually fine, consisting of all the leading kinds, a list of which will be found in the Bulb Catalogue, sent post-free on application. Early orders solicited.
B. S. WILLIAMS, Victoria and Paradise Nurseries, Upper Holloway, London, N.

Offer to the Trade.

POTATOS.—Quantity of Rivers' Ashleaf, Myatt's Ashleaf, Reading Hero, Schoolmaster, and Beauty of Hebron. At very low prices, upon application to
C. FIDLER, Potato Grower, Reading.

Popular Talks on Social and Sanitary Science.

MR. JOSEPH J. POPE, late Staff-Surgeon A.M.D., Professor of Hygiene at the Birkbeck Institution, and Lecturer to the National Health Society, is NOW BOOKING DATES for the delivery of his entertaining and instructive HEALTH LECTURES. Early application is solicited. Address
Mr. POPE, 4, South Crescent, Bedford Square, W.C.

SALES BY AUCTION.

Hyacinths, Tulips, Crocuses, Narcissus, Iris, Scillas, Snowdrops, and other Flower Roots from Holland.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY during October, at half-past 12 o'Clock precisely each day, CONSIGNMENTS of DUTCH BULBS, arriving weekly from well known farms in Holland, in large and small lots, to suit all buyers.

On view morning of Sale, and Catalogues had.

Established Masdevallias.

MR. J. C. STEVENS has been instructed by Mr. James Anderson to include in his SALE by AUCTION, on TUESDAY, October 10, without reserve, about SIXTY ESTABLISHED PLANTS, comprising the finest varieties of Masdevallias in cultivation, being a portion of the original stock grown at Meadowbank, including several plants of Bull's blood, Harryana splendens and superbissima, ignea, violacea, and versicolor, &c., described in Catalogue.

On view morning of Sale, and Catalogues had

Auction Rooms and Offices, 38, King Street, Covent Garden, W C.

Tuesday Next.

IMPORTED ORCHIDS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY NEXT, October 10, at half-past 12 o'Clock precisely, by direction of Messrs Shuttleworth, Carder & Co., fine imported plants of ODONTOGLOSSUM ALEXANDRÆ, O GRANDE, BARKERIA SKINNERI, B. SPECTABILIS, LYCASTE SKINNERI, ONCIDIUM ORNITHORRHYNCHUM, O. LEUCOCHILUM, O. WENTWORTHIANUM, &c.

On view morning of Sale, and Catalogues had.

Tuesday Next.

ESTABLISHED ORCHIDS, &c.

MR. J. C. STEVENS will include in his SALE by AUCTION, on TUESDAY NEXT, October 10, a few CHOICE ESTABLISHED ORCHIDS, comprising Cattleya exoniensis, Cattleya labiata, autumn-flowering variety; Odontoglossum Andersonianum, O. Wallisi, and O. Chestertoni, Anthurium Scherzerianum, &c.

On view morning of Sale, and Catalogues had.

Auction Rooms and Offices, 38, King Street, Covent Garden, W.C.

Tuesday Next.

CATTLEYA GIGAS.

MR. J. C. STEVENS will include in his SALE on TUESDAY NEXT, October 10, an importation from the New Plant and Bulb Company, consisting of CATTLEYA GIGAS, in best varieties; a New Yellow CATTLEYA; and CYPRIPEDIUM SCHLIMII, new variety, &c.

On view morning of Sale, and Catalogus had.

Auction Rooms and Offices, 38, King Street, Covent Garden, W.C.

Collection of Established Orchids.

MR. J. C. STEVENS will include in his SALE by AUCTION on TUESDAY, October 10, a COLLECTION of ESTABLISHED ORCHIDS, the property of a gentleman, including :—

Lælia anceps superba	Lælia atrorubens
Cattleya Mossiæ	Cattleya speciosissima
„ Mendelii	„ aurea

Odontoglossums, Dendrobiums, Oncidiums, and Cypripediums, in variety, &c.

On view morning of Sale, and Catalogues had.

Auction Rooms and Offices, 38, King Street, Covent Garden, W.C.

Thursday Next.

VANDA INSIGNIS (Lindl.), the true old species.

MR. J. C. STEVENS has received instructions from Mr. F. Sander to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 12, at half past 12 o'Clock precisely, a wonderful importation of this handsome and most distinct, hitherto so extremely rare VANDA. Unfortunately there is a variety of tricolor known in commerce as insignis which is often confused with the true species. VANDA INSIGNIS true is one of the finest of the genus, the rarest and one of the most beautiful; it has till now been in few collections only, in which it has been considered the gem of Vandas. Flowers 2½ inches in diameter, extremely showy; sepals and petals dark chestnut, blotched with a deeper hue, glossy and very broad, their under-surface as well as flower-stalks white; column and centre pure white, contrasting finely with the dark sepals and petals; lip broad and purplish-violet, white at the base. Habit of plant very compact. The importation is in splendid health, having been brought home by Mr. Rimann, who collected the whole in flower.

CATTLEYA LABIATA ROEZLII.

A grand importation, consisting mostly of large masses. It will be in the recollection of buyers that grand flowers (No. 97) were exhibited from the late Provost Russel's collection on April 13 in Mr. Stevens' Rooms. The importation comes from the same spot from whence Mr. Roezl brought it home in 1874, since when none have been imported from that locality. The consignment is in splendid order, consisting mostly of very large masses. Also ONCIDIUM MARSHALLIANUM and FORBESI, COLAX JUGOSUS, the fine and rare ODONTOGLOSSUM RAMOSISSIMUM, BURLINGTONIA GRANADENSIS, ODONTOGLOSSUM ALEXANDRÆ, &c.

On view morning of Sale, and Catalogues had.

Woking, Surrey.

HIGHLY IMPORTANT CLEARANCE SALE, in consequence of expiration of lease, and the land being sold for other purposes.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Woking Nursery, Woking, about a mile from the Station, on TUESDAY, October 10, and two following days, at 12 o'Clock each day precisely, by order of Messrs. Jackman & Son, several acres of valuable NURSERY STOCK, including 5000 green and variegated Hollies, 1 to 8 feet; 7000 common and other Laurels; 3000 English Yews, 1 to 3 feet; 30,000 Evergreen Privet, 25,000 Larch Fir, 1 to 3 feet; 7000 Limes, 4 to 18 feet; 150 000 fine strong bedded Quick; 1500 Acer Negundo variegata and "stocks;" 80,000 Forest Trees, 1500 Scarlet Oaks, 4 to 10 feet; an assortment of ornamental Deciduous Trees, large quantities of Cupressus Lawsoniana, Spruce Firs, Aucubas and other Coniferæ.

May be viewed. Catalogues obtained on the Premises, or of the Auctioneer, and Estate Agents, 8, New Broad Street, E.C., and Leytonsone.

Dutch Bulbs.—Sales every Monday.

MESSRS. PROTHEROE AND MORRIS will SELL at the Mart, Tokenhouse Yard, City, E.C., every MONDAY, at half-past 11 o'Clock precisely, over 800 lots of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, SNOWDROPS, and other ROOTS, from Holland; in lots to suit all buyers.

Catalogues at the Mart, and 8, New Broad Street, E.C.

Friday Next.

SALE of CAMELLIAS, AZALEAS, PALMS, DRACÆNAS, FICUS, and other PLANTS from Belgium; also a consignment of HYACINTHS, TULIPS, CROCUS, NARCISSUS, &c., from Holland.

MESSRS. PROTHEROE AND MORRIS will SELL the above at the Mart, Tokenhouse Yard, City, E.C., on FRIDAY NEXT, at 12 o'Clock precisely.

Catalogues at the Mart, and 8, New Broad Street, E.C.

Sunbury, Middlesex.

By order of the Executors of Mr K. A. Osborn, deceased

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises known as Osborn's Old Nursery, Sunbury, on TUESDAY, October 17, and following day (unless taken by the purchaser of the Freehold Estate at a valuation) the whole of the HARD-WOODED GREENHOUSE PLANTS, including the entire collection of strong short-jointed and well-ripened Vines, the beautifully grown Tea, H.P., and Noisette Roses, the extensive collection of Figs in bearing condition, several hundreds of splendidly grown Camellias and Azaleas abundantly set with buds, Clematis in great variety, and other stock.

May now be viewed, and an inspection is invited.

The first portion of the thriving and well grown OUTDOOR NURSERY STOCK will be sold on TUESDAY, November 14, and following days unless taken by the purchaser of the Estate by valuation. Due announcements will appear.

Lee, S.E.

CLEARANCE SALE.

MESSRS PROTHEROE AND MORRIS are instructed by Mr. Collins to SELL by AUCTION, on the Premises, the Grove Park Nursery, Lee, S.E., on FRIDAY, October 20, at 12 o'Clock, a large quantity of well-grown NURSERY STOCK, in good condition for removal, including a variety of Evergreens and Coniferæ, Ornamental Trees, &c., for effective Planting; 5000 Strawberries and other Stock, fully described in Catalogues, to be had on the Premises, or at the Auctioneers' Offices, 8, New Broad Street, E.C.

Kilburn, N.W.

IMPORTANT SALE of SURPLUS STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. B. Goubert (in order to make room for other stock) to SELL by AUCTION, on the Premises, the Salisbury Road and Avenue Nurseries, Willesden Lane, N.W., on THURSDAY and FRIDAY, November 2 and 3, a large quantity of well-grown NURSERY STOCK: 1000 Standard and Dwarf Roses, 8000 Euonymus in variety, 3000 Double White Primulas, 2000 Adiantums, &c.

Further particulars will appear.

Beeston Nursery.

One mile from the Beeston Station on the main line from Derby to Nottingham.

To NOBLEMEN, GENTLEMEN, NURSERYMEN, and OTHERS.

MR. T. NEALE has received instructions from Mr. Henry Frettingham to SELL by AUCTION at the above Nursery on TUESDAY, October 10, at 11 o'Clock, a fine surplus stock of Golden and Silver Queen HOLLIES; smooth leaf, yellow berried, and common HOLLIES; CEDRUS DEODARA, specimen Golden and other YEWS, RHODODENDRONS, RETINOSPORA AUREA, LIMES, &c., the whole in a fine state for removal. The Golden Hollies are one of the finest collections in the country.

Descriptive Catalogues will be forwarded on application by post to the Auctioneer, Wheeler Gate, Nottingham.

Fulham Fields.

To MARKET GARDENERS, SEEDSMEN and OTHERS.

MR. J. S. GOMME is instructed by Mr. T. Brosnan, of Norman Farm (the land being let for Building), to SELL by AUCTION, on the land, Margravine Road, adjoining the Cemetery at the rear of the Fulham Union, on TUESDAY, October 10, at 2 for 3 o'Clock in the afternoon, about 6 Acres of fine SEAKALE, and 2 Acres of Victoria and Albert RHUBARB, for Forcing, in Lots to suit the Trade.

May be viewed.

Catalogues at the Offices of the Market Garden Auctioneer and Valuer, 99, Strand, W.C.

WANTED, a Small Genuine FLORIST'S or FRUITERER and FLORIST'S BUSINESS; or, would undertake MANAGEMENT of an Established BUSINESS, and Invest a moderate sum.

A. B, 70, Park Walk, Chelsea, S.W.

FOR SALE, owing to death of Proprietor, an excellent SEED, NURSERY, and LANDSCAPE GARDENING BUSINESS, in the Midlands. Price £800.

For particulars, apply to HURST AND SON, Seed Merchants, 152, Houndsditch, London, E.

TO LET, on Lease, an Old-Established NURSERY, about 6½ Acres, situated at Atherstone—glass-houses included.

For particulars apply to EVANS AND SONS, Seedsmen, Nuneaton.

To Nurserymen, Seedsmen, and Florists.

TO BE LET, a very Old-established BUSINESS, for the last seventy years in the same family. Good connection, and close to railway-station. Five Acres of Land, the greater portion well stocked. Greenhouses, Hot-houses, Pits, &c., to be taken by valuation.

Apply to W. FAIRBEARD, Mount Pleasant Nursery, Teynham (L.C.D.R.), Kent.

Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at 8, New Broad Street, E.C.

ROOTED PELARGONIUM CUTTINGS.—Several thousands; only best Market sorts grown. Price 25s. per 100 for cash with order.

J. PALMER, Spring Grove Lodge, Isleworth.

RASPBERRY, Fastolf, £1 per 1000. Good plants and well rooted.

BLACK CURRANTS, Black Naples, 4 years old, £4 per 1000. Clean good plants

STRAWBERRY PLANTS, from open ground—President, Elton Pine, Goliath—10s. per 1000

JOHNSON AND SONS, Paddock Wood, Kent.

FOR SALE, a grand DICKSONIA ANTARCTICA (in tub): height of stem 5 ft., spread of fronds 16 ft.; in splendid health. Too large for present owner. Apply to

The GARDENER, East Court, Charlton Kings, Cheltenham.

STRAWBERRY PLANTS, ELTON PINE, strong, large quantity at 1s. 6d. per 100.

JAMES YOUNG, Seedsman, Brechin.

HYACINTHUS CANDICANS.

Bulbs of I. quality 18s. per 100, £7 10s. per 1000.

„ „ II. „ 12s. „ £5 0 „

„ „ III. „ 6s. „ £2 10s. „

With 10 per cent. discount

L. SPATH, Nurseryman, Berlin S. O., Köpnicker Str., 154.

Roses, Fruit Trees, &c.

WILLIAM FLETCHER'S LIST of the above is now ready. The stock is very large and well-grown. Post-free on application.

Ottershaw Nurseries, Chertsey.

SINGLE DAHLIAS, Pot Roots.—Full particulars upon application. 5000 ground roots of my superb strain on offer, cheap. All to colour.

THOMAS S. WARE, Hale Farm Nurseries, Tottenham, London.

FOR SALE, EUONYMUS OVATA AUREA. 1500, 9 in. to 1 ft. high. Cheap for cash. Very bushy, and good colour.

J. B. BUITERFIELD, Nurseries, Enfield, Middlesex

FOR SALE, Seven handsome Specimen AUCUBAS—a bargain; and fifty dozen GOLDEN EUONYMUS, in pots, beautifully coloured bushy plants, cheap. G. CHRISTMAS, Florist, 35, Grove Lane, Camberwell, S.E.

FOR SALE, CHEAP, 3000 RHODODENDRONS, 2 feet high, and bushy; grown on heavy clay land—JAMES SOUTHERN, 7, Knowsley Street, Bolton.

Special Offer.

CEDRUS DEODARA.
CRYTOMERIA ELEGANS.
VARIEGATED YEWS.

H. LANE AND SON, having many thousands of the above, well transplanted, can offer them very cheap; also many other TREES and SHRUBS.

The Nurseries, Berkhamsted, Herts.

BRIERS, Standard, Half-standard and Dwarf, at 9s., 7s. 6d., and 5s. 6d. per 100. CYCLAMEN PERSICUM, Strong Flowering Plants, Covent Garden Strain, 8s. per dozen, 55s per 100. Nett cash against invoice.

A. GODWIN AND SONS, Ashborne, Derby.

LARGE TEA ROSES (Pots, Nos. 24 to 1), specially prepared for Winter Blooming, and suitable either for Cut Flower Trade or Conservatory—NIPHETOS, ISABELLA SPRUNT, C. MERMET, &c., some of them 6 feet Standards, on own roots; also several hundred CINERARIAS (J. Sisley's Strain), coming into bloom; also a few White CHRYSANTHEMUMS, well set.

J. H HADFIELD, Chase Cottage, Southgate.

BEDDING PANSIES (VIOLAS, an acre).—We beg to offer the above in any quantity, good and strong, for immediate planting, in the most effective colours—Blue, White, Yellow. Flower all the year. 8s. per 100. For newer kinds see CATALOGUE, post free.

The Home for Flowers, Swanley, Kent.

A. RIEMSCHNEIDER, Brandenburg-on-Havel, Germany, has to offer, SPIRÆA JAPONICA, extra strong clumps, 15s. per 100; CHRISTMAS ROSES, extra strong, 80s. per 1000; DIELYTRA SPECTABILIS, 18s. per 100; DEUTZIA GRACILIS, very strong, 18s. per 100; ASPARAGUS plants, 3-years old; ERFURT GIANT, 16s. per 1000; Crab Seedling PEARS, APPLES, PLUMS, CHERRIES, extra strong and good, 24s. per 1000. All orders should be addressed to

Messrs. R. SILBERRAD AND SONS, 25, Savage Gardens, London, E.C.

Clematis.—Clematis.—Clematis.

SPLENDID PLANTS, in 5-inch pots.

WOOD AND INGRAM beg to offer twelve of the best varieties of the above, including Gipsy Queen, Mad. Grange, Lord Nevill, Symeana, Lawsoniana, &c., for 15s., package included.

General Nursery CATALOGUE will be ready in a few days, and will be forwarded, free by post, upon application.

The Nurseries, Huntingdon and St. Neots.

N.B. W. & I. have also an extensive stock of COBŒA SCANDENS VARIEGATA, and will quote price on application.

Planting Season.

JOHN PERKINS AND SON beg to draw attention to their large stock of the following, the whole of which have excellent roots :—

AUCUBA JAPONICA, 1 to 3 feet.
CUPRESSUS LAWSONIANA, 1½ to 10 feet.
HOLLY, Variegated, 1 to 4 feet.
„ Green, 1 to 3 feet.
LAURELS, Common, 1 to 3 feet.
„ Portugal, 1 to 4 feet.
„ ROTUNDIFOLIA and CAUCASICA, 1 to 3 feet.
LAURUSTINUS, 1 to 2 feet.
PI EA NORDMANNIANA, 2 to 6 feet.
THUIA AUREA, 1 to 3 feet
„ GIGANTEA, 1 to 6 feet.
„ LOBBII, 3 to 4 feet.

YEWS, English, 2 to 3 feet, 3 to 4 feet, and 4 to 5 feet; also large stocks of transplanted FOREST TREES, ASH, ALDER, BIRCH, ELMS, HAZEL, HORNBEAM, Evergreen PRIVET, PINUS AUSTRIACA, LARCH, Scotch and Spruce FIRS, various sizes, 1 to 4 feet; WHITETHORN QUICKS.

An inspection particularly solicited.

WHOLESALE and RETAIL CATALOGUES on application.

52, Market Square, Northampton: Nurseries—Billing Road.

NEW ROSES of 1882, in pots.—Vendors' Selection, 30s. per dozen; Purchaser's, 36s. per dozen. The above comprise all the best English and French-raised Hybrid Perpetuals, Perpetual Polyantha, Teas, Hybrid Teas, and Perpetual Moss.

ROSES of 1881, of above-named classes, 18s. to 24s. per dozen, in pots.

CHOICE ROSES. — Tea-scented, Hybrid Tea, Noisette, China, and Bourbon, 18s. to 24s. per dozen, strong plants in pots.

Descriptive LIST on application.

RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

EIGHTY THOUSAND CLEMATIS, in Pots, of all the finest double and single varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants.

Descriptive LIST on application.

RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

10,000 Ferns. 10,000

TWELVE best Stove and Greenhouse FERNS, including Pteris in variety, Lomaria gibba, Adiantums &c., 4s. per dozen, 30s. per 100 Strong plants by post or in pots. An enormous stock of these, as also in larger sizes. See CATALOGUE.

W. M. CROWE, Boleyn Nursery, Upton, Essex.

To the Trade.

H. AND F. SHARPE will be pleased to give special quotations for all the leading varieties of VEGETABLE and AGRICULTURAL SEEDS they have grown this season. The quality will be very fine, the Seeds having been harvested in fine condition. They have been grown from the finest selected stocks. The prices will be found very low.

Seed Growing Establishment, Wisbech.

Catalogues for the Season.

CHARLES TURNER'S Descriptive LISTS of the following can be had free on application:—

DUTCH and OTHER BULBS,
CARNATIONS, PICOTEES, and PINKS,
STRAWBERRIES, &c.

The Royal Nurseries, Slough.

Special Offer.

STUART AND MEIN are prepared to make special cheap offer of the following to the Trade and Large Buyers. Samples on application:—

ALDER, 6, 8, 10, and 12 feet.
ASH, Common, 2 to 5 feet.
,, Mountain, 4 to 9 feet, transplanted.
BEECH, Common, 2 to 3 feet.
BIRCH, 4 to 6 feet.
BROOM, Common, 2 to 4 feet.
CHESTNUT, Horse, 2 to 3 feet.
,, ,, 6, 8, 10 and 12 feet, fine clean stems.
ELDER, Common, 1½ to 3½ feet.
HAZEL, 3 to 6 feet.
LARCH, 1½, 2½ to 5 feet
,, 3½ to 4½ feet, transplanted 1882.
MAPLE, English, 4 to 6 feet.
,, Norway, 10 to 14 feet, fine clean stems.
OAK, English, 1 to 1½ foot.
PINUS AUSTRIACA, 1, 2, 3, to 6 feet, transplanted, fine.
SCOTCH FIR, 2-yr. 2-yr.
,, 1½ to 3 feet.
POPLAR, Black Italian, 3, 5, 10, to 14 feet.
SYCAMORE, 1, 3, 5, to 9 feet.
MAHONIA AQUIFOLIA, 1½ to 2 feet,
BERBERIS VULGARIS, 2 to 3 feet.
BOX, Tree, 9 to 12 inches.
COTONEASTER SIMMONDSII, 1 to 3 feet.
PRIVET, Common, 1½ to 3 feet.
YEW, Common, 1 to 3 feet.
SPIRÆA CONFUSA (fine for forcing, pure white).
,, FORTUNEI ROSEA, NOBLEANA, THUNBERGIANA.
DEUTZIA of sorts.
SYRINGA, Common.
,, White.
VIRGINIAN CREEPER.
CLEMATIS FLAMMULA.
THUIA ERICOIDES, 9, 12, to 24 inches.
HYPERICUM CALYCINUM.
ESCALLONIA MACRANTHA.

Fruit Trees.

APPLES, on Paradise and Crab Stocks, Pyramid, Bush, and trained trees, in all the leading hardy and free-bearing varieties, very fine.
PLUMS, ditto.
CHERRIES, ditto.
GOOSEBERRIES.

The Nurseries, Kelso, N.B.

Special Trade Offer.

CALCEOLARIA SEED. — Magnificent strain, saved under our own supervision

ALEX. DICKSON AND SONS, Nurserymen and Seedsmen, &c., Belfast.

To Planters.

JAMES BIRD offers the undermentioned Forest stuff, price on application:—

LARCH FIR, 3 to 4 feet, and 4 to 5 feet.
SCOTCH FIR, 1½ to 2 feet, and 2 to 3 feet.
SPRUCE FIR, 1½ to 2 feet, 2 to 3 feet, 3 to 4 feet, and 4 to 5 feet.
PINUS AUSTRIACA, 1½ to 2 feet.
HAZEL, 2 to 3 feet, and 3 to 4 feet.

The Nurseries, Downham.

To Nurserymen and Planters.

FOR SALE, a large number of fine, bushy, well-grown LAURELS, of three or four years' growth.

Rev. E. F., Amesbury House, Bickley, Kent.

JAMES DICKSON & SONS. GRAPE VINES of the usual excellent quality can now be supplied, price 5s., 7s. 6d., and 10s. 6d. each; the stronger will fruit next year either in pots or planted out.

CHRYSANTHEMUMS.—Well-grown plants of leading kinds, for immediate blooming, can be supplied at 12s. per dozen and upwards

STRAWBERRIES.—By now planting transplanted runners a crop may be depended upon next year. Strong plants in large and small pots for forcing and planting can also be supplied.

AZALEAS, CAMELLIAS, WINTER FLOWERING and other PLANTS.

CATALOGUES with full particulars on application to

"NEWTON" NURSERIES, CHESTER.

NEW CURRANT, BLACK CHAMPION.

JAMES CARTER AND CO. are now booking orders for this the best BLACK CURRANT in the World.

It was awarded a First-class Certificate by the Royal Horticultural Society Committee, and greatly admired by all who saw the fruit exhibited last year. Stock limited.

Price, each, 5s.; per dozen, 55s.; so long as unsold.

The Queen's Seedsmen, 237 & 238, High Holborn, London, W.C.

JOHN SCOTT, The Royal Nurseries, Merriott, Somerset, offers:—

PICEA NORDMANNIANA, in large or small quantities. This noble Pine is one of the handsomest and hardiest of the Fir tribe. On the Crimean and other mountains it attains a height of 100 to 150 feet, clothed with lovely dense green branches to the ground. J. S. offers the following sizes:—500, 18 inches high by 18 inches in diameter, at £5 per 100; 500, 2½ feet by 2½ feet, at £10 per 100; 300, 3 feet by 3 feet, at £15 per 100; 400, 4 feet by 4 feet, at £25 per 100; and a few fine specimens, 8 feet high by 6 feet. All the above are densely feathered to the ground.

J. S. also offers BIOTA SIEBOLDII, 6 feet high by 8 feet; and fine healthy collections of all the best EVERGREENS, from 1½ foot to 2, 2½, 3, 3½ and 4 to 8 and 12 feet, all transplanted during the last six months, at 12s. to 40s per dozen. DECIDUOUS and FOREST TREES by the 1000, and FRUIT TREES in large numbers at low prices. For sorts see Scott's *Orchardist*.

Carnations.

HEATH AND SON are now prepared to send out the following:—

BRIDE, 30s. per 100.
PRINCE of ORANGE, 40s. per 100.
MISS JOLIFFE, for winter flowering, fine stuff for immediate potting, 50s. per 100.
WHITE SWAN, do., 50s. per 100.

Also a grand stock of TREE CARNATIONS.

HEATH AND SON,
Exotic Nurseries, Cheltenham.

TEN THOUSAND ROSES IN POTS.

On own roots and Seedling Briers.

TEA, NOISETTE, CHINA, and HYBRID TEAS, a select LIST of the leading varieties.

5-inch pots (1st selection), fine, bushy, 1½, 2 to 2½ feet.
5-inch pots (2d selection), fine, bushy, 1, 1½ to 2 feet.
7-inch pots, suitable for forcing.
CLIMBING ROSES, 5 to 7 inch pots, 4, 5, 6 to 8 feet.
Second to none in quality.

GEO. JACKMAN AND SON, Woking Nursery, Surrey.

GRAPE VINES and ORCHARD HOUSE TREES in POTS. — GRAPE VINES, extra strong, short-jointed and well ripened; Planting Canes, 3s 6d. to 5s. each: extra strong Fruiting Canes, 7s. 6d. to 10s. ORCHARD-HOUSE TREES, fruiting in pots, consisting of Peaches, Nectarines, Apricots, Plums, Cherries, Pears, Apples, and Figs. Descriptive Price LIST for 1d. stamp.—RICHARD SMITH AND CO., Nurserymen and Seedsmen, Worcester.

Forcing Pinks.

SIX of the best varieties in cultivation—Anne Boleyn, Mrs. Moore, Mrs. Pettifer, Newmarket, Ascot, Fimbriata alba—by post, or in 60-pots. 4s. per dozen. Mrs. Linkins, the grand new white variety, 9d. each, 6s. per dozen. These flowers are invaluable for button-holes, and can be bloomed early in any cool house or frame. CATALOGUES free.

W. M. CROWE, Boleyn Nursery, Upton, Essex.

TO CUT FLOWER GROWERS. — JAMES CARTER AND CO. are now selling large quantities of the beautiful new DOUBLE BOUVARDIAS for Market Work, and all Growers should have them.

DOUBLE WHITE BOUVARDIA, "ALFRED NEUNER." (First-class Certificate Royal Horticultural Society.)

Price, strong established plants, 1s. each; 9s per dozen. Special price per 100 on application, with sample plants.

CARTERS', 237 and 238, High Holborn, London, W.C.

DOUBLE PINK BOUVARDIA, "PRESIDENT GARFIELD," a handsome and distinct variety.

Good plants, price 5s., 7s. 6d., 10s. 6d., and 15s. each. Special price per dozen on application, with sample plants.

CARTERS', 237 and 238, High Holborn, London, W.C.

BEAUTIFUL WINTER and SPRING FLOWERS.—All who wish to see their conservatories and flower gardens gay with beautiful flowers in winter and spring, should apply to the subscribers, who make a speciality of the flower-root branch of their business, and supply complete collections of choice flower roots at low prices, delivered free. Orders should be sent in early to secure finest bulbs.

Descriptive Price Lists free on application.

LITTLE AND BALLANTYNE, The Queen's Seedsmen, Carlisle.

Bulbs—Bulbs—Bulbs.

SEGERS AND CO., BULB GROWERS, Lisse, near Haarlem, Holland, are now booking Orders for LILY OF THE VALLEY, very strong clumps and crowns; SPIRÆA JAPONICA and PALMATA, LILIUMS, GLADIOLUS BRENCHLEYENSIS, and others. They keep also fine samples in stock of HYACINTHS, TULIPS, CROCUS, &c.

CATALOGUES may be had free on application. No Auction Sales or Retail Trade supplied, but the Wholesale only.

☞ Please observe name and address.

5000 Cylamen persicum. 5000

ALL from the finest procurable strains, good plants by post, 2s. 6d. per dozen; larger, in pots, 3s. 6d. and 5s. per dozen; extra large, 10s. per dozen. Now is the time to pot these on to make grand stuff for flowering the coming season.

W. M. CROWE, Boleyn Nursery, Upton, Essex.

Tuberous Begonias.

JOHN LAING AND CO.'S Gold Medal Collection is unrivalled. 100,000 now in cultivation are producing a magnificent floral display. Orders executed with blooming plants.

Prices, 12s. to 60s. per dozen.

CATALOGUES on application. Address

JOHN LAING AND CO, Forest Hill, S.E.

NOTICE.

SELLING OFF OF NURSERY STOCK.

EWING & CO.,

EATON, near NORWICH.

Great Reduction in Price for Cash Payments, viz.,

15 per Cent. for Cash before delivery.
10 per Cent. for Cash within One Month of date of invoice.
5 per Cent. for Cash within Three Months of date of invoice.
After Three Months no discount can be allowed.

In addition to their immense Outdoor Stock of ROSES; FRUIT TREES, Bushes and Roots; ORNAMENTAL TREES and SHRUBS, they have ready for immediate Sale a very extensive Stock of New and Scarce ROSES in Pots; Tea and Noisette ROSES in Pots; CLEMATISES of best Old and New Varieties, in Pots; Variegated and Choice Green-leaved IVIES, in Pots; AMPELOPSIS VEITCHII, and many other Hardy CLIMBING and CREEPING PLANTS, in Pots, &c.

N.B. Cut Roses, &c., can be supplied at cheap rates, carefully packed for travelling long distances.

A slight extra charge must in most cases be made for packing. Where cash in payment of goods is sent *with the order*, the amount for *package* may be forwarded in stamps *after* despatch of goods.

N.B. Post-office Orders should be made payable to EWING AND CO., at Eaton, near Norwich. Cheques crossed GURNEY AND CO., Norwich.

Trade Terms on application.

HOOPER'S CATALOGUE of BULBS contains a superb COLOURED PLATE of CALIFORNIAN LILIES, *faithfully represented.*

The Catalogue will be forwarded for 4 stamps, and the 4d. returned in the first purchase of bulbs.

Splendid Collection of all kinds of DUTCH, FRENCH, CAPE, JAPANESE and AMERICAN BULBS, *at exceedingly low prices.*

Delivery carriage free over 20s. value.

Single Dahlias.

HOOPER AND CO. invite inspection of their beautiful collection of these, now in full bloom at their Nurseries, adjoining Twickenham Station, South-Western Railway.

Also specially fine collection of PENTSTEMONS.

HOOPER AND CO., Covent Garden, London, W.C.

BELGIAN STOCK of FORCING PLANTS of the Ornamental Plant Nursery of Ghent.

AZALEA INDICA and MOLLIS with buds, CAMELLIAS with buds, DEUTZIA GRACILIS, HELLEBORUS NIGRA, SPIRÆA JAPONICA and PALMATA, &c. CATALOGUE free on application. Send Orders directly to JULES DE COCK, Nurseryman, Ghent, Belgium.

Autumn List.

JOHN LAING AND CO.'S New CATALOGUE of Dutch Bulbs, Roses, Fruit Trees, &c.; also Revised LIST of Tuberous Begonias, has been issued to all Customers. Copies gratis on application. Goods all first quality at moderate rates. Address

JOHN LAING AND CO., Nurseries, Forest Hill, S.E.

The New Rates for Carriage of Small Parcels.

BULBS of ALL DESCRIPTIONS and PLANTS in great variety delivered free at your nearest Railway Station, at the following Prices, *for cash with order only.* New Descriptive CATALOGUE for autumn, 1882, post-free. All the goods of the best quality.

Bulbs for Pots.

12 fine HYACINTHS for pots, to name, distinct 6s.; 50, 24s. 12 extra fine HYACINTHS for pots, to name, distinct, 9s.; 50, 35s. 12 early single White ROMAN HYACINTHS, 3s. 6d.; 100, 24s. 50 TULIPS for pots, to name, 4s. 6d.; 100, 8s. 6d.

Bulbs for Bedding.

HYACINTHS, Red, White, or Blue, separate, 50, 11s. 6d.; 100, 22s. TULIPS, to name, colours separate, 50, 3s. 6d.; 100, 6s. 6d. CROCUS, to name, colours separate, 100, 3s. NARCISSUS of sorts, to name, 100, 6s. 6d. SNOWDROPS, double or single, 100, 3s. All other Bulbs delivered free at equally low prices. For list, see new Catalogue.

Spring Flowering Plants.

Strong young plants for present planting of WALLFLOWERS, SWEET WILLIAMS, CANTERBURY BELLS, MYOSOTIS, POLYANTHUS, Single PRIMROSES of fine colours, DAISIES, ARABIS, AUBRIETIAS, DACTYLIS, delivered free at 5s. per 100. Bedding PANSIES and VIOLAS to name, distinct colours, free at 10s. per 100. HERBACEOUS PLANTS, 12 distinct sorts, free at 4s.; 50 varieties, 15s.; 100 plants in 100 sorts, free at 28s.

Our selection. CATALOGUES post-free.

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham, Cheshire.

CABBAGE, CAULIFLOWER, LETTUCE PLANTS, &c., Autumn sown, best varieties, in any quantities. LIST, and printed copy of many recent (1882) testimonials, on application. Prices moderate, no charge for packages.—EDWARD LEIGH, Dunsfold, near Godalming.

STRAWBERRIES, The best sorts for Fruiting next year.

V. H. DE THURY, SIR JOSEPH PAXTON, PRESIDENT, } Strong plants, all well rooted, from small pots, 4s. per 100, 35s. per 1000.

Also strong plants of the above, from open ground, 2s. per 100, 18s. per 1000. Package free. Extra plants for carriage. Cash from unknown correspondents.

H. J. HARDY, F.R.H.S., Stour Valley Seed Grounds, Bures, Suffolk.

GRAPE VINES.—A large collection of best sorts, in pots, some in fruit, to be sold cheap.

E. TURVEY, Brixton Hill, S.W.

CRANSTON'S NURSERIES
(Established 1785).

NOW READY,

Descriptive and Priced Catalogue of ROSES

For Autumn 1882 and Spring 1883.

CRANSTON'S NURSERY and SEED CO.
(LIMITED),
KING'S ACRE, HEREFORD.

GLADIOLUS.

Very great care having been taken in eliminating what, till comparatively lately, was considered good in this most beautiful class, a perusal by all interested is invited of the SELECT LIST contained in our BULB CATALOGUE.

RICHARD SMITH & CO.,
SEED MERCHANTS AND NURSERYMEN,
WORCESETER.

DENDROBIUM FORMOSUM GIGANTEUM.

HEATH & SON

Beg to announce that the Plants of the above imported by them are now flowering with from 3 to 9 flowers on a growth of extraordinary size and colouring.

They will be pleased to send sample blooms to any address.

HEATH & SON,
EXOTIC NURSERIES, CHELTENHAM.

KENT, the GARDEN of ENGLAND

350,000 Fruit Trees, True to Name.

The Largest Stock of Standard Cherries in Britain.—Cherry Orchards are a paying investment.

The Largest Stock of Black Currants.
A lucrative market crop.

The Largest Stock of Gooseberries and Red Currants.—These have again returned large profits per acre.

The Largest Stock of Cluster or Farleigh Damsons.—A grower takes 2500 bushels this year (when fruit is short), and sells at 13s. per bushel. A plantation of these will soon buy the ground they stand on.

The Largest Stock of Plums and Gages in Britain.—Many thousands of Standard and Half-Standard **Pears** and **Apples.**

The Stock of Garden, Wall, Pyramidal, and Trained Fruit Trees is equally extensive.

The Descriptive Catalogue of Fruits free for two stamps.
The Fruit Trees in these Nurseries are not equalled for vigour, freedom of growth, and abundant fibrous roots. Success in removal is certain.

THE KENT ROSES DO LIVE,
because they are wonderfully rooted.
New Descriptive List free by post.
Remarkably fine H. P.'s and Teas, Standards, Half-Standards, and Dwarfs.

Evergreens, Hollies, Coniferæ, Forest Stuff
—many acres—are in finest order.

GEORGE BUNYARD & CO.,
FRUIT TREE and ROSE GROWERS,
GENERAL NURSERYMEN, FLORISTS & SEEDSMEN,
MAIDSTONE, KENT.
N.B.—Frequent Trains from London by North Kent or London, Chatham and Dover Line.

SEEDLING PALMS—PHŒNIX RECLINATA, one year Seedlings, 8s. per 100, in quantities of not less than 500.
Mr. WILLIAM BULL'S Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

LARGE TREES
For Screens, Blinds, and Immediate Effect.
CHINESE ARBOR-VITÆ, 8 to 10 feet, 10 to 12 feet; THUIA GIGANTEA, 10 to 12 feet; CRYPTOMERIA JAPONICA, 8 to 10 feet; THUIA LOBBII, 10 to 12 feet; DEODARAS, 6 to 8 feet, 10 to 12 feet; WELLINGTONIAS, 8 to 10 feet, 10 to 12 feet; GREEN HOLLIES, 10 to 12 feet; SPRUCE FIR, 6 to 8 feet; PORTUGAL LAURELS, 5 to 6 feet, 6 to 8 feet; CUPRESSUS LAWSONIANA, 10 to 12 feet; THUIOPSIS BOREALIS, 10 to 12 feet; HORSE CHESTNUT, SYCAMORE, Black Italian POPLAR, English OAK, Purple BEECH, &c., 10 to 12 feet.
The above are well rooted, with good Tops. The Evergreens are well furnished to within a few feet of the ground.
Should this catch the eye of any Autumn Planter requiring such furniture, will be pleased to quote prices, and arrange for carriage to any part of England or Wales according to the number that may be required.
WM. MAULE AND SONS, The Nurseries, Bristol.

ROSES—ROSES—ROSES.

50,000
STANDARD, HALF STANDARD,
AND
DWARF ROSES,

Of the very best sorts, to choose from, at the lowest prices.

Those who have witnessed my Roses at the Exhibitions could judge of their quality.

Catalogues forwarded free on application to

FRANK CANT,
THE MILE END NURSERIES,
COLCHESTER.
TRADE SUPPLIED.

SPIRÆA PALMATA:
The largest stock for forcing in the world.
LAURUS CAUCASICA:
The finest Laurel ever introduced.
RHODODENDRONS:
All kinds and all sizes.
STANDARD RHODODENDRONS:
You may select from thousands.
HARDY TREES, SHRUBS, ROSES, &c.:
For general planting, acre after acre.
Intending planters are invited to come down and see the stock. The Nursery is ten minutes from Sunningdale Station, S.-W. Railway.
CHARLES NOBLE, Bagshot.

MESSRS. JOHN STANDISH AND CO. beg to intimate that their TRADE CATALOGUE is now ready, and will be sent post-free on application.
The following plants are grown in quantity, and, they venture to think, will be found unexceptionally good of their respective kinds:—ERICA HYEMALIS, BOUVARDIAS, FICUS ELASTICA, TEA-SCENTED ROSES, GREVILLEAS, PALMS, AZALEA MOLLIS and INDICA, SOLANUMS, ARALIA SIEBOLDI, ADIANTUM CUNEATUM, GRACILLIMUM, and other FERNS; CAMELLIAS, DEUTZIA GRACILIS, GARDENIAS, of all sizes, from 48's to No. 1 pots, and many others.
They have also a fine stock of hardy plants to offer, especially RETINOSPORA PLUMOSA, and PLUMOSA AUREA, for boxing and potting; also Gold and Silver HOLLIES, CLEMATIS, IVIES, &c.
LARCH, SCOTCH, and other FOREST TREES.
Royal Nurseries, Ascot, Berks.

MIGNONETTE,
MILES' HYBRID SPIRAL.

AWARDED FIRST-CLASS CERTIFICATES AT THE
Royal Horticultural Society's, South Kensington;
Royal Botanic Society's, Regent's Park;
Crystal Palace Company's, Brighton, Manchester, and many other Shows.

Acknowledged at the Trial of Mignonettes at Chiswick this year to be the best in cultivation.

Trade supplied at special low rates per dozen, 100, or 1000.

To be had Genuine, in Sealed Packets only, bearing my name and address, at 1s. each.

WM. MILES, West Brighton Nurseries;
and 39 and 40, CHURCH ROAD, HOVE;
also 30, WESTERN ROAD, BRIGHTON.



TO THE TRADE.

Certificate of Merit, Royal Horticultural Society. Nov. 3, 1881.

NEW POTATO,
DANIELS' WHITE ELEPHANT,

The best Second Early and most wonderful productive Potato in the World; cooks beautifully white and floury, and of splendid flavour.

From J. TUCK, *Burnham, Wells, Norfolk, September* 18, 1882.—"From three-and-a-half stone of Daniels' White Elephant Potato I grew, on poor soil, thirty-five hundredweight (35 cwt.) of fine marketable tubers, of splendid cooking quality."

LOWEST PRICE PER TON ON APPLICATION.

DANIELS BROTHERS (Seedsmen to Her Majesty the Queen, and His Royal Highness the Prince of Wales), **NORWICH.**

MR. WM. GORDON, 10, Cullum Street, London, begs to offer the under-mentioned ORCHIDS, of which he has received large importations, and is in a position to supply at the very low prices quoted. In all cases package and packing are included.

CHEAP LIST OF ORCHIDS.

Aërides crispum, 7 leaves	5s. 0
Aërides crispum, 12 leaves	10 6
Aërides quinquevulnerum, 7 leaves	7 6
Aërides Lobbii, 5 to 7 leaves	5s. to 7 6
Aërides odoratum majus, 7 and 10 leaves	3s. 6d. to 5 0
Aërides japonicum, 3 to 4 leaves	2 6
Aërides virens, 8 to 10 leaves	5 0
Angræcum falcatum, 8 to 10 leaves	3 6
Bletia hyacinthia, 4 and 5 bulbs	3s. 6d. and 5 0
Calanthe Sieboldii, 3 and 4 bulbs	5 0
Calanthe vestita luteo, 3 and 4 bulbs	5 0
Cattleya citrina, 10 and 12 bulbs	5 0
Cattleya dolosa, 2 and 3 brakes, 10 and 12 bulbs	5 0
Cattleya Mossiæ, 2 and 3 brakes, 5 and 10 bulbs	3 6
Cattleya Loddigesii, 2 and 3 brakes, 8 and 9 bulbs	5 0
Cattleya intermedia, 2 and 3 brakes, 6 and 8 bulbs	5 0
Cattleya Trianæ, 2 and 3 brakes, 6 and 10 bulbs	5s. and 7 6
Cattleya gigas, 1 and 2 brakes, 4 and 8 bulbs,	7s. 6d. and 10 6
Chysis lævis, 1 and 2 brakes, 4 and 6 bulbs	5 0
Chysis aurea, 1 and 2 brakes, 4 and 6 bulbs	5 0
Cœlogyne corrugata, 4 and 5 brakes, 4 and 5 bulbs	3s. 6d. and 5 0
Cypripedium Sedeni, 2 and 4 growths	7s. 6d. and 10 6
Cypripedium niveum, 5 and 10 growths	2s. 6d., 3s. 6d. 5 0
Dendrobium aggregatum majust 10 and 14 bulbs	3s. 6d. & 5 0
Dendrobium heterocarpum, 10 and 14 bulbs	3s. 6d. and 5 0
Dendrobium chrysotoxum, 5 and 6 bulbs	3s. 6d. and 5 0
Dendrobium cretaceum, 10 and 12 bulbs	3s. 6d. and 5 0
Dendrobium Dalhousianum, 4 and 7 bulbs, with very strong growths	5s. and 7 6
Dendrobium Devonianum, 10 and 12 bulbs	3s. 6d. to 7 6
Dendrobium densiflorum, 6 and 7 bulbs	7 6
Dendrobium eburneum, 5 and 6 bulbs	5 0
Dendrobium Falconeri, 10 and 12 growths	5 0
Dendrobium formosum giganteum, 2 and 3 strong growths, 6 and 12 bulbs	3s. 6d. and 5 0
Dendrobium Jamesianum, 6 and 8 bulbs	5 0
Dendrobium nobile, 10 and 12 bulbs	2 6
Dendrobium tortile roseum, 9 and 12 bulbs	3 6
Dendrobium thyrsiflorum, 10 bulbs	5 0
Dendrobium Wardianum, 2 and 4 growths	5s., 7s. 6d., 10 6
Epidendrum vitellinum, 10 and 12 bulbs	2 6
Galeandra Devoniana, 3 and 4 bulbs	5s. and 7 6
Goodyera japonicum, 3 and 4 growths	2s. 6d. and 3 6
Goodyera pubescens, 3 and 4 growths	2 0
Grammatophyllum Ellisii, strong growths	10s. 6d. and 15 0
Lælia anceps, 8 and 10 bulbs	3s. 6d. and 5 0
Lælia Boothiana, 6 and 7 bulbs	5s. 0
Lælia purpurata, 5 and 8 bulbs	5s., 7s. 6d., 10 6
Lælia majalis, 10 and 15 bulbs	2s. 6d. and 3 6
Masdevallia amabilis, 7 and 12 bulbs	5 0
Masdevallia chimæra, 3 and 4 growths	10s. 6d. and 15 0
Masdevallia maculata, 7 and 12 leaves	2 6
Masdeval ia melanopsis, 7 and 12 leaves	3 6
Masdevallia Wagneriana, 7 and 12 leaves	5 0
Maxillaria grandiflora, 5 and 6 bulbs	5 0
Miltonia flavescens, 8 and 10 bulbs	5 0
Nanodes Medusæ, 3 and 4 growths	7 6
Odontoglossum Alexandræ—these all have been imported this year and are breaking well, and some splendid varieties have been flowered out of this importation, and can offer them at the low prices of	3s. 6d., 5s., and 7 6
Odontoglossum bictoniensis	3 6
Odontoglossum cirrhosum	3 6
Odontoglossum citrosmum, 4 and 5 bulbs	5 0
Odontoglossum constrictum, 6 and 10 bulbs	5 0
Odontoglossum gloriosum, 3 and 4 bulbs	3 6
Odontoglossum grande	3 6
Odontoglossum nebulosum, 6 and 7 bulbs	3s. 6d. and 5 0
Odontoglossum Rossii, 15 and 20 bulbs	3 6
Odontoglossum triumphans, 3 and 6 bulbs	3 6
Oncidium ampliatum, 3 and 6 bulbs	3 6
Oncidium concolor, 5 and 7 bulbs	5 0
Oncidium crispum, 5 and 7 bulbs	3 6
Oncidium flexuosum, 5 and 7 bulbs	2 6
Oncidium Forbesii, 5 and 7 bulbs	5 0
Oncidium ornithorhyncum, 5 and 7 bulbs	3s. 6d. and 5 0
Oncidium Phalænopsis, 8 and 12 bulbs	5 0
Oncidium prætextum, 5 and 7 bulbs	5 0
Oncidium sphacelatum, 5 and 7 bulbs	3 6
Oncidium unicorne, 5 and 7 bulbs	2 6
Oncidium variosum, 5 and 7 bulbs	5 0
Phaius grandiflora, 5 and 7 bulbs	5 0
Phalænopsis amabilis, 2 and 3 leaves	10 6
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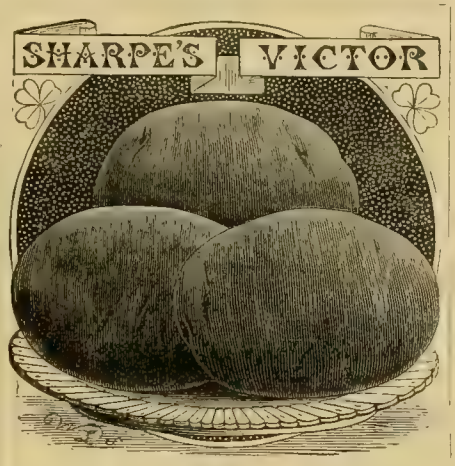
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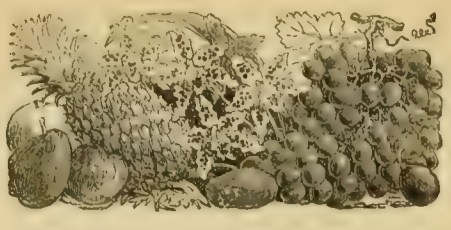
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THE

Gardeners' Chronicle.

SATURDAY, OCTOBER 7, 1882.

EDGE HALL.

A WHOLE working day, from forenoon till evening, devoted to the inspection—some forty pages of closely written notes containing the record of the day's work—how shall we attempt to condense all this into such a shape as shall convey to the reader an adequate idea of the riches of the collection of plants got together by Mr. Wolley Dod at his seat near Malpas? Nevertheless, we must make the attempt, in the hope that, however inadequate it prove, it may yet serve some useful purpose. The task is simplified by the circumstance that, large and varied as the collection is, it is almost exclusively confined to hardy plants; were it not for this we might be disposed to say that the mantle of Wilson Saunders had fallen on the shoulders of Wolley Dod, but Saunders did not confine himself so exclusively to hardy plants. Otherwise the parallel seems to us just; there is the same enthusiasm, the same zest for collecting, the same eagerness for information, the same search after knowledge. To know the plant's name is not sufficient; its native country must be known, its habit of growth, its likes and dislikes, and specially the means by which it may be propagated.

"Propagate, propagate, propagate," are the watchwords in Mr. Dod's garden. The reasons are obvious. Not only is the stock thereby increased, but it often happens that were means not taken to secure this perpetual rejuvenescence the plants would die out and be no more seen. Moreover, the generous instincts of the proprietor have thus full play, and the expression, "Make a note of what you want," which is ever on his lips, could not otherwise, as it so largely does, ripen into practical operation. And so it happens that on looking round under the guidance of the hospitable owner one is constantly tapping his experience, if we may so say. "These do best treated as biennials;" "this won't divide;" "this must be propagated by cuttings;" "this won't come true from seed;" "this is hard to transplant;" and so forth. These are the kind of hints so valuable to the plant-cultivator, which Mr. Dod out of his full experience and even fuller sympathy lets fall as he acts the part of cicerone. The garden is an old garden—the pasture around it is old. The reader will appreciate the significance of this as regards the soil, otherwise not of the most favourable character in this locality. And the plants—how and where are they disposed? Any way—all ways—everywhere. They line the sides of the carriage way, they fill borders upon borders, they occupy bed after bed. They clothe the slopes, they are dotted on the lawn, they edge their way in up to the very hall-door, they are invading the kitchen-garden at such a rate that the "quarters" have well nigh become beds. Fruit and vegetables are ousted by their more showy looking neighbours—and who will regret it? Cabbages can be seen any day and procured everywhere, but the sight of such a collection as this is not an everyday occurrence. And the rockeries—

we should not care to say how many there are, but they are specially interesting as they show the stages of progress in rockwork building. In the earlier ones the struggle for existence among the occupants, however attractive to one class of onlookers interested in the conditions and outcome of the internecine struggle, is not so agreeable to the cultivator. He wants to keep the peace among his subjects and let each attain its full development unmolested by the others. And so it is evident that in the more recently constructed rockeries a great deal more judgment has been brought to bear in the selection of suitable plants than was at first the case. Nothing but practical experience will give this judgment. Personal observation will do much, friendly hints of fellow workers will assist, but nothing but actual subjective work will lead on to success. Not only is experience shown in the selection of appropriate plants, but, perhaps even more strikingly so, in the subtle way in which the special requirements of individual plants are provided for. There are a few general rules as to the construction of rockeries, such as the formation of pockets and niches in suitable aspects, with sufficient drainage and depth of soil, which can be acted on by the novice, but nothing but experimental evidence will suffice to give the cultivator the full grasp of the requirements of individual plants. Again, on a rockery, as under glass, it is not the servile and necessarily very one-sided imitation of the conditions under which plants naturally grow that leads to success, it is the manner in which the plant can be made to exert its power of adaptation to new circumstances and new surroundings that has to be studied. Experiment alone can give this information. Mr. Dod has evidently realised this, for he says one ought to demolish an old and construct a new rockery every year. Such practice is not possible for most of us, but the reasonableness of the advice is obvious.

In a garden of such magnitude and of such diversity of aspect, the general appearance must of necessity vary greatly from month to month. When we saw it early in September certain things were predominant, and contributed to give it a special appearance which is indescribable, but which may in a measure be realised when it is stated that the dominant plants in the borders were tall yellow-flowered Composites, Japan Anemones, Anemone Honorine Jobert, herbaceous Phloxes, white and coloured, tall Œnotheras, scarlet Lobelias, Campanula pyramidalis, both blue and white forms, splendidly developed; Tritomas, Salvia patens, Carnations of varied hue, with Erigeron mucronatum in the foreground.

We pick these out among others as those which seemed to contribute most to the general effect, but if we were to consider detail, a catalogue not much less than Loudon's *Hortus Britannicus* would be wanted. The beds on the lawns owed their effect to much the same class of plants, so that the beds and the borders may be taken as belonging to the same type, the bed being but a detached portion of the border, a sort of island amid a sea of green turf. More use, however, is made of Fuchsias in the lawn beds than in the borders; indeed one, if we remember right, was entirely filled with Riccarton Fuchsias and Fuchsia Fraseri, and these masses of one type of flower came as a grateful contrast to the mosaic parterre wrought elsewhere by scores of brilliant flowers. Salvia patens and hybrid Lobelias, also, are respectively used separately in this way with good effect. Mr. Dod evidently has a partiality for Lobelias, and the intensity and variety of their colours affords ample justification for the preference. Michauxia campanuloides was also very striking from its singular and handsome appearance, so unlike anything else.

Proceeding with our task, and without caring to observe any special sequence, we may note that among the yellow Composites, which formed so conspicuous a feature both in the borders and in the store beds, the most striking were the lemon-coloured variety of the common Sunflower, Heliopsis canescens, Harpalium rigidum, here, as elsewhere, one of the best—if not the best—of its class, and the flowers of which expand and grow in water if cut early; Coreopsis lanceolata, the luminous yellow sheen of which is very remarkable; Helianthus cucumerifolius, an annual with yellow ray-flowers and dark disc-florets; Helianthus multiflorus, and the double variety, forms which we well remember were expelled from many gardens some twenty or more years ago as worthless, but which the whirligig of taste has again, and very deservedly, brought to the front, the plant never having been abandoned by the cottagers; Helenium autumnale, especially the finer forms of it; Rudbeckia subtomentosa, with a dark centre; R. columnaris, and R. Newmanni, whatever that may be; Helenium Hoopesii, H. lætiflorus, remarkable for its glossy black stem. Silphiums are almost too large for the garden, and must be relegated to the wilderness walk. Of dwarfer habit, Solidago multiradiata is one of the best of the genus. Verbascum Chaixii is one of a tall growing race, very like V. nigrum, but with much larger flowers. V. olympicum has very fine foliage. The white variety of V. nigrum is a stately plant, but, like others of its race, it becomes coarse if not frequently divided. Veronica verticillata is another tall growing perennial, appropriately named, so far as its leaves are concerned, and bearing long, erect, pyramidal spikes of small white flowers. V. subsessilis is, perhaps, the handsomest of the Veronicas, its dense massive spikes of blue flowers being very attractive. Mr. Dod finds that in the second year the plants are better than in the first year, but that they degenerate in the third year, hence his advice to divide and multiply. V. spicata corymbosa is a low growing form, whose flower-spike breaks up into a mist of fine branches covered with small blue flowers. Mr. Dod finds this difficult to propagate. Pyrethrum uliginosum, a bold white "Marguerite," Mr. Dod finds can hardly be divided too often. Chrysanthemum atratum and C. lacustre have flowers of a similar character, and very conspicuous at this season. Erigeron philadelphicum, a pinkish-flowered Aster, is chiefly noteworthy in that it is in flower for the greater part of the year. The Monardas were represented by M. fistulosa, dull lilac, and M. fistulosa alba; M. Russelliana, with magenta flowers; and M. didyma. The lilac-flowered Phytostegia virginica and P. speciosa were characteristic, as well as Chelone obliqua and C. Lyoni. Of the Prunellas P. grandiflora seems an enlarged form of our common wild species. The white form is striking, and even more so P. Webbiana, with dark magenta-red flowers. Dracocephalum Ruyschianum is of similar character, but with larger pale blue flowers. Two Linarias made a special show at the time of our visit—one, L. anticaria, with a pale lilac or cream-coloured flower, with deeper violet lines and palate, and L. reticulata, of rich chestnut-brown, with bright orange palate recalling a humble bee. Senecio pulcher thrives well, sending up its handsome panicles of purplish flowers. Loasa vulcanica, a tender plant in one sense, and one likely also to promote tender feelings in him who incautiously touches it, is a very peculiar plant covered with stinging hairs and with numerous white cup-shaped flowers, not only beautiful, but of the most curious and interesting structure.

To allude to a small fraction of the innumerable plants grown on the rockeries would be tedious, and unless we could enter into details, for which space cannot be granted, unprofitable. We must pass them over, therefore, with but scanty notice, mentioning in passing that the newest construction of this nature is a low mound of nearly uniform height throughout, and constructed of thick rugged slabs of mountain limestone, such as that which forms the Great Orme's Head. The numerous pits which stud these blocks serve to retain moisture, while the blocks themselves are so arranged as to afford shelter alike from burning sun and excessive wet. To our fancy they resembled cromlechs, the side stones of which support a flat one for a roof, beneath the shelter of which the plants nestle. We do not wish to convey the idea that the whole rockwork consists of cromlechs of this description, but they are interspersed with such frequency as to be characteristic of the whole. Among the hundreds of occupants of these rockeries we can only mention a few of the more striking. Cyananthus lobatus, with its trailing habit, distended hairy calyx and bell-shaped blue flowers with a singular coronal or threads in the throat, we were told, only strikes from spring cuttings. It is a Campanula which in some of its floral arrangements has so widely strayed from family costume and feature as to have puzzled the botanists and led them to assign it a place in other families where it has no right to be. Pratia ilicifolia, a New Zealand Lobelia, has the foliage of Campanula hederacea and the white flowers of a Lobelia. Of the Campanulas, C. Hendersoni, C. turbinata, and C. pelviformis, have all been proved here to be forms of C. carpatica, as their seeds have produced C. carpatica. Rubus arcticus, a dwarf species with delicate pink flowers, though of Arctic origin, proves tender in Cheshire, probably from not knowing how to keep quiet in our capricious autumns and springs. Dianthus petræus, in its double-flowered form, seemed as if it might have been the origin of the beautiful and fragrant double white Pink so much cultivated about London, and so delightful a harbinger of summer. Sedum pulchellum, a species figured in these columns, and a common North American plant, is so very beautiful that it is a matter of surprise that it is not more frequently seen in gardens. As it is, we meet with it almost exclusively in the gardens of *connoisseurs* and specialists, but the plant is not so rare or so difficult to cultivate (quite the contrary) as to warrant such exclusiveness.

Gentiana verna thrives here so luxuriantly that on one small patch not much bigger than one's hand 100 flowers were to be seen open at one time. Arnebia echioides was flowering freely, as we were told it had been all the summer, some of the flowers spotted, others spotless as is the wont of this species. Saxifrages, Sedums, Sempervivums, Primulas, Androsaces, are of course well represented, but these and hundreds of other "alpines" must be left to the imagination of the reader.

A word or two in conclusion as to the British wild plants here cultivated. Anagallis tenella, Campanula hederacea, and Lysimachia nummularia, might reasonably be expected to be found here. Foxgloves and Lythrum salicaria are also not unexpected inhabitants, but in addition to these more common plants Mr. Dod has succeeded in collecting from their native haunts same of the rarer British species, which hold their own well in point of beauty with any from other parts of the world. Among these are Erica vagans, the Cornish Heath; Sibthorpia europæa, and its variegated variety, a Cornish plant of exquisite habit. Contrasting strongly with these in size and habit were the tall stems and yellow flower-heads of Senecio saracenicus, a Cheshire plant; the various species of Verbascum, a remarkably fine variety of Sedum Telephium, with large flower-clusters of deep purple-red flowers, gathered in Wales; Inula crithmoides, a very rare British plant, found in localities where it gets salt in the soil and salt in the atmosphere; Hypochæris maculata, a plant found on the Orme's Head, but only known to us previously in a herbarium or specimen state, which gives no notion of its really handsome appearance.

The space at Mr. Dod's command is so large, and the richness of his collection so great, that he can well afford to try the same plant in all sorts of different situations, with a view to determine which is best. His collection, moreover, is so thoroughly representative, and the care taken in securing correct nomenclature so great, that we can hardly imagine a more useful and instructive task as a guide for other cultivators than the formation of a monthly, or in the height of the season of a fortnightly, list of the plants as they come into bloom, with occasional notes on their cultivation, structure, and relative value as plants for different purposes and positions.

AUTUMN FLOWERING PLANTS.—Wallflowers are now appearing in the markets in something like plenty: for they are blooming very freely, indeed a wet summer like that we have just passed through is favourable to early and vigorous growth, and this followed by dry autumnal weather induced the Wallflowers to bloom freely in September. Something is also due to the fact that growers select every year for their own seeding the earliest flowering varieties, provided that precocity is associated with a good dwarf bushy and compact habit of growth. So long as the weather is open and mild, so long may we look for a supply of Wallflowers. Auriculas grown in pots are throwing up autumn trusses with great freedom. The plants where well looked after have made a vigorous and prolonged growth, and when this occurs autumn trusses are formed. It is best to pinch the flower-stems out, and keep the plants a little dry, so as to induce a period of rest. Many autumn flowers, such as Cyclamen hederæfolium, the Colchicums, autumn-flowering Crocuses, &c., have bloomed very early this season, and generally with great freedom. Hardy Primulas of all kinds are remarkably active; a plantation of common Primroses in a cool and shady spot is a mass of bloom, and the hybrid coloured Primroses are not less active. To the gardener and farmer alike a dry autumn is an inestimable gift of Nature, and if flowers come out of season it is because plants are in a high state of vigour, and the spring blooming is not thereby materially decreased.

New Garden Plants.

CATTLEYA (LABIATA) RÖEZLII, *Rchb. f.*, 1874.

This turns out to be merely a catalogue name, and I have earned many reproaches on account of it from excellent orchidist acquaintances in England who were a little interested in the trade. I spoke about Cattleya Mossiæ without having Sir William Hooker's table, *Bot. Mag.* 3669, in my memory. The feeling against Don Benito was, however, quite pardonable —even justified. Panno Röezl had most accidentally only introduced, if I remember right, 6000 plants at once, and those who had paid first good prices felt a well excusable regret. Where are they? *Vadite ad inferos.* In those days Cattleyas were repotted as often as Coleuses, and they died, though not as quickly as Coleuses. I have, however, a letter from Mr. J. Mills, Lord Rendlesham's gardener, who sent me in the autumn of 1875 the first flower expanded in Europe, far superior to my typical wild flower sent by M. Röezl, and now by Mr. Sander.

The plant has more slender bulbs, and there appear to be usually two nearly equal joints, whereas in Cattleya Mossiæ I think them very unequal. The flower itself would appear to resemble most nearly that of Cattleya Warscewiczii. It has two bright yellow eyes behind the anterior blade of fine purple. The superior part between the side-laciniæ appears to be quite or nearly free from brown. It has usually three flowers, now two.

I hope the plant will now-a-days be kept, and enjoy a good reputation. We know now, after the loss of perhaps 80,000 Cattleyas in England, that they must not be disturbed, and that only with the greatest caution can a change of what little soil may be afforded be permitted. A question, not solved, I believe, is the light question. We may hear about it from Mons. Massange de Louvrex, of Château de Baillonville, who is growing Cattleyas, surpassed by nobody, though the Veitchian Cattleyas enjoy decidedly an extraordinary and much deserved fame. *H. G. Rchb. f.*

PLEUROTHALLIS SPECTRILINGUIS, *nov. sp.**

This is allied to the species that bears the name of that distinguished orchidist, Mr. John Barber, of Old Hall, Spondon, but is smaller and has another kind of inflorescence. The spatulate leaves reach scarcely an inch in length and are rather narrow. The thin peduncle bears nearly a dozen of flowers at its top, which might be called corymbose, the pedicels being long and unequal. The hyaline, triangular, aristate sepals have some fine purple-mauve blotches. Petals much smaller, hyaline, with brown margin, triangular, cuspidate, 1-nerved. Lip dark olive-greenish-brown, with basilar retrorse horns and a fimbriate anterior elliptical blade. I had this fine gem from Mr. James O'Brien, West Street, Harrow-on-the-Hill. *H. G. Rchb. f.*

LIFTING AND STORING OF POTATOS.

(*Concluded from p.* 430.)

PROTECTIVE STORING.—To prevent the disease making progress during the storing, you must proceed as follows. First apply a layer of dry sand, then place upon this sand a single layer of Potatos, put sand over them just sufficient to cover them; proceed in this way alternately with a layer of sand and a layer of Potatos, and finally cover the heap in such a way that the rain-water cannot run through it. I dare not positively say that by this proceeding not a single tuber will take the disease from the few originally diseased tubers that may be found in the lot at the time of storing; but I assert that the progress of the disease when the Potatos are stored in this way will be next to nothing. Experiments which, however, are not quite finished, strongly corroborate this view, and, besides, it is evident from the fact that even if some of the diseased tubers produce spores, these spores cannot possibly penetrate even the slightest layer of dry sand, because they require water for carrying them, and it is known that the spores are the only means of propagating the disease in stored Potatos. I must add that dry earth may be used instead of dry sand; but of course the latter gives more work when the Potatos are to be taken out of the pit or store-room. The same sand may be used year after year without the slightest risk. Dry sand is best, but even if it is a little wet it may do very well notwithstanding.

There is still one point left of no small consequence, on which it will be necessary to make a few remarks. Store your Potatos in the way described as you dig them. Never let them remain in heaps longer than a few hours. Many people think they ought to dry their Potatos before storing them; this is not at all necessary when the Potatos are put in dry sand. The sand itself will dry them sufficiently to prevent wet rot—a phenomenon quite different from, and known long before the Potato disease was ever heard of—and such a drying is all that is required. When Potatos are stored without sand or the like material, the drying is in itself a very reasonable thing, for it not only protects the Potatos against wet rot, but it also renders them very much less susceptible to disease. But, unhappily, the operation of drying the Potatos in the open air is in its beginning not without danger. If the weather is rather warm, and especially if the bruised Potatos have not been well cleared out of the lot, the disease may take a new start and do much harm in the course of a few days, although it takes a little longer time before the damage becomes visible to its full extent. In cold weather perhaps no new outbreak of the disease will take place, but why run a great risk when it may be very easily avoided?

The grower may answer that the great drawback with this operation is the work and expense it entails. Certainly the weight of this objection cannot be denied, but my object is only to point out a means by which he will be on the safe side, while at the same time this proceeding, although it costs something, is not impracticable. In the meantime, if he has postponed the lifting till the temperature has abated to 45° or 50° Fahr., the disease is many times less dangerous than is the case with a temperature of 60° to 65°, and perhaps then he may run the risk of storing in the ordinary way to evade expense. I hope another day to be able to speak more positively on this point. For the present I think I ought to recommend the storing with sand, as with this proceeding every danger will be excluded, and the former will be independent of temperature if the lifting and storing be done in the way described.

I propose to call the storing with dry sand "protective storing." By way of analogy, late lifting, with the precautions described, might be called "protective lifting." To sum up :—

1. Protective moulding (described in my pamphlet) will, if well executed, secure the Potato crop to such a degree that, as a rule, you will only find a mere trace of disease at the time of lifting.

2. Protective lifting will fully save the crop from a very fatal attack often experienced at the very moment of taking the tubers out of the ground.

3. Protective storing will secure the Potatos against an outbreak and development of the disease during the keeping.

As long as the farmer keeps to the old system of cultivating and dealing with the Potatos the disease will be his master, but by adopting the protective system, and taking care that it is well executed in all its points, he will be the master of the disease. This is the great difference. *J. L. Jensen, Rue Perronet, Neuilly, Paris.*

THE MANUFACTURE OF WOOD PULP IN SERVIA.—The manufacture of paper-pulp from wood seems to be increasing in some directions, while in others the reverse is the case. From Belgrade, in Servia, we learn that the manufacture of wood paper is very largely increasing. A large quantity of paper is consumed in Servia, and it is all imported, though the raw material necessary for paper-making, and abundant water and water-power, are to be found in almost every Servian valley. Lime, Aspen, and Fir trees are most suitable for this manufacture, and they can be obtained in Servia at an almost nominal price. Besides paper for home consumption, it is proposed to manufacture pulp for exportation to England.

THE UPTON NURSERIES, CHESTER.

A SHORT walk from the centre of Chester, past the "rows"—those unique products of a bygone style of architecture, past the Town Hall, so strongly reminding one of Belgium; past the dull red cathedral and along the Northgate Street, and we arrive at the nurseries of Messrs. Francis & Arthur Dickson. The site of the nursery is flat, it has none of the undulations which give so pictural an appearance to some nurseries, few or none of those fine specimen trees which constitute so great an attraction in some establishments. On the other hand, there is a go-ahead business like appearance about the nursery, dependent on system, method, and order, which strike the visitor at a first glance, quite as much as the extent of the place and the multitude of plants it contains. Unlike the great London nurseries, there is here no special show-house, but there is a small town of useful pits and low span-roofed plant-houses filled with the varied stock which must be kept in a first-class general nursery. Stove plants, greenhouse plants, hard-wooded stuff, soft-wooded stuff, New Holland plants, pot Vines, Figs, Tea Roses, Begonias, market plants, decorative plants, Ferns, Palms, and a dozen other types are represented here in unusually large quantities, and in excellent condition. Beyond this, as we do not profess to write a trade list, there is nothing special to record concerning them.

Messrs. Dickson are great advocates for the hardening off process being, where practicable, carried on out-of-doors. Azalea mollis allowed is to make its growth under glass, and is then transferred to the open air to ripen the wood. Even such a plant as Pleroma macranthum is found to flower much better if it be kept out-of-doors for a time. Over-coddling is not the order of the day; many Ferns usually grown in the stove do here not only as well, but better, in a cooler temperature. Adiantum Williamsi is in this case doing better in a greenhouse temperature than in the stove. Princess Louise Petunia, a double white variety, is largely grown, and is in truth very effective. Tropæolum Crimson Gem, planted in March last, and allowed to run along the rafters of a span-roofed house, bids fair to supply its brilliant flowers all through the winter.

Passing out of the maze of plant-houses, noting by the way a frame of show Auriculas now resting from their labours, we are shown long beds full of one-year-old cuttings of Silver Queen and Golden Queen Hollies respectively. The beds are sheltered by adjacent pits, and the plants we noted have occasional protection by means of hand-glasses. In any case there was scarcely a failure to be seen, and the row after row of tiny piebald Hollies constituted a pretty and novel sight.

Among the hardy Heaths and plants of that character which, together with Rhododendrons, are grown here very largely, we noted a Pernettya, under the name of P. floribunda, which is, we presume, a garden name. In any case, it is neater in foliage than P. mucronata, much more free flowering, later, and its berries, of a lovely rose-pink colour, are not only more numerous, but larger than those of P. mucronata. Tropæolum speciosum, which people find so difficult to grow in the South, grows freely enough here, as we noticed also in other places about Chester, and, under widely different conditions, in Wales.

Of Hollies and hardy Conifers the stock is unusually varied and excellent. There are not, indeed, many "specimen trees," but the number and variety of small symmetrical well-grown plants are alike remarkable, and the numerous and well filled succession seed-beds give assurance that there will be no lack in the future either of purely ornamental species or of kinds like the Corsican, the black Austrian, the Scotch or the Larch, which, like various deciduous forest trees, are principally grown for utilitarian purposes. The endless varieties of Lawson's Cypress, the countless Thuias, the Junipers, as beautiful as numerous; the Retinosporas, with their wonderfully diverse foliage and their range of colour, are all striking here, not only for their symmetry and varied hue but from their great numbers. The Japanese Conifers generally assert their hardiness here as elsewhere, but we noticed (or thought we did), as indicative of the climate, an absence of some of the more tender Pines

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* *Pleurothallis spectrilinguis*, nov. sp.—(Apodæ cæspitosæ). Folio spatulato parvulo; inflorescentia tenui corymbosa scopiformi; sepalis oblongis caudatis dorso carinatis; tepalis lanceis crenatis triplo minoribus; labelli trifidi laciniis lateralibus triangulis curvatis retrorsis antice incumbentibus, lacinia antica elliptica lacero-fimbriata; columna arcuata gracili superne dilatata. *H. G. Rchb. f.*

and Silver Firs. Among the hundreds of thousands of plants grown here, however, it well might be that in a very hurried visit a great many things must have been overlooked, and our speculations as to the relation of vegetation to climate rendered correspondingly inaccurate.

Fruit trees are very largely grown, and the growth of the Apples this season appeared unusually fine, though we were assured a hard fight had been maintained with blight early in the season. There was, no doubt now, however, with whom the victory lay. Unflagging attention, aided by soft-soap and quassia-chips, had routed the enemy, and left such growth as the fruit-grower likes to see.

Roses, too, occupy a very large area. The season of flowers was well-nigh over, but budding and cutting-making were still in full swing. The La Grifferaie stock is much used for Teas and Noisettes, but in some cases the growth made on it is too coarse to be desirable. The seedling Brier is largely made use of, and Brier cuttings also. A shoot 4—5 inches long is used, the eyes all removed except one near the top (see fig. 67, p. 407). The cuttings strike freely, and are then worked. It is claimed as an advantage of this method that the operation of budding is more readily effected than in the case of the seedling Brier, the roots are nearer the surface, and more under control, and the liability to produce suckers less.

EGYPTIAN VEGETATION.

(*Concluded from p.* 425.)

CULTIVATION.

As already mentioned, cultivation in the Delta includes nearly all the herbaceous vegetation and practically all the arboreous. The Date Palm, Phœnix dactylifera, is the tree of the Delta, occurring in groves and groups all over the country. In the north it grows to a height of between 30 and 40 feet, whilst in the centre and south it attains between 60 and 70 feet. There are many varieties of the Date, differing in the size, shape, colour, and flavour of the fruit. The Doum Palm (Hyphæne thebaica), the common branching Palm of Upper Egypt, does not reach the Delta. Next in order of frequency is the Sycamore of Scripture (Ficus sycomorus), which bears an inferior kind of Fig, much relished by the natives. The White Mulberry (Morus alba) is another fruit tree planted in some quantity near Cairo and in other parts of the Delta. Acacia nilotica is the commonest species of the genus, which is characteristic of the arboreous vegetation of Upper Egypt, being planted throughout the country on account of the value of its timber, and it appears to be the only arboreous one in the Delta. Only in and around the large towns and in the gardens of the wealthy is there any variety of trees.

Among the commoner trees planted in the streets and squares of Cairo and Alexandria are Albizzia Lebbek, Acacia Farnesiana, Parkinsonia aculeata, Ficus sycomorus, and various species of Tamarisk. The Grape, the Fig, the Indian Fig (Opuntia ficus-indica), the Banana, Apricot, Peach, and many other fruits, are also cultivated near some of the towns, and most of them produce good fruit. So much has been written respecting the fertility of the Delta, that it may suffice to enumerate some of the chief crops. These are Wheat, Clover, Trifolium alexandrinum, Cotton, Broad Bean, one of the most essential articles of food of both man and beast; Sugar-cane, Rice, Maize, Flax, Tobacco, Indigo, Hemp, Chama (Abelmoschus esculentus), Colocasia, Onions, Tomatos, Cucumbers, and Gourds of various kinds.

CULTIVATION IN THE DESERT.

Beyond the very extensive planting of Tamarisk on the banks of the Canal we are not aware what, if anything, has been done to bind the sands of the embankment.

The country forming a square, with Cairo, Zagazig, Ismailia, and Suez occupying the four corners, was a treeless, almost naked desert; but already much has been done towards reclaiming it. In the first place the Sweet-water Canal, of which we have lately heard so much, supplies the most necessary element. This canal runs from the eastern, or Damietta arm of the Nile, to Ismailia, and thence southward to Suez. It was begun in 1861, and carried as far as Lake Timsah in 1862, and completed all the way to Suez in January, 1864, in time to be of inestimable value to the vast numbers of labourers employed in making the Maritime Canal.

Perhaps we cannot do better than conclude this hasty sketch with some extracts from an article on "Gardening at Ismailia," by Mr. Pierre, manager of the waterworks there. This gentleman had lived some twenty years in Egypt, and, being fond of gardening, spent his leisure in gratifying his taste. The subsoil is sand, mixed with a little clay, and upon this is a bed of sand of varying thickness brought by the north winds from the desert. In the garden this bed of sand was about 12 feet thick in the highest part, and about 2 feet 6 inches in the lowest. Due provision for irrigation having been made some Acacias and other trees were planted, and the Acacias succeeded so well that in two years after planting their trunks were 18 to 20 inches in girth. But the greatest successes were with vegetables and fruits. Asparagus produces excellent crops twice a year, affording a most welcome vegetable delicacy that could not previously be purchased. Strawberries of the alpine varieties yield a deliciously-flavoured, though small fruit in great abundance during two months of spring. Orange, Peach, Pomegranate, Fig, and many other fruit trees flourish and bear good fruit; but Apple and Pear trees, although they grow, do not bear fruit. Peach trees exhibit a most extraordinary degree of luxuriance, and are very prolific when quite young. Seeds planted, it is stated, at the time of gathering the ripe fruit, grow into trees, bearing abundance of fruit, two years after. The Grape Vine, too, succeeds remarkably well, and as early as 1870 Mr. Pierre had quite a nice vineyard. He made his first wine in 1867. One Vine that had been planted four years produced 148 bunches, some of which weighed from 1 to 2½ lb., and the largest weighed between 5 and 6 lb. With regard to pruning, our author states that the system of cutting back hard, practised in France, will not answer in Egypt, where it is better to leave long shoots. Sugar-cane as fine as that seen in Upper Egypt was grown in pure sand, frequently watered. Amongst vegetables that grow freely and are of good quality are Carrots, Turnips, Scarlet Runners, Peas, and Salsify, as well as all kinds of Salad; whilst Cabbage, Cauliflower, Artichokes, and some others only languish, or are very poor in quality. The common Potato is replaced by the Sweet Potato, which produces excellent crops with little care beyond liberal watering. Both Lucern and the native Egyptian Clover are very good forage plants. The former will give five or six mowings a year, but the latter is preferable, because it will stand several years, whereas the Clover has to be sown afresh every year. The writer enumerates many other ornamental and useful plants that were flourishing, and that as long ago as 1870—thus he had Papaw, Cocoa-nut, Doum Palm, Bamboos, &c.—but we have been unable to find any more recent report of the progress of gardening at this new town in the desert. From all that we can learn, however, there seems to be no reason why the land in the vicinity of the Canal should not be gradually reclaimed and covered with vegetation.

For more detailed information on some of the points merely touched upon, it may be useful to add the following references to previous volumes of this journal. Thus on the Cotton crop see *Gardeners' Chronicle*, n.s., ii., p. 654; Egypt as a fruit-producing country, with statistics of the Date Palms, iv., p. 746; on tropical fruit trees, v., p. 730; on the vegetable remains in the ancient monuments, &c., viii., p. 563; and on Egyptian gardens, xii., p. 328. *W. B. Hemsley.*

ASTERS.

ASTERS, as a rule, are a despised class of plants. Various reasons may be assigned for this, the most prominent perhaps being their want of any decided colour in the flower and the grossness of their herbage. Nature seems to have denied them the bright and glaring colours generally seen in plants that bloom in the sunny months. They make the most display at a season when insects are not very active, and consequently very few of them produce perfect seeds. If we are to believe that all Asters are descended from one individual, reproduction by seeds must have been the rule in the far back history of the world, not the exception, as at present, otherwise the number of species now known could not have originated. About 150 or more species are distributed over the cooler parts of the world, occurring most abundantly in America. In common with other plants that do not seed freely, they possess a means of reproduction that enables them to combat with other vegetation, and to survive the constant vicissitudes to which all organised Nature is liable. While the flowering stem shoots upwards, a rhizome or underground stem runs along beneath the surface, and crops up somewhere at a distance, forming, as it were, a new individual. Here, then, is another reason that serves to make Asters unpopular in the well-kept garden, because by their rambling propensities they soon exceed the limited space allotted them, overcrowding or completely smothering their neighbours, despite the gardener's attention. This is especially the case with all the worst forms, so that if reproduction by seeds is denied them in a measure, it is amply compensated by their powers of underground extension. Curiously enough, all or nearly all the good ones, from a horticultural point of view, increase very slowly, and form very short rhizomes, or none at all. Therefore, if a judicious selection were made, and planted in a moderately good soil in a sheltered position, where they would not be knocked about by the autumnal gales, Asters would become far more popular than they are. The great redeeming feature is, that the greater number flower at a season when there is little else to take their place. They are most generally known as Michaelmas Daisies, simply because they bloom at that season. If a few selected sorts were planted in any well-arranged herbaceous border, they would serve to keep it gay while the dull season is approaching. Moreover, the greater number are fit occupants for the shrubbery or wild garden, where they could ramble at will, without interfering with their gayer and more favoured neighbours. The following is a selection of twelve good sorts—the number could be augmented, but for any small collection they are quite sufficient:—

Aster Amellus, a native of Italy and other parts of South Europe, is one of the best. Its average height is 2 feet; and the flowers, which, under good cultivation are perhaps the largest of any, are of a deep purplish-blue, and the rays closely and evenly set. It makes the most display in August and September. The lower leaves are spathulate and very blunt, the upper oblong lanceolate, subacute and scabrous, that is, rough to the feel. The stem is usually much branched at the top, with the branches corymbose, or ending on the same level, showing off the flowers to advantage. For the history of this plant see *ante*, p. 437.

A. lævis is a native of North America, and grows from 2 to 3 feet high. The leaves are smooth, as the name implies, and shining, the lower somewhat serrated, and the upper entire. The stem in the type is closely branched at the top, bearing the flowers in a close panicle when in full bloom. They are medium sized, but of a lively blue colour. This species is about a month later in commencing to bloom than the last. There are several varieties of this grown in gardens under different specific names, taller and looser in habit, yet possessing some value.

A. lævigatus var. minimus is a neat little plant, with rosy-purple flowers, sometimes seen in gardens under the name of A. Novæ-Belgii minimus. It blooms about the same time as the last, and has much the same habit, but is only about half the height. The leaves are lanceolate, smooth, and somewhat serrated.

A. grandiflorus grows, on an average, about 2 feet high. This is a North American species, and has linear, rigid, and acute leaves, reflexed on the numerous branches towards the top of the stem. Each branchlet ends in a large purple flower-head, surrounded by a loose spreading involucre. The florets of the ray are not very regularly disposed, so that, all things considered, it is not one of the best, despite its size.

A. Curtisii, a native of the United States, grows about 3½ feet high. The inflorescence is a lengthened and much branched panicle, while the flowers (above the medium size) are of a pleasing purplish-blue colour. The leaves are smooth, oblong lanceolate, with a few distant serratures on the lower ones. It is one of the more recent introductions, but becoming pretty well distributed in gardens.

A. cordifolius, also from the United States, grows about 3 feet high, and has a much branched elongated panicle. The individual flowers are small, but produced in great profusion. They are very pale blue with a purple centre, and best seen in a mass. The leaves are cordate, serrate, stalked, and hairy, rather an uncommon type amongst Asters.

A. Shortii is a more recent introduction than the

last, similar in appearance to that but more rigid, and producing larger flowers of a deeper blue. It comes from the same country, however, and grows about the same height. The leaves are stalked, cordate-oblong, and pubescent on both sides, the radical ones distantly serrated, and the upper entire, or nearly so.

A. punctatus is a native of South Europe. This is the Aster acris of Linnæus and, as well as the two following species, belongs to the subgenus Galatella of some authors. They are characterised chiefly by the disc-florets being twice as long as the floral involucre, and the densely branched inflorescence arranged in a corymbose manner. This species is generally seen about 12 or 15 inches high. The flowers are comparatively large, and of a purplish-blue colour. The leaves are linear lanceolate, three-nerved, and marked with minute dots—whence the specific name.

A. dracunculoides is a native of Siberia, and grows about 18 inches or 2 feet high. The leaves are entire, downy on both sides, linear acute, and the flowers produced abundantly on the top of straight stems. The ray-florets are few in number to a head, but are long, of a bright blue colour, and, seen in the mass, are rather attractive.

A. ptarmicoides, a native of the United States, and of recent introduction, is perhaps the neatest and best white grown; seldom exceeding 15 inches in height. The flowering season extends over a considerable part of the summer and autumn, by its habit of sending up successional shoots, owing perhaps to its position sometimes. Like the two former, the leaves are narrow, but less stiff, ther adical ones especially resembling a tuft of grass.

A. Chapmani, also from the United States, grows about 4 feet high, has large bright blue flowers, and the branches have a twiggy appearance. It is by some authors considered a variety of A. turbinellus, which may be the case, but certainly it has a very different appearance, owing to the lower leaves being two or three times broader than in that species, giving the plant a totally different appearance from the true A. turbinellus, which at a little distance appears like a loose bundle of naked twigs.

A. Novæ-Angliæ is from the same country as the last. It is considered one of the best of the tall growing ones, and has been long known in gardens. It grows 6 or 8 feet high, and has sported into several varieties, such as A. Novæ-Angliæ rosea and A. Novæ-Angliæ pulchella. The type has a purplish red flower, while that of the variety "pulchella" is of a deep blue. The latter is also dwarfer, better habited, and blooms earlier. The individual flower-heads are large, and commence opening from September onwards, till killed down by frost. The leaves are linear lanceolate, amplexicaul, with short auricles, and along with the stem are hairy. The root-stock increases very slowly, and is one of the few that does not form a green rosette of leaves above-ground in the autumn. *Observer.*

FLOWERS IN SEASON.

Calceolarias.—These are, as a rule, past their best after August—sometimes, indeed, before, in light soils, and especially if the season should turn out a dry one; but the past season has been neither very wet nor very dry, and the result is that Calceolarias are blooming later than usual this autumn. Golden Gem is still the best of the yellows, and the least likely to go off during hot weather. By-the-way, how seldom we see mixed beds of Calceolarias now-a-days, and how very few of the old varieties appear to be in existence. Mr. Barron has one or two mixed beds at Chiswick, consisting of Golden Gem and Sparkler, the latter a very old sort; they are planted in about equal numbers, and are still as showy as they were weeks ago. What has become of that very dark dwarf variety, Ambassador, which attracted so much attention in Scotland some twelve or fourteen years ago? We believe it was raised and sent out by Messrs. Edward Sang & Sons, of Kirkcaldy.

Cratægus pyracantha.—The extreme beauty of this berry-bearing and truly ornamental plant is rarely appreciated as it ought to be. It is common, forsooth, and every cottager in the country may decorate the front wall of his house with it. Only a day or two ago we saw a fine specimen on a wall at Chiswick covered with clusters of berries at the extreme ends of the shoots. The berries are of a shining coral colour. The plant is trained loosely to the wall, and there are numerous green shoots hanging in a natural fashion from the main stems, which adds much to its appearance. But the pyracantha is more than a wall plant. In the Wilderness, Battersea Park, it is very effective as a bush plant in the centre of one of those little valleys where the free style of gardening may be said to be represented and flowers and shrubs are pleasingly intermixed. Its shoots covered with clusters of berries almost rest upon the earth, and viewed from the walk a considerable distance above them the effect seems to take the fancy of a good many now that flowers in exposed situations are past their best for the season.

Rudbeckia Newmanni.—This is one of the best of autumn-flowering perennials. We lately saw a broad band of it quite as effective as the first and freshest display of Calceolarias in July. A straggling plant put here and there in a border may take the eye for the moment, but a mass of orange-yellow flowers with dark centres, looking as bright as possible after a week's rain, is something unusual in the last days of September. We have evidently not yet discovered the way to make the most of some of our best autumn-flowering plants. A mass of flowers always makes a lasting impression on the mind.

Autumnal Crocuses.—In the Crocus bed at Kew several species are now blooming profusely. C. nudiflorus is not uncommon, but its large bluish-purple flowers are very welcome at this season. C. speciosus is a splendid autumnal species, with large handsome purplish-blue flowers, beautifully reticulated with purple internally. If planted in sheltered places with various aspects its blooming period can be lengthened considerably. This can very easily be done on rockwork, where that planted with a southern aspect will bloom first and that facing the north last. C. pulchellus has pale lavender coloured flowers with blue lines internally and a yellow throat. Its blooming period is rather later than that of the last. Both are very handsome and not half so common as they ought to be. Although leafless during their blooming period, if planted in certain positions that deficiency would not be so noticeable.

Crocus speciosus.—At no season of the year is the Crocus more beautiful than in autumn. There are no other flowers of the same type or character, and none more showy. We know of nothing more beautiful than a large tuft of this pale blue Crocus peeping up from bewteen patches of green Saxifrage, and partly shaded by a broad green leaf or two of some taller growing plants.

Lobelia fulgens.—This Mexican species is now flowering on the rockwork at Kew. It is a grand ornament for garden decoration, and one of the most ornamental of the genus, if not the best. The flowers are intense scarlet, with broad nearly equal segments to the lower lip of the corolla. The stem and leaves are conspicuously covered with a greyish pubescence, distinguishing it at once from L. splendens and L. cardinalis, other two species having scarlet flowers with which it is often confounded in gardens. What adds to the confusion is the number of hybrids in cultivation. These hybrids give variety of colour certainly, but any departure from the glowing scarlet of this species, or of L. splendens, is a deterioration. All three are easy of cultivation, but being a little tender require the protection of a cold frame in winter. They amply repay this trouble on the cultivator's part.

Polygonum vaccinifolium.—This fine old plant, with its spikes of lively pink flowers, is now in fine condition on the herbaceous ground at Kew. We sometimes see it in old gardens where the ruthless hand of summer flower gardening spared it when the bedding craze was at its height. It is something in the way of P. Brunonis, but abundantly distinct, and has that refinement about it the latter does not have. Planted on rockwork with a good exposure it is quite at home, and whether in flower or not its slender trailing stems are seen to best advantage when hanging over a rockery ledge or large stone.

Lilium auratum.—In a peat bed on the rockwork at Kew, dotted amongst a collection of Himalayan Rhododendrons, are some fine specimens of this noble Japan Lily. They are very dwarf, ranging from 1 to 2½ feet high. Some of them are opening their flowers, having petals 6 inches long by 2½ broad. They are well sheltered, with an eastern aspect.

Pyrethrum uliginosum.—This fine herbaceous plant is just now a mass of bloom of snowy purity in various parts of the grounds at Kew, constituting a great source of attraction to visitors. Frequent inquiries are made respecting the name of the plant, and whether hardy or not, the great mass of those interested in it never thinking of inspecting the named collection in the herbaceous ground. As a fashionable plant it is one of the first water, and ought to be in every collection. Growing to the height of 3 or 4 feet, it is admirably adapted for planting amongst shrubbery, where its bold masses of white have a very telling effect, and are conspicuous from a great distance. It also makes an excellent plant for cut flower purposes, affording a great quantity of useful flowers. Like other plants of a similar growth it delights in a tolerably moist rich soil. It is a native of Hungary, and was introduced to this country nearly three-quarters of a century ago.

Impatiens Sultani.—A recent number of the *Botanical Magazine* contains a fine figure of this splendid East African Balsam. Showy as many of the species of Impatiens are none can surpass I. Sultani either in gorgeous colouring or profuse flowering. Plants at Kew are flourishing under widely different conditions; in the stove it is of course quite at home, in cooler houses, too, it does well, whilst, strange to say, in an open border it grows and flowers well, and does not exhibit any traces of resentment at treatment apparently so unnatural. Probably this is the only tropical African plant which can be found growing in the open air at Kew. The petals are flat, scarlet in colour, and the leaves are light green. The plant is of good habit and constitution, and strikes readily at any time of the year. In these respects it is much unlike some of the magnificent Indian species. From the *Botanical Magazine* we learn that I. Sultani is "one of the numerous and not the least beautiful of the discoveries of Sir J. Kirk, K.C.M.G., Political Resident at Zanzibar, whose scientific labours, first as the companion of Livingstone on his second expedition, and since in his official capacity, have thrown more light on the flora of Eastern Tropical Africa than that of all other explorers put together. I have named it in honour of that distinguished potentate, the Sultan of Zanzibar, to whose enlightened and philanthropic rule Eastern Africa owes so much."

Cotoneaster buxifolia.—Amongst the most striking of autumnal berry-bearing ornamental shrubs are some members of the genus Cotoneaster. Not the least desirable by any means is the subject of the present note. There are two or more forms at Kew which exhibit some differences which are marked enough from a horticultural standpoint. In the one the berries are almost scarlet, and the leaves are white, felted beneath; in the other the berries are a dull red, and the leaves are somewhat larger, and less, white and felted on their under-surface. For covering a mound or for forming a highly ornamental clump this Himalayan shrub is preferable to the better known and more common C. microphylla. At different elevations on the Himalayas the same species assumes a widely different habit and general aspect—so much so that we believe intermediates can be collected from a few inches in height, and of dense rigid growth, to stout vigorous bushes or even small trees.

Kniphofia Leitchtlinii.—The genus Kniphofia, consisting of South African Liliaceous plants, is generally known under the name of Tritoma, and by some old gardeners even as Tritomanthe. Unlike several of its noble congeners this species, judging from a specimen in a pot at Kew, is of low stature. It does not exceed a foot in height, and has a dense oval head of clear orange flowers. The perianth is also very distinct, being little more than half an inch in length, narrow at the base, and remarkably enlarged towards the mouth. It will probably prove as hardy as several others of older introduction. In many parts of the country their behaviour seems to indicate that their hardiness is insufficient to warrant extended cultivation. Notwithstanding this fact they live and flower to perfection every year where the thermometer in the winter often falls below zero. This they do without any protection whatever, except the dense masses of their own foliage, which throw off the rain and keep the crowns as dry as a covering of thatch would. In planting them for permanent effect the best plan is to secure for them a deep, rich, sandy soil in a position sheltered from cutting winds, and till they are sufficiently established protected with a covering of dry leaves, in the autumn throwing a spadeful of soil on them, to prevent their blowing about. This would save the trouble of lifting and transferring them to the protection of a cold frame when other work of that nature is pressing.

Oxalis floribunda.—This charming autumn-blooming variety is well named floribunda. The delicate three-lobed leaves and pink flowers are a pretty sight upon the slope of a rockery—a position to which it seems well adapted. The flowers are of a purplish hue at the base, but this is not observed except upon close inspection.

THE POTATO DISEASE.

IN THE LEAF.—On February 16 last I had the honour of submitting to the Linnean Society a paper entitled, "Potato Disease and the Theory of Fungoid Parasitism." In that paper I detailed certain discoveries which I had completed during 1881, and explained the way in which they had been arrived at. During the present year these have been somewhat extended and confirmed, but in no respect modified; and I propose here to describe the phenomena of the Potato disease as they develope themselves in the leaf.



·X·30·

FIG. 74.—POTATO LEAF VIEWED ON LOWER SIDE.

Two-hundredth part of a square inch, showing sixteen sclerotia of Peronospora infestans, equal to 3200 per square inch. × 46.



·X·30·

FIG. 75.—POTATO LEAF ("PINK EYE") VIEWED ON LOWER SIDE.

Two-hundredth of a square inch, showing eighty-three sclerotia of Peronospora infestans, equal to 16,600 per square inch. × 46.

If a green Potato leaf be taken and looked at by transmitted light it is too opaque for any structure to be clearly detected in the interior. But if a bud-leaf is taken before it comes through the ground in spring, and while it is still white, it can be seen through; and if mounted with the lower side next the eye there will, in many cases, be detected here and there round or ovoid dark spots, somewhere within the tissue. They are not found in all leaves; they are different from the proper material of the leaf. What are they?

If a green leaf be taken a fortnight later will the spots have disappeared? If a fragment of the leaf

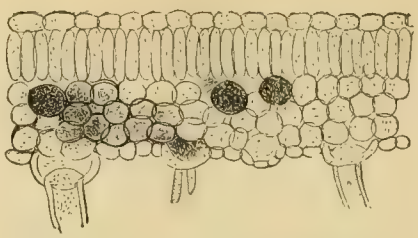


FIG. 76.—POTATO LEAF; TRANSVERSE SECTION,

Showing the position occupied by the sclerotia of Peronospora infestans. Lower side of leaf lowest on the page. × 142. One sclerotiet germinating.

be taken and squeezed between two slides, and then allowed to stand for a few hours in spirit, the air and the chlorophyll will be partly discharged, and if the leaf be then examined from the lower side with a low power, there are the spots, blacker and more definite and larger than before. They will be better seen if the squeezed leaf is simply macerated for a few days in water. It will then begin to decompose without losing colour, and if pressed down on the slide in mounting will spread out, leaving a brown ball free here and there of the tissue. It is seen that these little balls, of about the two-thousandth of an inch in diameter, are composed of adhesive labyrinthic granules. From previous acquaintance with the sclerotia of various fungi, I suspected from the first sight of these balls that they were sclerotia, and in my diary called them by anticipation sclerotiets. On germinating at a subsequent period they turned out to be the parasitic sclerotia of Peronospora infestans.

Fig .74 shows a bit of Potato leaf infested with these sclerotia to what may be regarded as a slight degree, there being only about 3000 to the square inch.

In fig. 75 the sclerotia appear in far greater numbers, being at the rate of nearly 17,000 to the square inch. In some leaves they are still more numerous.

When the surface of the leaf and the stomata are in



FIG. 77.—COURSE OF PARASITIC DEVELOPMENT OF PERONOSPORA INFESTANS IN POTATO LEAF FROM PARASITIC SCLEROTIA TO MATURE FRUIT, *a*, *b*, *c*, *d*.

focus it is seen that the sclerotia are not in focus, but at a greater distance from the eye than the surface, and therefore within the tissue. A few transverse sections will hit upon what is wanted, when it will be found that the enemy is posted at the bottom of the palisade cells forming the upper half of the leaf, and lies amongst the loose soft cells forming the lower side (see fig. 76).

It is evident, from other considerations than are presently adduced, that the sclerotia undergo a process of maturation within the leaf; and this process I propose to call apogestation; implying the gestation of the germ of one plant in the tissue of a wholly different plant away from the generating species. This conception and its implications, and the facts which it is based upon, will throw a strong light, not only on the theory of fungoid parasitism, but likewise on the transmission or attack of disease germs in the animal kingdom.

The sclerotia germinate in the manner shown in

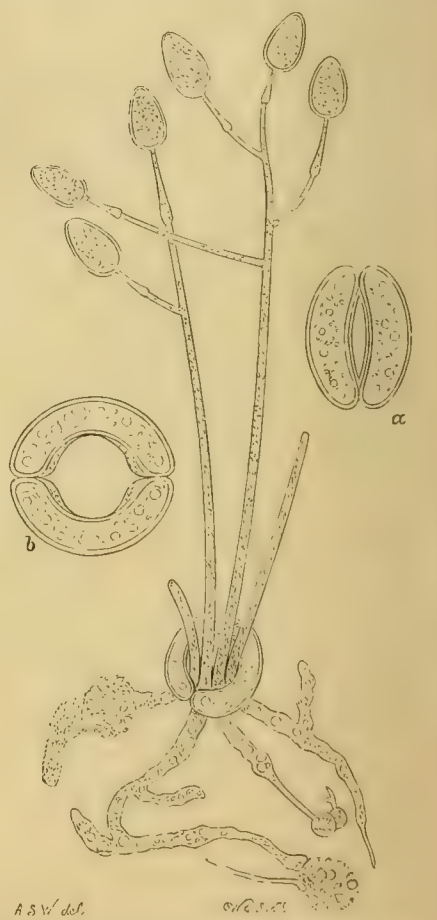


FIG. 78.—YOUNG STALKS AND MATURE PARASITIC FRUIT OF PERONOSPORA INFESTANS,

Showing the roots of the conidiophores arising from the plasmodiated and myceliated sporules of the sclerotia. × 285. *a*, Stoma before period of disease; *b*, Stoma during period of disease. × 570.

fig. 77, *a*, *b*, *c*. In general they begin to open out at the edges in a way which may be called plasmodiation, and this eventuates in myceliation (fig. *a*). The lines of mycelium at their origin in granular plasm are of extreme delicacy, and often of not one-third the diameter of a conidiophore. In many cases a line of this mycelium proceeds from a float of plasm or a granule in a single unbranching course, gradually growing thicker till it finds a stoma; it then rises up into the air as a simple tube, the branches being thrown out after it is half grown. Two or three lines from different sources frequently come out at the same stoma. The best way which I have yet found for investigating this part of the process is to strip off a part of the cuticle of the leaf from the still green confines of a dark spot, and turn it over on the slide with the interior next the eye. Many of the conidiophores are thus torn up by the root with the granules from which they have grown still attached. Some of these are represented in fig. 78.

What the immediate cause of germination in the sclerotia may be I have not yet ascertained; but various changes come over the tissues of the leaf as the season advances. One notable alteration takes place: in the early part of the season the stomata are mere slits, through which it would hardly be possible for the point of a conidiophore to emerge; but at the period when the fungus begins to appear the stomata have changed into great round holes, through which six or eight stalks may sometimes be seen to have come. These enlarged pores must admit a greater quantity of air and moisture into the leaf, the effect of which may be to set up the process of germination in the sclerotia. Or the same cause which brings about the enlargement of the stomata may bring about the germination of the parasite which escapes by them.

Thus ends the parasitic system of P. infestans. Its sclerotia enter the tissues of the Potato in a way to be afterwards explained; they undergo a process of apogestation, for the very purpose of enabling the fungus to produce its perfect parasitic fruit—the conidia. There is a clear philosophy in this; but the notion that the zoospores of the conidia, first produced without being parasites at all, send their tubes into the stomata in a burglarious way, just to come out again no better than they went in, makes Nature the perpetrator of a piece of pure deviltry. The slides which I send you as vouchers for this paper, contain indubitable evidence to the man who has patience to look for it, that the conidiophores originate from within the leaf [the specimen sent confirms this statement. Ed.]; will any one send you a slide showing the entry of the tube of a zoospore at a stoma?

The stems of the Potato and the tubers, and the very walls of the ovary and the placenta, are infested, or are liable to be infested, with the sclerotia and plasm granules of this terrible parasite, so that seedlings have no immunity, and their leaves in my possession went this year full of spots, and the young plants down as they ought to do. But the stem and the tubers and the non-parasitic system will be treated in subsequent papers. *A. Stephen Wilson.*

Orchid Notes and Gleanings.

Work in the Houses.—Whatever work is now necessary in the way of surface-dressing or repotting to put the plants in better condition to pass through the winter should be done without delay. At the same time the plants ought to be carefully sponged over to free them from dust and other accumulations, and to open the pores of the foliage, so as to assist them to perform their functions to the fullest during the short days that are now at hand. Before them are re-arranged every part of the houses should be thoroughly cleaned down and sweetened, and all dirt and accumulations removed from the glass. With the exception of the Phalænopsis in the East Indian-house the greatest attraction in flowering plants will now be in the Mexican-house, as in this house will be found the greatest number of species that flower during the winter months. Many of these will now be pushing up their flower-spikes, and while these are young and succulent on the Lælias they should be guarded from injury either from insect pests or from coming in contact with the glass. These will all take a moderate amount of water while they are developing their spikes. A useful autumn plant is Cymbidium Mastersii. This will now be forward for flowering, and should not be allowed to suffer for want of water. Winter-blooming Cattleyas, such as C. maxima, C. chocoensis, and C. Warscewiczii, that have their growths completed will only require sufficient water to keep their bulbs plump. Others, such as C. Mossiæ and C. Mendelii, that are now completing their growths will require a moderate supply of moisture at the root, but this must be gradually reduced till during the winter the supply must only be sufficient to keep them from shrivelling. Cattleya Warneri, C. crispa, C. Dominiana, Lælia purpurata, and any others that make their growths during the winter season, should be placed in warm and light positions in the house. The earliest Pleiones will now be getting defoliated, and should be kept dry for a month or so; but as soon as they show signs of flowering a little water at the root will assist them in pushing up their flowers. Any of these that have not completed their growths and are now in cool quarters, will be better for a little extra warmth at this damp season. All the species of Chysis that have completed their growths must now be kept slightly cooler, and they will require but little water during the winter. In the East Indian-house Angræcum eburneum will soon be in flower, and as it is a free growing and a free rooting plant it is generally prolific of flower. The winter blooming Saccolabium giganteum and S. Harrisonianum will soon be showing their spikes, and should be kept a little moister at the roots at this season than the summer flowering species. It is a good plan at this season of the year to lighten the material around the roots of the Phalænopsis, as nothing is more likely to bring disease than too great a mass of sphagnum over their roots. It is preferable to have them to water every day in very open material than to have a mass of material that only requires watering perhaps once a week, but the medium between these two conditions is the safest for this genus. *J. Roberts, Gunnersbury Park Gardens.*



Fig 79.—complete plant of peronospora infestans,

As seen on mounted slide lying beside a fragment of teased-out leaf. A delicate line of mycelium arising from plasm of germinating sclerotia ends at the base of the conidiophore, the tube there becoming much stronger as it enters the air through the stoma which has here been broken off. In this specimen the branches are short and without nodes. × 285.

Cirropetalum delitescens (Bulbophyllum delitescens), Hance; Trimen, *Journ. of Bot.* 1876, p. 44.—This Chinese Orchid, recently introduced to cultivation, is now flowering at Kew. It was sent in a living state by Dr. Hance, and is a native of Hong Kong, where it grows in the Victoria Peak, flowering in July—"very rare," Mr. C. Ford states, in a note attached to a dried specimen sent by him; the source also of Dr. Hance's original specimen. It is closely allied to C. Macræi, Lindl., from Ceylon, but differs in the shorter and broader leaves; the sepals not gradually tapering almost from the base, but contracted suddenly to an acuminate point; the total absence of yellow from the flower, and other minor differences. The following description is taken from the living plant:—Pseudobulb ovate, compressed, 1 inch long by ½ inch broad. Leaf solitary, oval-oblong, obtuse, 3—5 inches long by 1½—2 inches broad; dark green above, paler below, and densely covered with minute light-coloured dots. Scape 7—8 inches long, slender, glabrous, dark olive-green, 3-flowered. Bracts subulate, 2 lin. long. Pedicels ½ inch long. Flowers 2½ inches, uniformly marbled with two shades of dark lurid purple. Upper sepal 7 lin. long, ovate, boat-shaped, abruptly narrowed at apex into a hair-like appendage, 5 lin. long; lateral sepals 2 lin. broad at base, tapering a little towards apex, where it suddenly contracts into an acuminate point. Petals 3 lin. long by 1 lin. broad, falcate, 3-nerved, central nerve projecting as a bristle 1 lin. long; lip bent back, crescent-shaped, narrow. Wings on column 1 lin. long, narrow, and forked. Pollinia sessile, pale yellow; the cap short, and terminated by five minute teeth. *R. A. Rolfe.*

Sadiya, Assam.—There are many lovely Orchids in the forests north of this. The best blooming time is March and April. They grow for the most part on the branches of trees, so as to be shaded from all but the slanting sunrays morning and evening, although some are exposed to the sun all day. I hope to send you further notes on them as opportunity serves. [Pray do.] *G. H. P. L.*

Orchids in Flower at Holloway.—At the present time there is a grand plant of Lælia elegans prasiata in flower in Mr. Williams' nurseries at Holloway: it has two spikes, one with eight flowers and the other with seven. The lip is intense magenta at the base, the part which overlaps the column white, and the sepals and petals are dull magenta. The effect of the white part of the lip against the rich colour of the remainder of the flower is charming. Lælia crispa superba is also in bloom, a much finer variety than the one we referred to a few weeks back. Zygopetalum Gautieri and Z. maxillare are well represented, there being one specimen with a quantity of spikes and a number of small ones in bloom. This is a charming Orchid for flowering at this dull season of the year, when the Orchid-houses are not too gay.

Pholidota articulata, Lindl.—This botanical curiosity has just flowered with Mr. T. Christy, F.L.S., Malvern House, Sydenham, having been introduced from Siam, a new locality. *H. G. Rchb. f.*

Spathiglottis Fortunei.—This, as grown at Kew, is a decidedly handsome Orchid; indeed, few of the cultivated terrestrial Orchids surpass it in grace and beauty. It was introduced to Kew from Hong Kong. Like some of the Bletias, it has grassy leaves and upright slender stems bearing several bright yellow flowers with a chocolate-brown wing on each side of the column.

Disa polygonoides.—In the Orchid collection at Kew this species is now flowering. It has a long spike of orange-red flowers, each of which is in form a pigmy representation of D. grandiflora. It seems a freer grower than the last-named, and, in spite of the smallness of the flowers, their number and colour, &c., entitle it to a place even in select collections of showy Orchids. In a wild state the spike sometimes attains a foot in length, and varies in colour from bright canary-yellow to light red, and even scarlet. It is a native of marshy valleys from Grahamstown eastward to Natal.

Orchids at Messrs. Veitch's, Chelsea.—A run through this collection on September 12 showed a number of good species and varieties in flower, and many in that stage which would warrant the belief that a grand display of bloom will be seen during the late autumn and winter months. Cattleya Trianæ is in great force. Indeed the flowering sheaths of this and C. Mendelii may be counted by the hundred. A rather noteworthy Cattleya is beautifully in flower at present, viz., C. Ainsworthii ×. It is best described as a really good form of C. Mossiæ; it has been raised by crossing that species with the pollen of C. speciosissima, the result being an autumn flowering Mossiæ which in its way is quite as valuable as the autumn form of C. labiata. The sepals and petals are of a clean pale rosy tint, the latter being 3 inches across, the whole flower is 6 inches in diameter. The labellum is of a rich purplish-crimson, blotched with pale yellow at the base. This Cattleya, fine as it is, is quite eclipsed by a handsome form of C. gigas in the same house. We do not know whether it has any distinctive name, but it is worthy of being com-

pared to the fine form exhibited by Sir Trevor Lawrence, or that exhibited at Regent's Park by Mr. Williams of Holloway. These three fine forms flowering in one season may inspire the hope that other collections are rich with good forms; they at least prove gigas to be the finest of all Cattleyas. C. Loddigesi was also in flower, and pretty enough in its way. C. Eldorado was not yet over, and it is certainly very pretty, although the flowers are only of medium size; one form had the throat of the deepest orange colour. The large Cattleya-house was enlivened by two forms of Lælia elegans, and a huge specimen of Epidendrum prismatocarpum with ten strong spikes. The next house is filled with Dendrobiums principally, few of wh ch were in flower, for which reason the eye speedily rested upon a singularly diminutive species, with dense clusters of snowy white flowers; though small, they are very pretty: it is from Australia, and is named D. Moorei. Spathoglottis Fortunei was also in flower—a terrestrial Orchid, with spikes of bright yellow flowers. It seems to be easily cultivated. Many good forms of Vanda tricolor are flowering freely. This species, when well grown, flowers in the autumn as well as in the spring. There are also some strong plants of the flowering size of V. Hookeræ; indeed, it was from this batch that the plant exhibited at South Kensington in flower on the 12th ult. was selected. V. Hookeræ promises to be the finest of the genus.

Florists' Flowers.

The Pink.—It is rumoured that an exhibition of Pinks is likely to be held during the coming year, and that London will be selected as the most fitting centre. Special societies for the encouragement of particular flowers are now the fashion, and it is not surprising that the lovers of the Pink should be desirous of putting their favourite flower foremost in common with the cultivators of the Rose, Auricula, &c. It deserves to be a popular flower on many grounds, because it is one of the old-fashioned flowers that were favourites with our forefathers years ago, because it is very hardy, of comparatively easy cultivation, and will flourish in almost all situations; and, further, because it is on the whole very free flowering and richly fragrant; and great antiquity is claimed for it. It is said the Pink was discovered in the time of Augustus Cæsar, in that part of Spain called Biscay, then inhabited by the Cantabri, a ferocious and warlike people. They rebelled against the then masters of the world, and it was during the struggles which ensued that the plant was discovered and sent to Rome, where it was, according to Pliny, called Cantabrica. In the days of Queen Elizabeth it was first cultivated in its double state, but it was not until 1790 that that elegant ornament of the Pink called lacing first made its appearance on a flower named Lady Stoverdale, raised by one Major, from seed, somewhere in the South of England. Lacing in the Pink consists in the continuation of the colour of the eye round the white or broad part of the petals, which gives the whole flower a most beautiful appearance. When a pure white border or margin of the width of the lacing, but exterior to it, is present also, something in the way of perfection in the Pink is being attained. Whether the old controversy between the Northern and the Southern growers can be settled by the adoption of a national Pink show, or whether it will be re-opened again, remains to be seen. The latter have advocated large flowers full of petals, which the former have disdainfully termed "mops," and they advocate flowers of from fifteen to twenty petals only, which their opponents have termed "single" flowers. These are matters of arrangement, and there is no doubt but that if an exhibition of Pinks become one of the fixtures in 1883, it will be heartily welcomed. But no time should be lost in making the preliminary announcement, that plants may be obtained and beds planted with as little delay as possible.

Almonds from Morocco.—Almonds, the seeds of Prunus Amygdalus, form a very important item in the exports from Morocco. The quantity exported from Mazagan last year showed an increase over the previous year, and it is considered that the future trade in Almonds with the above port bids fair to become of very considerable importance.

FRUIT NOTES.

Six of the Best Plums.—Now that the time is fast approaching when fruit trees ought to be planted, it may be of service to some if growers, who have had experience with the different varieties, will state which they have found the best, and as we grow many Plums I purpose having something to say on six kinds which I have found to be equal, if not superior, to any others in cultivation. Plums are generally divided into two classes, the one culinary and the other dessert; but, like Apples or Pears, the best dessert kinds are the best cookers, as they are far sweeter and more delicious in flavour. This being so it seems absurd planting inferior sorts, unless it be those that are remarkable for their hardiness and free-bearing habit, like Denyer's Victoria, Pond's Seedling, and Prince Englebert, which do well as standards. The first on the list that is deserving of cultivation is the old Green Gage, which, as every one knows, is exquisite in flavour, but the fruit varies much according to aspect, the most sugary and luscious being that which is picked from trees well exposed to the sun, and in planting they should, therefore, have east or west walls. Standards or bushes also do well if grown in sheltered, warm situations; and as these ripen their fruit late, they are valuable for prolonging the season. The next in point of merit is Coe's Golden Drop, a large oval-shaped rich-looking yellow Plum, which begins ripening in September, and lasts a long time in use as the fruit comes on slowly, and when gathered may either be carefully rolled up in soft silver paper, or hung suspended by the stalk in a dry airy room, where the Plums will keep good for weeks. For orchard-house culture Coe's Golden Drop is quite unsurpassed, and there the fruit will hang on the trees, and shrivel and become a perfect sweetmeat in flavour. The same may truly be said of the Jefferson, which is also a grand Plum, larger than the last-named, and having a deeper coloured skin, flushed and blotched with red with the sun, which gives the fruit an exceedingly rich tempting appearance—qualities that are fully borne out on closer acquaintance. Trees of both these kinds are very strong growers, especially the Jefferson, which has large leaves and makes big shoots that soon run out long and fill up or cover a fair space on a wall. I find that the best aspect for these two Plums is a westerly one, that is, in fairly warm districts, as there they get quite sun enough without being distressed or becoming scaly, as they do when grown in a hotter position. Reine Claude de Bavay partakes a good deal of the character of the Green Gage, but is much larger, being nearly double the size, and as it ripens from the end of September through October, it is doubly valuable, coming in as it does when most others are over. To finish the fruit up properly it is necessary to plant the trees on south-east or south-west aspects, as it requires all the sun we get in the autumn to convert the juice into saccharine matter. Kirke's Seedling must be my next, and a most beautiful Plum it is, the fruit being large and round, and carrying a heavy blue-black bloom like that of a well finished Alicante Grape. Not only is the fruit fine looking, but it is firm and delicious, and as it ripens early Kirke's Seedling is one of the most valuable Plums under cultivation, and a very free bearing kind. My last is Reine Claude Violette, a medium sized roundish Plum, and, as its name implies, of a violet colour. The fruit of this, when well ripened and allowed to shrivel a little, is simply delicious and first-rate for dessert. There is one thing I would warn planters against when getting and starting young trees, and that is cutting them back, as is only too commonly done—an operation that is worse than useless, and is positively mischievous, as a whole year's growth is removed at a blow, and the upper progress of the tree considerably retarded. The more top a young plant has the more roots will it make when it starts in the spring, and the quicker will it fill its allotted space and become re-established. *J. S.*

Alnwick Seedling Grape. — The crop of Grapes that this Vine is bearing at Chiswick is the most remarkable that we have yet seen. The bunches, thirteen in all, upon one Vine, are of uniform size, and they have been handled to perfection. There is not a small, or even unequal-sized berry, to be seen, and the bloom is of a dense blue shade, which gives the bunches a very handsome and striking appearance. The bunches would scale about 3 lb. each, and are borne upon a rod 15 feet in length.

The Flower Garden.

Lifting Bedding Stock.—As the bedding plants are now past their best it will be advisable to lift and pot up at once all that will be required for stock and to furnish a supply of cuttings in the spring, many indeed of the slow growing tricolor and zonal and other choice sorts of Pelargoniums will have to be lifted and potted on from year to year. As their chief beauty consists in their neat and compact habit of growth and the brilliancy of their colouring, it is not at any time advisable to plant them in very rich soil, or they will degenerate and become coarse both in habit and colouring—on the contrary a light sandy soil and rather poor than otherwise will greatly assist them to retain their desirable characteristics. Nor is it desirable at this season to shorten any that have made growth at the time of potting, so that in the spring there may be more scope to trim them into a compact shape and to furnish a good supply of cuttings, as they will propagate much more freely at that season. All the stronger growing sorts may, however, be considerably shortened at the time of potting; the soil should be light, principally leaf-mould, and the pots well drained, and, as in the case of newly potted cuttings, heat and ventilation should be afforded for a time to assist the rooting process.

Preparation of the Beds.—After the plants have been lifted, potted, and stored the remaining *débris* must be cleared away at once, and the beds prepared for replanting by trenching up the soil, and, during the process, inserting a layer of well decomposed manure about 9 inches from the surface. This is necessary to recruit the soil exhausted by the bedding plants, and to strengthen the bloom of their successors.

Planting the Bulbs.—Presuming that bulbs, such as Hyacinths, Tulips, and Narcissus, are intended to form, as it were, the groundwork of colour, they should be arranged over the bed at such distances apart as to allow of plants from the reserve garden being planted between them; the colour must be contrasted according to taste, and before plunging the bulbs at the necessary depth the beds should previously be edged with Sempervivum calcareum or other like edging, and next to this an edging of Crocus of the various colours should be planted at 3 inches apart and 3 inches deep. Tulips should be planted from 4 to 5 inches apart, and for Hyacinths a square dibble should be inserted to the depth of six inches, so as to allow of the bulbs being enclosed in silver-sand both above and below: all other bulbs should be surrounded with sand, but none covered up until the bed is finished off by plants from the reserve garden, consisting of Myosotis dissitiflora, Arabis, Aubrietia, Alyssum, and the various coloured Pansies or Violas—one plant between each of the larger bulbs; and it is not desirable to plant more beds with the bulbs than can be finished off the same day.

Planting Ornamental Evergreens.—It may be considered desirable, in order to break the monotonous appearance of these beds through the winter, by planting in the centres of small beds, and more in larger beds, a number of small evergreen plants of the coniferous tribe; and there are several so attractive in appearance and colour as to render them very useful as auxiliaries to the general display, as they lighten up the garden during the dull season, and when the young growth is putting forth in spring it is often so highly coloured as to make a very fine display of itself without any adventitious aid—such as Retinospora plumosa aurea, a most charming plant for the purpose and for standing alone on the lawn Biota elegantissima, Golden Yew, Cupressus Lawsoniana aureo variegata, Biota semperaurea, and several others conspicuous by their intrinsic beauty for the purpose. When this plan is adopted it will be necessary, after trenching up the beds, to plant these before arranging the bulbs and other plants. A portion of the reserve garden should be kept to remove these plants to when the bedding-out time arrives; they should be carefully lifted with plenty of roots, and the tops cut back to keep them of a nice shape, and replanted, taking care to give them plenty of water during the operation. *John Cox, Redleaf.*

Grapes and Vineries.

Still keep the earliest house as cool as possible, and cover the outside borders with shutters to throw off the wet if the rainfall is excessive. Continue to prune and clean the Vines as recommended in my last Calendar. After pruning dress all the cuts with styptic to prevent bleeding. If not already done examine the borders, and if the soil has become old and worn out, take off the surface of the border as deep as can be done without damaging the roots, and replace with good loam, bones, and charcoal, in a state that is neither wet nor dry, so that it can be well trodden down and made firm. When the border is finished give a good watering with cold water. Where the latest Hamburghs are wanted to keep until the new year they will want close attention, and must have a little fire-heat on dull or foggy days; and must be looked over several times weekly for decayed berries, for if this is neglected they will soon spoil the appearance of the bunch. Give abundance of air on both back and front ventilators, when the days are bright and fine, reducing it early in the afternoon before the outside atmosphere becomes humid. Give a litttle air on the back ventilators only on dull days with a little fire-heat. If the bunches have not been thinned severely, so that the air does not circulate freely among the berries, they will not keep so well; but if a note is made of it it can be done with greater care another year.

All Muscats should now be ripe, and must have the temperature steadily reduced till it reaches 55° at nights, with a few degrees more by day, which will keep them in good condition, giving clear water at the roots when necessary, but only sufficient to keep the berries plump. It will depend a great deal upon how the border is drained as to what quantity of water is required, but after this time, if the border is watered and covered with Fern to prevent evaporation, it will generally be sufficient. The outside borders will be better covered with shutters to throw off the cold autumn rains. Give air on the back ventilators on all favourable occasions, but front air will only be required on the brightest days. All late varieties of Grapes should now be thoroughly ripe, and must have the outside borders covered with shutters to throw off the rain, as Lady Downe's especially suffer if not protected at the roots from the cold autumn rains. Reduce the fire-heat steadily till it reaches 55° by day, and 50° by night. Give air on both front and back ventilators when the days are bright, but on dull days only open the back ventilators, and apply sufficient fire-heat to keep the atmosphere light and buoyant. One watering at the roots of the inside border if dry, and the border covered with Fern, will generally be sufficient after this time, but it is the best plan to examine the border sometimes, and not by any means to let them get dust-dry at the roots, for where the borders are well drained they will sometimes require another watering afterwards. In all newly-planted vineries fire-heat may be dispensed with, as the wood will be well ripened, and the front and back ventilators kept open night and day, giving the inside borders sufficient water to keep the roots healthy. The earliest pot-Vines must have sufficient water at the roots to keep them fresh, and if the house-room is required place them outside in a warm, sunny aspect. *Joshua Atkins, Lockinge Gardens, Wantage.*

The Pine Stove.

By the end of the month all plants should be removed from dung-frames into pits or houses that are heated either by hot-water pipes or flues. To have to winter Pines in pits or frames that are heated by fermenting materials, entails much labour, and the results are not so satisfactory. However, necessity knows no choice, and when such is the case it is better to keep the young stock, such as rooted suckers and later batches of succession plants, in these places. The early lot of succession plants intended to be started in January and February should have the advantage of fire-heat, and the fruiting plants should also have these reserved quarters. By so doing the young plants can be managed better than larger ones, and a minor consideration is, that should the plants sustain any injury or check, being in later stages they have a better chance to recover themselves. The great drawback to growing Pines through the winter in dung-heated pits is the amount of vapour which, after condensation, settles in the axils of the leaves, and, there being no fire-heat to correct or counteract this state of things, the accumulation of water remains for an indefinite time, which is a certain injury to the plants. To reduce this evil, only plunge the plants shallow or stand them on the surface of the bed, and on every favourable opportunity turn them upside down, to allow the water to run out of the axils of the leaves. This should be done carefully, to prevent the soil from falling out of the pots. The primary point to aim at in this mode of cultivation is to keep up a steady continuous heat at both top and bottom. To secure and manage this properly a heap of prepared fermenting materials should be kept ready to hand. It is also a good plan to work the materials for linings in the same way, only using a little more litter for the sides of portable frames, to prevent them from giving way. If leaves are not already collected commence to store at once. Chestnut leaves are preferable, being the best among the early falling leaves. When Oak leaves are procurable these should be used exclusively, as they are the most durable. With these about one-third of good stable litter should be added to two-thirds of leaves for linings. The inside beds are best made up of Oak leaves entirely, as they do not shrink so much, the heat is more lasting, and less liable to fluctuate. If the leaves are very dry throw a little water over them; this makes them ferment better. The fermenting materials, however, should not be allowed at any time to become too sodden with water, as it then rapidly decomposes and gives off heat only for a short time. This plan of growing Pines answers well during the summer months, and by so doing gives additional accommodation, which enables growers to fruit a greater number every year than if restricted to only stoves or heated pits. The drawback is, however, during the five dullest months, when the plants often lose all their roots, as well as their centre leaves, which renders them of no further use. Where a flow and return pipe can be introduced it alters the state of things, but this is not done in all cases. *D. Wilson, Castle Hill.*

The Hardy Fruit Garden.

If the weather prove at all dry it may be necessary to water any fruit trees that have had their roots lifted, as recommended in last Calendar. Occasional light syringings may also be required after bright days to preserve the foliage until it can be matured in due course, but which is required to be kept in an active condition for a time to secure a sufficiency of root-action to insure the formation of fresh rootlets. Trees lifted thus early will, with care in watering—or shading, if necessary—have great advantage over those left to be operated upon at a later date when growth has entirely ceased for the season. In most gardens of any extent some fruit trees require to be procured every season, either for the purpose of replacing worn-out trees to supersede inferior sorts, or to increase the collection and general supply. In choosing trees select those that have made medium-sized growths and are well ripened rather than those that present the greatest amount of branch extension. Where trained trees for walls are being chosen, the even balance of the branches will be of as much importance as any other consideration, and where the growth has been well regulated the other requirements will also generally be found. It is well in selecting fruits to consider the extension of the season of each kind as far as possible, and to choose varieties that by being very early or late cover the greatest possible time at present obtainable, although in the case of Peaches and Nectarines in the open air it is questionable if there is any advantage in having later sorts than some of the older standard varieties ripening towards the end of September. Some of the newer early varieties should be planted whenever an opportunity offers of a position on a good aspect. Of sorts that have proved themselves of good quality and in advance in point of time, of older sorts may be mentioned Early Rivers, a really fine flavoured fruit, but liable to stone cracking on some soils; Alexander, with richly coloured, large, and well flavoured fruits; Hale's Early, which has become better known and more generally planted than other early sorts; and Early Louise, which is good in quality, but rather under the average size. Much less advance has been made amongst Nectarines: the only great gain of late years appears to be Lord Napier, which has every good quality to recommend it—being early, large, productive, handsome in appearance, and highly flavoured. Add to this Elruge and Rivers' Orange, or the Pitmaston Orange, which is much similar, and the three sorts leave little to be desired in the way of variety until the season can be further extended by some earlier kind. Cherries are not so well represented in many gardens as they deserve to be, considering the manner they are appreciated at the dessert table. Frogmore Bigarreau, Early Rivers, and Black Tartarian, may be added to the invariable May Duke with advantage where space can be afforded them.

Little improvement has been made in Apricots of late years, and Moor Park continues to be the most useful and generally appreciated, and Hemskirk is so like it that either may be planted. Early Moor Park seems to be of a rather delicate constitution, and does not appear to be a great success anywhere; while one of the surest of croppers is Breda, which, although small, comes in as a certain source of supply for tarts and preserving. It will be well to see that a good supply of sound loam is laid in in readiness for any planting that has to be done, or for the renewal of worn-out and impoverished borders, and additions to previously prepared stations in unsuitable soils. General work will principally consist in the removal of Apples and Pears as they become sufficiently matured, and in keeping the department tidy and in good order by clearing up any early falling leaves, keeping down weeds by a timely application of the hoe, which can also be used with advantage to remove traces of trampling about the trees after gathering, and in clearing away covering material from bushes as soon as the fruits are gathered, also all framework and other protecting appliances as soon as done with. *R. Crossling, Penarth.*

The Kitchen Garden.

NOTES ON VEGETABLES.

Tomatos in Pots.—If the Potato fungus has spared Tomatos in the open air this year, it may have done so only ironically, seeing that the crop under any circumstances will be but a poor one, and will at its best hardly repay the trouble given in planting and cultivating. The summer has been far too cold for Tomatos even on warm walls, and the produce now seen presents a strange contrast to the fine crop grown last year in the open air, although even then the Peronospora materially affected the growth in the autumn. It has, therefore, of late years become the more obvious that it is only by growing Tomato plants under glass that a sound and sure crop of fruit can be secured, and though not largely, yet in very many places the rich-coloured fruits may be grown in pots, where as yet none are now obtained. At the Bedfont seed grounds Mr. Dean has utilised the uprights that at intervals support the roof of a glasshouse, the plants being in 10-inch pots, and plunged into the soil-beds on either side of the alley, and on which Cucumbers have been grown during the summer. The kind of Tomato grown is the rich-coloured and handsome Hathaway's Excelsior, and each plant is now ripening a good crop of fruit, and at the same time adding colour and life to the house that is quite pleasing. At the Grape Vineyard, Feltham, Mr. Cole has utilised a low span-roofed Strawberry-house for the pot-culture of Tomatos entirely, and with the very best results, having, without giving heat, taken from the plants several hundredweight of fruit, and has more to follow. Mr. Cole prefers the Excelsior, as indeed do the market buyers, because of its useful size, good form, and rich colour. A rough ladder or trellis made of sticks and laths serves to train the plants to—a row standing at either base of the plant-stand, which runs through the centre of the house, and another row on each side of the path on the earth bank which forms the side stage or shelf. Some weak manure-water is occasionally given, but too much stimulus tends to promote growth—which will always comef ast enough—and to split the fruits. Very severe pinching and thinning is not only needful, but it is the great element in successful culture, and must be performed without stint,

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Oct. 9	Sale of Dutch Bulbs, at Stevens' Rooms. Sale of Dutch Bulbs, at the Auction Mart, by Protheroe & Morris
TUESDAY,	Oct. 10	Royal Horticultural Society: Meeting of Fruit and Floral Committees, at 11 A.M. Sale of Imported and Established Orchids at Stevens' Rooms. Great Sale of Nursery Stock, at Jackman's Nursery, Woking, by Protheroe & Morris (three days).
WEDNESDAY,	Oct. 11	— Sale of Dutch Bulbs, at Stevens' Rooms.
THURSDAY,	Oct. 12	Sale of Imported Orchids, at Stevens' Rooms
FRIDAY,	Oct. 13	Sale of Plants from Belgium and Dutch Bulbs, at the Mart, by Protheroe & Morris.
SATURDAY,	Oct. 14	— Sale of Dutch Bulbs, at Stevens' Rooms.

IT may be well said of the history of PARASITIC FUNGI that the plot thickens. The more their history is studied the more complicated does it appear to be. Their construction is simple—of the simplest, in fact; but their habits of life are astonishingly complex. In the somewhat inappropriately called higher plants bud and seed suffice, the one for reproduction, the other for subdivision and extension. The bud is a mere portion of the fabric, more or less detached, and more or less independent, told off to do a certain work. The seed likewise is a detached portion of the plant, with its allotted office. The essential difference between the two is that while a bud is a mere outgrowth from the branch which bears it, a seed requires for its development the concurrent action of the male or pollen element with the germ or female element. Bud and seed, then, suffice in the so-called higher plants for the reproduction and extension of the plant. In the lower fungi buds and seeds, or their physiological counterparts, do indeed exist, but now in one form, now in another; in a third case in still another guise, and so on. Before these facts were ascertained and proven by actual experiment, each form was considered as a separate species or as a representative of a genus even. This opinion was only natural in the state of knowledge at the time, the more so as one form often exists or grows on one plant, another form on another plant of totally different character. The interesting papers of Mr. PLOWRIGHT on the "Mildew and Rust of Wheat," recently published, afford good illustration of this. Mere observation of what occurs in the field was hardly likely, unless by some extremely improbable chance, to enable the botanist to unravel the whole *curriculum vitæ* of the plant. It was only when actual experiment was pressed into the service, and when botanists began to cultivate these growths in their laboratories under varying conditions, that the truth became evident. By sowing the spores or reproductive bodies of the fungi under certain conditions accurately determined, certain results were obtained. By altering the conditions other results ensued. By excluding the spores altogether no results at all were found. Such, in very general terms, is the general character of the means adopted by microscopists and botanists now-a-days. Mere observation is not enough, cultivation and experiment are imperatively necessary. By their means cumulative evidence is obtained. The indirect and partial insight furnished by casual observation becomes converted into a connected chain of direct evidence, which in proportion as it is free from flaw and inaccuracy becomes unassailable.

The necessary researches demand the knowledge, the skill, the patience, the impartiality of a trained specialist, and therefore they cannot be performed by every one. The difficulties of the observations and the risk of fallacy and misinterpretation are so great that the observations of one man require to be checked and confirmed or refuted as the case may be, by others. It is abundantly clear that by no other means can we rightly obtain an insight into the nature of these pests, every sympathy and encouragement should therefore be held out to those who devote themselves to the work. If we are to find a preventative or a cure we are far more likely to do so when we are familiar with the course of the malady than when we are ignorant of its nature and procedure. "*Ignoti morbi nulla est curatio*" has been an axiom of physicians from time immemorial, and that there is no cure for a disease whose nature is unknown is as true as ever.

But even where the nature and course of the disease are, in a measure, made out, as in the case of the leaf disease of the Coffee, and the Potato murrain, we seem as far off as ever from a cure. This circumstance gives occasion to some to sneer at the apparently unproductive labours of the man of science. They forget that they themselves have been growing Coffee or Potatos, or what not, all their lives, and have had the plants under constant observation without advancing our knowledge one whit. Instead of welcoming the information the specialist puts before them, and endeavouring to turn it to account—which, it should be remembered, is their duty, not that of the scientist—they carp at his labours, or, when too well bred to do that, they indulge in a little banter at his expense. Mr. MARSHALL WARD'S researches into the history and course of the Coffee-leaf fungus, a summary of which is given in the last number of the *Journal of the Linnean Society*, prove incontestably that it is the fungus, and nothing but the fungus, that produces the disease—they prove the conditions under which the spores will germinate, and those under which growth is impossible. They show how and why it is the plant is so injured—how the fungus not only interrupts the growth of the plant, but avails itself of its food. "To replace the damage done," writes Mr. WARD, "the leaves require to do more work in a given time, or to have a longer lease of life to work in, whereas they have less opportunity of doing either." The same remarks, with the necessary modifications, apply to the Potato fungus. Its history is not, thanks to BERKELEY, DE BARY, SMITH, WILSON, and others, the obscure thing it once was; we know a great deal of its manifold appearances, its spawn, its suckers, its bud-spores, its moving spores, its male cell, its germ cell, and the resulting "resting-spores." As if the resting-spore (the nearest analogue to a seed) were not enough, DE BARY tells us of portions of the spawn which hibernate in the tissues of the tuber, to start into life again when circumstances are propitious.

In our present issue Mr. WILSON describes similar masses of spawn or mycelium aggregated into hard lumps occupying the tissues of the haulm and leaf, and which, as the preparations he has kindly sent us show, first assume an amoboid form and then give origin to threads bearing the bud-spores or "conidia," as they are technically called. This is an important observation of Mr. WILSON'S, although we cannot say that all the stages between what looks like an amæba destitute of cell-wall and a spawn-thread with its cellulose covering are as yet satisfactorily made out. Mr. WILSON must expect the *cui bono* sneer with which such observations are usually met. But how really stands the case? Does not each successive discovery go to show that, under present circumstances, our efforts should be devoted to prevention rather than cure? From what we now know it is clear that, under existing circumstances, little or nothing can be done in the way of cure. But the life-history of the fungus at least shows us how we may to some considerable extent evade and prevent it by means often suggested, but never thoroughly carried out. If we could entirely prevent the ingress of the fungus-spores, we should assuredly be able to stamp out the disease. We cannot do this fully, but we can do so to some extent. This is the principle underlying Mr. JENSEN'S recommendations, and there can be no question he is, so far, on the right track, that is, if it be taken as proved that the spores can germinate and penetrate the skin of the tuber, which is doubtful; but his process is only calculated to prevent the access of spores which would otherwise fall from the leaf on to the tubers, and takes no heed of those which germinate within the leaf, and penetrate into the interior of the plant, there to reproduce at once or to become for a time dormant.

What shall we say of those gardeners and farmers who, in spite of their yearly losses, in spite of all the teachings and warnings they have had, not only take no steps at all to prevent the onset of the disease, but seemingly take the best means in their power to disseminate it, and insure its wide diffusion? Why, to mention one thing only, there is enough diseased haulm in Covent Garden Market, on any one day in the season, to supply infection for a continent. Those concerned have no longer the excuse that they do not know this; or if they have their ignorance is not mere nescience—it is a crime.

—— FLORAL DECORATIONS.—We have more than once given illustrations of decorative groups arranged by Mr. JOHN WILLS, and to-day we place before our readers on the opposite page, a view of another characteristic bit of work by the same hands. Our illustration (fig. 80) was prepared from a photograph taken after a reception at Sir SAMUEL WILSON'S mansion in Grosvenor Square, given during the late London season. It represents a third portion only of a charmingly effective decoration, the principal feature in which was a temporary room constructed over the entrance porch, and which was fitted with mirrors on the three sides, with a carpet at the base, about 2 feet wide, of fresh, sparkling green Selaginella apoda, sparingly dotted with handsome young Palms and other fine-foliaged plants intermixed with the finest cut spikes, set in the moss, as well as small plants of Odontoglossums, Cattleyas, and other Orchids, that Mr. WILLS could obtain. It is impossible to describe the whole arrangement in this little retiring chamber so as to convey any adequate idea of its great beauty and refinement, and it must suffice to say that it was in Mr. WILLS' most successful style. Forming a portion of the picture as a whole, yet in themselves very distinct and of a strikingly attractive character, were recesses on either side of the entrance to the little chamber already noticed, that on the left being the subject of our illustration. Mr. WILLS here introduced shallow tanks of water as the base of his designs, and with the aid of Pitcher-plants, Nepenthes and Sarracenias, and a few highly-coloured small fine-foliaged plants, with one or two examples of Hydrangea paniculata grandiflora, constructed a couple of tropical views, the artistic spirit of which was all that could be desired.

—— THE THORNHAM HALL FÊTE.—We are pleased to hear from Mr. PERKINS, with reference to the recent *fête* at Thornham Hall in aid of the Gardeners' Royal Benevolent Institution, that after paying all expenses there was a balance of £40, which has been sent to the Secretary. Considering the deplorable circumstances as regards weather under which the *fête* was held, the result must be considered very satisfactory, and we earnestly hope that next season Mr. PERKINS' example may be widely followed.

—— THE EYOT ABOVE KEW BRIDGE.—The *Daily News* states that the Commissioners of Woods and Forests have given instructions to the auctioneer to withdraw from public sale the Brentford eyot. It is generally thought that the Government, observing the antagonistic feeling of the people in the neighbourhood, and the unfavourable comments of the metropolitan and local Press, have been induced to take this step. It is only too apparent that immediate action must be taken if the eyot is to be preserved. The recent high tides have swept completely over it. The unusually high tides on Saturday last reached a point 2 feet up the trunks of the trees. Some time ago the Richmond Vestry purchased, under the powers of the 164th section of the Public Health Act, the small island below Richmond Bridge. That body camp-shedded and otherwise improved it at a comparatively small cost, and it is now considered one of the beauty spots of the river. We have before suggested that the Kew eyots should be placed under the management of the authorities at Kew Gardens, and be utilised for the growth of Alders, Willows,

Poplars, and such-like trees, so far as space and other requirements allow.

—— The Stinging Tree.—The following paragraph, which is copied from a recent number of *Knowledge*, is definite enough about the results brought about by the sting of this tree, but charmingly indefinite in other respects. What is it? There are many tropical Urticaceæ, to the virulence of some of which, even when cultivated under widely different conditions from those which obtain in their native haunts, our own columns have borne witness ere this. Laportea is a genus in point. But let *Knowledge* speak:—"The Stinging Tree of Queensland, Australia, is a luxurious shrub, pleasing to the eye, but dangerous to the touch. It grows from 2 or 3 inches to 10 or 15 feet in height, and emits a disagreeable odour. Says a traveller: 'Sometimes, while shooting turkeys in the scrub, I have entirely forgotten the Stinging Tree till I was warned of its close proximity by its smell, and have often found myself in a little forest of them. I was only once stung, and that very lightly. Its effects are curious. It leaves no mark, but the pain is maddening, and for months afterwards the part when touched is tender in rainy weather, or when it gets wet in washing, &c. I have seen a man who treats ordinary pain lightly roll on the ground in agony after being stung, and I have known a horse so completely mad after getting into a grove of the trees that he rushed open-mouthed at every one who approached him, and had to be shot. Dogs when stung will rush about whining piteously, biting pieces from the affected part.'"

—— Central Asia.—The climate of this region is one of extremes, combined with extraordinary clearness of atmosphere. Much of the country has become little better than desert from the previous destruction of the forests. The Russians are making great endeavours to ameliorate this condition of things. Taschkent is now stated to be surrounded by Poplars, Elms, Negundo, Maples, &c., introduced by the Russians; and at Samarcand General Korolkoff (known to many of our readers as the origin of the name Korolkowia) has introduced immense



Fig. 80.—Floral decoration in a London mansion. (see p. 464.)

quantities of Ailantus glandulosus, Robinia pseud-acacia, and Pinus halepensis, as trees bearing drought well. Before these plantations were formed rain, so it is stated, never fell in summer, at Samarcand, but now it rains four or five times during the season. An interesting account of the agriculture of these regions is in course of publication in the *Annales Agronomiques*.

—— Berberis stenophylla ×.—We observe with regret that Dr. Hance has called a new Chinese Berberis under this name—as, indeed, he was strictly entitled to do, for we are not aware that the name B. stenophylla ×, a beautiful hybrid between B. empetrifolia and B. Darwinii of gardens, has been so published as to receive recognition at the hands of botanists, although it must many a time and oft have been figured, and is so well known in gardens that it is not likely to be dislodged by the new aspirant to its name.

—— Semi-double Lilium auratum. — Mr. Higgs sends us a flower of this Lily with nine perfect segments, the stamens and style being normal. This might be a desirable variety if it could be perpetuated, which is doubtful.

—— Epidendrum bicornutum.—In his report for 1881, just published, the Government Botanist and Superintendent of the Demerara Botanic Gardens, Mr. Jenman, gives some interesting information respecting several Orchids, among which is the subject of this note. Mr. Jenman states that although in places Epidendrum bicornutum "is one of the commonest Orchids of the colony, it has proved in the garden, as it has in England, very difficult to grow in cultivation. The difficulty experienced here is in getting the plants established; with a great many bulb after bulb dies away before this is attained." At Kew, however, where this species is very successfully managed, it has been found to be quite amenable to cultivation. In a hot, close, thoroughly moisture-laden atmosphere during the growing season it makes strong growths year after year, and produces numbers of its deliciously-scented handsome flowers.

—— A New Remedy for Hydrophobia. — Almost every year some new specific is put forward and proclaimed to be an infallible remedy for hydrophobia, and in spite of this we believe that there is no thoroughly authenticated case on record where a cure has been effected after the symptoms of this dreadful disease have undoubtedly manifested themselves. A year or two ago pilocarpine, the product of a Brazilian shrub (Pilocarpus pinnatifolius), cultivated at Kew and elsewhere, gave reason to hope, from its peculiar physiological action, that at last a real remedy had been found. The French physician, however, who was the foremost to advocate its claims now mournfully admits its failure to arrest the progress of hydrophobia. The following appears in the *Daily News* of September 26:—"Dr. Morales, living at St. Bernard, near New Orleans, writes to certify that an infallible remedy for hydrophobia is to be found in that parish. It consists, according to him, of the berries of a shrub not unlike the Laurel, which will not stand severe cold, and the virtues of which were made known to the inhabitants some fifty years ago by the Indians, who had long been accustomed to make use of this remedy. Its efficacy is now so generally recognised that several people at St. Bernard grow the shrub for the purpose of selling the berries in the neighbourhood, and Dr. Morales asserts that he has direct personal knowledge of several cases where they have effected complete cures. He recommends all persons who may have been bitten by a dog to take nine berries beaten up in a glass of wine, increasing the dose at the rate of one berry a day until they have taken 117 berries in all." We wonder how Dr. Morales arrives at such a definite number, and what would be expected to happen if the unlucky patient lost count and exceeded or stopped short of the mystic number!

—— New Hybrid Rhododendrons.—Messrs. Isaac Davies & Son, of the Brook Lane Nursery, Ormskirk, are just introducing two new varieties of their useful and popular hybrid Rhododendrons—viz., Isaac Davies, a hardy variety of bushy habit, the flowers deep crimson; large conical-shaped trusses, so full and compact that neither rain nor wind changes their form—the flowers being erect are always conspicuous; and Rosy Bell, a dwarf-growing hardy type in the style of R. ciliatum, of bushy habit and free-flowering, the smallest plants bearing flowers in the form of pendent trusses of bell-shaped flowers, rosy-pink in colour. This, with R. Daviesii, and the fine sweet-scented varieties, Countess of Derby, Mr. James Shawe, Lady Skelmersdale, Countess of Sefton, and Duchess of Sunderland, are all valuable for early flowering, as they force well and are easily managed; they flower with great freedom, and are objects of great beauty under glass in March and April.

—— Wallflower-leaved Stocks.—How did this strain originate? How did it come about that the Stock should lose its soft, downy leaves, and become possessed of a bright emerald-green, shining, and downless leaf of an entirely different character? The same thing is seen in Peas. Emerald Gem has a distinctive shining green foliage, and with an exception or two it stands almost alone in this respect. To most strains of the annual Stocks there is a Wallflower-leaved section, and the varieties with this character of foliage have so multiplied of late that they can be offered in collections of ten varieties. Some of these may be deemed undesirable in point of colour, but it shows how they have increased of late years. There is a singular fact in relation to the colour of the flowers of the single form of the yellow Stock. It will be noticed by those who grow Stocks in colours, or who when sowing a collection keep the colours separate, that the singles among the yellow Stocks will be found white-flowered, and not yellow-flowered, as might be supposed. There is one exception at least to this rule. There is a marvellously fine strain of large-flowered branching Stocks known as Sutton's Perfection, and in this instance the single flowers were yellow, not white—in fact of the same colour as the double. But the yellow form of the Perfection Stock is Wallflower-leaved, and it may be that it is a peculiarity of the woolly-leaved Stocks to produce white flowers, but yellow in the case of the Wallflower-leaved varieties.

—— Lobelia fulgens. — It is very difficult indeed to match in any other flower the rich, pure, striking vermilion hue of Lobelia fulgens. It stands almost alone for its peculiar brilliancy of tint, and the bright looking varieties of Gladioli growing near it appear poor by comparison. It is a flower of a marked individuality of character, and where one sees a plant of any one of the purple, violet, pink, rose, or other coloured varieties, there are a hundred of the grand old L. fulgens, and to associate with this in combination for beds what can be better than the equally valuable Salvia patens, with its flowers unrivalled for their singularly bright hue of blue. If we were to name a white flower to go with them we should unhesitatingly say pompon Dahlia Lady Blanche. The flowers are small, pure white, freely produced, and in the matter of height of growth match well the Salvia and the Lobelia.

—— Agricultural Lectures. — Courses of lectures on the "Principles of Agriculture" will be delivered during the autumn, winter, and spring months, by Mr. Bernard Dyer, F.C.S., F.I.C., in connection with the City of London College (Monday evenings seven to eight), and also in connection with the East London Union for Advanced Education at Stepney (Monday evenings nine to ten). Particulars may be obtained from the secretaries of these institutions at 66, Leadenhall Street, E.C., and at "the Schools," Dempsey Street, Jubilee Street, E., respectively. The Stepney classes are open to ladies as well as gentlemen.

—— The Heaviest Gooseberries.—Mr. Salsbury, Melbourne, near Derby, informs us that the four heaviest Gooseberries shown during the present year are:—Red: Bobby, 31 dwt. 17 gr. Yellow: Leveller, 34 dwt. 2 gr. Green: Stockwell, 30 dwt. 17 gr. White: Fascination, 31 dwt. 4 gr.

—— The Temperature on October 1.—Mr. R. H. Allnatt writes from Cheltenham to the *Times*:—"On Sunday last, October 1, an unwonted combination existed of high atmospheric temperature, semi-equatorial wind, and heavy masses of flying clouds that occasionally obscured the sun. At 4 P.M., under these conditions, the shade thermometer stood at 69° (Fahr.). On reverting to my meteorological observations that appeared some years ago in the *Times*, I find, for a period of twelve or fourteen years, no such recorded high temperature as this. The nearest approach was in 1873, when the afternoon thermometer registered 67°; but the average temperature on October 1 for twelve years yields an amount of only 51°.5. Ozone tests on the present occasion, in an aspect sheltered from the direct blasts from the south-west, speedily bronzed, and had they been placed in the full current the effect, of course, would have been still more decided. A heavy rainfall occurred soon after sunset."

—— A Lecture on Plant Labels will be given by Mr. Shirley Hibberd at the meeting of the Royal Horticultural Society, on Tuesday next, October 10. Mr. Hibberd will endeavour to indicate the points of interest attaching to the recent competitive exhibition of plant labels at the Society of Arts.

—— Farmyard Manure. — The summary of some elaborate researches on the evaporation of water from arable land is published in the *Annales Agronomiques*. M. Masure concludes that, whether considered as a physical agent in the improvement of the texture of the soil, or chemically farmyard manure is the most valuable fertilising agent a farmer can use. Compared with other substances, it absorbs and retains a larger quantity of rain-water; it gets rid of superfluous water quickly; it attracts and condenses at night the vapours of the atmosphere and their valuable constituents; it absorbs the solar rays and the oxygen which are so important to plant life; and it renders the soil more porous and adapted for the penetration and ramification of the roots. As the dung is the principal agent in condensing the fertilising gases from the atmosphere, it is important not to bury it too deeply in the ground, but to take care that it is well mixed with the surface soil, or in special cases that it be used as a mulch.

Erythrina Crista-galli.—Is not this fine old fashioned plant in some danger of being relegated to comparative obscurity? Occasionally one meets with it as a fine exhibition specimen, but it is generally thought by exhibitors that judges are apt to underrate its value on the ground that it is a half-hardy plant, and easily cultivated. It is true its management does not involve any serious amount of care; but some attention is yet required to grow it well. Of late years we have been accustomed to see the Erythrinas bedded out as sub-tropical plants, and with great success. It is a plant that can be grown by many gardeners who have limited accommodation for growing choicer subjects, as, after flowering, it goes to rest until the following spring, the shoots being cut back to the old wood. In this state it can be housed during the winter under the stage of a greenhouse, and early in the season it should be shaken out of the soil in which it grew during the previous year, if in a pot, and be re-potted in January, or early in February. It is an accommodating subject, and may be potted into the flowering pots at once, using a compost made up of loam, peat, leaf-mould, in equal proportions, with some well-rotted manure and silver-sand. In such soil the plants make a free growth, and when the shoots thrown up from the crown are 5 or 6 inches long, a half-dozen of the strongest should be selected, and the rest cut away. The plants will do well in a vinery, and when the flower-buds appear they can be removed to an ordinary greenhouse, and eventually, if needed, to the open air. In some parts of the country the plants will stand all the winter if placed against a south wall, and protected in severe winters. In addition to the old type, Madame Belanger, ornata, and ruberrima are well worthy of cultivation; and the three last-named, being of dwarf growth, are best adapted for planting out in beds.

—— Lapageria-house at Gunnersbury Park. —This is a new arrangement rather than a new erection; for the long house at the back of the spacious conservatory in the grounds, formerly used for wintering Orange trees, Myrtles, &c., in tubs, was some time since modified in some details of ventilation and light, and planted as a Lapageria-house. The house is 70 feet in length by 16 feet in width, and the Lapagerias are planted in a narrow raised bed at the back, but sufficiently ample to admit of a free root-growth. The varieties, red and white, are planted alternately, and they are trained on wires on the back wall up to the low span-roof of glass, and then carried across horizontal wires to the front, a large portion of which is of glass, and facing the

west. The back wall is wholly of brick, and the bare portions are covered with a free growth of Ficus repens. The plants, being from two to three years since planting, have done remarkably well, and by next summer will hang down in flowering festoons from the roof; then it will be a fine and striking sight. The condition of the plants, and the whole of the internal arrangements, illustrate Mr. Roberts' skill and forethought.

—— An Ancient Civic Custom.—On Wednesday evening, in accordance with a very ancient custom in the City, the Master, Wardens, and Court of Assistants of the Fruiterers' Company waited upon the Lord Mayor and the Lady Mayoress at the Mansion House, and presented them with a choice assortment of the fruits in season, including Grapes, Pineapples, Melons, Pears, Apples, Peaches, Plums, Apricots, &c. In former times the gift consisted of 12 bushels of Apples of various kinds, which, neatly packed in clean white baskets, and covered with napkins, were carried by porters from Farringdon Market to the Mansion House, preceded by the Company's beadle with his gown and staff. On the fruit arriving the Lady Mayoress, in the olden days, took charge of it, and placed a bottle of wine in each basket for the use of the carriers, who were subsequently entertained at dinner. In later years the form of the present has changed, and instead of Apples the choicest fruits of the season are now annually offered to the Chief Magistrate. On the present occasion the Master of the Fruiterers' Company (Dr. Fotherby), in making the presentation, traced the old custom to the time when the Lord Mayor for the time claimed, as of right, a sample of all the new fruit which entered the City, by way of toll. The payment of this tribute led to frequent disputes and unseemly brawls between the servitors of the Lord Mayor and the Company, and the matter was at length gracefully compromised by the agreeable custom which now prevailed, and which he (the Master) hoped would not be swept away by the bold utilitarian spirit which prevailed at the present day. The Lord Mayor (Sir J. W. Ellis) thanked the Company for their gift, and echoed their wish that an observance so courteous and interesting might be long allowed to continue. Following the ancient usage the Lord Mayor and the Lady Mayoress entertained the Master, Wardens, and Court of the Company at dinner afterwards in the Egyptian Hall, the guests numbering 300.

—— Fuchsias in Autumn.—At no period in all the year are Fuchsias more beautiful in the open garden than during the autumn months. When in growth and in fairly good health their leaves are fresh looking and of various shades of colour, which harmonise well when they are planted in large groups. Even a few flowers upon a plant look well, and as these vary in colour more than the foliage, a healthy mass of leaves and a sprinkling of flowers is a welcome sight at this season. In Hyde Park such a group may be seen at present, when such things as Pelargoniums, Verbenas, and many other bedding plants are beginning to look shabby both in leaf and flower.

—— Single Dahlias and Eucalyptus.—A charming companion for single Dahlias is the Australian Blue Gum Tree, Eucalyptus globulus. Young plants of the Eucalyptus of about the same height of the Dahlias present a contrast of foliage of a very pleasing character in the twilight of evening. The blue shaded foliage of the Gum Tree, the healthy bright green leaves of the Dahlias, and their flowers of so many colours and shades, make a combination that it would be difficult to surpass at the beginning of October.

—— Canna erecta zebrina.—Those who are in possession of well-grown Cannas of the type above mentioned, or Gloire de Lyons, which is of a similar colour, but having the ribs and dark stripes in the leaves more prominent, should lift them for potting before the leaves get nipped with frost. They bear cold better than rough winds, but are not safe out-of-doors after this date if they are to figure in the conservatory through the winter. After potting, they should be put in a north house, and dewed overhead occasionally until they take root afresh, which will be in a few days, and they should not feel heat for some time, in order that the leaves may not be affected by the sudden change. By giving them a little attention their handsome leaves may be retained quite fresh in the conservatory until after Christmas, where they have as good an effect as many choice foliage plants that are far more difficult to cultivate. We have seen them used for furnishing in winter, in company with Chrysanthemums, in situations where it would be absolute ruin to put a stove plant.

—— Single Dahlias.—Messrs. Cannell & Sons, of Swanley, have lately furnished us with some beautiful samples of various colours, one or two that we consider as fairly representing what the type of a single Dahlia should be. The specimen that we refer to is of a deep mauve, with slightly reflexed petals, but the flower is rather under-size. Another—a white one—is also very good, as is a dark crimson variety, of great substance of petal, and a very striking flower indeed. Yellow and orange varieties are also sent that are very showy as regards colour, but hardly up to a first-class standard in form. Messrs. Cannell are evidently in earnest in the raising and cultivation of single Dahlias, and there is still an open field for those who choose to apply themselves in the direction of improvement. We would like to see the merits of single Dahlias neither under nor overstated. They are invaluable to gardeners at this season, both as cut flowers and in the open garden. We have not yet hit upon the best way of disposing them. A dozen or more sorts planted promiscuously and without any definite idea as to the height that each plant may grow in a large bed is not the way to do justice to single Dahlias, nor is it the way to educate the public into growing them. Suppose we take six distinct sorts—say, white, crimson, yellow, mauve, orange, and red—and we plant a bed of each, is there any other flower in the open garden that will compare with them at the present moment? Or suppose we plant them among Rhododendrons (one variety in each bed), is there any other flower that will give the same continuous effect from early in August to November? The fact is clearly and unmistakably established, that there is not. Again we look at the position of the private gardener, who has to provide cut flowers in large quantities for shooting parties during the autumn, will not the single Dahlias be a great boon to him? If you cut the flowers from a choice hothouse plant you have nothing more to expect for another season, but the single Dahlia supplies them every morning that you like to go and cut them. For home use it is not a matter of much importance whether they last long in a cut state or not, quantity is the main thing to look after. We are perhaps not over-ready either in recognising the many choice, not to say brilliant, colours among single Dahlias that will be of vast importance to the gardener who has much decoration to do for large dinner parties. A white Dahlia is just as good as a white Eucharis by gaslight, the difference is that the one is called rare, and the other is not; for practical purposes both are the same as regards colour. Raisers of new kinds should therefore have some idea of the class they have mainly to provide for. We want medium-sized flowers, distinct in colour, and having rather more substance of petal than we have yet seen, and with less tendency to shed their petals early. Given these and a little taste and judgment on the part of those who grow and use single Dahlias as cut flowers, and we cannot help thinking there is a hopeful future to look forward to.

—— Timehri.—The name will require explanation by most of our readers; and, could they see the curious hieroglyphs on the title-page, strangely like the representations of men and animals that British children are wont at a very early age to scrawl upon their slates, they would be more puzzled still. But Mr. im Thurn is a good editor, and does not leave us long in doubt. Timehri is a Carib word, spoken in Guiana ages before any European set foot in the country, and used to designate the hieroglyphs above alluded to. These inscriptions were scratched on the rocks, where they still exist, the records of a forgotten time. Mr. im Thurn adopts the word and an "ideograph" of the thing to designate the *Journal* of the Royal Agricultural and Commercial Society of British Guiana. Its contents include articles on the cultivation of Cocoa, on tame animals among the red men; on indiarubber, by Mr. Jenman; on the encouragement of the lesser industries, and on a variety of other topics, which show that *Timehri* is at once comprehensive and eclectic. Such a publication can hardly fail to be of service to the colony and beneficial to science. We trust that in future numbers meteorological details will—as indeed is promised—be given. Such details, together with indications of the conditions under which plants grow, would not only be useful to the colonial agriculturists, but to meteorologists and horticulturists at home. A word of well-earned praise is due to the printer for the excellent way in which he has done his part. Success to *Timehri!*

—— Apples Spotted with Fungus.—Many persons complain that their Apples, though comparatively few in number, are often so spotted as to become almost unsaleable. We find this especially to be the case in that valuable Apple the Northern Greening, and with us Lord Suffield, which in general has the surface beautifully pure and brilliant, is much stained this year with spots. On examination we find a delicate mycelium fringing the spots as in an Asteroma, and the centre of the spots divested of the fungus exposing the subjacent tissue. It is the fungus to which Fries gave the name of Spilozœa, but which is clearly a state of Helminthosporium pyrorum (which is now common on the leaves of Apples), the spores being still visible enough on the fringe. The genus is now referred to Cladosporium, under the name of C. dendriticum. Fortunately it is quite superficial, and therefore does not cause the fruit to rot. *M. J. B.*

—— The Weather.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending Oct. 3, issued by the Meteorological Office, London:—The weather during the past week was very unsettled generally, and at the close of the period it became exceedingly stormy in Ireland and Scotland. On the evening of October 2 bright aurora was seen in all parts of the kingdom. The temperature was a little above the mean in Scotland and the north-east, south, and north-west of England, but below it in Ireland. On the evening and night of September 30 the thermometer rose very rapidly, and the maximum readings of October 1 varied between 65° and 70° in all districts. The minima, which occurred on September 29 and 30, were below 40° in most districts, and in some parts of "England, E.," the thermometer fell to 35° in "Scotland, E.," to 34°, and in "Ireland, N.," to 32°. The rainfall was considerably more than the mean in "England, S.W.," and "Ireland, N.," and a little more in "England, E.," the Midland Counties, and "England, S.," but in all other districts it was less than the normal. Bright sunshine varied from 22 per cent. off the possible amount in "Ireland, N.," to 44 per cent. in "England, E." Depressions observed:—On September 26 and 27 a somewhat shallow depression passed slowly across our islands from the southward, reaching the north of Scotland by the morning of the 28th. On the night of the 28th a deeper disturbance advanced over the south of England from the south-westward; and on the 30th another travelled quickly in a north-north-easterly direction along our west and north coasts. All these, however, were of slight importance in comparison to a depression which made its appearance on the morning of Oct. 1. This, which proved to be very deep, travelled in a direction similar to that of September 30, and occasioned severe southerly gales in Ireland and Scotland. On the night of the 2d the barometer was rising generally, and the weather seemed rather more settled.

—— Gardening Appointments.—Mr. William King, from Dalkeith Gardens, succeeds Mr. MacLellan, as Gardener to J. G. C. Hamilton, of Dalziell, M.P., at Dalziell House, Lanarkshire.—Mr. Harry Carter, as Gardener to Sir Harvy Bruce, Bart., M.P., at Downhill, Coleraine, Ireland.—Mr. John McPherson, lately Foreman at Widmore, Bromley, Kent, as Gardener to Major Green Thompson, Bridekirk, Cockermouth.—Mr. Andrew Hunter, lately Gardener to Lord Shand, Newhailes, Midlothian, as Gardener to Robert Stewart, Esq., Ingliston, Ratho.—Mr. James Carstairs, lately Gardener at Hermitage, Hexham, as Gardener to Lea Priestley Edwards, Esq., Brandsby Lodge, Easingwold, Yorks.—Mr. John Sinclair, lately Gardener at Monkwood, Edinburgh, as Gardener to Mrs. Reed, Kenwolde Court, Virginia Water.—Mr. Edward McCormick, as Gardener to William Younger, Esq., Auchen Castle, Moffat (the above five through Messrs. Downie & Laird).—Mr. Edward Moorhouse, late Foreman to Mr. Christie, at Warwick Castle, succeeds Mr. Wilkins as Gardener to George Henry Nelson, Esq., The Lawn, Emscote, near Warwick.

LIST OF GARDEN ORCHIDS.

(*Continued from p. 428.*)

38. ERIA, Lindl., *Bot. Reg.*, t. 904.—Leaves various. Peduncles 1-flowered or raceme-bearing, lateral or apparently terminal, on the leafy stems or pseudobulbs. Column short, produced at the base in a foot. About 120 species inhabiting India, South China, and the Malayan Archipelago. A polymorphous genus in habit, divided by Mr. Bentham into ten sections, most of which are regarded by some botanists as distinct genera.

Sect. 1. PORPAX.—Dwarf plants, with depressed spheroidal or flattened pseudobulbs, at length clothed with a fibrous network; crowned with two orbicular or ovate leaves, which soon deliquesce. Flowers solitary, or two or three together, between the leaves, nearly sessile, medium size: ex. E. Jerdoniana.

Sect. 2. CONCHIDIUM.—Dwarf herbs, with the pseudobulbs and leaves of Porpax, but the peduncles are slender and longer, 1-flowered or more rarely 2-flowered; flowers usually very much smaller than in Porpax: ex E. extinctoria.

Sect. 3. BRYOBIUM.—Small herbs, with pseudobulbs similar to those of the last section, or sometimes ovoid. Leaves 2 or 3 on the short stems, or peduncles leafless during flowering. Flowers small or minute, several, shortly pedicellate, racemose: ex. E. Bryobium.

Sect. 4. MYCARANTHES. — Stems clothed with sheaths at the base, scarcely thickened, or at length with narrow pseudobulbs, 2-leaved at the top. Racemes narrow, 1—2 from the uppermost nodes; flowers numerous, small, in two rows, shortly, or very shortly, pedicellate, clothed with white hairs. Sepals short and broad: ex. E. stricta.

Sect. 5. ERIURA. — Stems taller than in Mycaranthes, several or many-leaved, often with several racemes from the uppermost nodes: ex. E. paniculata.

Sect. 6. HYMENERIA.—Stems or flowering branches borne on a rhizome, leafy, not thickened during flowering, but usually thickening into pseudobulbs like the sterile stems after flowering. Racemes apparently terminal (pseudoterminal), solitary, or a few together in the upper axils; flowers medium or small: ex. E. myristiciformis.

Sect. 7. UROSTACHYA.—Flowering-stems considerably developed, often thickened, sometimes like long pseudobulbs. Racemes lateral, few or many; flowers small, or rarely rather large: ex. E. Dillwynii, E. bractescens, and E. convallarioides.

Sect. 8. DENDROLIRION.—Scapes bracteate at the base, proceeding from or near the base of the pseudobulbs, which are oblong or elongated, one or few-leaved. Racemes loose, few or many-flowered, rarely dense. Flowers more or less woolly or hairy, small or medium: ex. E. stellata, and E. armeniaca.

Sect. 9. TRICHOTOSIA.—Stems stout, leafy, scarcely thickened at the base; not pseudobulbous; often clothed with stiff spreading hairs. Racemes axillary, usually shorter than the leaves, sometimes very short and few flowered. Flowers shortly pedicellate, narrow, hairy, or rarely glabrous. Column sometimes longer than in the other sections; pollinia often rather broad: ex. E. vestita, E. ferruginea.

Sect. 10. CYLINDROLOBUS.—Stems leafy, glabrous, slender or thickened and fleshy above. Racemes very short lateral or pseudo-terminal. Flowers 2—3, rather large, glabrous, on long pedicels. Differs from section Trichotosia mainly in being glabrous, from Urostachya in its few large flowers: ex. E. nutans.

The following names have been proposed as independent genera for species now included in Eria: — Dendrolirium, Pinalia, Porpax, Aggeianthus, Lichenora, Conchidium, Aloisia, Bryobium, Mycaranthes, Xiphosium, Trichotosia, Ceratium, and Cylindrolobus.

1. ERIA ABBREVIATA, Lindl., *Nov. Gen. and Sp. Orch. Pl.*, p. 68; Miq., *Fl. Nederl. Ind.*, iii., p. 662. *Dendrolirium abbreviatum*, Blume, *Bidjr. tot Fl. Nederl. Ind.*, p. 348.—Java. Cultivated at Buitenzorg in 1866.
2. E. ACERVATA, Lindl., *Journ. Hort. Soc. Lond.*, vi., p. 58, with a woodcut; Lindl. and Paxt., *Fl. Gard.*, i., p. 170.—India. Cultivated in the gardens of the Society in 1851. Of no horticultural value.
3. E. ACUTIFOLIA, Lindl., *Bot. Reg.* 1842, Misc., n. 32; *Gard. Chron.* 1842, p. 382.—India. An unattractive species, imported by Messrs. Loddiges.
4. E. ACUTISSIMA, Rchb. f., *Gard. Chron.*, n.s., v., p. 567.—Polynesia (?) Cultivated by the Duke of Buckingham at Stowe in 1876. Flowers small, yellow.
5. E. AFFINIS, Griffith, *Not.*, iii., p. 297; *Journ. Linn. Soc.*, iii., p. 54.—India. Cultivated at Kew in 1882. Hort. Kew.
6. E. ALBA, Lindl., *Gen. and Sp. Orch. Pl.*, p. 67; *Journ. Lin. Soc.*, iii., p. 53.—India. Cultivated at Kew in 1882. Hort. Kew.
7. E. ALBIDO-TOMENTOSA, Lindl., *Ind. Contrib.*, ii., p. 18; *Xenia*, ii., p. 112, t. 136. *Dendrolirium albido-tomentosum*, Blume, *Bijdr. tot Fl. Nederl. Ind.*, p. 345.—Java. Buitenzorg Botanic Garden, 1866.
8. E. AMICA, Rchb. f., *Xenia*, ii., p. 162, t. 168, fig. 6—9.—India. Imported from Assam and cultivated by Mr. Day in 1867.
9. E. ANNULATA, Blume, *Mus. Bot.*, ii., p. 184. *Trichotosia annulata*, Blume, *Bijdr. Fl. Nederl. Ind.*, p. 343; Lindl., *Gen. and Sp. Orch. Pl.*, p. 132.—Java. Cultivated at Buitenzorg in 1866.
10. E. ARMENIACA, Lindl., *Bot. Reg.* 1841, Misc., n. 70, t. 42; *Walp. Ann.*, vi., p. 270. *E. ornata*, Lindl., *Gen. and Sp. Orch. Pl.*, p. 66. *Dendrolirium ornatum*, Blume, *Bijdr. tot Fl. Nederl. Ind.*, p. 345.—Java and Philippine Islands. Introduced by Cuming, and flowered by Loddiges in 1841. A robust and showy species, having large yellow brown bracts subtending the green and crimson flowers.

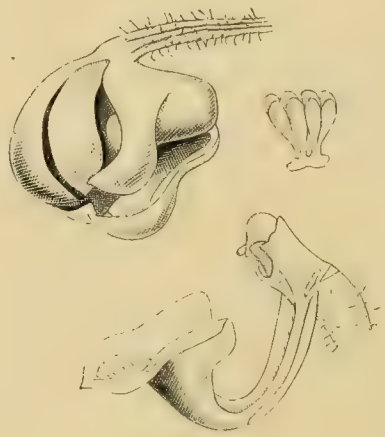


FIG. 81.—ERIA CONVALLARIOIDES.

11. E. BARBAROSSA, Rchb. f., *Hamb. Gartenz.*, xvi., p. 420.—Native country not recorded. Cultivated in Germany by Messrs. Booth in 1860.
12. E. BARBATA, Rchb. f., *Walp. Ann.*, vi., p. 270; *Refug. Bot.*, t. 114. *Tainia barbata*, Lindl., *Gard. Chron.* 1857, p. 68. India. Cultivated by Loddiges in 1856. Flowers yellow with crimson lines; pedicels bearded with papillæ on the upper side.



FIG. 82.—ERIA FLAVA.

13. E. BERRINGTONIANA, Rchb. f., *Gard. Chron.* 1872, p. 666.—Borneo. Flowered by Mr. A. D. Berrington in 1872. "A giant Eria flava, bearing a raceme of flowers, each nearly as big as a flower of Bulbophyllum Lobbii."
14. E. BICRISTATA, Lindl., *Gen. and Sp. Orch. Pl.*, p. 67; Miq., *Fl. Nederl. Ind.*, iii., p. 661; *Dendrolirium bicristatum*, Blume, *Bijdr. Fl. Nederl.*, p. 346.—Java. Cultivated at Buitenzorg in 1866. Flowers whitish, pale purple at the base of the labellum.
15. E. BIPUNCTATA, Lindl., *Bot. Reg.* 1841, Misc., n. 179; *Gard. Chron.* 1841, p. 783.—India. Collected in the Khasya Hills by Mr. Gibson, and sent to Chatsworth. Inconspicuous.
16. E. BRACTESCENS, Lindl., *Bot. Reg.* 1841, Misc., n. 46, and 1844, t. 29; *Gard. Chron.* 1841, p. 231. *E. Dillwynii*, Hook., *Bot. Mag.*, t. 4163.—Singapore and Philippine Islands. Introduced by Cuming for Messrs. Loddiges. A handsome and vigorous species; the *Bot. Reg.* figure represents a starved plant. Flowers in erect racemes, yellowish white, subtended by ample bracts of the same colour.
17. E. CILIATA, Miq., *Fl. Nederl. Ind.*, iii., p. 659. *Trichotosia*, Teijsm. and Binnend.—Java. Cultivated at Buitenzorg in 1866.
18. E. CLAVICAULIS, Wallich, *Bot. Reg.* 1840, Misc., n. 220; *Walp. Ann.*, vi., p. 278.—India. Introduced by Dr. Wallich and cultivated by Messrs. Loddiges. Flowers white; lip bordered with pink.
19. E. COCHLEATA, Lindl., *Bot. Reg.* 1844, Misc., n. 23; *Walp. Ann.*, vi., p. 269.—Manilla. Imported and cultivated by Messrs. Loddiges. Flowers small, white, crimson, and green.
20. E. COMPRESSA, Blume, *Mus. Bot.*, ii., p. 182; Miq., *Fl. Nederl. Ind.*, iii., p. 657. *Ceratium compressum*, Blume, *Bijdr. Fl. Nederl. Ind.*, p. 342, t. 46; Lindl., *Gen. and Sp. Orch. Pl.*, p. 130.—Java. Cultivated in the Botanic Garden, Buitenzorg, in 1866.
21. E. CONCOLOR, Parish and Rchb. f., *Trans. Linn. Soc.*, xxx., p. 148.—Moulmein. Introduced by the Rev. Mr. Parish, and flowered at Kew in 1871. Hort. Kew.
22. E. CONVALLARIOIDES, Lindl., *Gen. and Sp. Orch. Pl.*, p. 70; *Gard. Chron.* 1841, pp. 551 and 783; *Bot. Reg.* 1841, t. 62. *β major*, *Bot. Reg.* 1847, t. 63.—India, Nepal. Flowers small, white, in very dense, shortly-stalked, pendent clusters from the axils of or below the leaves. Hort. Kew. (See fig. 81.)
23. E. CORNERI, Rchb. f., *Gard. Chron.*, n.s., x., p. 106.—Formosa. Discovered by Mr. A. Corner, and grown by Mr. A. Leach, Clapham, in 1878. Flowers pale green; lip white, with a purplish middle lobe, and purplish streaks over the side lobes.
24. E. CORONARIA, Rchb. f., *Gard. Chron.*, n.s., v., p. 234.—India. Collected in the Khasya Hills by Mr. Gibson. Flowers sweet-scented, pure white, with some yellow and brown.
25. E. CURTISII, Rchb. f., *Gard. Chron.*, n.s., xiv., p. 685.—Borneo. Collected by Mr. Curtis for Messrs. Veitch, with whom it flowered in 1880. Flowers yellowish-white. Near E. myristiciformis.
26. E. DASYPUS, Rchb. f., *Bot. Zeit.* 1864, p. 415; *Xenia*, ii., p. 161, t. 168, fig., t. 3.—Moulmein. Discovered and introduced by the Rev. Mr. Parish, and cultivated by Mr. Day.
27. E. DAYANA, Rchb. f., *Gard. Chron.*, n.s., viii., p. 102.—India. Cultivated by Mr. J. Day, in 1877. Flowers honey-yellow; lip with some brown and almost black blotches.
28. E. EBURNEA, Rchb. f., *Hamb. Gartenz.*, xv., p. 56.—Native country not recorded. Imported and cultivated by Consul Schiller, of Hamburgh. An attractive species, having dense clusters of large, snow-white flowers, with a yellowish lip.
29. E. ELONGATA, Blume, *Mus. Bot.*, ii., p. 183; Miq., *Fl. Nederl. Ind.*, iii., p. 657.—Borneo, Sumatra. Cultivated at Buitenzorg in 1866.
30. E. ERECTA, Lindl., *Gen. and Sp. Orch. Pl.*, p. 68. *Dendrolirium erectum*, Blume, *Bijdr. Fl. Nederl. Ind.*, p. 348.—Java. Cultivated at Buitenzorg in 1866.
31. E. EXCAVATA, Lindl., *Gen. Sp. and Orch. Pl.*, p. 67.—India, Nepal. Wallich. Cultivated at San Donato, by Prince Demidoff, about 1858. Hort. Kew.
32. E. EXTINCTORIA, Hook., *Bot. Mag.*, t. 5910; *Gard. Chron.* 1873, p. 646; n.s., xiii., p. 427. *Dendrolium extinctorium*, Lindl., *Bot. Reg.*, under t. 1756.—Birma. First collected by W. Griffith, and subsequently sent by the Rev. Mr. Parish to Kew, where it flowered in 1871. A pretty little Orchid, in habit like Drymoda picta, but the 1-flowered scapes are from the top of the pseudobulbs. Flowers white, suffused with rose, and having a purple blotch on the lip.
33. E. FEROX, Blume, *Mus. Bot.*, ii., p. 184. *Trichotosia ferox*, Blume, *Bijdr. Fl. Nederl. Ind.*, p. 342; Lindl., *Gen. and Sp. Orch. Pl.*, p. 132; De Vr., *Ill. d'Orch.*—Java. Cultivated in the Buitenzorg Botanic Garden in 1866.
34. E. FERRUGINEA, Teijsm. and Binnend., *Bot. Nat. Tydschr.*, xxiv., reprint, p. 8.—Java. Buitenzorg Botanic Garden, 1866.
35. E. FERRUGINEA, Lindl., *Bot. Reg.* 1839, t. 35; *Walp. Ann.*, vi., p. 274.—Imported from Calcutta by Messrs. Loddiges, and flowered at Hackney in 1838. Flowers medium size, hairy, dull coloured.
36. E. FLAVA, Lindl., *Gen. and Sp. Orch. Pl.*, p. 65. *E. pubescens*, Lindl., *Bot. Reg.*, under t. 904. *Dendrobium? pubescens*, Hook., *Exot. Fl.*, ii., t. 124.—India. Sent to the Liverpool Botanic Garden in 1820 by Dr Wallich. A robust species, with racemes of medium size, yellow flower on tall scapes. Hort. Kew. (See fig. 82.)
37. E. FLAVESCENS, Lindl., *Gen. and Sp. Orch. Pl.*, p. 66. *Dendrolirium flavescens*, Blume, *Bijdr. Fl. Nederl. Ind.*, p. 344, t. 69.—Java. Cultivated at Buitenzorg in 1866.
38. E. FLORIBUNDA, Lindl., *Bot. Reg.* 1844, t. 20; *Gard. Chron.* 1844, p. 298; *Walp. Ann.*, vi., p. 276. *E. leucostachya*, Lindl., *Journ. Hort. Soc. Lond.*, iii.; *Proc.*, p. xvi., fig. A; Lindl. and Paxt., *Fl. Gard.*, iii., p. 116, fig. 288. — Singapore, Borneo. Originally discovered by Mr. Prince, and subsequently sent to Messrs. Loddiges by Mr. Cuming. Flowers white or tinged with red,

small, but very numerous, in pendulous racemes, not infrequently 8–10 inches long. Hort. Kew.

39. E. fusca, Blume, *Mus. Bot.*, ii., p. 184; Miq., *Fl. Ned. Ind.*, iii., p. 658.—Java. Cultivated at Buitenzorg in 1866.

(*To be continued.*)

Home Correspondence.

A Thanksgiving Fungus.—The Rev. M. J. Berkeley has informed us in his works that there is a fungus named Polyporus sacer which is worshipped in West Africa as a god. A specimen of this fungus is preserved in the British Museum at South Kensington. Polyporus sacer was recently brought vividly to our recollection on hearing that a gigantic fungus had been exhibited in a London church a week or so ago as part of the "decorations" belonging to a harvest thanksgiving. This "thanksgiving fungus" was in two pieces, forming together a mass of about 4 feet by 3 feet, or perhaps more, such a mass as one sometimes sees growing out of the trunks of trees. It was about 4 or 5 inches thick. This choice "decoration" was not a magnificent edible and fragrant Sparassis, for which one might feel truly thankful, but a hideous flabby growth peeled from the top of a sewer in Old Street, St. Luke's, where it was found by a workman. From the foul London sewer this treasure was transferred to the church, and the dim religious light pouring from the stained glass windows flickered fitfully over the frowzy fungoid monster. The workman scooped the growth from off the slime of the sewer roof, removed it from the church at the termination of the "thanksgiving service," and took it back to the Old Street sewer for temporary safety. The discoverer of this wondrous object believed it to be valuable, and refused a reasonable money offer for its purchase; he said he would take it to the British Museum and offer it for sale to the nation: but whether he intended to go to Bloomsbury or South Kensington we know not. If the latter, the "thanksgiving fungus" may one day be appropriately exhibited side by side with Polyporus sacer. *W. G. S.*

Amaryllis Belladonna.—It seems almost superfluous to write about this plant, but as it stands unrivalled at this season of the year among hardy plants no apology is needed in saying a few words about it. It is surprising that it is so little grown, considering the beauty and usefulness of the flowers and the large quantity produced from a small space of ground. The present is the best season to plant it outside, and the conditions necessary to ensure success are a warm and well drained border. In preparing a border for this plant the natural soil, if at all heavy, should be entirely removed to the depth of 18 inches or 2 feet. In the bottom 10 inches or so of drainage must be placed, and for this purpose nothing is better than brickbats; over these should be placed a layer of littery dung, to keep the soil from mixing with the drainage. The compost for filling up the border should be light and sandy, and should be composed of about equal parts of light loam and peat, with a liberal mixture of road-scrapings or sand. In filling up the border the soil should be rammed moderately firm, to prevent it from holding too much moisture at any season. The bulbs may be planted about 6 inches apart, and about the same in depth. After planting, the border should be covered with a layer of cocoa-fibre or leaf soil to the depth of 3 inches, to keep the bulbs secure from severe frost, and this covering will be necessary every winter after the bulbs are established. During spring, when they are making growth, a watering may be necessary, should the weather be very dry; but during the months of July and August the bulbs should be kept as dry as possible, and should the weather be wet during these two months a covering of some kind should be placed over the roots, otherwise they will not flower satisfactorily. *J. Roberts, Gunnersbury.*

The Late Great International Fruit Show.—When your correspondent "Looker On" says (p. 438) that the Pine-apple Charlotte Rothschild shown in the collection of fruits that won the Veitch Memorial Medal was "quite green," he is surely mistaken, as your reporter and hundreds of others can testify. That being so, the remainder of "Looker On's" criticism on other exhibits at the same show is in my opinion unworthy of notice. *J. McIndoe.*

Fruit Crops.—Referring to the remarks at p. 435 I may say that in this locality the same thing has occurred, and the reason why has also been asked, and in my opinion answered, from observations which have been taken for years. As a proof, I believe there are varieties of Peaches barren of pollen, and which, therefore, require the pollen to be taken from other kinds and applied to the stigmas, or otherwise there is no fruit. In the case of orchards nearly all this fertilising work must be left to the bees and other insects, for it often happens that during the period when the pollen is ripe on certain trees it is rainy weather, consequently all the work of impregnation has to be done, as it were, between the showers; and if bees are not at hand and plentiful many fruitless trees are the result, but if bees are kept and well cared for in the immediate neighbourhood—as they were when two crops of fruit were yielded in this locality—all outdoor fruit would be more regular and plentiful, and probably much larger. It would be interesting to hear if bees are kept near the orchard mentioned at Brentwood, if so this will be another proof that bees are absolutely necessary in every garden, and in fruit plantations in particular. *H. Cannell, Jun., Swanley.*

Gardeners' Royal Benevolent Institution.—It may be interesting to many of your readers to learn that the number of collectors to the Pension Augmentation Fund this year, up to the present time, is 189, and the amount collected is £284 5*s.* 6*d.* giving an average of £1 10*s.* 1*d.* to each collector. The collection for this year will close on November 15 next, and I trust by that time to be enabled to announce a much larger amount. *E. R. Cutler, Sec.*

Sweet-scented Cyclamen (see Enquiry, p. 442).—Cyclamen europæum and C. græcum are the sweetest I know. C. europæum is sometimes said to be autumn-flowering, but mine flower in the summer as well, and are deliciously fragrant. C. græcum I take to be a form of C. hederifolium. *J. T. Boscawen.*

Lilies at Heatherbank, Weybridge Heath.—Though we may hope for some good Lily blooms for a month longer, the Lily season may be considered about over, and you may perhaps like to have a note of our experience of it. In some points the weather has been somewhat exceptional; a long sunless time, continued prevalence of high winds, the notable evil salt blast of April, have greatly told on Lily growers; but when carefully watching experiments on which weather has much influence, every season seems exceptional, so we must be content to take the weather as it comes, and endeavour, as far as possible, to make ourselves independent of it. My experience in these gardens in every sort of season is, that many Lilies, among them L. auratum, L. Krameri, L. speciosum, and (with loam added) L. Szowitzianum, are certain to thrive and bloom well if planted in a sheltered situation, in beds where Rhododendrons are doing well; the only objection to this mode of cultivation is, that unless in very large gardens, a few hundred bulbs are as many as room can be found for, and, as I want to grow Lilies on a larger scale, other means of protection had to be sought. I don't think it can be too often repeated, that different climates and situations have so much to do with success in Lily growing, that every garden has to some extent to work out its own experience. Some of my friends, experienced and skilful cultivators, find that with them L. auratum thrives, but in open situations in full sun, with us, it sometimes does well treated thus, but cannot be depended upon. Our rule in experimenting is not only to try situations where plants are likely, according to experience, to succeed, but places where the probabilities are against this; by so doing we often get valuable hints. I once planted a hundred or two L. auratum on an exposed hillside in very damp loam—an improbable place: the first year they bloomed so well that we continued the experiment on a larger scale. These also, as well as the previous ones, bloomed well, but the next year told a different tale; and this is no question of injured bulbs, as on examination these were found in good order. Our next experiment will be replanting these bulbs after the ground has been moderately drained. Our best bed of L. auratum this year in our experimental garden at Wisby, without a sign of blemish or spot, was planted in 1878 in a shady place, with Bracken round, quite under an Oak tree. In our hurdle beds on the hillside we have had some very fine L. auratum and L. speciosum flowers, but others with a good deal of spot both on leaves and flowers. L. Batemanniæ in some beds bloomed beautifully, in others spotted. L. Szowitzianum was perfect, finer than we ever had it before; L. Martagon, fine; L. Leichtlinii did not open its flowers well; L. avenaceum, not good; L. tigrinum flore-pleno and splendens, both very fine. We risked three not large bulbs in a hurdle bed of the true L. auratum rubro vittatum. They all bloomed well. L. Hansoni bloomed fairly well, but not as well as in the orchard-house. The old white garden Lily gave some fine flowers. L. longiflorum was less cut by spring frost than usual, L. testaceum bloomed beautifully, and L. Martagon dalmaticum on the open hillside. In the wood L. Krameri, as a rule, bloomed well. L. canadense of many shades of colour was much admired, but of all the Lilies the one which seemed most thoroughly at home was the swamp Lily, L. superbum: the height, size, and richness of colour of flowers make it quite a different plant from what it is when grown in an ordinary garden. Of course we have given it quite damp places. When speaking of growing Lilies in gardens I always consider them as treated as shrubbery flowers, which get no chances in the way of artificial watering. Of course many Lilies would thrive in unlikely places if they were at all regularly watered. We have planted many Rhododendrons at Oakwood, and though these are much more scattered than in Rhododendron beds, they give much shelter, and I think we have hit on the right amount of drainage; so things look hopefully for next season. I yesterday picked a beautiful head of L. speciosum album from a shady corner of the wood. *George F. Wilson.*

Plant and Fruit Growing at Welham Hall, Kelford.—Having heard of the successful culture of plants and fruits carried on at Welham Hall, Kelford, the residence of W. Birks, Esq., I took the opportunity a few days ago of calling to see the practice as carried on by Mr. Wynch, the head gardener. I there found a good collection of Orchids occupying four houses, all of them looking well, and some of them having, to my mind, made extraordinary growths, viz., Dendrobium Wardianum having made growths 4 feet 6 inches long, strong, and a good many of them. I also noticed the smaller variety, D. crassinode, with young growths over 2 feet long, which must in due season give a fine display of bloom. Eighteen houses are devoted to plant and fruit culture, the latter receiving the same attention as the former, and the results equally satisfactory—the Peach trees having made very strong growths, some of them over 6 feet long, and well set with fruit-buds. In the vineries there are some fine fruit of the best of all white Grapes, Muscat of Alexandria, large both in bunch and berries, and having that fine golden colour so essential to a good finish. Melons and other fruits are well done at Welham. As gardeners (some of them) are at this time of year making their calls upon their brothers in the craft (and I am glad to see so much good feeling shown one towards another) should any favour Mr. Wynch with a visit I predict they will, like myself, be highly pleased by doing so, as well as benefited by the practical hints given by Mr. Wynch on the various subjects brought under notice while passing through the various compartments of this well-kept garden. I may just say the place is about two miles from Kelford station on the Great Northern main line. *J. Jefferson, Worksop.*

"Free Trade or Fair Trade: Dutch Trade or No Trade."—It was not long since that your columns contained letters with regard to the gradual encroachments made by the Dutch wholesale houses on our English trade, but this season matters appear to take a more definite stand than ever, and I consider it is time that we, as Englishmen, should take some decided action with regard to our Dutch bulb trade, which is fast slipping out of our hands. Houses professedly wholesale are now sending out their trade catalogues indiscriminately to small retail buyers in England, and representatives of the same houses have the coolness still to call upon those of us who are in the trade, for orders as usual. Surely they cannot expect to "have their cake and eat it too." It was only this week that I called upon one of my customers, whose order for bulbs was not forthcoming, when he informed me that he had been offered better terms in Holland, all cases free, and carriage paid. This is only one out of numerous cases which are constantly occurring, so that now our bulb trade will hardly be worth looking after. With a view to remedy this state of things I venture to suggest that a mass meeting of the trade should be called in London at which condemnatory resolutions should be passed and be forwarded to all the Dutch houses. I merely suggest this plan, and shall be glad of further suggestions on the subject. *E. W. Serpell, Nurseryman and Seedsman, Plymouth.*

Girth of Trees.—Having measured and reported in the *Gardeners' Chronicle* the size of many trees in Great Britain, perhaps you will allow me to congratulate "F. F. B." on the noble timber trees of his neighbourhood, the girth of which he gave at p. 439. The list is of great interest, and I think its value would be increased if your correspondent would state whether the Scotch Fir measuring 12 feet 8 inches at 4 feet from the ground has a tall trunk, or only such a trunk as that kind of Fir developes when it has not been drawn up by companions—that is, a short trunk with spreading branches. Kingsley always spoke of the Scotch Firs at Bramshill as "the best in England;" and taking them collectively perhaps he was right; but he spoke with his wonted enthusiasm, and I am not surprised to learn that there are larger Scotch Firs at Moor Park. *H. E.*

Gynura aurantiaca.—This plant (see p. 435) is easily propagated. When commencing last January we had nine stock plants, since then more than 7000 plants have been produced, and it would have been easy to have produced many more if necessary. I do not think the plant is hardy (but we have not

yet tried it), but it is, as you say, a plant exceedingly useful for the ornamentation of conservatories and apartments during winter; it becomes in such a place one of the most lovely decorative plants known. On the Continent it has not produced such a brilliant effect as last year, on account of the exceptionally wet summer; but I feel sure that, planted in full sunlight and in a better season than the one just past, it will be a great favourite and one of the plants most sought after for decorative purposes. *J. Linden, Ghent.*

Exhibition Potatos.—I cannot agree with your correspondent "G. B. G." when he goes so far as to say that the Potato has not been improved in quality by exhibitions. This in my opinion is what has been done, and what the promoters of the International Potato Show have been aiming at. Since Potato exhibitions have been formed, Potatos have been cultivated in a far better and more careful manner than hitherto, at least that is my experience; and if it only tends to better cultivation it is certainly very praiseworthy. But again, as to new varieties, if they are not all of good quality, there are some that are really first-class, and which, were it not for the exhibition table, would not have had one half the prominence they now have. Not but what such sorts as Myatt's, Rivers', Veitch's, Ashleafs, and Lapstone still hold their own on any exhibition table: there was scarcely a collection shown at the Crystal Palace on the 20th and 21st ult. but what had a dish of either of these varieties in them, especially the latter, which was represented in most collections. This reminds me to ask "G. B. G." if he will inform me how he managed to secure such good results as he writes of, with respect to Lapstone and International. Out of a good breadth of the former I planted this season I have not been able, owing to disease, to get one good dish fit for exhibition, but out of two not very large rows of International I got plenty; not that I wish to praise International—far from it, for I presume it is as bad eating with me as with every one else, but if one is able by taking any extra precautions to secure these two varieties without getting any disease, then certainly it holds good to other varieties equally strong. *H. E. G.*

—— I will not interfere, for obvious reasons, between two such practical authorities as "A. D.," p. 272, and that "foeman, worthy of his steel," "G. B. G.," p. 407, as to the connection—perhaps I should say divergence—between the best exhibition varieties of Potatos and those best for cooking purposes. I do not think there is so much difference between your correspondents after all, as both agree in one important respect—the good Potato exhibitions have done in encouraging the production of new varieties. The necessity for new varieties rests on the substratum of fact, that after a greater or less number of years all kinds are known to degenerate. Twenty years ago, a pupil at the Government Farming Institute at Glasnevin, near Dublin, I had charge of experiments with thirty varieties of Potatos: that was then considered a large number, and of that number, except a small quantity here and there, not one is now in general cultivation. Many of those varieties were American raised, and as they came from a drier and warmer climate than ours, maturation, as in the Middle and Southern States—especially in such a moist season as we have had — became impossible, and degeneracy was the result, with the concomitants of puny growth and increased liability to disease. Now, to my mind, this is the great argument for encouraging English, Scotch, or Irish seedling raisers, and, as a sequence, for encouraging Potato exhibitions. It so happens, as a practical proof of this, that the two most extensively-grown varieties in these islands — Champion and Magnum Bonum — have been raised in Great Britain. Of the 800,000 acres in Ireland this year in round numbers 500,000 are occupied by Champions, yet the Champion does not owe its extensive culture, or the favour it enjoys, to smiles from the judges at exhibitions. Rather curious that neither one nor the other figured in the 1st prize collection at Sydenham International Potato Show on the 20th and 21st ult.—the coveted prize carried off by Mr. Ellington. Why? it may be asked. Well, the Champion is not handsome; it has deep eyes and rough texture. But what of its cooking properties? Here, too, opinions differ. I wrote rather warmly on this point in a contemporary some time ago, and a certain correspondent chaffed the Irishman who preferred a Potato "with a stone in the heart of it." (The explanation of the supposed witticism was that his cook did not know how to prepare them.) To avoid further misunderstanding I would suggest that some expert should give us a concise definition of what is a good cooking Potato; what properties it should have; and, from what I have already stated, it would not be amiss to refer to the method of cooking—boiling, steaming, or otherwise. The matter is by no means settled, *W. J. Murphy, Clonmel.*

The Double Operculum of Eucalyptus.—As most people know now-a-days, the Eucalypti are distinguished in the large family of Myrtaceæ (Leptospermeæ) by a rounded conical or horn-shaped lid, which when it slips off allows the stamens to unfold and shed their pollen. According as this lid is long or short the stamens are straight or bent towards the centre of the flower. But the lid properly so-called is not always single; often when the young flowers are examined they are found covered outside by another lid, thin, membranous, and fugacious, quickly withering, and which usually falls off before the principal operculum. What is its morphological nature? Authors do not agree upon this point, and Bentham, in his excellent Australian *Flora* thus expresses his opinion (*Flor. Aus.*, iii., p. 187):—"The operculum described is always the single one, probably representing the petals, as it appears when ready to fall off for the expansion of the stamens. The outer one, of whose nature there is still much doubt, exists probably in nearly all the species at an early stage, but is usually thin, and falls off too soon to be worth mentioning in the descriptions, whereas in E. platyphylla it persists rather longer; it appears to do so in a very variable degree in the same species. It is only, as far as hitherto observed, in E. variegata that it is more constantly persistent till nearly the time of expansion of the flower, and equals or exceeds in thickness and consistency the inner one. There is nothing like the observation of living plants (as said the regretted Decaisne) to enable one to understand the structure and specific characters of plants. On several young plants of Eucalyptus which I have grown at the Villa Thuret for three years, and which are beginning to flower, I have observed this outer lid, which is seldom visible except in the very young flower-buds, it is so thin and fugacious. Whence comes it? In my opinion it is the limb of the calyx, the leaflets of which are joined together, as are those of the petals, to form the interior and persistent operculum. From the first this little external operculum is continuous with the tube of the calyx, to be pushed off by the corollary or inner lid. It does not wait to be detached by the circumcision of the calyx-tube, but is pushed off by the interior operculum, the top of which is capped by it. In a short time it becomes dry and falls off. The operation is very well seen in E. rudis, which bloomed for the first time this season at Antibes. It is the Flooded Gum of Australian colonists. *Ch. Naudin.*

Dahlias: Double v. Single.—With the utmost respect for the florists — who, as a rule, are quiet, enthusiastic, painstaking gentlemen—I cannot bring myself to believe in double Dahlias—not even after the grand display at the Crystal Palace lately. Notwithstanding the variety and beauty of colours in such varieties as Lady Gladys Herbert, Queen Mab, Robert Burns, and others of the "fancies," and the intense reds and purples and primrose of the so-called "show" flowers, there is a vulgar, ostentatious air about them, and especially when divested of their foliage, that reminds one rather of the painted face of a Jezebel than the homely sweetness and purity of a Ruth. The great recommendation of the double Dahlia is, I suppose, its suitability as an exhibition flower. Then it is useful, as the saying now is, in lighting up and enlivening the background of wide borders and void places in the shrubbery. For all other purposes it is ineligible, and, as a great authority once savagely characterised it, "lumpish." Let alone its unpleasant rankness of odour, which renders it inadmissible in a lady's bouquet, it is unmanageable in any arrangement of cut flowers, asserting, as it does, a vulgar preponderance of size and colour utterly intolerable. Now come we to the other side—the single Dahlia—and one must frankly admit that with regard to one of the chief *desiderata* of cut flowers for bouquets or table decoration, it, too, has the distinctive odour of the species. Being of much smaller bulk, however, and of more elegant form, it is so easily arranged with flowers possessing fragrance that the unpleasantness is scarcely perceptible. I have not seen it grown for the winter decoration of the greenhouse or conservatory, but for all other purposes it is very valuable. It is capital for vases, where its long slender stem when not crowded together with other flowers makes its graceful outlines to be seen to advantage. In a very large collection I saw lately at Tottenham, there were some beautiful flowers of vivid colour and elegant shape. The whites, yellows, and maroons were charming. In some varieties, however, there was a tendency to coarseness, the consequence probably of a too stimulating compost. The dwarf varieties are more eligible for the amateur, with whom, on account of the ease with which they are raised from seed, they will quickly become favourites. Our friend the florist, let us trust, will be satisfied with the single row of petals, and turn his attention to purity of colour and elegance of outline. Some of the more strictly orthodox, who can see no beauty in a Dog-rose, will no doubt proceed to lay down rules for guidance, accompanied by a geometrical woodcut of intersecting curves within a perfect circle. One great charm of the Rose I take to be its unwillingness to conform to the florist's ideal. The fuller it is of petals, beyond a certain ease and comfort in their disposal, the less beautiful does it become. It is only necessary to point to the Comtesse C. Chabrillant as the nearest approach to the ideal florist's Rose. There is, it is true, a certain pleasing regularity in its overlapping and abundant petals, but it savours of geometrics and the tweezers, and Madame la Comtesse must give way to the old Provence, the Cabbage Rose of our boyhood, still *par excellence* the artist's Rose. I admire and respect the florists nevertheless; we owe them a multitude of good things. Let us hope we may be grateful to them also for not attempting to double our single Dahlias. Form, colour, refinement, hardihood, are the *desiderata* in the single Dahlia. I have no doubt that they will improve all these; there is plenty of work to be done even with the single Dahlia, but the double Dahlia is incapable of improvement. *T. W., Harrow.*

The Ripening of the Wood of Peach Trees.—Every one who has had anything to do with Peach trees knows how important it is to have the wood thoroughly ripened, and as we rarely get enough sun it is very important that we make the best use of what we are favoured with by letting it have full play, which may be done by going carefully over the walls and removing any shoots not absolutely required for bearing next year. This will not only let in the light and sun required, but will considerably benefit the wood left, as it will enable the buds to swell up and become plump, and harden the tissues. Wood and buds in this condition are in a far better state for standing the winter and cold of spring, as frost has little effect on it, and the flowers are stronger, as they have their organs properly formed and fully developed, with plenty of pollen in the fat anthers. Weakly buds produce weakly blooms, and weakly blooms seldom set, or if they do the fruit falls off immediately after or during the period of stoning. It may seem a labour to go over Peach trees now, but it is time well and profitably spent, and any pruning done now is time saved later on in the season. In thinning out Peaches and Nectarines it should be borne in mind that it is not the strongest wood that is the best, as that is generally sappy, and ought only to be left when it is desired to fill up any vacant space or extend the tree, but for bearing there is nothing equal to shoots that are close and short-jointed and about the size of a quill. These have little pith, and are always more consolidated and better built up, and should therefore be selected accordingly. *J. S.*

Squirrels v. Oak Galls.—I see in the paragraph you inserted in the *Gardeners' Chronicle* at p. 406 I am made to say, "on the evergreen Oak," instead of English Oak. I have never seen or heard of any galls on evergreen Oaks; but the English Oak, although the national importance of it is now somewhat lessened, as far as its use is concerned, is so well known to be injured by this pest that anything known which tends to abate or destroy it is worth hearing. I should like to hear if others have noticed the fact before. *Henry Mills.*

Veronica pinguifolia and V. carnosula.—The species of the large genus Veronica are nearly all of them exceedingly troublesome and difficult to determine, and perhaps none more so than the group of species confined to the southern hemisphere and concentrated in New Zealand, but having a few outlying members in Australia, Tasmania, Chili, Patagonia, and Fuegia, a group recognised at once by their shrubby or dwarf densely tufted habit and more or less fleshy or coriaceous leaves, which are mostly quite entire and veinless, only the midrib being at all conspicuous. Of this group V. pinguifolia and V. carnosula are two of the most difficult to discriminate, at any rate from dried specimens, whatever they may be when alive, and it has unfortunately happened that the two species were last year confused in the *Botanical Magazine*, where at t. 6587 V. pinguifolia is figured as V. carnosula, since it is there stated that, "as grown at Kew these two are distinguished at once by the glaucous almost white colour of V. carnosula in contrast with the deep green of pinguifolia, but in the herbarium their best diagnostic character is the acute glabrous ovate capsule of the latter [former] as compared with the obovate oblong, rounded, or emarginate one of the latter." But in the original descriptions in the *Handbook of the New Zealand Flora*, p. 210, both species are described as being glaucous, as to judge from the dried specimens appears to be the case, certainly V. pinguifolia is very glaucous; the capsule of V. carnosula is described as being "ovate, acute, glabrous, twice as long as the calyx," and that of V. pinguifolia as being "obovate-oblong, obtuse, rounded or emarginate, pubescent, not much longer than the calyx." In the description accompanying t. 6587 of the *Botanical Magazine* the capsule is thus described:—"Capsule (in dried specimen) ovoid, acute, glabrous." This description is taken from the dried type specimens of V. carnosula, and is correct for that species; but in the plate the young fruit is represented as obovate, emarginate, and pubescent, which of course is the character of V. pinguifolia; the plant named V. pin-

guifolia at Kew, to which Sir Joseph Hooker alludes as having deep green foliage, is not the true V. pinguifolia, but V. Traversii. To judge from dried specimens V. carnosula must very closely resemble V. pinguifolia, since I can see no real characters whereby to separate the two except those of the ovary and capsule. I do not know if the true V. carnosula is in cultivation, but it does not appear to be in the Kew collection. The two species may be distinguished by the following characters:—*V. carnosula*, Hk. f., *Handb. N. Zeal. Fl.*, p. 210. Ovary and capsule ovoid, acute, glabrous. *V. pinguifolia*, Hk. f., *Handb. N. Zeal. Fl.*, p. 210; (V. carnosula, *Bot. Mag.*, t. 6587, as to plate). Ovary and capsule obovate, obtuse, emarginate, pubescent. *N. E. Brown, Kew.*

Weather Indications.—I have read Mr. Miller's letter on a "Morning Rainbow" with much interest. I doubt if his suggestion of sending forth individuals to gather information from weatherwise persons would be generally useful. The benefits would, I fancy, be local only. For example: I knew an old gentleman eighty-two years of age who had been a close observer of Nature all, or nearly all, his life, and he told me when first I came to this locality, "When you see a mist over Whetham (a hill near here) you may be sure that it will rain." I have verified his prognostications. Whenever clouds gather over "Whetham" we get wet weather, and I fancy that some of our farmers might study "Whetham" to their advantage. By the way I would like to know the origin of the name: perhaps it was originally "Wet Ham or Holm." I fancy "Ham" in the Saxon signified house: but though "Whetham" is a weather signal to this especial neighbourhood, it will not avail for other districts; consequently, as I before remarked, the observations of weatherwise people will only as a rule benefit the dwellers in their own immediate vicinity: still, as we have the local plants, and the local sayings, folk-lore, &c., of certain counties, why should we not have the local weather signs? *Helen E. Watney, Lyss, Hants.*

Foreign Correspondence.

Araucaria Bidwillii.—One begins to tire in our Provencal region of the monotony of common Conifers, with which too many of our so-called gardens are encumbered. It is the remnant of a horticultural fancy of thirty years ago, when green trees were generally the fashion. It must be admitted that in the vast group of Conifers there are some which by the grandeur of their habit, their strange and foreign aspect, as also by the beauty of their foliage, are, and will remain, in the first rank as ornamental trees in southern landscapes. The Araucarias, Dammaras, and Podocarpus, are among these. In 1858 M. Thuret received from Paris a young Araucaria Bidwillii, which was planted on one of the lawns in his garden at Antibes. The tree grew, and now forms an elegant pyramid of glossy green, 12 mètres in height; in short, it is one of the specimen trees in the garden, where for twenty-four years it has survived the cold of winter and the still more trying droughts of summer. This last year it formed three enormous female cones, imperfect since we were without the male plant. They fell from the tree by reason of their own weight. They were as large as a man's head, and certainly it would have been dangerous for any one to have been under the tree when they fell. The weight of the first was 3 kilos. 920 cent., the second 3 kilos. 540 cent., and the third 4 kilos. 120 cent.; making a total of 11 kilos. 880 cent., or 23½ lb., of our old measures. If these cones had been ripened and the seeds had developed, their size and weight would have been still greater. These three remarkable (one might almost say monumental cones) have been sent to the Jardin des Plantes, Paris, to be exhibited in the botanical lecture-room if it is possible to preserve them and keep them fresh. I am reminded by this circumstance to warn amateurs of trees, that it is useless to have one specimen only of each species. They should have several, especially in the case of dicœcious plants. With only one specimen of a dicœcious tree one sees but half of the species and loses the advantage (often great) of collecting the seeds. Is it not likely that much profit might accrue to the horticulturist if he could obtain at home seeds of rare trees, which often are received only after a long voyage, and nine times out of ten have lost their germinating faculty? It is the case with many trees of interest, and especially so with Conifers from the southern hemisphere. Our beautiful Araucaria Bidwillii is an example of this, and, what is more to the purpose, it is probably the only one of its species which exists in France in the open air, and perhaps in Europe. *Ch. Naudin, Antibes.*

The Arboretum.

Pinus insignis.—I send you the dimensions of a tree of Pinus insignis growing here and about forty years old:—Height, 59 feet; widest spread, 54 feet; girth at 5 feet from the ground, 11 feet; and containing 140 feet of timber. Do you or any of your correspondents know a larger one? and can you tell me what the value of the timber would be? also whether seed from such a tree would be worth anything? Any other information concerning the insignis would be interesting to me, and possibly to many of your readers—whether the timber, English grown, has been used and for what purposes, &c. The tree in question lost its leader some years ago, or it might have been taller than it is. *C. N. G., Knowle, Bovey Tracey.* [We saw lately some splendid specimens at Bodorgan, Anglesea; one had a trunk 6 feet in girth at breast height. Perhaps Mr. Ellam would kindly furnish the reply our correspondent needs. Ed.]

Notices of Books.

Review of the Forest Administration in the several Provinces under the Government of India, for the year 1880-81. By W. Schlich, Ph.D.

In this review we have a summary history of the present condition of the Indian Forest Department. The staff consists of ten conservators, thirty-seven deputy-conservators, forty-six assistant-conservators, besides rangers and labourers. The local governments of each province are quite independent of the Government of India, except that first appointments to the department are confirmed by it, and that the head of the department in each province is selected by it. The forest officers are subordinate to the civil collector of the district. The rangers are exclusively natives, and it is proposed to train them at a forest school now in operation at Dehra Dun. The reproduction of forests in India must be effected in the main by natural means, without recourse to planting. "It is in this that the skill of the forester shows itself, and it is for this reason that so much stress has been laid on the Continental training of forest officers." It is satisfactory to find that the natives are beginning to appreciate the benefits to themselves of forest conservancy, which they could hardly be expected to do at first. Much is clearly due, not only to the skill of the officials, but to their tact; thus we find in the present report an allusion to the liberal way in which the forest officers met the demands of the civil officers for fodder during a period of drought. The forest officers seem to have acted as Indian officials are wont to do—for the benefit of the people first, for the advantage of their department in the second place. The financial details are, on the whole, very satisfactory, the balance in favour of the department, that is, the surplus of receipts over payments, varying from 14,16,569 rupees as a yearly average from 1864 to 1869 (five years), to 25,22,969 rupees in the year 1880-81, the whole table showing that the revenue and the expenditure are increasing about in the same proportion. The exports consist of caoutchouc, shellac, lac dye, sandal-wood, ebony, cutch and gambier, myrobalans, and teak; the total value of the exports at the port of shipment being 1,62,46,822 rupees—an increase of 43,41,798 rupees in the year. Himalayan Box-wood has been sent to England for trial for engraving purposes, but has not proved useful, being too soft.

—— *New Commercial Plants and Drugs*—Mr. Christy has recently published another part of his periodical under the above name, and which is of interest owing to the development it foreshadows of various fibres both for paper-making purposes and for weaving or spinning. Low priced, or short fibres, will be converted into paper-pulp; the longer fibres being utilised for textile purposes. The fibres are cleansed, isolated by boiling in bisulphite of magnesia, which removes the encrusting matters, and leaves the woody fibres isolated and pure. By this means every kind and quality of paper can be speedily and economically produced from wood, and such fibres as jute, hemp, flax, &c., be employed free from the gummy matter which is now so difficult to remove. Should these statements be confirmed the paper difficulty will be solved. The illustrations are by M. Vétillart, whose work on fibres we have previously had occasion to comment upon. The second part of Mr. Christy's periodical is devoted to new drugs, which experience would seem to show are likely to be less generally useful than the fibres. The latter, at any rate, will not so soon go out of fashion.

FORESTRY.

The Beech alluded to at p. 434 is a large well-developed tree, probably not less than 120 years old, and up to the time of the arrested growth, which was apparently exactly coincident with the thunderstorm on May 15, it was in perfect health. The arrest of growth was not confined to any particular branch or side of the tree, but was universal—in fact, a complete paralysis. Can any of your readers suggest any steps for the purpose of restoring the trees's vigour, and say whether they think the tree will survive or should be cut down? *C. G. T.*

PLANT PORTRAITS.

Apple Beauty of Hants, *Florist and Pomologist*, June.—A variety of the Blenheim Orange type, but more pyramidal in shape, and superbly coloured. Raised in Mrs. Eyre Crabbe's garden, near Southampton.

Apple Werder's Golden Reinette, *Florist and Pomologist*, t. 562.—A beautiful Apple, of medium size, regular, globular form, orange-streaked on the sunny side. Flesh white, melting. An excellent dessert Apple. Season, October—February.

Angræcum eburneum, Du Petit Thouars, *Williams' Orchid Album*, t. 41.—A winter-flowering Madagascar Orchid, with spikes of closely set large flowers with green sepals and petals, and large ovate acute white lip.

Cattleya Trianæ, Lindl. and Rchb. f., *Williams' Orchid Album*, t. 45.—Sepals narrow, oblong lanceolate, pale lilac, petals slightly stalked, ovate lanceolate undulate, pale lilac, lip convolute at the base, rosy lilac, anterior part flattish, rich magenta, disc marked with a yellow blotch.

Cereus Philippi, Regel, *Gartenflora*, t. 1079.—Stems erect, ridged with tubercles crowned with slender spines; flowers of medium size, yellow, shaded with red. Chili.

Cereus serpentinus, Lagasca, *Gartenflora*, t. 1079.—Stems sub-erect, 10-angled; spines straight. Flowers large, rosy, at length white Mexico.

Corydalis Sewerzowi, Regel, *Gartenflora*, t. 1077.—A Turkestan species, with a tuberous root-stock, glaucous, bipinnatisect leaves, with obovate segments, and racemose yellow flowers with long spurs. One of the handsomest of the genus.

Cypripedium chloroneurum ×, Rchb. f., *Williams' Orchid Album*, t. 37.—A hybrid raised by Mr. Warner. Sepals green, edged with white; petals spreading, green veined, the lower half green, the upper purplish-brown, the lip tinged with purplish-brown.

Cypripedium politum, Rchb. f., in *Gard. Chron.*, xiv., 525, *Williams' Orchid Album*, t. 36.—A hybrid with leaves chequered with dark bottle-green markings, upper sepals conjoined, ovate, white at the tip rose coloured at the base, and with green veins; petals strap-shaped, spreading, bright claret colour, fringed and warted; lip bucket-shaped, purplish-red. Raised by Mr. Warner.

Dahlia gracilis vars., *Florist and Pomologist*, May, 1882.—1. Var. superba, Moore; flowers crimson-scarlet. 2. Var. cuprea, Moore; flowers coppery-red. 3. Var. lutea; flowers pale chrome-yellow. In addition, var. fulgens, bright crimson-scarlet; and var. ignea, with flowers brilliant fiery orange, have been raised in the Chelsea Botanic Garden.

Dendrobium bigibbum, Lindl., *Williams' Orchid Album*, t. 38.—A tropical Australian species with narrow lanceolate sepals, broad roundish petals, both rosy-lilac, lip smaller, purplish-crimson, basal lobes inflexed, anterior one flattish.

Dendrobium superbum, Rchb. f., *Williams'*

Orchid Album, t. 42.—A Philippine Island species, with racemes of large flowers, sepals and petals oblong acute, rosy-lilac, lip ovate acute, magenta coloured at the base, paler in front.

GLOBBA ATROSANGUINEA, Teijsmann and Binnendijk.—This is the plant provisionally named at vol. xvi., p. 23, as G. coccinea, but which is now referred to the species above-named. It was introduced from Borneo to Messrs. Veitch's establishment by Mr. Curtis.

GRAPE ALPHONSE LAVALLÉE, *Bulletin d'Arboriculture*, March.—A seedling from Gros Colmar, and a market Grape, with berries of large size, globular or ovoid form, deep blue, covered with thick glaucous bloom; the skin is thick, therefore the Grape is a good keeper.

LÆLIA ANCEPS DAWSONI, Anderson, *Williams' Orchid Album*, t. 44.—A charming variety with pure white sepals and petals, the front lobe of the lip rosy-lilac with a white edge.

MILTONIA CUNEATA, Lindl., *Williams' Orchid Album*, t. 46.—A Brazilian Orchid, with racemes of large flowers, sepals and petals lanceolate, brown tipped with yellow, lip narrow at the base, dilated in front, pure white.

NECTARINE DRYDEN, *Florist and Pomologist*, June.—A fine well-favoured fruit, much larger than the ordinary race of Nectarines, possessing a distinct and remarkable flavour. Raised from a stone of the Dagmar Peach by Mr. T. F. Rivers.

ODONTOGLOSSUM ALEXANDRÆ (CRISPUM, Lindl.), *Williams' Orchid Album*, t. 47.—A specimen figured from the collection of the Prince and Princess of Wales at Sandringham.

ODONTOGLOSSUM ANDERSONIANUM, Rchb. f., in *Gard. Chron.* 1868, 599; *Williams' Orchid Album*, t. 35.—Raceme many-flowered from the base of an ovate pseudobulb; flowers like those of O. crispum, sepals and petals lanceolate, cream-coloured, with brown spots, lip broad at base, lanceolate, yellowish, crested as in O. crispum. A supposed hybrid from New Grenada.

ODONTOGLOSSUM CRISPUM FLAVEOLUM, Rchb. f., *Williams' Orchid Album*, t. 43.—A variety remarkable for its creamy yellow flowers.

ODONTOGLOSSUM KRAMERI, Rchb. f., *Gard. Chron.*, 1868, p. 98; *Williams' Orchid Album*, t. 40.—Racemes erect from the base of the subglobose pseudobulbs; flowers 1½ inch across; sepals and petals oblong, lilac edged with white; lip narrowed at the base, yellow, fore portion flat, roundish, rosy-lilac with a semicircular white band. Costa Rica, Hort. Willams.

PAPAVER UMBROSUM, Hort., *Garten Zeitung*, July, 1882.—This very showy annual Poppy, introduced to English gardens by Mr. Thompson, of Ipswich, is referred here to P. commutatum, Fisch. et Mey.

PEACH BELLE HENRY PINAUD, *Revue Horticole*, April 1.—Flowers large; fruits large, depressed, and sometimes broader than long, furrowed on one side. Skin deep red, velvety, striated; flesh free, white or yellowish, melting, very juicy, sugary, acidulated; ripens in the middle of August.

PESCATOREA KLABOCHORUM, *Garden*, July 8.

PHALÆNOPSIS STUARTIANA, Rchb. f., *Bot Mag.*, t. 6622 (see *Gard. Chron.*, xvi., p. 748, c. ic.).

PHALÆNOPSIS STUARTIANA NOBILIS, Rchb, f., in *Gard. Chron.*, n.s., 748; *Williams' Orchid Album*, t. 39.—Sepals oblong white, the two lateral ones white on the upper half, green, spotted brown on the lower half; petals stalked, roundish, white; lip three-lobed, lateral lobes erect, spotted, anterior lobe deltoid, terminating anteriorly in a two-lobed anchor-like projection.

PINGUICULA CAUDATA, Schlecht., *Bot. Mag.*, t. 6624.—The same plant as that figured in an earlier stage as P. Bakeri in the *Gard. Chron.*, although the different form which the leaves assume as the plant grows larger, as now figured, might well lead to the supposition that it was a distinct species. The leaves in the adult form are broadly oval obtuse or obovate; the flowers are large, rosy-lilac, with a long spur. Mexico.

ROSE MADAME ETIENNE LEVET, *Journal des Roses*, April, 1882.—A new Rose, raised by Etienne Levet, by fertilising the H.P. Antoine Verdier with the pollen of a Tea Rose. It is described as truly perpetual, flowering all the season till the advent of frost; flower large, full, of good form, cherry-red, the base of the petals coppery-yellow. The figure is too poor to allow of a correct judgment being made, but the description given is that of a first-class, *de premier mérite*, Rose.

ROSE PANACHÉE D'ANGERS, *Journal des Roses*, May, 1882.—Syn. Commandant Beaurepaire. H.P., with medium-sized flowers, delicate rose, marked with purple and violet, according to the text, though this is not very obvious in the figure.

SATYRIUM NEPALENSE, Don, *Bot. Mag.*, t. 6625.—A terrestrial Orchid with an erect leafy spike of small pink flowers. Generally distributed in the mountains of India.

STIGMAPHYLLON LITTORALE, H. Gup., *Bot. Mag.*, t. 6623.—A stove climber with petiolate, ovate, cordate leaves, and umbels of yellow flowers. Like most of the Malpighiaceæ, the structure is very curious. Native of South Brazil.

STROMANTHE LUBBERSIANA, E. Morr., *Belgique Horticole*, 1882, t. 1.—A Brazilian Maranta-like plant, with long sheathing leaf-stalks, oblong acuminate, leaf-blades dark green, marbled with lighter markings.

VANDA CŒRULESCENS, Griffith, *Williams' Orchid Album*, t. 48.—Raceme drooping, with numerous small lilac flowers, the oblong obtuse lip deep violet, with two small lateral yellowish lobes at the base.

VERBASCUM OLYMPICUM, Boissier, *Gartenflora*, t. 1078.—A very handsome perennial pyramidal form, with densely packed lanceolate hoary leaves, and much branched pyramidal panels of yellow flowers.

VRIESIA INCURVATA, Gaudichaud, *Belgique Horticole*, 1882, t. 2.—A fine Bromeliad, with oblong acuminate leaves and dense flat spikes of overlapping, 2-ranked, boat-like, orange-red bracts, from the axils of which proceed long cylindric yellow flowers, tipped with green. Native of Brazil.

Variorum.

THE PRODUCTS OF ASTERABAD. — A very interesting report on the province of Asterabad, Persia, has recently been furnished to the Foreign Office by Consul Lovett. Besides the trade and commerce of the province this report treats of peasant life, the costumes of the people, productions of the soil, and various other matters. On the subject of forests we are told that the greater part of the province, except the pasture lands of Shahkuh and Sava, is probably for nine-tenths of the surface covered with forest. The trees are mostly deciduous. Amongst them are Oaks, Beeches, Elms, Walnut trees, Planes, Sycamores, Ash, Yew, Box, Juniper, &c. Pine, Fir, and Cedar are said to exist in the dense forests of Finderisk and on the slopes of the Goklan Hills to the east. Oak, Beech, and Elm, under the names respectively of Mázú, Nús, and Azad, are used in constructions. The houses in Asterabad and the better sort in the villages in the district are tiled, the roofs having a tolerably high pitch. The tiles are laid on reeds, supported on rafters, sustained by an ingenious arrangement of props standing on cross beams—a very unscientific and wasteful arrangement, sufficiently explained, however, by the timbering being unsuitable for trusses owing to its being split irregularly from the trunks of trees. There are no saws for "getting out" planks and straight beams from the fallen trees, and carpentry is in a very backward state indeed throughout the province. All houses, especially at Asterabad, are provided with wide projecting eaves. The walls are built generally of stone or burnt brick, as the climate is too damp to use the mud walling common in other parts of Persia. The action of the damp winds which prevail is distinctly traceable on all portions of the mountain range exposed to the sea breeze, even by the channels afforded by the valleys of the rivers that debouch on to the Caspian—such are densely clothed with forest of a type similar to that found in southerly temperate climates. The flora is distinctly not tropical. Besides the trees already mentioned, wild Hops and Plums are to be found. In the spring the hillsides are covered with thick excellent pasture. In the gardens and orchards of Asterabad are to be found Vines, Fig trees, Orange trees, Pomegranate and Lemon trees; and the vegetables chiefly cultivated are Melons, Pumpkins, Marrows, Lettuces, Aubergines, &c., that form in their seasons food staples for the people. Tobacco used for manufacturing cigarettes is also grown here on a small scale.

Obituary.

WE much regret to hear of the accidental death, from falling into a water-tank, of Mr. SIM, of the Sidcup Hill Nursery, Foot's Cray, Kent, aged 54. The deceased was the only son of the late Mr. R. Sim, a thoroughly good practical British botanist, formerly occupying the position of a gardener in the West Kent district, and subsequently the founder of the Foot's Cray Nursery. This establishment has long been noted as one of the leading nurseries where the culture of Ferns was made a speciality, and Mr. Sim's collection both of exotic and British Ferns was some few years since probably the best in the country, both as to extent and correctness of nomenclature, much of its merit in the latter respect being due to the talent and industry of Mr. R. Sim, jun., whose loss we have now to deplore. To him also was due the high literary and correct scientific character of the Fern catalogues issued from the Foot's Cray Nursery. The collection of the choicer varieties of the British Ferns to be seen here was probably the most important ever got together in the trade, and the extent of the stock of many of the best of the sorts was astonishing in those days when the rearing of young Ferns from the spores was not so familiar amongst cultivators as it is at present. Owing to delicate health, the younger Sim, though one of our cleverest practical pteridologists, but seldom exhibited specimens from his rich store of choice species and varieties, and was rarely seen at the meetings and exhibitions, where his aid would have been valuable, and his presence welcome. From his youth up he may be said to have dwelt in a paradise of Ferns, and it is no wonder, therefore, that his love for them and his devotion to them was so intense. One of the finest traits in his character was the readiness and the gracefulness with which he communicated to those who desired it a share of his very comprehensive knowledge of the forms of our native Ferns, which, through his extensive correspondence, he had so excellent an opportunity of acquiring, and this from a pure love of the plants, and altogether apart from trade considerations. His comparatively early and unfortunate death will be learned with deep sorrow by his friends generally, and especially by those of them who knew and appreciated his devotion to the study and culture of Ferns.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, OCT. 4, 1882.

MONTH AND DAY.	BAROMETER. Mean Reading Reduced to 32° Fahr.	BAROMETER. Departure from Average of 18 years.	TEMPERATURE OF THE AIR. Highest.	Lowest.	Range.	Mean for Day	Departure of Mean from Average of 50 years	Hygrometrical Deductions from Glaisher's Tables 6th Edition. Dew Point.	Degree of Humidity. Sat. = 100.	WIND. Average Direction.	RAINFALL.
Sept.	In.	In.	°	°	°	°	°	°			In.
28	29.52	−0.20	62.4	43.5	18.9	52.0	− 2	54	33	73	W.	0.03
29	29.39	−0.33	55.5	49.5	6.0	52.2	− 2.2	47.8	85	W.; N.W.	1.00
30	29.73	+0.02	61.2	46.0	15.2	53.8	− 0.5	51.8	93	W.; S.W.	0.02
Oct.											
1	29.67	−0.03	71.0	54.5	16.5	62.0	+ 7.6	56.6	83	S.S.W.	0.08
2	29.88	+0.19	66.0	50.0	16.0	57.7	+ 3.5	49.5	69	S.W.; W.S.W.	0.02
3	30.12	+0.41	63.0	48.5	14.5	54.4	+ 0.5	45.4	72	W.; S.S.W.	0.17
4	30.31	+0.62	57.0	45.5	11.5	51.2	− 2.3	48.2	87	W.; N.W.	0.00
Mean	29.83	+0.10	62.3	48.2	14.1	54.8	+ 0.6	48.9	80	W.	1.32

Sept. 28.—Fine bright day, slight rain at night, cloudy.
— 29.—Very heavy rain in early morning, a dull overcast day, windy. Fine bright night, cloudless.
— 30.—Fine; a little rain fell betwen 11 A.M. and noon. Fine night, windy.
Oct. 1.—A little rain in early morning. Fine mild night. Rain from 8 to 9 P.M.
— 2.—Fine bright day and night.
— 3.—Fine bright day and night.
— 4.—Fine; sun's place visible; fine afternoon, but no sun. Fine bright night, cloudless.

LONDON: *Atmospheric Pressure.*—During the week ending September 30, the reading of the barometer at the level of the sea increased from 30.04 inches by the beginning of the week to 30.05 inches by 9 A.M. on

the 24th, decreased to 29.25 inches by 9 A.M. on the 27th, decreased to 29.76 inches by 9 A.M. on the 28th, decreased to 29.31 inches by 9 A.M. on the 29th, and was 20.90 inches by the end of the week.

The mean reading for the week at the level of the sea was 29.68 inches, being 0.23 inch lower than last week, and 0.19 inch below the average of the week.

Temperature.—The highest temperature in the shade in the week was 68°, on the 25th; on the 29th the highest temperature was 55°.5. The mean of the seven high day temperatures was 61°.7.

The lowest temperature in the shade in the week was 43°.5 on the 28th, the lowest temperature on the 26th was 51°. The mean of the seven lowest temperatures was 48°.2.

The greatest range of temperature in one day was 18°.9, on the 28th; the smallest was 6°, on the 29th. The mean of the seven daily ranges was 13°.5.

The mean temperatures were—on the 24th, 50°.5; on the 25th, 55°.2; on the 26th, 55°; on the 27th, 52°.1; on the 28th, 52°; on the 29th, 52°.2; and on the 30th, 53°.8; of these the first three days were above their averages by 0°.5, 0°.4, and 0°.3 respectively, and the last four days below by 2°.5, 2°.5, 2°.2, and 0°.5, respectively.

The mean temperature of the air for the week was 53°.7, being 0°.4 warmer than the preceding week, and 0°.9 below the average of the week.

The highest reading of a thermometer with blackened bulb placed in full rays of the sun, was 119°, on the 28th. The mean of the seven readings was 94°.7.

The lowest reading of a minimum thermometer with its bulb on short grass was 34°.5, on the 29th. The mean of the seven readings was 39°.7.

Rain.—Rain fell to the amount of 1.12 inch in the week, of which 1 inch fell on the 29th.

ENGLAND: *Temperature.*—During the week ending September 30 the highest temperatures were 71° at Sunderland, 68°.2 at Cambridge, and 68° at Blackheath and Hull. The highest temperature at Bolton was 61°.5, at Bristol 62°.2, and at Plymouth, Liverpool, and Bradford 62°.5. The general mean was 64°.9.

The lowest temperatures in the week were 35° at Hull, 38°.5 at Nottingham, and 40° at Wolverhampton; the lowest temperature at Truro and Liverpool was 46°, and at Plymouth 45°. The general mean was 42°.

The greatest ranges of temperature in the week were 33° at Hull, 29° at Sunderland, and 28°.1 at Cambridge; the least ranges were 16°.5 at Liverpool, 17°.5 at Plymouth, and 18° at Truro. The general mean was 22°.9.

The mean of the seven high day temperatures was highest at Cambridge, 65°.2, at Sunderland 64°.7, and at Hull 63°.3; and was lowest at Bolton, 58°, at Liverpool 59°, and at Wolverhampton 59°.1. The general mean was 61°.1.

The mean of the seven lowest night temperatures was highest at Truro, 49°.6, at Plymouth 48°.7, and at Bradford 48°.6; and was lowest at Hull 43°, at Cambridge 44°.6, and at Wolverhampton 45°.2. The general mean was 47°.1.

The mean daily range was greatest at Cambridge, 20°.6, at Hull 20°.3, and at Sunderland 17°.7; and was least at Liverpool, 10°.6, at Pymouth and Bradford 10°.7. The general mean was 14°.

The mean temperature of the week was highest at Sunderland, 54°.6; at Truro 54°.3; and at Brighton 54°.2; and was lowest at Bolton, 50°.6, at Wolverhampton 50°.9, and at Bristol 51°.7. The general mean was 52°.8.

Rain.—The largest falls were 2.79 inches at Truro, 2.58 inches at Plymouth, and 1.31 inch at Bolton; and was smallest at Hull, 0.38 inch, at Nottingham 0.64 inch, and at Sunderland 0.72 inch. The general mean fall was 1.13 inch. It fell on every day in the week at Bolton, and on six at Truro and Bradford.

Thunderstorms occurred at Bradford on the 26th and 27th.

SCOTLAND: *Temperature.*—During the week ending September 30, the highest temperature was 63°.6, at Leith; the highest temperature reached at Dundee and Paisley was 61°. The general mean was 61°.9.

The lowest temperature in the week was 32°, at Perth; at Greenock the lowest temperature was 40°. The general mean was 36°.5.

The mean temperature for the week was highest at Leith, 54; and was lowest at Perth, 51°. The mean temperature was 52°, being 0°.5 above that of the week immediately preceding, but 2°.5 below that of the corresponding week of 1881.

Rain.—The largest fall was 1.39 inch, at Perth, and the smallest was 0.24 inch. The general mean fall was 0.92 inch.

JAMES GLAISHER, F.R.S.

Answers to Correspondents.

AMATEUR OR NURSERYMAN: *R. B. B.* If the man employs no labour, and is not a gardener by profession and training, it would not be common sense to call him a nurseryman, although he may sell a few vegetables of his own growth, but he should not be allowed to compete with cottagers.

BRIER CUTTINGS: *Inquisitive.* See p. 300, bottom of the first column, for the details you require.

CARBOLIC ACID AND SALT: *J. Dewar.* We should prefer the carbolic acid as being the most effective. About 1 lb. of carbolic acid to 3 gallons of water would be about the right strength, but you can easily ascertain by trial.

CAULIFLOWER: *W. Horley.* The caterpillars of some insect have eaten out the fleshy part of the leaf, and left the skin. So far as we know, hand-picking is the only remedy,

DOUGLAS FIR: *R. M.* 1, The male and female blossoms are on the same tree. 2, It will ripen seed with you probably in late autumn. 3, Frost will not hurt the seed if kept in the cone. 4, Open, loamy, well-drained soil, in a moderately sheltered place.

FIGS: *Helen E. Watney.* Figs that are now swollen to any size—say larger than marbles—will do no good this season, and may be pulled off. The little ones that you can just recognise now will be your first ripe fruit next season, and, of course, to disturb these would be to destroy next year's crop.

FOXGLOVE: *Rusticus.* In a light, rich, sandy loam, there would not be much difficulty in growing Foxgloves to about the dimensions you quote, which are however, unusual. The other plants you name we would prefer to sow in spring.

INSECTS: *T. S.* We can only guess that the stems of your Bouvardias have been gnawed beneath the crowns of the plants by the larvæ of a weevil (Otiorhynchus sp.), or possibly by woodlice. *I. O. W.*

MONSTERA DELICIOSA: *W. Hovell.* It is not at all an uncommon occurrence for this plant to bear fruits as freely as you describe, but they are not particularly desirable fruits to grow for the dessert on account of the unpleasant sensation left on the tongue by the little prickles which abound in each pip. The best plan is to insert a quill between the pips, and suck the juicy pulp through that. The fruit was figured and described in our number for October 8, 1864.

NAMES OF FRUITS: *J. Williams.* Probably the Transparent Codlin. —*W. Wood & Sons.* Duchess' Favourite.—*Subscriber, Putney Heath.* 1, Yorkshire Greening; 2, Beurré Rance; 3, unknown; 4, Louise Gregoire; 5, Beurré Hardy; 6, Bergamotte d'Esperen; 7, Belle Julie; 8, 11, Louise Bonne of Jersey; 9, chasselas Musqué Grape; 10, unknown.—*J. E. N.* Your Apple is distinct from anything we know, and very good in quality.—*H. Tindall.* Landsberger Reinette. —*V. S. Pears:* 1, Beurré d'Amanlis; 2, 3, Williams' Bon Chrétien—specimens much decayed; 4, Beurré Nantois; 5, Comte de Lamy; 6, Forelle, or Trout—fruit all very good. —*A parcel* (received without any letter) contained a small piece of Astrantia intermedia, one Plum (Pond's Seedling), and six Apples: 1, Cox's Orange Pippin; 2, Northern Greening; 3, Dumelow's Seedling; 4, ditto; 5, 6, small, worthless, indefinable sorts.—*F. B. Pear:* Beurré d'Amanlis; *Apple*: Red Astrachan, probably.—*S. F. B.* 1, Beurré Clairgeau; 2, Marie Louise d'Uccle; 3, Louise Bonne of Jersey; 4, probably small fruits of Vicar of Winkfield; 5, Calebasse passe Bosc; 6, quite decayed; 7, King of the Pippins; 8, Dumelow's Seedling; 9, Norfolk Beaufin; 11, Fearn's Pippin; 10, 12, not recognised. —*F. P., Belmont.* 2, Nonsuch; 3, 11, King of the Pippins; 5, Small's Admirable; 10, Dumelow's Seedling; others small, and, without any characteristic features, cannot be recognised.—*James Cocker & Sons. Apple:* Ingestre Yellow.

NAMES OF PLANTS: *A. C. Chapman.* 1, Cornus mas; 2, Viburnum Lantana. — *James Cocker & Sons.* 1, Hypericum patulum; 2, Aster lævis; 3, Adiantum concinnum latum.—*T. W. S.* A Gongora, the species of which we cannot determine from the specimen sent. It may be new.—*Sarah McN.* Achillea tanacetifolia; Plectranthus zeylanicus. — *F. C. F.* We fear your specimen has been mislaid.—*D. Walker.* Odontoglossum tripudians.—*A Subscriber.* Asteriscus maritimus.—*E. Bul'more.* 1, Rapistrum rugosum; 2, Moricandia arvensis; 3, Cannabis sativa; 4, Polycarpon tetraphyllum; 5, Melilotus officinalis; 6, Thlaspi perfoliatum —*C. E. F.* The shrub or small tree is Rhamnus catharticus, the Buckthorn, berries purgative; the smaller specimen is not Juniperus nana, but Empetrum nigrum.—*D. Dartnall.* Aspidium falcatum, a rhizophorous and remarkably scaly form; and Adiantum lucidum var.

PINE SPORT: *R. W.* The stools were returned before your second letter came. We have nothing further to say on the subject, but we should be glad to have actual evidence of the interesting fact of such a union.

SINGLE DAHLIA: *W. M. Crowe.* Your single seedling Dahlia will make a very nice companion to Paragon, the petals being narrow, bronzy-red at the base, and edged with purplish-lilac.

THE "GARDENERS' CHRONICLE," OR THE "GARDENER'S CHRONICLE:" *B.* We are quite aware of the objection you raise, and that a noun of multitude, when used to express an aggregate or class rather than a single individual, should be, according to grammatical rules, placed in the singular. But then see the dilemma we should be placed in. If we wrote it, as you advocate, "Gardener's Chronicle," how should we be able to indicate that we address ourselves, not to a single gardener, but to the whole body corporate in general? The instance you cite of "Gentlemen's Magazine" is not to the point, because there is a sufficiently marked difference in the singular and plural noun in this case which does not exist in the case of the word "Gardener."

VALLOTTA PURPUREA: *G.* There should be little difficulty in flowering this plant in August, as that is about its usual time to flower. If the bulbs have been fresh potted, or disturbed in any way, they are not likely to flower the season after. Good strong bulbs nearly filling the pot, and having plenty of roots, are the essential points in cultivation. At one time the plant used to be treated upon the drying-off system, but now it is more rationally grown as an evergreen. Get the plant to make its growth a little earlier than usual, and rest gently afterwards, and you will about hit the mark, assuming that you are in possession of strong healthy bulbs.

VIOLA LEAVES DISEASED: *T., Parkhill.* There is no fungus on your Viola leaves now, and if the injury was caused by a fungus, as you suggest, it was probably Æcidium violæ in May and June last. No preventive is known for attacks of this fungus. The circular livid patches on the leaves do not appear to us to be the result of fungi, but rather the work of some small leaf-boring grub.

WHITE EVERLASTING PEA: *Ignoramus* (p. 410). If you will take young shoots when 3 or 4 inches long in spring, and insert them in loam and sand—principally silver-sand—and treat them as Verbena or Fuchsia cuttings, the majority will root readily. *W. H. H.*

*** Correspondents are specially requested to address, post-paid, all communications intended for publication to the "*Editor*," and not to any member of the staff personally. The Editor would also be obliged by such communications being *written on one side only of the paper* and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

☞ FOREIGN SUBSCRIBERS sending Post-Office Orders are requested to send them to the Publisher of this journal, 41, Wellington Street, Covent Garden, and to make them payable to William Richards, at the post-office, Drury Lane, London, W.C.

CATALOGUES RECEIVED.

CRANSTON'S NURSERY & SEED COMPANY (Limited), King's Acre, Hereford—Roses, Forest Trees, Conifers, Ornamental Trees and Shrubs.

V. H. HALLOCK, SON, AND THORPE, Queens, New York—New Plants, Bulbs, Small Fruits, &c.

JAMES GRAY, Danvers Street, Chelsea — Designs for Horticultural Buildings.

WILLIAM RUMSEY, Waltham Cross, N.—Roses, Trees, Shrubs, &c.

COMMUNICATIONS RECEIVED:—C. H. B.—D. T. F.—Prof. Reichenbach.—J. V. & Sons.—B. D.—H. E. W.—C. W. D. —W. G. S.—John Deverill.—J. Broadbent.—F. W. S —S. McN.—J. D.—H. E.—Morley & Co.—T. S—R. A. R.—Sir Trevor Lawrence.—W. J. G—J. McD.—H. C.—J. R. J. —E. B.—I. O. W.—J McC.—W. H.—J. R.—R. S.—J. W —F. G.

Markets.

COVENT GARDEN, October 5.

No alteration to quote this week. Trade steady, and prices firm. *James Webber, Wholesale Apple Market.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldii, doz.	12 0	24 0	Ficus elastica, each	1 6	7 0
Arbor-vitæ (golden), per dozen ..	.. 6	18 0	Foliage Plants, various, each ..	.. 2	10 6
— (common), dozen	6 0	12 0	Fuchsias, per dozen	4 0	9 0
Asters, per dozen ..	4 0	12 0	Genista, per doz	.. 8	12 0
Begonias, per doz. ..	6 0	12 0	Heliotrope, per doz.	3 0	6 0
Chrysanthems., doz.	6 0	18 0	Hydrangea, doz. ..	9 0	12 0
Coleus, per dozen ..	4 0	6 0	Marguerite Daisy, per dozen ..	.. 6	12 0
Cyperus, per dozen	6 0	12 0	Myrtles, per doz ..	6 0	12 0
Dracæna terminalis	30 0	60 0	Palms in variety, each ..	.. 2	6–21 0
— viridis, per doz.	12 0	24 0	Pelargoniums, scarlet, per doz.	.. 2	6– 6 0
Euonymus, various, per dozen ..	.. 6	18 0	Solanum per doz. ..	9 0	12 0
Evergreens, in var., per dozen ..	.. 6	24 0			
Ferns, in var., dozen	4 0	18 0			

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 blooms	0 2–	0 4	Marguerites, 12 bun.	4 0–	6 0
Arum Lilies, per doz.	4 0–	6 0	Mignonette, 12 bun.	1 6–	4 0
Asters, 12 bunches ..	4 0–	9 0	Pansies, 12 bunches	1 0–	3 0
Bouvardias, per bun.	0 9–	1 0	Phlox, 12 bunches ..	3 0–	6 0
Calceolaria, 12 bun.	6 0–	12 0	Pelargoniums, 12 sprays ..	0 9–	1 0
Camellias per dozen	3 0–	6 0	— zonal, 12 sprays	0 3–	0 6
Carnations, 12 blms	1 0–	3 0	Primula, double, per bunch ..	1 0–	1 6
Chrysanth., 12 bun.	4 0–	12 0	Roses (indoor), doz.	1 0–	3 0
Cornflower, 12 bun	2 0–	4 0	— (outdoor) doz ..	0 4–	0 9
Dahlias, 12 bunches	3 0–	6 6	— Coloured, doz..	1 0–	2 0
Eucharis, per doz. ..	3 0–	6 0	Stephanotis, 12 spr..	5 0–	6 0
Fuchsias, 12 bunches	6 0–	8 0	Sunflower, 12 blooms	0 6–	2 0
Gardenias, 12 blms..	3 0–	6 0	Sweet Peas, 12 bun.	1 6–	3 0
Gladioli, 12 sprays ..	1 6–	3 0	Tropæolum, 12 bun.	1 0–	2 0
Heliotropes, 12 sp. ..	0 6–	1 0	Violets, 12 bunches..	1 0–	1 3
Lapageria, white, 12 blooms ..	.. 2 0–	4 0	— French Czar, bun.	0 9–	1 0
— red 12 blooms..	1 0–	3 0	White Jasmine, 12 bunches ..	.. 4 0–	9 0
Lilac (French), bun.	9 0–	10 0			
Lilium various, 12 bl.	3 0–	6 0			

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, ½-sieve	2 6- 5 0	Melons, each	2 0- 4 0
Aubergines, per doz.	4 0- ..	Peaches, per dozen	2 0- 8 0
Cobs, 100 lb.	45 0-52 0	Pears, per dozen	1 0- 2 0
Figs, per dozen	0 6- 1 0	Pine-apples, Eng., lb.	3 0- 4 0
Grapes, per lb.	1 0- 2 6	Plums, ½-sieve	5 0- 8 6
Lemons, per 100	6 0-10 0		

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe, per doz.	3 0- 6 0	Herbs, per bunch	0 2- 0 4
Beans, French, English, per lb.	0 8- ..	Horse Radish, bund.	4 0- ..
Beet, per doz.	1 0- ..	Lettuces, Cabbage, per score	1 6- ..
Cabbages, per doz.	1 0- 2 0	Mint, green, bunch	0 4- ..
Carrots, per bunch	0 4- 0 6	Mushrooms, p. baskt.	1 6- 2 0
Cauliflowers, English, dozen	2 0- 4 0	Onions, per bushel	3 0- ..
Celery, per head, per bundle	0 4- .. 1 0- ..	— Spring, per bun.	0 6- ..
Cucumbers, each	0 6- 1 0	Parsley, per bunch	0 4- ..
Endive, per score	1 0- ..	Radishes, per doz.	1 6- ..
Garlic, per lb.	1 0- ..	Small salading, pun.	0 4- ..
		Spinach, per bushel	2 0- ..
		Tomatos, per doz.	2 0- ..
		Vegt. Marrows, doz.	3 0- ..

POTATOS :—Magnum Bonums, 90s. to 100s ; Regents, 80s. to 90s. ; Myatt's, 100s. to 110s. per ton.

SEEDS.

LONDON : *Oct.* 4. — Messrs. John Shaw & Sons, of 37, Mark Lane, report that the seed market to-day was thinly attended and no new feature presented itself. Clover seeds all round keep firm, but there is very little business doing therein ; in fact, the disposition to postpone purchases until nearer the consumptive season appears very general. Small orders still come to hand for Trifolium. Winter Vetches find buyers at the late reduction. For bird seeds the sale is slow. Large Imperial Blue Peas continue in good request.

CORN.

At Mark Lane on Monday really good samples of English Wheat remained at the rates of the previous Monday, but secondary sorts showed 1*s.* decline on the week. Foreign Wheats were in full supply, and met a dull sale at 1*s.* under the figures of Monday se'nnight, excepting Indian and American. Flour was difficult of sale, and tended in favour of buyers. Barley was very quiet, without much change in prices. Beans met a slow sale, and Peas were rather scarce, and 1*s.* dearer. Oats were steadier at the previous Monday's rates. Maize was very dull, and prices weak, in view of increased supplies.—On Wednesday spot transactions in Wheat were not sufficient to establish any change in quotations. Flour remained quiet and unchanged. The market for Oats was steady, whilst no quotable change occurred in Barley, Beans, or Peas.—Average prices of corn for the week ending Sept. 30 :—Wheat, 40*s.* 4*d.* ; Barley, 34*s.* 10*d.* ; Oats, 20*s.* 2*d.* For the corresponding period last year :—Wheat, 47*s.* 9*d.* ; Barley, 35*s.* 1*d.* ; Oats, 19*s.* 11*d.*

CATTLE.

At the Metropolitan Market on Monday prime cattle, from scanty supply, supported steady value, but middling and inferior sold badly, and in many cases cheaper than last reported. The sheep trade on the average was steady, and prime calves met about a steady sale. Quotations :—Beasts, 4*s.* to 5*s.*, and 5*s.* 6*d.* to 6*s.* ; calves, 5*s.* to 5*s.* 8*d.* ; sheep, 5*s.* 4*d.* to 6*s.* 6*d.*, and 6*s.* 10*d.* to 7*s.* 2*d.*—Thursday's trade was quiet, but not without firmness. Beasts sold slowly, full prices being, however, paid for prime qualities. Sheep were scarce, and quite as dear as on Monday, and calves made more money. Pigs were quiet.

HAY.

Tuesday's Whitechapel Market report states that there were good supplies, with a dull trade, and prices lower for Clover and straw. Quotations : — Prime Clover, 115*s.* to 125*s.* ; inferior, 75*s.* to 80*s.* ; prime meadow hay, 95*s.* to 105*s.* ; inferior, 36*s.* to 60*s.* ; and straw, 30*s.* to 43*s.* per load.—On Thursday there was a good supply, and trade was very dull at about Tuesday's prices.—Cumberland Market quotations :—Superior old meadow hay, 100*s.* to 112*s.* ; inferior, 84*s.* to 92*s.* ; new, 70*s.* to 94*s.* ; superior old Clover, 132*s.* to 140*s.* ; inferior, 100*s.* to 114*s.* ; new, 84*s.* to 110*s.* ; and straw, 40*s.* to 45*s.* per load.

POTATOS.

The Borough and Spitalfields Markets reports state that there were moderate supplies and a steady demand, at the following quotations.—Lincoln Champions, 65*s.* to 70*s.* ; ditto Magnum Bonums, 30*s.* ; Kent Regents, 90*s.* to 100*s.* ; ditto Champions, 80*s.* ; Victorias, 90*s.* to 100*s.* ; Magnum Bonums, 90*s.* to 100*s.* ; Essex ditto, 80*s.* to 90*s.* ; ditto Victorias, 80*s.* to 90*s.* ; ditto Champions, 70*s.* to 80*s.* ; ditto Regents, 80*s.* to 90*s.* per ton. The imports into London last week comprised 4210 bags from Hamburg, 20 bags from Harlingen, and 200 bags from Bremen.

COALS.

The following are the prices current at market during the week :—Wallis End—South Hetton, 21*s.* ; Lambton, 20*s.* 6*d.* ; Hawthorn, 18*s.* 9*d.* ; Wear, 18*s.* 6*d.* ; East Wylam, 17*s.* ; Hetton, 21*s.* ; Caradoc, 21*s.* ; South Kelloe, 19*s.* 6*d.* ; Hetton Lyons, 18*s.* 6*d.* ; Thornley, 20*s.* ; Ravensworth West Hartley, 15*s.*

Government Stock.—On Monday Consols closed at 100⅜ to 100⅜ for delivery, and 100⅜ to 100⅜ for the account. Tuesday's final quotations were, 100 to 100⅛ for delivery, and 100 7/16 to 100 9/16 for the account. Wednesday's closing figures were, 100⅛ to 100¼ for delivery, and Tuesday's prices for the account. On Thursday the final quotations were 100¼ to 100⅜ for delivery, and 100 7/16 to 100 9/16 for the account.

Roses and Primulas by the 100 and 1000.

EDWIN HILLIER offers Dwarf H.P. ROSES, fine bushy plants, and best varieties ; also an extensive collection of Tea and Noisette Roses in pots, mostly on the Seedling Brier. CATALOGUES with cash prices to be had.

DOUBLE WHITE PRIMULAS, fine stuff, in 48-pots ; and his New Double "ANNIE HILLIER," First-class Certificate. Strong plants in 32-pots now ready.

The Nurseries, Winchester.

Immense Sale of

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Cabbage Plants.

CABBAGE PLANTS!— Extra strong Autumn-sown plants, in any quantities, well rooted and free from club, of Early Enfield Market, Battersea, Nonpareil, and Robinson's Champion Drumhead Cabbage, at 3*s* per 1000, delivered on Rail ; cash or reference from unknown correspondents.

W. VIRGO, Wonersh Nurseries, Guildford, Surrey.

ONE HUNDRED THOUSAND SINGLE SNOWDROPS.
50,000 Double Yellow DAFFODILS.
30,000 Double White NARCISS.
30,000 Single Pheasant-eyed NARCISS.
10,000 Orange Phœnix NARCISS (the large Double White Daffodil).
LILIUM CANDIDUM, and CHIONODOXA LUCILIÆ (The Glory of the Snow).
Prices on application to
WATKINS AND SIMPSON, Exeter Street, Strand, W.C.
All varieties of English and Dutch Bulbs.

8000 Winter-Flowering Carnations. 8000

TWELVE WELL-ROOTED PLANTS, in six best varieties, by post 4*s.* ; larger, in 5*s*'s, 6*s.* per dozen, 42*s.* per 100 ; in 48's, 15*s.* and 18*s.* per dozen, £3 and £9 10*s.* per 100. See CATALOGUE.

W. M. CROWE, Boleyn Nursery, Upton, Essex.

STEPHANOTIS FLORIBUNDA.— Good plants in 48's, 2*s.* each, 18*s.* per dozen, £7 per 100. Prices of larger on application.

W. M. CROWE, Boleyn Nursery, Upton, Essex.

STRAWBERRIES.—Strong roots for present planting and for fruiting next year, 4*s.* per 100. Descriptive LIST and price for plants in pots for forcing on application. — RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

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DIRECT FROM THE GROWERS.

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CHOICE FLOWER ROOTS.

OUR GUINEA PACKAGE
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contains the following well selected, first-class sound Bulbs, viz :—

36 HYACINTHS, mixed, in distinct colours
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400 CROCUS, in four distinct colours
36 GLADIOLUS, best mixed
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782 Bulbs in all.

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4*d.* per bushel ; 100 for 25*s.* ; truck (loose, about 2 tons), 40*s.* ; 4-bushel bags, 4*d.* each.
LIGHT BROWN FIBROUS PEAT, 5*s.* 6*d.* per sack ; 5 sacks, 25*s.* ; sacks, 4*d.* each.
BLACK FIBROUS PEAT, 5*s.* per sack, 5 sacks 22*s.* ; sacks, 4*d.* each.
COARSE SILVER SAND, 1*s.* 9*d.* per bushel ; 15*s.* per half ton, 26*s.* per ton ; in 2 bushel bags, 4*d.* each.
YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1*s.* per bushel.
SPHAGNUM MOSS, 8*s.* 6*d.* per sack.
Manures, Garden Sticks, Virgin Cork, Tobacco Cloth, Russia Mats, &c. Write for Free PRICE LIST.
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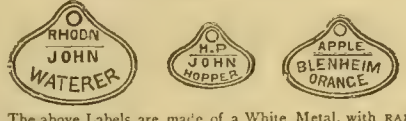
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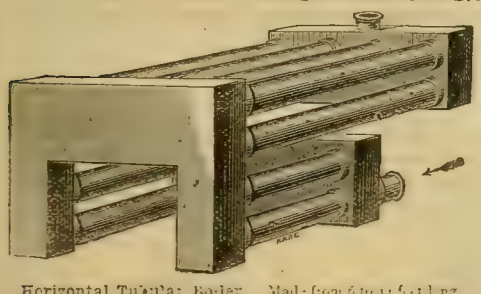
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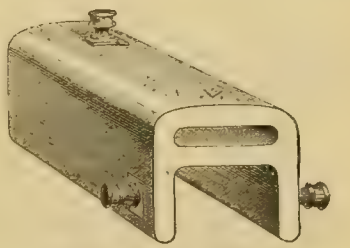
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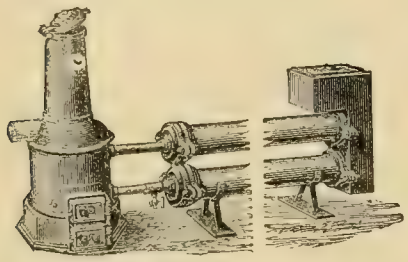
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Stands severe tests of Government Departments, thus proving superiority of quality. Lasts four times as long as ordinary Indiarubber Hose, Lighter in Weight, Greater in Strength, and Cheaper in the long run than any other Hose for Garden Use.

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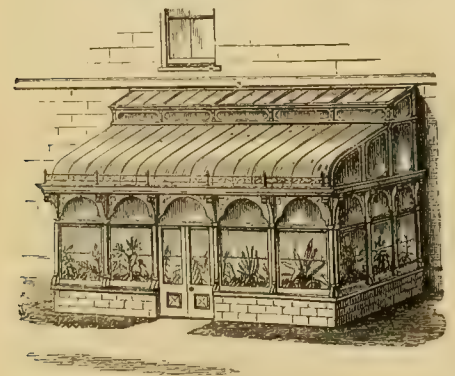
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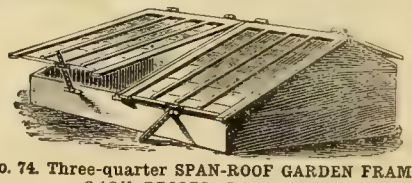
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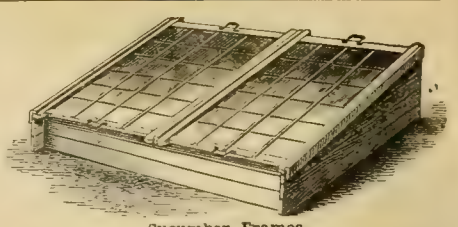
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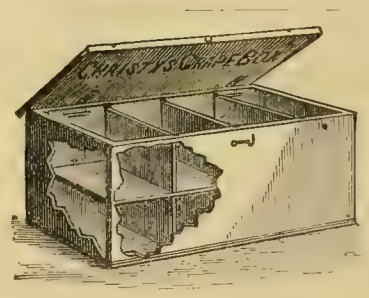
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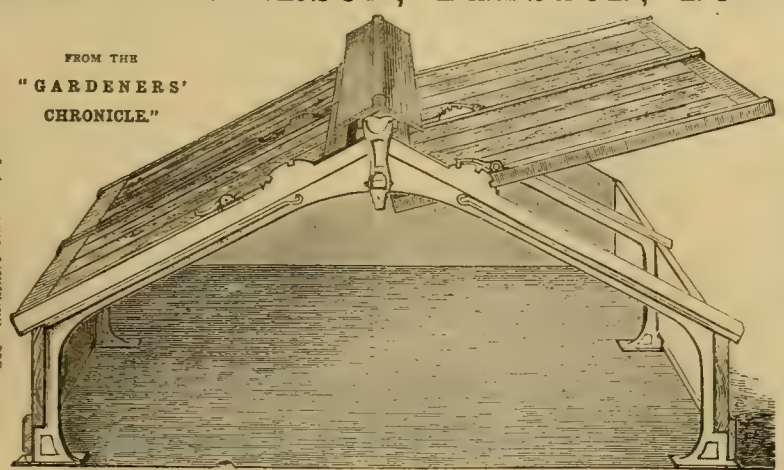
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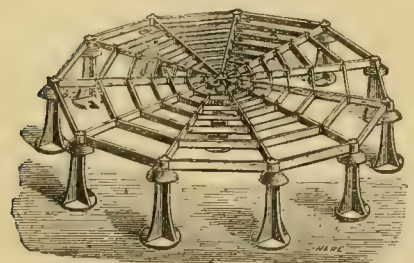
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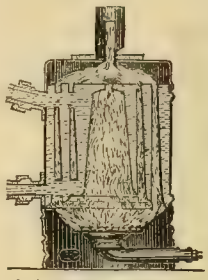
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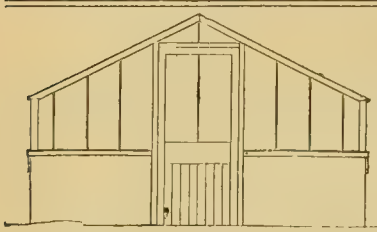
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VIOLETS (an acre).—We beg to inform the Trade that we have a vast stock of all the best varieties, in splendid condition, full of flower, both in pots and open ground. Special quotations for large quantities.

H. CANNELL AND SON, The Home for Flowers, Swanley, Kent.

Early Roman Hyacinths, &c., for present Planting.

BULBOUS PLANTS of all kinds, ORCHIDS, &c.

THE NEW PLANT AND BULB COMPANY beg to announce that their AUTUMN CATALOGUE is just published, post-free on application.

Lion Walk, Colchester.

Tea Roses.

THE LIVERPOOL HORTICULTURAL COMPANY (JOHN COWAN), Limited, The Vineyard and Nurseries, Garston, near Liverpool, have a splendid stock of TEA ROSES in all the leading varieties.

LIST free. Price to the Trade on application.

Also a large stock of GRAPE VINES.

SAXIFRAGA DIVERSIFOLIA.—New Seed of this most distinct Himalayan yellow-flowered species is now offered in 2s. 6d. and 3s. 6d. packets.

RODGER, McCLELLAND AND CO., Nurserymen, &c., Newry.

Hyacinths, Tulips, &c.

BUDDENBORG BROTHERS, BULB GROWERS, House Bloemswaard, Hillegom, near Haarlem, Holland. Wholesale CATALOGUE now ready, and will be sent, post-free, on application.

Dutch, French, and other Flowering Bulbs.

JAMES DICKSON AND SONS' carefully prepared CATALOGUE of their large excellent stock will be sent post-free on application. Early orders are solicited.

Seed and Bulb Warehouse, 108, Eastgate Street, Chester.

CAMELLIAS.—Large Camellias for Sale, to make room for other plants. LIST, with sizes and prices, on application.

EDW. COOLING, Mile Ash Nurseries, Derby.

Autumn List.

JOHN LAING AND CO.'S New CATALOGUE of Dutch Bulbs, Roses, Fruit Trees, &c. ; also Revised LIST of Tuberous Begonias, has been issued to all Customers. Copies gratis on application. Goods all first quality at moderate rates. Address

JOHN LAING AND CO., Nurseries, Forest Hill, S.E.

To the Trade.

THIRTY THOUSAND FERNS of the following sorts, ready for immediate use, nice clean stuff in 48-pots, all at 50s. per 100 :—Pteris tremula, Pteris cretica, Lomaria gibba, Adiantum cuneatum, Gymnogrammas, and Aspleniums. Sample dozen for 7s., on receipt of P. O. O.

C. PRATLEY, American Nursery, Hanley Road, Upper Holloway, N.

HYACINTHUS CANDICANS.

Bulbs of I. quality 18s. per 100, £7 10s. per 1000.

,, ,, II. ,, 12s. ,, £5 0 ,,

,, ,, III. ,, 6s. ,, £2 10s. ,,

With 10 per cent. discount.

L. SPATH, Nurseryman, Berlin S. O., Köpnicker Str., 154.

GARDENIAS for Winter Blooming, 14s. per dozen, clean and healthy. Good plants in 48-pots. Trade price on application.

H. R. MARSHALL, Nursery, Barnham, Arundel.

FOR SALE, a grand DICKSONIA ANTARCTICA (in tub) : height of stem 5 ft., spread of fronds 16 ft. ; in splendid health. Too large for present owner. Apply to

The GARDENER, East Court, Charlton Kings, Cheltenham.

6000 Grape Vines.

THE LIVERPOOL HORTICULTURAL COMPANY (JOHN COWAN), Limited, The Vineyard and Nurseries, Garston, near Liverpool, have a splendid stock of VINES, grown from eyes this year, suitable for present planting.

CATALOGUE free. The Trade supplied.

Also a large stock of TEA ROSES.

STRAWBERRY PLANTS, ELTON PINE, strong, large quantity at 1s. 6d. per 100.

JAMES YOUNG, Seedsman, Brechin.

CABBAGE, CAULIFLOWER, LETTUCE PLANTS, &c., Autumn sown, best varieties, in any quantities. LIST, and printed copy of many recent (1882) testimonials, on application. Prices moderate, no charge for packages.—EDWARD LEIGH, Dunsfold, near Godalming.

POTATOS FOR SALE.—Reading Hero, also a few Schoolmaster, for Seed (true). Cash.

R. B. McCOMBIE, Christchurch.

SALES BY AUCTION.

Dutch Bulbs.—Sales every Monday.

MESSRS. PROTHEROE AND MORRIS will SELL at the Mart, Tokenhouse Yard, City, E.C., every MONDAY, at half-past 11 o'Clock precisely, over 800 lots of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, SNOWDROPS, and other ROOTS, from Holland; in lots to suit all buyers.

Catalogues at the Mart, and 8, New Broad Street, E.C.

Important Sale of a Choice Collection of Dutch Bulbs, a splendid assortment of 400 Standard and other ROSES, selected FRUIT TREES, hardy CONIFERS, SHRUBS, AMERICAN PLANTS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION the above at the City Auction Rooms, 38 and 39, Gracechurch Street, E.C., on TUESDAY, October 17, at 12 o'Clock precisely.

On view morning of Sale. Catalogues had at the Rooms and of the Auctioneers, 8, New Broad Street, E.C., and Leytonstone, E.

Sunbury, Middlesex.

By order of the Executors of Mr. R. A. Osborn, deceased.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, Osborn's Nursery, Sunbury, Middlesex, about ten minutes' walk from the station, on TUESDAY and WEDNESDAY NEXT, October 17 and 18, at 12 o'Clock precisely each day, the whole of the HARD-WOODED GREENHOUSE PLANTS, including the entire collection of strong short-jointed and well-ripened fruiting and planting Vines, embracing all the leading kinds; and the choice and extensive collection of Figs, the stock of beautifully grown Tea, H.P., and Noisette Roses in pots; several hundreds of splendidly grown double Camellias and Azaleaindica abundantly set with bloom-buds, Gilbert's new double pink and white Primulas, Clematis, and Ivies, in large numbers; thousands of Herbaceous Plants, including nearly 1020 specimen clumps of Iris; 2000 Helleborus, and an assortment of Hardy Climbers for which this nursery has been so long celebrated.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 8, New Broad Street, E.C., and Leytonstone, E.

N.B.—The first portion of the thriving and luxuriant OUTDOOR NURSERY STOCK will be sold by Auction, on the Premises, on November 14 and following days.

The productive Freehold Nursery of 17 acres with the Dwelling-house and extensive ranges of modern glass erections is for Sale by private treaty. Particulars may be obtained of the Auctioneers.

Friday Next.

IMPORTED and ESTABLISHED ORCHIDS.

MESSRS. PROTHEROE AND MORRIS are instructed by N. Colborne, Esq., to SELL by AUCTION, at the Mart, Tokenhouse Yard, City, E.C., on FRIDAY NEXT, at 12 o'Clock precisely, a magnificent importation of about 4000 ODONTOGLOSSUM ALEXANDRÆ, including several very large masses; also ESTABLISHED ORCHIDS, including Lælia purpurata alba, Cattleya Eldorado Wallisii, C. Mendelii, C. Dowiana, from the collection of Mr. Colborne.

In the same Sale will be included 1000 plants of COCOS WEDDELLIANA, and 10 trunks of CYCAS MEDIA, 2 feet 6 to 5 feet, in fine condition, just received from Australia.

Catalogues had at the Mart, or 8, New Broad Street, E.C.

Friday Next.—Dutch Bulbs.

MESSRS. PROTHEROE AND MORRIS will SELL at the Mart, City, E.C., on FRIDAY NEXT, a Consignment of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other ROOTS, from Holland.

Catalogues at the Mart, and 8, New Broad Street, E.C.

Lee, S.E.

CLEARANCE SALE.

MESSRS PROTHEROE AND MORRIS are instructed by Mr. Collins to SELL by AUCTION, on the Premises, the Grove Park Nursery, Lee, S.E., on FRIDAY, October 20, at 12 o'Clock, a large quantity of well-grown NURSERY STOCK, in good condition for removal, including a variety of Evergreens and Coniferæ, Ornamental Trees, &c., for effective Planting; 5000 Strawberries and other Stock, fully described in Catalogues, to be had on the Premises, or at the Auctioneers' Offices, 8, New Broad Street, E.C.

Chelsea, S.W.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Tebbutt to SELL by AUCTION on the Premises, The Vale Nursery, King's Road, Chelsea, S.W., on WEDNESDAY, October 25, at 12 o'Clock precisely, a large quantity of GREENHOUSE PLANTS, thousands of EUONYMUS of sorts, in pots, CLIMBERS, and other stock.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 8, New Broad Street, E.C.

Tottenham N., adjoining the Station.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Hale Farm Nurseries, Tottenham, N., on TUESDAY October 31, by order of Mr. T. S. Ware, a large quantity of well grown NURSERY STOCK, including 5000 Standard Roses, 5000 Single Dahlias, 3000 Helleborus, 5000 splendidly grown oval-leaved Privet, 5000 clean grown Limes, 6000 Euonymus, and several acres of Asparagus and Seakale for forcing.

Catalogues had on the Premises, and of the Auctioneers, 8, New Broad Street, E.C.

Rugby.—Expiration of Lease.

PRELIMINARY.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Nursery, Rugby, by order of Mr. W. Bryant, on WEDNESDAY, November 1, the whole of the well-grown NURSERY STOCK.

Catalogues, when ready, of the Auctioneers, 8, New Broad Street, E.C.

Godalming, Surrey.—Preliminary Notice.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Maurice Young to SELL by AUCTION, on the Premises, The Milford Nurseries, Godalming, on WEDNESDAY and THURSDAY, November 1 and 2, several Acres of Hardy EVERGREEN TREES and SHRUBS, RHODODENDRONS, ROSES, FRUIT TREES, and other NURSERY STOCK. Further particulars will appear next week.

Catalogues at 8, New Broad Street, E.C.

Kilburn, N.W.

IMPORTANT SALE of SURPLUS STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. B. Goubert (in order to make room for other stock) to SELL by AUCTION, on the Premises, the Salisbury Road and Avenue Nurseries, Willesden Lane, N.W., on THURSDAY and FRIDAY, November 2 and 3, a large quantity of well-grown NURSERY STOCK! 1000 Standard and Dwarf Roses, 8000 Euonymus in variety, 3000 Double White Primulas, 2000 Adiantums, &c.

Further particulars will appear.

Re **R. A. Osborn, Deceased.—Result of Sale.**

MESSRS. PROTHEROE AND MORRIS beg to announce that the FREEHOLD PROPERTIES, viz., 4 acres of valuable Building Land in New King's Road, Fulham, and 5 Acres of Land in Broad Lane, Hampton, were SOLD at the Auction on THURSDAY, the 5th inst.

The productive FREEHOLD ESTATE known as Osborn's Nursery, Sunbury, comprising 17 Acres of Land, Dwelling House, nine newly-erected Greenhouses, built and heated upon the most improved principles, and Outbuildings, together with the Goodwill of the old-established Business, was NOT SOLD, and may now be treated for privately on advantageous terms. Particulars at the Auctioneers' Offices, 8, New Broad Street, E.C.

Hyacinths, Tulips, Crocuses, Narcissus, Iris, Scillas, Snowdrops, and other Flower Roots from Holland.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY during October, at half-past 12 o'Clock precisely each day, CONSIGNMENTS of DUTCH BULBS, arriving weekly from well known farms in Holland, in large and small lots, to suit all buyers.

On view morning of Sale, and Catalogues had.

Wednesday Next.

PHALÆNOPSIS SANDERIANA, Nov. Spec. (H. G. Rchb. f.).

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, October 18, at half-past 12 o'Clock precisely, by order of Messrs. Hugh Low & Co., a large quantity of choice imported ORCHIDS, including fine plants of the above-named splendid novelty, brought from the Philippine Islands by Mr. Boxall. It is likely to prove one of the most beautiful of the genus. The flowers are the size of those of P. amabilis, but totally distinct in colour, being suffused all over with rose colour. Also PHALÆNOPSIS STUARTIANA, P. VIOLACEA in quantity, CYPRIPEDIUM CILIOLARE, a fine new species, very closely resembling the much admired C. superbiens (Veitchianum); 500 DENDROBIUM DEAREI, SOPHRONITES GRANDIFLORA, ONCIDIUM in variety, ZYGOPETALUM MAXILLARE, 600 ODONTOGLOSSUMS from vicinity of Bogota, &c. At the same time will be offered established plants of PHALÆNOPSIS AMABILIS, P. SCHILLERIANA, P. ESMERALDA, P. MANNI, one P. INTERMEDIA PORTEI, one P. AMETHYSTINA, CATTLEYA AMETHYSTOGLOSSA with flower sheaths, the rare GALEOTTIA FIMBRIATA, VANDA HOOKERI, PESCATOREA DAYANA, 200 CYPRIPEDIUM SPICERIANUM, and other choice Orchids.

On view morning of Sale, and Catalogues had.

Thursday Next.

PHALÆNOPSIS ESMERALDA.

MR. J. C. STEVENS will include in his SALE by AUCTION, on THURSDAY NEXT, October 19, about 50 good plants of PHALÆNOPSIS ESMERALDA, in fine condition.

On view morning of Sale, and Catalogues had.

Auction Rooms and Offices, 38, King Street, Covent Garden, W.C.

Thursday Next.

RARE IMPORTATIONS.

MR. J. C. STEVENS has received instructions from Mr. Sander, St. Albans, to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 19, a fine lot of:—

CATTLEYA IMPERIALIS. The grandest lot ever offered of this magnificent Cattleya.

DENDROBIUM LEUCOLOPHOTUM. Beautiful new white flowering Dendrobe.

VANDA LIMBATA. The rarest of the genus, and extremely beautiful.

DENDROBIUM DEAREI. Splendid consignment of this suberb novelty.

AERIDES VIRENS. Java varieties. Finest lot ever offered.

PHALÆNOPSIS REICHENBACHIANA. Fine novelty in the way of Sumatrana and Luddemanniana.

PHALÆNOPSIS VIOLACEA, and STUARTIANA, ACINETA ERYTHROXANTHA, HOULLETIA WALLISII, &c.

On view morning of Sale, and Catalogues had.

Worton Farm, Isleworth, Middlesex.

Important SALE of about 5 Acres of SEAKALE, a splendid crop.

To Nurserymen, Producers, and Others.

MR. WOODS has been instructed by Mr. Steel to SELL by AUCTION, at the above Farm, on TUESDAY, October 17, at 2 for 3 o'Clock in the afternoon, 20 lots of SEAKALE (quarter of an acre in each lot), from the celebrated Fulham strain.

May be viewed and Catalogues had at the above Farm, and of Mr. WOODS, Auctioneer and Valuer, Hounslow.

Alderton Hall Farm, Loughton, Essex.

Re Porter, in Liquidation. By order of the Trustees and under a Bill of Sale.—225 LOADS of HAY, the Growing Crops of WURZEL and RED CABBAGE.

MESSRS. BUCKLAND AND SONS will SELL by AUCTION, on the Premises, on THURSDAY, October 19, at 12 o'Clock punctually, about 225 Loads of well got CLOVER and MEADOW HAY, in six Ricks; also 4 Acres of RED CABBAGE and 3 Acres of MANGEL WURZEL.

Catalogues may be had at the place of Sale, at the principal Hotels in the neighbourhood, and of Messrs. BUCKLAND AND SONS, Auctioneers, &c., 11, Adam Street, Strand, W.C., and Windsor.

FOR SALE, owing to death of Proprietor, an excellent SEED, NURSERY, and LANDSCAPE GARDENING BUSINESS, in the Midlands. Price £800.

For particulars, apply to HURST AND SON, Seed Merchants, 152, Houndsditch, London, E.

To Nurserymen, Seedsmen, and Florists.

TO BE LET, a very Old-established BUSINESS, for the last seventy years in the same family. Good connection, and close to railway-station. Five Acres of Land, the greater portion well stocked. Greenhouses, Hothouses, Pits, &c., to be taken by valuation.

Apply to W. FAIRBEARD, Mount Pleasant Nursery, Teynham (L.C.D.R.), Kent.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

NOTICE IS HEREBY GIVEN, that an ADDITION to the PENSION LIST of this Institution will be made in JANUARY NEXT. All persons desirous of becoming candidates are requested to send in their Certificates to the Committee on or before November 6 next, after which date none will be received. Preference will be given to those candidates who have been subscribers for 15 years and upwards. Should there not be a sufficient number of this class of applicants to fill the vacancies, then the cases of those who have not been subscribers so long, or not at all, will be considered.—By order

EDW. R. CUTLER, Sec.

14, Tavistock Row, London, W.C.—October 10, 1882.

P.S. The requisite printed forms may be procured from the Secretary.

PROTHEROE AND MORRIS, HORTICULTURAL, MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 8, New Broad Street, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

FOR SALE, 50,000 CABBAGE PLANTS, (Gibson's Dalkeith).

Apply, Mr. BRUNYCE, Swinfleet, Goole, Yorks.

Mulberries and Planes.

PONSFORD AND SON can supply the above in large or small quantities, in fine condition for transplanting. Prices, &c., on application to

Loughborough Park Nurseries, Brixton, S.W.

CHOICE WHITE ORCHID FLOWERS for Sale, in quantities. Can be supplied regularly. Apply to Messrs. WRIGHT, Florists, Turner Road, Lee, S.E., or at their Stands 106 to 108, Covent Garden Market, W.C.

FOR SALE, a large quantity of HARLINGTON WINDSOR BEANS, grown from the original Harlington Stock.—Apply to

J. SMITH AND SON, Growers, Sipson, near Slough; and North Side, Covent Garden Market, W.C.

TRADE CATALOGUE of NURSERY STOCK for 1882-83 now ready, and may be had post-free on application.

G. J. ALBERTS AND CO., Boskoop (Holland).

Special Offer.

CEDRUS DEODARA, fine plants.

3 to 4 feet, 15s. for 12, 60s. for 50, 110s. for 100.

4 to 5 feet, 18s. for 12, 70s. for 50, 130s. for 100.

THOMAS PERKINS AND SONS, 34, Drapery, Northampton.

POTATOS.—Schoolmaster, 9s.; Myatt's Early Kidney, 8s.; and Magnum Bonum, 8s. per cwt., either seed or table size (best quality, bright, and free from disease). Sent carriage paid to any railway station in England or Wales, on receipt of Post-office Order and address. Cheaper by the ton or truckload.

J. T. SMITH, Potato Merchant, Wisbech, Cambs.

SPECIAL OFFER.

GLOBE ARTICHOKES, strong, 3s. per dozen.
CURRANTS, White, strong, 8s. per 100.
SPRUCE FIR, 2-yr. 2-yr., 7s. per 1000.
CHESTNUTS, Scarlet, fine Standards, 6 feet stems, 8s. per dozen, 55s. per 100.

THOMAS PERKINS AND SONS, 34, Drapery, Northampton.

SEAKALE, ASPARAGUS and RHUBARB ROOTS.—Orders are now being booked for the above: also Globe and Jerusalem ARTICHOKES, HERB ROOTS, &c.

CATALOGUES post-free for all kinds of Dutch Bulbs and Flower Roots, choice Vegetable and Flower Seeds, Vegetable Plants, &c.

H. THORNTON AND CO. (late Dancer), Seed Merchants and Florists, Fulham, S.W.

Choice Greenhouse Flowers.

ISAAC DAVIES AND SON beg to call attention to their beautiful sweet-scented RHODODENDRONS and AZALEAS; also RHODODENDRONS MULTIFLORUM, PRÆCOX, and other hybrids, which should now be potted for early blooming. Descriptive LIST on application.

Brook Lane Nursery, Ormskirk.

Immense Sale of

VIOLAS, PANSIES, PERENNIALS, ROCK and ALPINE PLANTS, at one uniform price, 1s. per dozen — separately transplanted, not weakly rooted offshoots—our land being sold to the L. & N.-W. Railway Co. Hampers and packing gratis. CATALOGUES free. Our collection is admitted to be the largest and choicest collection ever brought together.

JOHN PIRIE AND CO., Stetchford, Birmingham.

HEATHERSIDE NURSERIES, Frimley, Farnborough Station.

RHODODENDRON PONTICUM, and the best named varieties, fine bushy plants.

ORNAMENTAL TREES and SHRUBS.

CONIFERS of all sizes, a fine young stock suitable for potting.

The above now in excellent condition for autumn planting.

First-class PEAT for Orchids and American Plants.

Prices and samples free on application.

F. STREET.

ARIEMSCHNEIDER, Brandenburg-on-Havel, Germany, has to offer, SPIRÆA JAPONICA, extra strong clumps, 15s. per 100; CHRISTMAS ROSES, extra strong, 80s. per 1000; DIELYTRA SPECTABILIS, 18s. per 100; DEUTZIA GRACILIS, very strong, 18s. per 100; ASPARAGUS plants, 3-years old; ERFURT GIANT, 16s. per 1000; Crab Seedling PEARS, APPLES, PLUMS, CHERRIES, extra strong and good, 24s. per 1000. All orders should be addressed to

Messrs. R. SILBERRAD AND SONS, 25, Savage Gardens, London, E.C.

TO AUTUMN PLANTERS.

The Subscribers invite Inspection of their Stock of

FOREST AND ORNAMENTAL TREES,

SHRUBS, ROSES,

RHODODENDRONS, FRUIT TREES, VINES, &c.,

WHICH IS ONE OF THE MOST COMPLETE IN EUROPE,

HARDY, HEALTHY, and WELL ROOTED.

Samples and Prices sent free on application, and Special Freights furnished to all parts of the Kingdom. Catalogues free by Post.

LITTLE & BALLANTYNE,

NURSERYMEN AND SEEDSMEN TO THE QUEEN,

CARLISLE.—Established 1812.

NEW POTATOS FOR CHRISTMAS

May be had without difficulty by planting, any time before October 20, in pots or frames,

THE

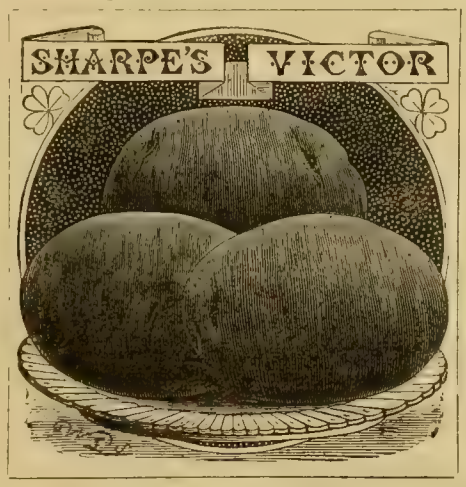
EARLIEST OF ALL POTATOS,

"SHARPE'S VICTOR."

Sharpe's Victor is a seedling raised from the Alma Kidney and the old early short-top round Potato. It is earlier than any present variety, and having a very short top is especially suitable for frame cultivation; its precocity is such that it has been fit for the table in nine weeks from the time of planting, and the raiser assures us that at this date, October 17, 1881, he is now growing his fifth successive crop this year, the first being lifted in January. Thus there is no difficulty in **securing new Potatos for the Table every day in the year.** Victor is a flattened roundish oval in shape, with a beautiful clear skin and extremely shallow eyes, being one of the handsomest as well as the heaviest cropper of any variety adapted for Frame-work, or for a first early crop outdoors. It is dry and mealy when cooked, and the flavour and quality of the flesh are superior to nearly every other variety at present in use.

Retail Price, 1s. per pound.

The Stock being very limited, early Orders are solicited to prevent disappointment.



CHARLES SHARPE & CO., SLEAFORD.

AUTUMN PLANTING.

THE LAWSON SEED AND NURSERY COMPANY (LIMITED),

EDINBURGH,

Respectfully invite the attention of intending Planters to their large Stocks of

SEEDLING and TRANSPLANTED FOREST TREES,

ORNAMENTAL TREES and SHRUBS, FRUIT TREES, ROSES, &c.,

And will be glad to submit Special Offers upon application.

NOTICE.

SELLING OFF OF NURSERY STOCK.

EWING & CO.,

EATON, near NORWICH.

Great Reduction in Price for Cash Payments, viz.,

15 per Cent. for Cash before delivery.
10 per Cent. for Cash within One Month of date of invoice.
5 per Cent. for Cash within Three Months of date of invoice.
After Three Months no discount can be allowed.

In addition to their immense Outdoor Stock of ROSES; FRUIT TREES, Bushes and Roots; ORNAMENTAL TREES and SHRUBS, they have ready for immediate Sale a very extensive Stock of New and Scarce ROSES in Pots; Tea and Noisette ROSES in Pots; CLEMATISES of best Old and New Varieties, in Pots; Variegated and Choice Green-leaved IVIES, in Pots; AMPELOPSIS VEITCHII, and many other Hardy CLIMBING and CREEPING PLANTS, in Pots, &c.

N.B. Cut Roses, &c., can be supplied at cheap rates, carefully packed for travelling long distances.

A slight extra charge must in most cases be made for packing. Where cash in payment of goods is sent *with the order*, the amount for *package* may be forwarded in stamps *after* despatch of goods.

N.B. Post-office Orders should be made payable to EWING AND CO., at Eaton, near Norwich. Cheques crossed GURNEY AND CO., Norwich.

Trade Terms on application.

SPIRÆA PALMATA:
The largest stock for forcing in the world.
LAURUS CAUCASICA:
The finest Laurel ever introduced.
RHODODENDRONS:
All kinds and all sizes.
STANDARD RHODODENDRONS:
You may select from thousands.
HARDY TREES, SHRUBS, ROSES, &c.:
For general planting, acre after acre.

Intending planters are invited to come down and see the stock. The Nursery is ten minutes from Sunningdale Station, S.-W. Railway.

CHARLES NOBLE, Bagshot.

Tuberous Begonias.

JOHN LAING AND CO.'S Gold Medal Collection is unrivalled. 100,000 now in cultivation are producing a magnificent floral display. Orders executed with blooming plants.

Prices, 12s. to 60s. per dozen.

CATALOGUES on application. Address

JOHN LAING AND CO, Forest Hill, S.E.

Bulbs—Bulbs—Bulbs.

SEGERS AND CO., BULB GROWERS, Lisse, near Haarlem, Holland, are now booking Orders for LILY OF THE VALLEY, very strong clumps and crowns; SPIRÆA JAPONICA and PALMATA, LILIUMS, GLADIOLUS BRENCHLEYENSIS, and others. They keep also fine samples in stock of HYACINTHS, TULIPS, CROCUS, &c.

CATALOGUES may be had free on application. No Auction Sales or Retail Trade supplied, but the Wholesale only.

☞ Please observe name and address.

BEAUTIFUL WINTER and SPRING FLOWERS.—All who wish to see their conservatories and flower gardens gay with beautiful flowers in winter and spring, should apply to the subscribers, who make a speciality of the flower-root branch of their business, and supply complete collections of choice flower roots at low prices, delivered free. Orders should be sent in early to secure finest bulbs.

Descriptive Price Lists free on application.

LITTLE AND BALLANTYNE, The Queen's Seedsmen, Carlisle.

GRAPE VINES and ORCHARD HOUSE TREES in POTS.—GRAPE VINES, extra strong, short-jointed and well ripened; Planting Canes, 3s. 6d. to 5s. each; extra strong Fruiting Canes, 7s. 6d. to 10s. ORCHARD-HOUSE TREES, fruiting in pots, consisting of Peaches, Nectarines, Apricots, Plums, Cherries, Pears, Apples, and Figs. Descriptive Price LIST for 1d. stamp.—RICHARD SMITH AND CO., Nurserymen and Seedsmen, Worcester.

TEN THOUSAND ROSES IN POTS.
On own roots and Seedling Briers.
TEA, NOISETTE, CHINA, and HYBRID TEAS, a select LIST of the leading varieties.
5-inch pots (1st selection), fine, bushy, 1½, 2 to 2½ feet.
5-inch pots (2d selection), fine, bushy, 1, 1½ to 2 feet.
7-inch pots, suitable for forcing.
CLIMBING ROSES, 5 to 7 inch pots, 4, 5, 6 to 8 feet.
Second to none in quality.
GEO. JACKMAN AND SON, Woking Nursery, Surrey.

JOHN SCOTT, The Royal Nurseries, Merriott, Somerset, offers:—

PICEA NORDMANNIANA, in large or small quantities. This noble Pine is one of the handsomest and hardiest of the Fir tribe. On the Crimean and other mountains it attains a height of 100 to 150 feet, clothed with lovely dense green branches to the ground. J. S. offers the following sizes:—500, 18 inches high by 18 inches in diameter, at £5 per 100; 500, 2½ feet by 2½ feet, at £10 per 100: 300, 3 feet by 3 feet, at £15 per 100; 400, 4 feet by 4 feet, at £25 per 100; and a few fine specimens, 8 feet high by 6 feet. All the above are densely feathered to the ground.

J. S. also offers BIOTA SIEBOLDII, 6 feet high by 8 feet; and fine healthy collections of all the best EVERGREENS, from 1½ foot to 2, 2½, 3, 3½ and 4 to 8 and 12 feet, all transplanted during the last six months, at 12s. to 40s. per dozen. DECIDUOUS and FOREST TREES by the 1000, and FRUIT TREES in large numbers at low prices. For sorts see Scott's *Orchardist*.

CARTERS' NEW CYCLAMEN GRANDIFLORUM.

Price, per Bulb—*s. d.*

Cyclamen White Swan, the most beautiful white Cyclamen in commerce. (Awarded First-class Certificate, Royal Horticultural Society.) 3 0

Cyclamen Duke of Connaught, rich purplish-crimson, flowers of unusually large size and substance; a grand flower. (Awarded a First-class Certificate by the Royal Botanic Society.) 2 0

Cyclamen Rosy Morn, clear bright and delicate rose, with massive flowers of magnificent appearance. (Awarded First-class Certificate by the Royal Horticultural Society.) 2 0

Cyclamen picturatum, pure white ground faintly shot with delicate pink, rich claret-purple base, finely-formed smooth petals, superb appearance. (Awarded a First-class Certificate by the Royal Horticultural Society.) 2 0

Trade price on application.
237 and 238, High Holborn, London, W.C.

FERNS, &c., in SMALL POTS.

Per dozen.—*s. d.*

ADIANTUM CUNEATUM .. .. *2s.* per 100 3 0
„ CONCINNUM 3 6
„ „ LATUM 3 6
„ EXCISUM 3 6
HEMIONITIS PALMATA 4 0
GYMNOGRAMMA, LAUCHEANA varieties .. .. *2s.* per 100 3 0
„ DECOMPOSITA 3 0
PTERIS MAGNIFICA .. .. .. *18s.* per 100 2 6
„ CRETICA .. .. *20s.* per 100 3 0
„ PALMATA 4 0
BRAINEA INSIGNIS 6 0
LYGODIUM SCANDENS .. .. .. *2s.* per 100 3 6
DRACÆNA VEITCHII and AUSTRALIS, PANDANUS UTILIS, LATANIA BORBONICA, CHAMÆROPS HUMILIS, C. EXCELSA .. 3 0
ARALIA SIEBOLDII, GREVILLEA ROBUSTA .. 2 6
ALLAMANDA GRANDIFLORA 15 0
CLEMATIS INDIVISA LOBATA 15 0
CHOISYA TERNATA 6 0
DIPLADENIA BREARLEYANA 15 0
„ of sorts .. .. *6s., 9s.,* and 12 0
ALLAMANDAS, CLERODENDRONS, and BOUGAINVILLEAS of sorts .. .. *6s., 9s.,* and 12 0
STOVE PLANTS in great variety .. .. per 100 50 0
GREENHOUSE PLANTS .. .. .. „ 50 0

As good varieties and plants as generally sold at treble the prices. Catalogues free.
WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

PLANTS FOR POTTING AND FORCING:—

AZALEA MOLLIS, with from 10 to 30 buds
„ a selection of the best hardy kinds, including PONTICA, NARCISSIFLORA, and GRAF VON MERAN, well budded.
KALMIA LATIFOLIA, nicely grown plants with flower-buds on wellnigh every shoot.
RHODODENDRONS, well budded and the best varieties for the purpose.
DEUTZIA CANDIDISSIMA, fl.-pl., established in pots.
HYDRANGEA PANICULATA GRANDIFLORA, very strong.
ANDROMEDA PULVERULENTA or SPECIOSA.
These can be obtained in satisfactory plants and at fair prices from
ANTHONY WATERER, Knap Hill Nursery, Woking, Surrey.

Special Cheap Offer.

ISAAC MATTHEWS AND SON are prepared to make special offer to the Trade and Large Buyers. Samples and Price List on application:—

ASH, Common, 3 to 4 feet, 4 to 5 feet, 5 to 6 feet.
„ Mountain, 3 to 4 feet, 4 to 5 feet, 5 to 6 feet, 7 to 8 feet, 8 to 9 feet.
OAK, English, 1½ to 2 feet.
POPLAR, Black Italian, 3 to 4 feet, 4 to 5 feet, 5 to 6 feet.
SYCAMORES, 2 to 3 feet, 3 to 4 feet.
CHESTNUTS, Horse, 9 to 10 feet, 10 to 12 feet.
ELDER, Golden, 2 to 3 feet, 3 to 4 feet.
THORN QUICK, strong, 2-yr., 3-yr., 4-yr. strong.
HOLLIES, Hodgins', maderensis, Bay-leaf, Golden Queen, Silver Queen, Old Silver, myrtifolia, ovata, Shephardii, common Green, in all sizes.
LAURELS, Common, 12 to 18 inches, 1½ to 2 feet, 2 to 2½ feet, fine.
CUPRESSUS, in variety, from 1½ to 7 feet.
RETINOSPORA PLUMOSA, 1 foot, 1½, and 2 feet, bushy.
YEWS, English, 18 to 24 inches, 2 feet, 2½ feet, 2½ to 3 feet.
AZALEA Pontica, 1½ to 2 feet, 4 to 6 inches.
RHODODENDRONS, Hybrid and Pontica, 3 to 4 inches, 4 to 6 inches, 6 to 9 inches, 9 to 12 inches, 12 to 15 inches, 15 to 18 inches, 1½ to 2 feet, 2 feet; ditto, choice named sorts, bushy, in 100 varieties.
„ CUNNINGHAM'S WHITE, 9 to 12 inches, 12 to 15 inches, 15 to 18 inches.
„ CAUCASICUM PICTUM, 9 to 12 inches, 12 to 15 inches, 15 to 18 inches.
RHODODENDRON STOCKS, strong.
PANSIES, in 100 varieties.
IVY, Irish, 2-yr., 3-yr., 4-yr., strong.
The Nurseries, Milton, Stoke-on-Trent.

STRAWBERRIES.—Strong roots for present planting and for fruiting next year, 4*s.* per 100. Descriptive LIST and price for plants in pots for forcing on application. — RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

ONE HUNDRED THOUSAND SINGLE SNOWDROPS.

50,000 Double Yellow DAFFODILS.
30,000 Double White NARCISS.
30,000 Single Pheasant-eyed NARCISS.
10,000 Orange Phœnix NARCISS (the large Double White Daffodil).
LILIUM CANDIDUM, and CHIONODOXA LUCILIÆ (The Glory of the Snow).
Prices on application to
WATKINS AND SIMPSON, Exeter Street, Strand, W.C.
All varieties of English and Dutch Bulbs.

Cabbage Plants.

CABBAGE PLANTS!—Extra strong Autumn-sown plants, in any quantities, well rooted and free from club, of Early Enfield Market, Battersea, Nonpareil, and Robinson's Champion Drumhead Cabbage, at 3*s.* per 1000, delivered on Rail; cash or reference from unknown correspondents.
W. VIRGO, Wonersh Nurseries, Guildford, Surrey.

JAMES DICKSON & SONS.

GRAPE VINES of the usual excellent quality can now be supplied, price 5*s.*, 7*s.* 6*d.*, and 10*s.* 6*d.* each; the stronger will fruit next year either in pots or planted out.
CHRYSANTHEMUMS.—Well-grown plants of leading kinds, for immediate blooming, can be supplied at 12*s.* per dozen and upwards.
STRAWBERRIES.—By now planting transplanted runners a crop may be depended upon next year. Strong plants in large and small pots for forcing and planting can also be supplied.
AZALEAS, CAMELLIAS, WINTER FLOWERING and other PLANTS.
CATALOGUES with full particulars on application to
"NEWTON" NURSERIES, CHESTER.

To Planters.

JAMES BIRD offers the undermentioned Forest stuff, price on application:—

LARCH FIR, 3 to 4 feet, and 4 to 5 feet.
SCOTCH FIR, 1½ to 2 feet, and 2 to 3 feet.
SPRUCE FIR, 1½ to 2 feet, 2 to 3 feet, 3 to 4 feet, and 4 to 5 feet.
PINUS AUSTRIACA, 1½ to 2 feet.
HAZEL, 2 to 3 feet, and 3 to 4 feet.
The Nurseries, Downham.

Special Trade Offer.

CALCEOLARIA SEED. — Magnificent strain, saved under our own supervision.
ALEX. DICKSON AND SONS, Nurserymen and Seedsmen, &c., Belfast.

Special Offer.

STUART AND MEIN are prepared to make special cheap offer of the following to the Trade and Large Buyers. Samples on application:—

ALDER, 6, 8, 10, and 12 feet.
ASH, Common, 2 to 5 feet.
„ Mountain, 4 to 9 feet, transplanted.
BEECH, Common, 2 to 3 feet.
BIRCH, 4 to 6 feet.
BROOM, Common, 2 to 4 feet.
CHESTNUT, Horse, 2 to 3 feet.
„ „ 6, 8, 10, and 12 feet, fine clean stems.
ELDER, Common, 1½ to 3½ feet.
HAZEL, 3 to 6 feet.
LARCH, 1½, 2½ to 5 feet.
„ 3½ to 4½ feet, transplanted 1882.
MAPLE, English, 4 to 6 feet.
„ Norway, 10 to 14 feet, fine clean stems.
OAK, English, 1 to 1½ feet.
PINUS AUSTRIACA, 1, 2, 3, to 6 feet, transplanted, fine.
SCOTCH FIR, 2-yr. 2-yr.
„ 1½ to 3 feet.
POPLAR, Black Italian, 3, 5, 10, to 14 feet.
SYCAMORE, 1, 3, 5, to 9 feet.
MAHONIA AQUIFOLIA, 1½ to 2 feet,
BERBERIS VULGARIS, 2 to 3 feet.
BOX, Tree, 9 to 12 inches.
COTONEASTER SIMMONDSII, 1 to 3 feet.
PRIVET, Common, 1½ to 3 feet.
YEW, Common, 1 to 3 feet.
SPIRÆA CONFUSA (fine for forcing, pure white).
„ FORTUNEI ROSEA, NOBLEANA, THUNBERGIANA.
DEUTZIA of sorts.
SYRINGA, Common.
„ White.
VIRGINIAN CREEPER.
CLEMATIS FLAMMULA.
THUIA ERICOIDES, 9, 12, to 24 inches.
HYPERICUM CALYCINUM.
ESCALLONIA MACRANTHA.

Fruit Trees.

APPLES, on Paradise and Crab Stocks, Pyramid, Bush, and trained trees, in all the leading hardy and free-bearing varieties, very fine.
PLUMS, ditto.
CHERRIES, ditto.
GOOSEBERRIES.
The Nurseries, Kelso, N.B.

Clematis.—Clematis.—Clematis.

SPLENDID PLANTS, in 5-inch pots.

WOOD AND INGRAM beg to offer twelve of the best varieties of the above, including Gipsy Queen, Mad. Grange, Lord Neville, Symeana, Lawsoniana, &c., for 15*s.*, package included.
General Nursery CATALOGUE will be ready in a few days, and will be forwarded, free by post, upon application.
The Nurseries, Huntingdon and St. Neots.
N.B. W. & I. have also an extensive stock of COBŒA SCANDENS VARIEGATA, and will quote price on application.

CARTERS' NEW "COCKADE" RANUNCULUS.—A splendid variety of colours and shades, immense double flowers, fitting in all respects to be cultivated by the side of the Empress Anemone, and equally superior with that variety to any other class of Ranunculus.
Price, per 1000, 55*s.*; per 100, 6*s.*; per dozen, 1*s.*
237 and 238, High Holborn, London, W.C.

To the Trade.

H. AND F. SHARPE will be pleased to give special quotations for all the leading varieties of VEGETABLE and AGRICULTURAL SEEDS they have grown this season. The quality will be very fine, the Seeds having been harvested in fine condition. They have been grown from the finest selected stocks. The prices will be found very low.
Seed Growing Establishment, Wisbech.

EIGHTY THOUSAND CLEMATIS, in Pots, of all the finest double and single varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12*s.* to 24*s.* per dozen, strong plants.
Descriptive LIST on application.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

NEW ROSES of 1882, in pots.—Vendors' Selection, 30*s.* per dozen; Purchaser's, 36*s.* per dozen. The above comprise all the best English and French-raised Hybrid Perpetuals, Perpetual Polyantha, Teas, Hybrid Teas, and Perpetual Moss.

ROSES of 1881, of above-named classes, 18*s.* to 24*s.* per dozen, in pots.

CHOICE ROSES. — Tea-scented, Hybrid Tea, Noisette, China, and Bourbon, 18*s.* to 24*s.* per dozen, strong plants in pots.
Descriptive LIST on application.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

AMERICAN WONDER PEA.—A few bushels of this New Early Dwarf Wrinkled Pea for Sale, cheap; grown from seed received direct from the Raisers, Messrs. B. K. Bliss & Co., New York, and warranted pure.
BRINKWORTH AND SON, Reading.

BELGIAN STOCK of FORCING PLANTS of the Ornamental Plant Nursery of Ghent.
AZALEA INDICA and MOLLIS with buds, CAMELLIAS with buds, DEUTZIA GRACILIS, HELLEBORUS NIGER, SPIRÆA JAPONICA and PALMATA, &c.
CATALOGUE free on application. Send Orders directly to
JULES DE COCK, Nurseryman, Ghent, Belgium.

New Strawberry "Bothwell Bank Prolific."

DICKSONS AND CO., NURSERYMEN and SEEDSMEN, Waterloo Place, Edinburgh, are now sending out well-rooted Plants of the above, which has been awarded a First-class Certificate by the Royal Caledonian Horticultural Society, and, as a forcing Strawberry has secured the First Prize wherever exhibited. It is hardy, vigorous, a most abundant cropper, and the fruit is large and handsome. Its firmness will make it an invaluable market variety. 10*s.* per 100, or 3*s.* per dozen. Liberal terms to the Trade.

Catalogues for the Season.

CHARLES TURNER'S Descriptive LISTS of the following can be had free on application:—
DUTCH and OTHER BULBS,
CARNATIONS, PICOTEES, and PINKS,
STRAWBERRIES, &c.
The Royal Nurseries, Slough.

Planting Season.

ANTHONY WATERER begs to invite attention to the following well-grown and properly rooted NURSERY STOCK:—

AUCUBA JAPONICA, 1½, 2, and 3 feet Thousands.
BOX, Green and Variegated, 2, 3, 4, 5, 6, and 7 feet. Thousands.
YEWS, English, 2, 3, 4, 5, 6, 8 to 10 feet. Thousands.
„ Golden, all heights up to 10 feet, and various shapes—Globes, Pyramids, &c. Thousands.
„ Irish, 5, 6, 7, to 10 feet.
JUNIPERS, Chinese, 5, 6, 7, to 10 feet.
PICEA PINSAPO, 5, 6, 7, to 10 feet.
„ NORDMANNIANA, 5, 6, 7, to 10 feet.
SPRUCE FIRS, well furnished, 3, 4, 5, 6, and 7 feet. Many thousands.
„ Black, 3, 4, and 5 feet.
SPRUCE, Hemlock, 4, 5, and 6 feet.
WEARE'S ARBOR-VITÆ, 4, 5, 6, and 7 feet.
HOLLIES, common Green, of all heights, up to 10 feet. Thousands.
„ Green, of sorts, such as LAURIFOLIA, MYRTIFOLIA, HODGIN'S, ALTACLARENSE, Yellow-berried, &c. An enormous Stock.
„ Variegated, from 3 to 5, 6, 7, 8, and 10 feet.
„ Waterer's, beautiful Specimens.
„ Golden Queen, up to 10 feet. Hundreds.
„ Silver Queen, up to 10 feet. Hundreds.
„ Perry's Weeping Standards and Pyramids.
„ Golden Weeping Standards and Pyramids.
The Stock of Hollies of various kinds comprises many thousands, and affords a choice quite unequalled.
CUPRESSUS LAWSONIANA ERECTA VIRIDIS, 3, 4, 5, 6, 7, and 8 feet. Thousands.
„ „ GRACILIS, 3 and 5 feet.
„ „ ARGENTEA, 3 and 5 feet.
„ „ LUTEA, hundreds of fine plants, 3, 4, and 5 feet high.
„ RETINOSPORA PLUMOSA AUREA, 3, 4, and 5 feet.
„ OBTUSA AUREA, 4, 5, 6, and 7 feet.
„ PISIFERA AUREA, 3 and 4 feet.
THUIOPSIS DOLABRATA, 3, 4, 5, and 6 feet. Hundreds.
BEECH, Purple, 6 to 10 and 12 feet Thousands.
LIMES, 10, 12, 14, 15, and 16 feet. Thousands.
PLANES, 10 to 20 feet.
MAPLE, Norway, 10 to 15 feet.
CHESTNUT, Horse, 10 to 16 feet.
„ Scarlet, 10 to 16 feet.
POPLAR, CANADENSIS NOVA, 10 to 16 feet. Thousands.
OAKS, Scarlet American, 10 to 12 feet.
ACER DASYCARPUM, 10 to 16 feet.
„ SCHWEDLERII, 10 to 12 feet.
And a vast and Miscellaneous Stock of Flowering DECIDUOUS SHRUBS and EVERGREENS, which intending purchasers are respectfully invited to come and see.
Knap Hill Nursery, Woking, Surrey.

CHEAP and GOOD PLANTS for the Garden, Greenhouse, &c. CATALOGUE for Autumn, 1882, post free.

Indoor Plants. Per dozen.—*s. d.*

HERBACEOUS CALCEOLARIAS, out of pots .. 1 6
„ „ in pots 2 6
PRIMULA SINENSIS, in 5-inch pots 6 0
CINERARIAS, in 5-inch pots 6 0
SOLANUMS, full of berries, in 5-inch pots 6*s.* and 9 0
CYCLAMEN, very fine, in 5-inch pots .. 6*s.*, 9*s.*, and 12 0
BOUVARDIAS, for early blooming, in 5-inch pots, 6*s.*, 9*s.*, and 12 0
AZALEA INDICA, Ghent or Mollis, with buds, 21*s.*, 24*s.*, and 30 0
HYACINTHS to name .. .. .. 5*s.* and 6 0
Roman .. .. per 100, 22*s.* 3 0
TULIPS, to name .. per 100, 6*s.* and 8*s.* 1*s.* and 1 6
HARDY HEATHS, to name 4 0
LEDUMS, KALMIAS, GAULTHERIAS 6 0
CONIFERS for Pots, Window-boxes, and Winter Bedding .. .. per 100, 40*s.* 6 0
CLIMBING PLANTS in great variety .. 6*s.*, 9*s.* and 18 0
CARNATIONS, PICOTEES, to name 7 0
PINKS, PANSIES, PENTSTEMONS, to name .. 3 6
POTENTILLAS, PYRETHRUMS, to name 5 0
PHLOXES, to name .. .. per 100, 20*s.* 3 0

All the above Florists' Flowers of the finest varieties. Many New Herbaceous Plants; many thousands of the most showy kinds—12 sorts, 3*s.*; 50 sorts, 11*s.*; 100 sorts, 20*s.*
Spring-blooming Plants, such as POLYANTHUS, Seedling PRIMROSES (all colours), WALLFLOWERS, CANTERBURY BELLS, ARABIS, AUBRIETIAS, DAISIES (Red, White, or Rose), MYOSOTIS, SILENE COMPACTA, 4*s.* per 100, 35*s.* per 1000.
TULIPS, for Bedding, to name, 5*s.* per 100.
CROCUS, 2*s.* per 100.
SNOWDROPS, 2*s.* 6*d.* per 100.
PRIMROSES, Double White, Sulphur, and Lilac, 24*s.* per 100, 3*s.* 6*d.* per dozen.
HEPATICAS, Double Red and Single Blue, 24*s.* per 100, 3*s.* 6*d.* per dozen.
SWEET VIOLETS, in good Clumps, for Forcing, 30*s.* per 100, 4*s.* per dozen; ditto, ditto, in small plants, 15*s.* per 100, 2*s.* per dozen.
New CATALOGUE post-free.
WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.



TO THE TRADE.

Certificate of Merit, Royal Horticultural Society. Nov. 3. 1881.

NEW POTATO,

DANIELS' WHITE ELEPHANT,

The best Second Early and most wonderful productive Potato in the World; cooks beautifully white and floury, and of splendid flavour.

From J. Tuck, *Burnham, Wells, Norfolk, September* 18, 1882.—"From three-and-a-half stone of Daniels' White Elephant Potato I grew, on poor soil, thirty-five hundredweight (35 cwt.) of fine marketable tubers, of splendid cooking quality."

LOWEST PRICE PER TON ON APPLICATION.

DANIELS BROTHERS (Seedsmen to Her Majesty the Queen, and His Royal Highness the Prince of Wales), NORWICH.

WEDNESDAY NEXT.

PHALÆNOPSIS SANDERIANA, NOV. SPEC.

(H. G. Reichenbach, f.)

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, October 18 at half-past 12 o'Clock precisely, by order of Messrs. Hugh Low & Co., a large quantity of

CHOICE IMPORTED ORCHIDS,

including fine plants of the above named splendid novelty, brought from the Philippine Islands by Mr. Boxall. It is likely to prove one of the most beautiful of the genus, the flowers are the size of those of P. amabilis, but totally distinct in colour, being suffused all over with rose colour; also PHALÆNOPSIS STUARTIANA, P. VIOLACEA, in quantity; CYPRIPEDIUM CILIOLARE, a fine new species, very closely resembling the much admired C. SUPERBIENS (VEITCHIANUM); 500 DENDROBIUM DEAREI, SOPHRONITES GRANDIFLORA, ONCIDIUM in variety; ZYGOPETALUM MAXILLARE, 600 ODONTOGLOSSUMS, from the vicinity of Bogota, &c.

At the same time will be offered established plants of PHALÆNOPSIS AMABILIS, P. SCHILLERIANA, P. ESMERALDA, P. MANNI, one P. INTERMEDIA PORTEI, one P. AMETHYSTINA, CATTLEYA AMETHYSTOGLOSSA, with flower sheaths; the rare GALEOTTIA FIMBRIATA, VANDA HOOKERI, PESCATOREA DAYANA, 200 CYPRIPEDIUM SPICERIANUM, and other choice Orchids.

On view morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

THURSDAY NEXT.

RARE IMPORTATIONS.

MR. J. C. STEVENS has received instructions from Mr. F. Sander, St. Albans, to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 19, a fine lot of

VANDA LIMBATA.
The rarest of the genus, and extremely beautiful.

DENDROBIUM DEAREI.
Splendid consignment of this superb novelty.

CATTLEYA IMPERIALIS.
The grandest lot ever offered of this magnificent Cattleya.

AËRIDES VIRENS.
Java varieties, finest lot ever offered.

PHALÆNOPSIS REICHENBACHIANA.
Fine novelty, in the way of sumatrana and Luddemanniana.

DENDROBIUM LEUCOLOPHOTUM.
Beautiful new white-flowering Dendrobe.

PHALÆNOPSIS VIOLACEA and STUARTIANA.

ACINETA ERYTHROXANTHA, HOULLETIA WALLISII, &c.

On view morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

CARTERS' "EMPRESS" POPPY ANEMONES.—We are enabled to offer for the first time the entire Stock of a splendid strain of Single Anemones, comprising the most brilliant and varied colours. There has been of late years a marked improvement in the stocks of several growers of this popular genus, but we do not hesitate to say that the variety we now offer will prove immeasurably superior to anything seen before.
Price, per 1000, 55s.; per 100 6s; per dozen, 1s.
237 and 238, High Holborn, London, W.C.

LAKE DISTRICT FERNS.—Large crowns suitable for rockeries—six varieties, 3s. 6d. per 100; ten varieties, 5s. 6d. per 100; fourteen varieties, 8s. per 100; seventeen varieties, 10s. per 100; large Royals, 7s. 6d. per 100; Angulare, 6s. per 100; Scolopendrium, 3s. per 100; 100 clumps of Allosorus crispus, 3s. 6d. Extra plants added for carriage. All correctly named.
JAMES STEPHENSON, 43, Fell Croft, Dalton-in-Furness.

Special Cheap Offer of Amaryllis.

DICKSON, BROWN AND TAIT, Seed Merchants, Manchester, can offer 500 large flowering Bulbs of Amaryllis aulica, at 30s. per dozen, £10 per 100. Also 500 Choice Hybrids, all flowering bulbs, 30s. per dozen, £10 per 100. These bulbs are well worthy the attention of purchasers. The bulbs are really fine, and not to be met with at prices named.

NEW GOLDEN BEDDING PANSY, KING OF YELLOWS—the largest, freest, and brightest of all golden-yellow Pansies; strong plants, 1s. each, 9s. per dozen.
PANSY THOS. GRANGER, rich glowing Crimson, 5s. per dozen.
PANSY SUNBURST, fine Red, 16s. per 100, 3s. per dozen. Fine collection of all leading sorts.
RODGER, McCLELLAND AND CO., Nurserymen, &c, Newry.

RASPBERRY, Fastolf, £1 per 1000. Good plants and well rooted.
BLACK CURRANTS, Black Naples, 4 years old, £4 per 1000. Clean good plants.
STRAWBERRY PLANTS, from open ground—President, Elton Pine, Goliath—10s. per 1000
JOHNSON AND SONS, Paddock Wood, Kent.

Special Offer to Nurserymen and Planters.

P. J. PERRY, NURSERYMAN, Banbury, offers:—

ALDER, 4 to 6 feet.	BEECH, 3 to 10 feet.
ASH, 4 to 10 feet.	BROOM, 2 to 6 feet.

CHESTNUTS, double Scarlet, 10 to 16 feet; stems, 2 feet in circumference.
ELM, English, 6 to 12 feet.
HOLLIES, Gold and Silver Variegated, 2 to 4 feet.
" standards, 5 to 12 feet.
LARCH, 1½ to 5 feet. | MAPLE, 4 to 6 feet.
PICEA NORDMANNIANA, 2 to 7 feet.
PINUS AUSTRIACA, 3 to 9 feet.
FIR, Scotch, 2 to 3 feet
" Spruce, 18 inches to 2 feet 6 inches.
THUIA GIGANTEA, 5 to 6 feet.
YEW, common, bushy stuff, 2 to 5 feet.
" Golden, 1 to 2 feet 6 inches
" Irish, 10 to 15 feet; 4 to 5 feet in diameter at 3 feet from the ground.
LAUREL, Portugal, 2½ to 3½ feet.
ROSES, standard, dwarf and pot; including most of the leading sorts.
200 GENISTA FRAGRANS, in 48-pots, 9s. per dozen.
500 CHRYSANTHEMUMS, in 32 and 24-pots, chiefly large flowered variety, 18s. per dozen.
200 GREVILLEA ROBUSTA, in 48-pots, 9s. per dozen.
400 FERNS, in variety, chiefly Adiantum cuneatum, Pteris cretica, Aspleniums in variety, in 48-pots, 15s. per dozen.
200 PELARGONIUMS, young plants, to pot, 5s. per doz.
100 GERANIUMS, Zonal, well-grown, full of bud, in 24-pots, 20s. per dozen.
500 ARALIA SIEBOLDII, in 60-pots, 4s. per dozen.
200 AZALEA INDICA, full of bud, in various sizes, from 30s. to 36s. per dozen.
800 BOUVARDIAS, 8s. per dozen.
Prices and samples on application.

SWEET VIOLETS for Winter Blooming.
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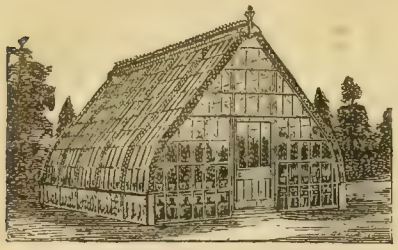
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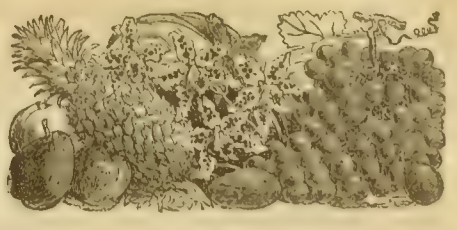
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THE

Gardeners' Chronicle.

SATURDAY, OCTOBER 14, 1882.

HARVEST FESTIVALS.

AMONGST the changes which time and fashion have wrought in the form and nature of our festal celebrations, few things are more prominent than harvest festivals. The ancient harvest home feast, with its eating and its drinking, its coarseness and lewdness, has happily become a thing of the past, and though it is well that employer and employed should, when prosperous years come, share in the gladness which the plenty and profit bring, doubtless it is wiser that the share should take the tangible form of hard cash than that questionable one of mere drunken debauchery. But what the social life of agriculture has rejected the Church, in its many sects and denominations has taken up; and now as in olden time the harvest festival has assumed a religious aspect, that is, so far as relates to the ceremonies attached to it. But there have grown up with the newer festival customs that are proving on the one hand profitable, on the other hand exacting.

No matter whether the huge church or the little and humble conventicle be the scene of the ceremony, it is now thought essential that the place of worship should be what is termed "appropriately" decorated for the occasion. Taste, indeed, forbids our bestowing approval upon the free and easy conversion of temples of Christian worship for the nonce into the semblance of temples of Ceres, Flora, and Pomona—for there seems to be no limit to human ingenuity not only in securing by determined begging gifts of all possible field and garden products, but in the disposal of them, so that the sacred building for the time resembles a greengrocer's shop or a miniature market. The floral decorations of Easter and Christmas, usually chaste and not unpleasing, seem to run riot at harvest-tide, and things which have no more connection with sparse or bountiful corn harvests than "the man in the moon" has with earthquakes are made to do duty as representatives of the bounteousness of Providence in giving us ample supplies of food. On none, however, do these festivals fall more oppressively than upon the gardener.

The farmer, who may furnish a sheaf or two of Wheat, gives after all but an exceedingly infinitesimal portion of his products, and is none the poorer. The gardener, however, has to meet heavy demands. In many places, not from one church or chapel, but from half-a-dozen, come pressing and urgent requests for flowers, of course, and as many, inclusive of Ferns and greenery, as he can send; thus garden produce is wanted liberally. It may to the common mind be difficult to find what intimate associations there may be between the field harvest and forced Grapes, Melons, Pines, wall Pears, and similar fruits, but the clergy see that these things are symbolically appropriate, and can always find room for any quantity, and which of course, having, as it were, once become consecrated to sacred uses, are no longer fitted for the delectation of lay mortals, and therefore are not

returnable. But even choice fruits fail to satisfy in every case. Tomatos and Cucumbers, Vegetable Marrows and Cauliflowers, Cabbages and Lettuces, Potatos and Turnips, *ad infinitum*, all become acceptable. No wonder that some gardeners feel that the demands they are thus called upon to satisfy are not only irksome, but make very serious inroads upon the supply of products to meet the requirements of their employer's family. But where this feeling exists the ideas of gratitude and self-sacrifice become, to say the least, debased and of little worth.

Few gentlemen would care to deny gifts from their gardens for this purpose, and few gardeners would like to seem wanting in such a matter, but there must be a limit to their good nature and the gardeners' capacity. The greatest restraint, however, would be that enforced by public opinion, for it is not possible to suppose that excessive and incongruous use of the fruits of the soil will not presently meet with wide condemnation. There is another objectionable aspect to these harvest decorations in its selfish element. Whilst those egotistically tempered may prefer to boast of the superior beauty or variety of their contributions, all admit that they prove eminently attractive to sightseers, as contrasted with worshippers, but as collections in hard cash always follow, the decorations, if involving much labour, prove not unprofitable. We may well ask, however, whether they have not gone far enough, and even whether it is not well for the moderate-minded of the clergy to set an example, by returning to the employment of those things which are simple yet appropriate, and not calculated to evoke the selfish feelings to which allusion has been made. *A.*

New Garden Plants.

VANDA HOOKERIANA, *Rchb. f.*

On the 24th of April, 1856, I first saw Dr. Lindley, Sir William Hooker, the Hookerian Herbarium, Mr. J. Bateman, and Kew Gardens.

Amidst the treasures of the Herbarium this plant made an extraordinary impression on me. It came from Labuan: Motley 347! I published it in Seemann's *Bonplandia*, 1856, 324. In 1862, having made Mr. Stuart Low's acquaintance, I urged him to introduce this lovely plant. Mr. Low knew the species but too well, and speaking hard words about its being the worst traveller he knew, predicted it would not easily come alive to Europe.

Then a so-called plant appeared on the Continent. It had thin blunt leaves, and the fact of its dying before flowering prevented its identification.

Finally, at the end of the summer, 1873, there came a living cargo to London. I believe all went direct to Sir N. de Rothschild, Bart., and the plants one afterwards saw at other places were all presents from Tring Park.

Now, after nearly ten years, Mr. Hill, Sir N. de Rothschild's Orchid grower, has succeeded in flowering the plant, and if progress may be seen later on in the quantity and diameter of the flowers, it is scarcely to be expected that the actual brilliancy of colour can be surpassed.

Details about the plant were given when it made its *debût* at the Royal Horticultural Society, on September 12, as noted in the *Gardeners' Chronicle*, 455, September 16, p. 375, col. 1. We should have had liked some remarks from Mr. Hill as to how he succeeded in flowering the plant. I remember that somebody, most probably Mr. Stuart Low, informed me it should be flooded with water during the growing season even more than a Nepenthes.

The general appearance of the plant is that of Vanda teres, though it is probably more delicate. I have at least no knowledge of such giant plants as my Vanda teres from Pegu. The leaves are provided with a subulate point, mucronate at the apex. I always saw the leaves yellowish-green in the typical plant, but I am not sure whether it does not change colour when in fine health. The peduncle exceeds the leaf in length. The one at hand is two-flowered. A wild inflorescence with ripe fruits bears five and so also one of Mr. Motley's Hookerian peduncles.

The flower has rather unequal sepals. The odd one is cuneate-oblong, wavy, and appears to be bent over the column. The lateral ones are nearly of the same shape, but much larger, and the median nerve projects on the outside beyond the margin in a subulate apiculus. The petals are spatulate, oblong, blunt, and undulated. When fading, all these organs, which are bent in an elegant manner, are cream-white, with a few crimson-lilac spots. When first I saw them they had a light lilac hue.

The auricles of the lip are nearly triangular, with a thick triangular area, bordered by callous lines. Two blunt calli stand in front of the mouth of the small acute spur. The lip's blade is large, transverse, trifid, the side laciniæ semi-oblong, a little retrorse at the apex, the anterior lacinia semi-oblong, all undulate, and even lobed. The lip is whitish, with an exceedingly light hue of lilac, and it is covered by numerous fine dark purple-lilac spots, which look exceedingly fine. The column is hairy under the fovea, white with a few purple-lilac lines on the back and on the androclinium. The pollen apparatus is that of Vanda teres.

I feel very grateful for the glorious specimen. No doubt Mr. T. Moore will have a difficult position when giving his verdict over the new Orchid beauties of this year. What will our modern Paris find to prefer to this grand plant?

My wild specimens, including nine flowers, are due (chronologically) to Mr. Stuart Low, Mr. Bull, Dr. Wallace, Sir Joseph Hooker. Some flowers came also from Singapore, where it may be grown easily. *H. G. Rchb. f.*

ANGRÆCUM BILOBUM (*Lindl.*) KIRKEI, *n. var.**

This has just flowered with Mr. B. S. Williams, Victoria and Paradise Nurseries, having been sent by Dr. Dougal Kirk, of Zanzibar. The same thing flowered as early as 1875 at the Hamburg Botanic Garden, and later, one sent by my late friend, C. M. Hildebrandt, from the same country. When it arrived it looked very distinct in its very narrow leaves (see also C. M. Hildebrandt's dried specimens, No. 1286). By-and-bye the flowers got broader and less acuminate, and the leaves became much broader. Thus I might suggest this to be a starved form of the Cape Coast Castle plant. I may add the remark, that I never saw such leaves as are represented by Miss Drake in the *Botanical Register*. I have drawn in the garden of Herr Keferstein, Kröllwitz bei Halle, a variety that forms an excellent connecting link, not having the rounded sides to the leaves. *H. G. Rchb. f.*

ANGRÆCUM FUSCATUM, *n. sp.*†

This is near Angræcum bilobum, Lindl. Its leaves are as much cuneate, oblong, unequally bilobed at the blunt top. I have no information about the height the plant reaches. It bears a thin lax peduncle with many flowers, which are nearly equal to those of Angræcum caudatum. The peduncle is cinnamon coloured, as are the ovaries and the very short blunt triangular bracts. Sepals ligulate acuminate, ochre coloured, the lateral ones reflexed. Petals nearly the same, a little broader, white. Lip oblong acuminate, white, with a filiform long flexuose brown spur. Column with a membranous toothletted border to the androclinium and a linear rostellar process. The flower might safely be compared with that of a Brassia in shape, provided the spur were not regarded. The plant was imported from Madagascar by Messrs. Hugh Low & Co.

The first flowers came from Mr. George Marriott, Exotic Nursery, Upper Edmonton, N. I finally persuaded my correspondent to spare a leaf for me, which was a great sacrifice, his flowering plant having only had three such organs. Then I had it from Messrs. Hugh Low & Co. Finally it came from Sir Trevor Lawrence's Orchid paradise of Burford Lodge. *H. G. Rchb. f.*

CYPRIPEDIUM CARDINALE, *n. hyb.*

This is a Sedenian cross, raised at the Royal Exotic Nursery of Messrs. James Veitch & Sons. The parents are Sedeni and Schlimii (Sedeni × Schlimii). It is distinct from Schlimii in its acute undulate petals, a longer odd sepal, in its white stamninode with a purple angulate marking, and in its purple hue on the upper sepals and petals. It differs from Sedeni by a narrower bract, straight petals, and the most intense glorious purple of the lip. It will be interesting to know whether it is as free a grower as the beloved C. Sedeni (Selenipedium cardinale). *H. G. Rchb. f.*

CYPRIPEDIUM GRANDE, *n. hyb.*

This is indeed a curious thing. It was raised by Mr. Seden at the Royal Exotic Nursery of Messrs. J. Veitch & Sons from a cross between Cypripedium Roezlii and caudatum (I guess caudatum roseum = Warscewiczii). It is a giant plant, with leaves and habit of the latter. The peduncle is that of Cypripedium Hartwegii with the acute bracts of a Heliconia. The grand flower would be that of a Hartwegii in an exaggerated edition had it not oblong-lanceolate sepals, the inferior one surpassing the lip. A fresh inflorescence is at hand bearing three flowers, which of course are not quite equal to the flower of the one flowered first inflorescence (Selenipedium grande). *H. G. Rchb. f.*

CYPRIPEDIUM CILIOLARE, *n. sp.**

Could Reinwardt or Zippel, who discovered the two first Sondaic Cypripedia, have foreseen what a rich store of those curious, even lovely plants, was concealed in the Malayan and Philippinese Archipelago! There is no end to them. Here appears once more a fresh species on the scene, very near Cypripedium superbiens, Rchb. f. (Veitchianum, Hort.), and yet well distinct, as I must believe from the materials at hand—a fresh leaf and dried flowers. It has already made its *debût* at Mr. Stevens' rooms, having been introduced by Messrs. Hugh Low & Co. The leaves come near those of Cypripedium superbiens. The flower has everywhere far more copious nerves, and the hairs on the margins of the sepals and petals are much more numerous and much denser, and not chiefly retrorse. The principal characters are to be found in the lip and in the staminodes. The nail of the apparently velvety lip is much shorter than in Cypripedium superbiens, and the staminode is much lower and broader, with blunt almost obscure inner teeth in front. The species will prove a good member of this fine genus, so much esteemed by many. *H. G. Rchb. f.*

THE FUNGUS WEEK AT HEREFORD.

HEREFORD! a name which calls up a host of pleasant memories to the present generation of British mycologists. Year after year do the devoted members of this confraternity look forward to the Woolhope week with an ardour no pluvial downpour can damp. For twelve years past it has been the privilege of the writer to be present at the fungus foray of the Woolhope Club, but never has the weather been more propitious than was the case this year. In the earlier days of these forays it was considered rather meritorious than otherwise to journey some 200 miles to be present, but times have changed since then. Now mycologists come double the distance, as the Rev. J. Stevenson did this year, from Glamis, in Forfarshire, and nothing is thought of it, or, as when our French *confrères* came a year or two ago, some of them from (to us) unknown regions trending towards the Jura mountains. This much is certain, that to acquire anything like an extended knowledge of the larger fungi the student must be an enthusiast. Of course any one with ordinary care and attention may learn to recognise the commoner species, but to pursue the study of the rarer, or, perhaps, it would be more correct to say, the less known and less easily recognised species, necessitates a great amount of enthusiasm, for several reasons; firstly, because the bulk of the specimens can only be obtained at one period of the year, and that but a limited one; then, as a rule, they occur in great numbers simultaneously; then, again, their ephemeral nature compels one to work at them almost night and day if their characters are to be grasped; and, lastly, the absence of any easily applicable method of preservation by which the determined specimen of one year can be compared with the

* *Angræcum bilobum* (Lindl.) *var. Kirkei*.—Minus, angustius; foliis angustioribus apice divergenti bifidis; laciniis oblongo-ligulatis obtusis; sepalis lanceolatis acuminatis; labello oblongo abrupte seu sensim cuspidato. *H. G. Rchb. f.*

† *Angræcum fuscatum*, n. sp.—Foliis cuneato oblongis apice obtusato inæqualibus; racemo pluriloro flaccido; bracteis triangulis ovaria longe non æquantibus; sepalis ligulato linearibus acutis, lateralibus reversis; tepalis cum sepalo inæquali fornicatis; labello oblongo-ligulato acuminato, calcari filiformi flexuoso ovarium pedicellatum ultra duplo superante, jugo semilunato uno supra alterum sub fovea.—Ex Madagascar insula imp. cl. Low. *H. G. Rchb. f.*

* *Cypripedium ciliare*, n. sp.—Aff. Cypripedio superbienti Rchb. f. (Veitchiano, Hort.): tepalis latis obtuse acutis breviori-bus, pilis quaquaversis densissime ciliatis; labelli ungue brevi; staminodio latissimo, brevissimo, extus dente utrinque inflexo brevissimo; dentibus anticis obscurissimis creniformibus. Ex ins. Philipp., imp. cl. Low. *H. G. Rchb. f.*

gatherings of the next—if the plant appears the following year, which is by no means to be depended upon; often one has to wait several years before seeing the same fungus again. But with the motto of the Club, "Hope on, hope ever," autumn after autumn finds the working mycologists of Britain wending their respective ways to the western city, and so this year, on Monday, October 2, there met at Ludlow station some dozen gentlemen, including, of course, Dr. Bull, Dr. M. C. Cooke, Rev. J. Stevenson, Rev. Canon Du Port, Messrs. W. Phillips, F.L.S.; T. Howse, F.L.S., &c., after the usual hand shakings and mutual greetings, the well-known voice cried "For—ward, gentlemen," and off the party started for Whitcliff Woods, not before, however, every one had expressed to every one else their extreme pleasure at seeing Mr. Broome, who was prevented last year by ill health from attending the meetings, once again in the field, rake in hand. The first find fell to the Doctor in Hygrophorus fornicatus, the next to Mr. Phillips in the shape of a

"Bonnie wee Cryptogame,
That has na got a name"

—a very beautiful Agaric growing on a stump, for which, strange and wonderful to relate, no one would venture a name. The party then deployed to search for Strobilomyces strobilaceus, but without success. Soon afterwards a Cortinarius was gathered, which at once indicated what the character of these meetings was to be, namely, that of careful consideration and discussion of species, rather than of the indiscriminate collection of large quantities of fungi. The species in question was decided to be Cortinarius mucifluus, which subsequent reference to Fries' *Icones*, t. 148, f. 1, confirmed.

Amongst the many critical species which came under discussion at these meetings were the following:—Agaricus cucumis and pisciodorus. The former is said to have saffron-coloured gills, and to smell of Cucumber; the latter to have pink spores and the odour of rancid fish—the gills are spoken of as "gilvo incarnatus, demum fulvellus." One would think these characters marked enough to make the recognition of these two species a question of no difficulty. It must be understood that in colour and general habit, place of growth, &c., they both resemble each other. But the smell surely will distinguish them, it may be thought—there can be no resemblance between rancid or putrid fish and Cucumber. Unfortunately, however, the plant we find commonly in this country has the fishy odour when first gathered, but in the course of a few hours, as the plant dries, it passes into a distinct Cucumber odour. Then it may be suggested that the colour of the spores should be compared. The spores are not so abundant in our plant as they are in many Agarics, but when collected on white paper they are of a pinkish-yellow. Whatever the mycological public may think of us, we are strongly of opinion that A. cucumis and A. pisciodorus are two states of one and the same fungus, and that A. piceus, Kalch., and A. nigripes, Trog., do not stand on too sure a foundation. Fries says of A. piceus, "Odor cucumerinus vel piscinus," and Kalchbrenner's figure might very well have been taken from a short-stemmed specimen of our plant; while Fries' figure of A. nigripes, with its yellow flesh-coloured gills and "fœtore piscis putridi," might equally well have been taken from a large specimen. Could we but find these four species all growing side by side at the same time, the question would be easy enough to settle, but as it is we must do the best we can. There may be four species, or there may be only one. There was another species which some thought was Agaricus (Flammula) inops, and others A. (Hypholoma) epixanthus. It was also a species in which the spores are few in quantity; but whoever may be right in the matter of description, in Fries' *Icones* our plant is figured under the name of inopus, as any one may see who cares to turn to t. 118, f. 1. Lactarius serifluus and camphoratus are often confounded, but, as was shown at these meetings, the former has a dark brownish pileus, and much paler gills, with a shade of yellow on them; the figure in Berkeley's *Outlines*, t. 13, f. 4, shows the colour of the pileus well, but is too dark in the gills; while camphoratus is a small species with the pileus inclining to dark brick-red. They both smell alike when fresh, but camphoratus developes when dry a powerful odour of Melilot. The var. Swartzii of A. fibula, and the A. setipes of Fries seem to us certainly identical, and we also fail in our endeavours to separate Cantharellus tubæformis and infundibuliformis. Mr. Stevenson pointed out that we had often confounded A. ammoniacus with A. alcalinus.

But to return to the Whitcliff Woods. Mr. Stevenson gathered A. (Flammula) lentus, Pers., and soon after Thelephora Sowerbei, Cortinarius hæmatochelis, Lactarius pargamenus (hitherto confounded by us with L. piperatus, but easily known by its very narrow and extremely crowded gills) were found. Luncheon was partaken of under the Oaks with zest and jest, especially the latter, for which the writer came in for his share, far too cruelly to bear repetition. The party then made for Sunney Gutter, a vile name, traducing a most lovely stream, at which the party quenched their thirst. A few minutes later Mr. Phillips gave the "view hullo" to "Strobilomyces!" around two specimens of which the company gathered, gazing with subdued enthusiasm as the Rev. J. Stevenson gathered this rare fungus which no Southern hand was allowed to cull. A few minutes later Lactarius lilacinus was added to the list of finds, and almost directly afterwards L. vietus, a plant bearing some resemblance to L. glyciosmus, but easily distinguished from it by the absence of odour and other characters. Satisfied with their day's gathering, the mycologists started for Ludlow. On leaving the wood a brilliant specimen of the amethyst variety of Agaricus laccatus was found pinned to some railings, and attached to it a record that "Fortey and four others were gone on." How like in some respects, yet how unlike in others, to the memorable record left by Captain Crozier of the *Erebus* and *Terror* expedition, which was found years afterwards by McClintock in the dreary Arctic regions! But mycologists are not given to melancholy. On the road to Abbey Villa Mr. Bagnall was met; he had unfortunately missed the party, and had wandered all day by himself in the Whitcliff Woods. His basket was turned out upon the lawn, when it was discovered that he had lighted upon some very interesting species, including the wonderful Lactarius uvidus and the rare Agaricus stans. Messrs. Fortey once more regaled the famishing fungologists with a meal they persist in calling a tea, but which is in reality a substantial dinner in disguise. During the meal a gentleman from Birmingham, who shall be nameless, mentioned in confidence that on the road down he had preconceived portraits of the mycologists present, but the only individual who came up to his ideal was Mr. Broome—as for the writer of these lines he had expected to find a venerable old gentleman, with a flowing silvery beard, after the style of old Parr it is presumed; but he was grievously disappointed when he saw—well,—only the writer in *propriâ personâ*.

In the evening there was a reception at Dr. Bull's, at which the President, Thomas Blashill, Esq., exhibited some beautiful drawings of microscopic objects, and a paper was read on some experimental researches upon the "Physiology of the Uredines," which provoked an animated discussion on heteræcism. This was followed by a most valuable paper by Dr. Wharton on the "Meanings of British Birds' Names," and one by Mr. Vize on "Glæocapsa sanguinea."

Next day Dinedore Camp and Rotheras Wood were hunted; the rare Agaricus bulbiger, however, was not to be found, although other interesting fungi were, including Lactarius trivialis and Puccinia circeæ, with its two forms of teleutospore. In the evening a meeting was held at the Free Library, when the work of naming and arranging the specimens was gone into with zeal.

On Thursday—the Club day—working mycologists were by 8 A.M. busy sketching and studying the specimens in the room. The collection was not by any means so large as it often is, but some very rare and interesting species were represented, amongst which were Boletus cyanescens, Polyporus intybaceus giganteus and Schweinitzii; Lactarius uvidus, trivialis, pargamenus, lilacinus, camphoratus; Agaricus semitalis, aurivellus, pyrotrichus, petatasatus, subpalmatus, holosericeus, columbetta, sordidus, stans, dryinus; Cortinarius impennis, mucifluus, cœrulescens, paleaceus, flexipes; Russula depallens, and rubra.

Mr. Berkeley sent a specimen of Lycoperdon Hoylii, and there was a Dædalea from Cornwall, sent by Mr. Boscawen, which some thought was D. confragosa. The fungologists now added to their number Miss Du Port, Mr. and Mrs. Griffith-Morris, the Rev. Mr. and Mrs. Vize, Messrs. Renny, Acton, Bucknall, Churchill, Holloway, Lane, Lingwood, and others, together with a host of Woolhopians, most of whose faces were familiar, but whose names are unknown to the writer.

The excursion to Credenhill Camp was quite an imposing ceremony, a string of carriages conveyed the Woolhopeans to Credenhill Court. Upon arrival the company were forthwith ordered to the camp, where several hours were spent searching for fungi and admiring the camp itself. At 2 o'clock the Doctor read his paper on "Credenhill Camp—Magna Castra," which was highly spoken of by those fortunate enough to hear it, but unfortunately the writer was not one of them. It so happened that just as we should have adjourned to the trysting place the Canon in finding Russula rubra lost his digger. Now it so happens that this is a Russula far from common, although many things have been called by this name. Some half-dozen fungologists sympathising in the loss of the weapon, and partly led on by the desire of gathering further specimens of the Russula, stayed behind to prosecute the search, and so missed the paper and only gained the carriages as they were starting. However, all were safely got on board and the start made. We were rattling along, thinking of the fungus dinner in store for us at the "Green Dragon," when the commissioner of the Woolhope Club, who of course led the van, suddenly held up his hand and cried "Hold!" in a voice which made us all tremble. We were at the time going down hill at a breakneck speed, but the drivers pulled up their horses and by applying the breaks vigorously to the wheels succeeded in bringing the carriages into a state of stable equilibrium directly opposite a gentleman's house. What is the matter? Something serious must have happened. Had the Doctor left his spud in the camp? or, worse than that, had he forgotten his basket of funguses? Nothing of the kind happily. The President gravely rose in his seat and pointing straight at the front door of the house in the calmest and most collected manner, said, "Debased Corinthian capitals," and away we sped, before the owner of the house could rush out to see what was the matter. It turned out that two stones found in Magna Castra had been placed upon the garden wall, so it was no accident after all, but a part of the programme into which we, the benighted mycologists, had not been initiated.

We had not proceeded far before another stop was made, but not so suddenly as the first. "What is the matter now?" was asked as the company fairly tumbled out of the carriages. "Going to see Magna Castra," was the reply, and the party disappeared through a gateway. It is a lamentable fact to have to relate, but a few bigots actually kept their seats and studied their specimens, while one of their number read Fries' *Monographia* till the rest returned. They came back in a body, through a gap in the hedge, covered with mud and laden with pieces of pottery, ancient and modern, Roman and Victorian, fragments of urns, potsherds, stones, and the like. One gentleman cherished half an old flower-pot, while another was intensely happy with a lump of verdigris, which he carefully wrapped in paper and put into his purse with good nineteenth century sovereigns,—as a Roman penny. The journey was resumed, and Hereford duly reached in safety, the dinner at the "Green Dragon" enjoyed, Agaricus nebularis tasted—all without a hitch. After dinner Dr. Cooke read a humorous paper on "Puff Balls" that gave every one a hearty laugh, and which was so good that it had to be re-read the following evening at Dr. Bull's. Mr. E. Cambridge Phillips read an interesting paper on the "Breconshire Raptores." The company adjourned to Mr. Cam's, where, after tea and coffee, their exuberant spirits were considerably quieted by a paper on the "Classification of the Uredines," which was listened to with admirable fortitude, for it was terribly technical. The President exhibited and demonstrated a very interesting Roman relic, a domestic altar recently found in Hereford.

Friday, the last day, was devoted to an excursion to Haywood Forest, where many rare and interesting specimens were found, including a Cortinarius, which provoked much discussion as to whether it was C. saginus or C. triumphans; Thelephora caryophyllea, Agaricus lampropus and ambustus, and a new Rhinotrichum found by Mr. Vize. At the evening meeting at Dr. Bull's Mr. Phillips read his paper on the "Polymorphism of Rhytisma radicale," and the Woolhope Fungus Forays of 1882 passed into history as they begun, with a general hand-shaking all round. May we all meet again next year, to have as profitable and as pleasant a series of meetings. *Charles B. Plowright, King's Lynn, Oct. 9.*

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BURNT ASH NURSERY, LEE.

THIS extensive plant-growing establishment and nursery, the property of Mr. B. Maller, Lee, is easily reached from London Bridge Station (South-Eastern Railway), or from Cannon Street or Charing Cross Stations. The distance from London Bridge to Lee is about 7 miles, and the nursery is close to the latter station. The principal entrance to the nursery is out of Burnt Ash Lane, where there are two borders planted with a good variety of trees and shrubs leading to the houses. Inside the entrance-gate we noticed a small show-house filled with Liliums of sorts, Pelargoniums, Azaleas, and Camellias. The borders referred to are neatly edged with Euonymus radicans variegata, and the variety of weeping trees, Conifers, and other trees and shrubs, are of the usual kinds selected to make such borders interesting, and in some degree instructive to visitors. We should like to see nurserymen give more attention to this matter than they do. A stranger visits a nursery, for instance, and he has to wade through acres of all kinds of trees, shrubs, and plants, before he can determine the plants or shrubs that are likely to suit his purpose for planting. We are aware that most nurserymen plant groups and borders of trees for the purpose of benefiting visitors, and assisting them to decide upon their planting arrangements, as well as for other reasons, but we would like to see the custom more general than it is. Mr. Maller employs a good many standard weeping Willows, weeping Almonds, &c., in his borders for the sake of giving effect. By the way, the latter makes a good cemetery plant. Hollies of sorts are used effectively in these borders, and from the appearance of their growth seem to be supported by plenty of fibrous roots. The cut-leaved Birch and purple Nut, variegated and other Elms, Gingko adiantifolia, and several kinds of Thuias are among those specimens that strike the visitor soonest, chiefly because of their habit and leafage. Eucalyptus globulus has a good effect in these borders beside the purple Nut and other green or dark-leaved specimens. Approaching the houses we pass a rare stock of Solanums thick with berries, and a good collection of single and double Pelargoniums.

The glass—a little village of it—is scattered about in blocks of houses running east and west and north and south, besides several detached houses. One of the latter—indeed, the first house we come to—is filled with Maréchal Niel Roses, from 6 to 9 feet high, worked upon the Brier stock, and a variety of other Tea Roses in 6-inch pots. The next house is 100 feet long, in two divisions, and is filled with an extra fine lot of Maidenhair Ferns. We say extra fine, not to convey an idea of mere size, but to point out the condition of the plants, which are not only well grown, but also well taken care of, as regards being gradually hardened off as the fronds are developed. The subsequent treatment of Ferns after they are actually grown is of equal importance to the system of cultivation—perhaps in the case of delicate Ferns even more so—and it is for this reason that we think Mr. Maller's collection unusually valuable. We observed a good-sized house filled with Begonias in flower—a really useful stock, consisting of B. floribunda, B. Weltoniensis, and a miscellaneous stock of other plants, including several kinds of Heliotropes, grown in small pots, and coming into flower; and after this a range of four houses running east and west, consisting of a propagating-house in two divisions, Fern-houses stocked with healthy collections of Polypodiums, Lomarias, exceedingly well grown, Adiantums, and Lastrea opaca. The fourth house of the block has a special stock of Ferns, Adiantums of sorts, set upon stages made of coke and cement, resting upon a wooden bottom.

Another block of four houses, each 80 feet long, is filled with Bouvardias, of which 10,000 plants are grown; Primulas, Ferns, Poinsettias and hosts of other plants, such as are in everyday request for furnishing and marketing purposes from now until the spring brings us a succession of other plants and flowers. The Bouvardias are grown in 48-sized pots, and embrace all the early and late flowering kinds, such as Humboldtii corymbiflora, Hogarthi, The Bride, longiflora, elegans, triphylla, Queen of the Roses, Vreelandi, and a considerable stock of the new double variety, Alfred Neuner. The plants are grown close to the grass, and will therefore make pretty little bushes, having healthy leaves and abundance of flowers for winter decoration. The Ferns in these houses are more remarkable for numbers than for variety. The sorts principally grown are Adiantum concinnum latum, A. pubescens, Pteris cretica albo lineata, and Pteris serrulata major. If one can see any distinction as regards quality, it is in the stock of Lomaria gibba, which we incline to think, as regards cultivation, the cream of the collection. The Polypodiums are good, so also is the stock of Doryopteris palmata. We next notice a batch of Grevillea robusta, so perfect in every respect that words need not be wasted in describing them. Over 2000 of these are grown, of various sizes, some early, some late, but the great bulk of them ready for table work or furnishing at any moment. The Palm-house has a north and south aspect. Among the inmates we observed Areca rubra, Phœnix reclinata, Latania borbonica, and Cocos Weddelliana, very good; and of miscellaneous subjects, Curculigo recurvata, Davallia barbata, Jasminum grandiflorum, Dracænas of sorts, and others. We should mention as being exceptionally fine the stock of Jacaranda mimosæfolia, from 12 to 18 inches in height, and beautifully furnished from top to bottom. The Pelargonium-house is furnished with a select stock, and there are two or more houses furnished with Vines in pots and other miscellaneous subjects, comprising Palms, Aspidistra lurida variegata, Ficus elastica, Caladiums, Azaleas, Tuberoses, Ophiopogon Jaburan foliis variegatis, Anthericum variegatum, and other useful flowering plants. The collection of Gardenias is healthy, and for young plants promises to yield a fair supply of flowers. The stock of Cyclamens fills five pits, and vary only as regards the time of flowering. The early ones are in flower, and will come into use about October and November, and plants raised from later sowings will succeed them. Of these Mr. Maller grows 4000. It is noticeable that but one or two varieties of plants are grown in the same house. A whole house is devoted to the culture of Cyperus alternifolius and Fuchsias, or the floor of a house is covered with Ampelopsis Veitchii, Euonymus ovatus marginatus, Echeverias, or something of similar habit and constitution, while the roof is covered with something more valuable. There are six pits, each 60 feet long, filled with young Heaths to come in for next year, a span pit 80 feet long and 10 feet wide also filled with young Heaths, and several more pits filled with smaller stock; or in round numbers a collection of 50,000 Heaths, among which there is not visible a dozen unhealthy looking plants. The varieties that are grown in large numbers are Erica Bowieana, E. Cavendishiana, E. perspicua nana, E. intermedia, E. rubra, E. verticillata, E. cerinthoides, E. blanda, E. caffra, E. candidissima, and others. But it is the stock of Erica hyemalis that is the wonder of this establishment.

Over 2 acres are covered with pots, or something like 20,000 plants in all. It is a lovely sight to watch the action of the wind waving to and fro the healthy dark green shoots of this extraordinary collection. The plants are grown in 24, 32, 40, and 48-sized pots, and are arranged in large beds in mathematical order from one side of the ground to the other. It is remarkable that there is not a single cut-back plant in the collection. The strongest and largest plants are one year and nine months old, and are so densely furnished to their very base that the rim of every pot is covered with healthy green, and every shoot erect and setting, or set, with flowers. It cannot but be interesting to state the system by which so many thousands of plants are kept supplied with water. Mr. Maller's plan is simplicity itself. A row of tubs are set at the top and bottom of the plants, the centre one being the highest, and every succeeding one falling slightly to either extremity of the line. A stand-pipe furnishes the supply of water, which flows from the centre tub right and left through a small iron pipe. Thus when No. 1 tub is filled the water flows on No. 2, and so on to the end; and if the supply of water is required in the set of tubs upon the right you have only to turn a tap to stop the flow of water entirely in the opposite direction. The man or men in charge of the collection are thereby enabled to water the plants in a space of time that would astonish many people, and without any attendance whatever.

There are other varieties grown in considerable quantities, such as E. perspicua erecta, E. autumnalis gracilis, E. melanthera, one of the most useful of winter flowering Heaths; E. colorans, E. hyemalis superba in moderate numbers, E. hybrida, E. caffra, and E. Wilmoreana. Genista fragrans in 48-sized pots are a foot across and covered with flowers; these are also grown in large numbers, as well as G. elegans and a stock of 8000 Solanums smothered with berries from top to bottom. Camellias, Azaleas, Araucaria excelsa, Clematis, Loniceras, Passifloras, and other plants occupy favourable situations out-of-doors. The stock of Azaleas consists of about 2000 plants.

The general stock of the home nursery is of a choice and rather select character throughout. Ceanothus of sorts, hybrid Rhododendrons, Gueldres Roses, Yucca gloriosa and recurva, both good London plants; hundreds of white Clove Carnations and herbaceous plants in variety. These include Anemones (sorts), Œnothera Youngii, Potentillas, Catananche bicolor, Spiræa Ulmaria var., Dielytra eximia, Chelone barbata antwerpensis (?), Diplopapus chrysophylla, Statice latifolia, Campanula turbinata alba, Sedums, Saxifrages, and others. The best flowering shrubs are Althæas, which are extremely lovely and in variety; Spiræa callosa, Spiræa Thunbergi, Hydrangea paniculata grandiflora, Philadelphus aurea var., and a good stock of Veronicas. Of trees we noticed the Carolina Poplar (Populus angulata caroliniana), a good batch of plants with stems from 7 to 9 feet high; weeping trees and fruit trees, a few by way of introduction to the general stock, which is grown at the Burnt Ash Hill and Brockley branch nurseries.

The Burnt Ash Hill Nursery is near to Lee Station, and here the stock is principally Roses, fruit trees, Rhododendrons, Poplars for seaside planting, and Seakale and Asparagus for forcing. The situation of this nursery, which, it may be remarked, is over 30 acres, is high, and exposed, and the soil is favourable to Rose growing. The standards and dwarfs are strong, and have made growths of an exceptionally hardy character, owing to the nature of the aspect in which they are grown, and will therefore bear transplanting early. Over 35,000 young stock have been budded this season. Some plots of Gloire de Dijon grown upon the highest ground of the nursery are excellent examples of Rose growing. The Brockley nursery is 1½ mile from Brockley Station, and is easily reached from London Bridge or Victoria Stations. Fruit trees, Roses, and evergreen shrubs are the main stock grown here, and the seed business is at High Street, Lewisham, about two miles from the home nursery. When a business of this kind developes so fast that its owner has to establish branches for facilitating the growth of special plants and trees, it is a benefit to others besides the proprietor, and for this reason, that proper soil and a good situation are sure to be selected, without which trees and plants of first-rate quality cannot be grown. *W. H.*

ORNAMENTAL VINES.

AMONG hardy climbers few are more handsome and altogether more desirable than the various species of Vitis and Ampelopsis. The name Cissus may just as well be discarded, for Messrs. Bentham and Hooker, the standard authorities on the genera of plants, tell us that between Cissus and Vitis there is not even sectional difference. The same authors also discard Ampelopsis, or rather use it merely as a sectional name. In gardens, for convenience sake, the old name will, however, doubtless be retained.

Messrs. Cripps, of Tunbridge Wells, send us, by Mr. Dartnall, foliage of various species, the most brightly coloured of all being the VITIS TRICUSPIDATA—the little Japanese species known in gardens as Ampelopsis Veitchii, and which is very probably only a form of V. heterophylla (see *Gardeners' Chronicle* 1869, p. 838). This plant is too well known now to need description, although few people are aware how variable it is in form and colour in different situations, and how coarse it becomes when grown under glass. Few people would recognise the great coarse foliage the plant assumes in the Temperate-house at Kew as belonging to the same neat-habited plant they are accustomed to out-of-doors.

Under the name of Ampelopsis japonica leaves are sent of Rhus toxicodendron. We have seen the plant so named at Combe Wood and other nurseries, but we particularly urge upon nurserymen and others concerned to rectify the misnomer, or serious consequences may ensue, Rhus toxicodendron being one of the most acrid poisons known, at least in its native country (United States). The 3-foliolate foliage turns of a glorious ruddy orange in winter, but those who have occasion to prune it should take care that the juice does not enter the skin through a cut or otherwise.

Vitis heterophylla variegata is a well-known and very pretty plant, with neat 3-lobed leaves, with red stalks and pretty variegated foliage.

Vitis striata is the plant commonly grown in nurseries as Ampelopsis sempervirens, and was described in our columns September 17, p. 371, and October 1, 1881, p. 427. It is a native of Uruguay, where it is said to be one of the most beautiful climbers, covering the bushes with red berries in the winter.

A. hirsuta, as sent to us, seems not very, if at all, different from A. hederacea, and the same may be said of A. quinquefolia and A. pubescens.

Vitis Sieboldi is a neat-habited species, with 3—5-lobed leaves, the leaves narrowed at the base, coarsely toothed, deep green, glabrous above, paler and covered thickly with rusty down beneath.

Vitis humulifolia, is a variety of heterophylla, with 3-lobed rugose leaves, glabrous, or nearly so, on both surfaces. It bears brilliant blue berries.

Vitis flexuosa has 3-lobed glabrous leaves, the central lobe much longer than the others, narrowed at the base, and prolonged into a long tail-like point at the apex. The colour is dark green above, claret-coloured beneath.

Ampelopsis serjaniæfolia is one of the most striking, having pinnately divided glabrous foliage, the main rib of the leaf between the pinnæ being winged on each side. The colour of the leaves is deep shining green above, paler beneath.

A. orientalis has bi- or tri-pinnate leaves, the segments being small, ovate, coarsely toothed, glabrous, with deep claret-coloured stalks. It was figured in our columns in 1871, p. 1615.

HURST SIDE, MOULSEY.

That success in gardening depends in a large degree upon the site of a garden, as well as upon the nature and depth of the soil, has often been practically illustrated before, but never with greater force than in the case of Sir Henry Thomson's new garden in Surrey. The protection that is looked upon as being an absolutely indispensable condition in laying-out new gardens is here almost absent, or, at least, the provision that has been made has certainly not grown sufficiently to be of much service as regards shelter. We were therefore hardly prepared to see such splendid crops of vegetables, and the promise of still better results in future.

The garden is in East Moulsey, a distance of about two miles from Hampton Court Palace, and between three and four miles from the village of Esher. Almost within gunshot of Hampton racecourse and the river Thames, you have only to traverse a few yards before you behold (if the day be a bright one) numerous tiny craft gliding gently along, the occupants of some having sail up, others using the oars, or engaged with rod and line. What more fitting place therefore to establish a garden than in the midst of pure air, and of so many pleasant local attractions. The garden is not an extensive one, it is not a fancy one in the ordinary acceptation of the term, but it is substantial in all its details. Fruit and vegetable growing command the greatest amount of attention, and all the arrangements, especially in the glass department, are perfect to the minutest detail.

At the entrance to the garden we notice a model gardener's house, having the front overrun with Clematis vitalba (or Maiden's Bower) hanging gracefully over the porch, fit subject to clothe a poet's residence in autumn in a more secluded situation! At the north side of the house, shelter planting with suitable material, and a sweep of lawn, are the only objects worthy of notice. The fruit-houses and kitchen garden are upon the Thames side of the house, and divided from the pleasure garden by an irregular border of ornamental and flowering shrubs. The fruit houses are four in number, lean-to's, with a hip at the back, well heated and ventilated, and having solid flag paths, bright and clean as hands can make them. There is a rare example of the Maréchal Niel Rose trained upon the back wall of the late vinery, which happens to be the first house of the range. The examples of Grape culture in this house are very good, the bunches of Alicante being handsome in form and very highly coloured. Considering that these houses have been in existence less than two years, the progress of the Vines and Peach trees has been most satisfactory, if not unusual. The second division is also planted with Vines from which the crop has been cut, and the two next divisions are planted with Peach trees bearing leaves of remarkable size, and we were told the fruits were also very large, some measuring as much as 15 inches in circumference. We noticed a stock of winter blooming plants coming forward in these houses, consisting of Richardias, Bouvardias, Heliotropes, and other useful subjects.

A detached house, erected upon the same principle as those already mentioned, is used for forcing vegetables, chiefly French Beans and Tomatos, as many as from 800 to 1000 of the former being used weekly during the early spring months. The autumn supply of these are grown in low pits, and are now coming into flower—the best of all systems of forcing Beans in winter. Early Peas are forced in the same pits. Rarely have we seen better facilities provided for vegetable growing, especially for the late autumn and winter supply. For the latter purpose a house facing the north has been erected, 90 feet long and 15 feet wide, in which late vegetables of any kind may be preserved through the winter. There are Plums planted on the back wall which bear fairly well, and the house is utilised through the summer for growing Tomatos or other crops. In the floral department the beds and borders of flowers appear to be of a carefully selected character, and in the kitchen garden the vegetable crops of all kinds are excellently grown under Mr. E. Hobday's care.

FRUIT NOTES.

Late Peaches.—The best of these with us is Walburton Admirable, which is truly described in the catalogues as a late Noblesse, as unquestionably it partakes of the qualities of that excellent Peach in an eminent degree, and is, perhaps, doubly valuable on account of its lateness. With less heat and sun than the Noblesse has when that ripens its fruit, the Walburton Admirable cannot be expected to be so good in flavour, but it is by far the best at this season, and in a fine autumn, such as we are having now, is most luscious and good, and makes a fine looking dish, as the solar rays tint its pale cheeks with a beautiful blush. Lord Palmerston is larger and later, but a clingstone, and though it appears to have been bred from the Walburton, it is nowhere equal in quality; and the same may be said of the Prince and Princess of Wales. Barrington is a grand Peach, as it is not only very large, highly coloured, and handsome, but it is of superior flavour. To carry on and link the season through, there are none to equal it, and it is a fine growing, vigorous sort. Late Admirable is very good, and desirable by way of variety, and ripens after the Barrington, the fruit being nearly as large and quite as high coloured, but more mealy, and not so well flavoured. Late Peaches like these should have a good aspect, and be protected by a wall coping of glass to shelter them from the autumn rains, which spoil the skins of the fruit and cause it to rot very quickly. *J. Sheppard.*

Notes on Apples Growing at North Riding Asylum, Clifton, York.—When furnishing you with a few notes on the fruit and Chrysanthemum show held at York last November I incidentally mentioned a fine collection of Apples exhibited and grown by Mr. Macintosh, gardener at the North Riding Asylum, Clifton, York, and promised to supply you with a few descriptive notes later on. As the best time for planting fruit trees is now near at hand, I am reminded that my promise is not yet fulfilled, and that this may be a convenient time to do so. I am much indebted to Mr. Macintosh for giving me the data, and send them tabulated, so that those of your readers who may be desirous to take hints from this note can easily ascertain the best varieties to plant. The trees are all on the Crab stock, as standards, and have been planted about fifteen years. The soil in which they are growing is a lightish hazel loam, resting on a sandy subsoil—not the best soil for Apples, as many of your readers will know. For several years after they were planted the ground underneath was regularly cropped with vegetables, during which time they made but slow progress, in consequence of the necessary digging having a tendency to cause the roots to go down into the sandy subsoil. About eight years ago Mr. Macintosh had it sown down with grass seed, since which time the trees have made much better progress. Some of the varieties have been more or less inclined to lose their growths through canker. During the late wet summers, and the severe winters previous to the last, this has been much worse, and Mr. Macintosh is of opinion that severe winters following wet summers is the main cause of canker in fruit trees generally. On comparing the names of the varieties with those described in Hogg's *Fruit Manual*, I find there are some few not described by that authority. The trees were supplied from a well-known local nursery, consequently the varieties not described are only local ones. Those marked with an asterisk (*) are the varieties Mr. Macintosh would plant were he planting for simply filling the fruit-room or for market purposes. *H. J. Clayton, Grimston Park Gardens, Tadcaster.*

Names.	Growth.	Remarks.
Alfriston	Moderate ..	Bears well, one of the best
Alexander	Large tree ..	Badly cankered
Adams' Pearmain ..	Moderate ..	Uncertain cropper
Bess Pool	Vigorous ..	Bears fairly well, worth growing
*Blenheim Orange ..	Vigorous ..	Good cropper
Boston Russet ..	Moderate ..	Worth growing
Baldwin	Vigorous ..	Good cropper
Bedfordshire Foundling	Moderate ..	Badly cankered
*Bowes' Nonsuch ..	Vigorous ..	Good cropper, worth growing
Beauty of Wilts ..	Moderate ..	A good Apple
Chiplin Pippin ..	Good grower..	Useful, but rather uncertain cropper
Claygate Pearmain ..	Moderate ..	Worth growing
Charlestown Pippin ..	Vigorous ..	Uncertain cropper
Court of Wick ..	Moderate ..	Uncertain cropper
Cornish Aromatic ..	Moderate ..	Uncertain cropper
*Cockpit	Vigorous ..	Good; one of the best croppers
Copmanthorpe Crab..	Good grower..	Useful; good cropper
Dumelow's Seedling..	Moderate ..	Fair cropper
Early Nonpareil ..	Moderate ..	Uncertain cropper
Early Harvest ..	Moderate ..	Badly cankered
Eve	Moderate ..	Uncertain cropper
Fearn's Pippin ..	Moderate ..	Crops well occasionally
*Flowery Town ..	Good grower..	A showy Apple; good cropper
Greaves' Pippin ..	Moderate ..	Uncertain
*Greenup Pippin ..	Vigorous ..	Good cropper; slightly cankered
Golden Russet ..	Moderate ..	Uncertain
*Gravenstein	Large tree ..	A good Apple; slightly cankered
*Golden Reinette ..	Weak grower .	Good cropper
Golden Drop	Moderate ..	Uncertain
Gloria Mundi ..	Moderate ..	Uncertain
*Green Balsam ..	Good grower .	Crops well; a good Apple
*Hunthouse	Good grower.	Worth growing
Hubbard's Pearmain .	Moderate ..	Uncertain
*Hawthornden (New) .	Moderate ..	Good cropper
Irish Peach	Moderate ..	Useful early Apple
King of Pippins ..	Moderate ..	Good cropper
Kentish Codlin ..	Moderate ..	Uncertain
*Lord Suffield	Moderate ..	Heavy cropper
*Large Yellow Bough	Vigorous ..	Good cropper
*McLean's Favourite..	Vigorous ..	Good cropper; good Apple
Margil	Moderate ..	Uncertain
Mere de Ménage ..	Weak grower	Not worth growing
Normandy Pippin ..	Moderate ..	Uncertain cropper
Nonpareil	Moderate ..	Useful Apple
Northern Spy.. ..	Good grower	Never yet produced a crop
Northern Greening ..	Moderate ..	A good Apple
Norfolk Beaufin ..	Moderate ..	Uncertain
Oslin	Moderate ..	Early blooming variety uncertain
Pitmaston Russet ..	Moderate ..	Uncertain cropper
Red Juneating ..	Good grower..	Good cropper
*Red Quarrenden ..	Good grower..	Good cropper
*Sir W. Blackett's ..	Good grower..	Heavy cropper
Sturmer Pippin ..	Moderate ..	Light cropper
Tower of Glamis ..	Moderate ..	Uncertain
*Transparent Crab ..	Moderate ..	Good cropper
*Wellington	Moderate ..	Heavy cropper
Warner's Pippin ..	Good grower..	Good cropper
Waltham Abbey ..	Moderate ..	Uncertain
Warner's King ..	Vigorous ..	Moderate cropper
*Yellow Ingestre ..	Moderate ..	Good cropper; small
Yorkshire Greening ..	Good grower..	Fair cropper

The Best Late Nectarines. — We gathered our last dish of Humboldt and Pine-apple Nectarines on September 18, both of which are not only late, but of large size and first-class quality, partaking in these respects of the character of the good old Pitmaston Orange, from which, judging by their general appearance, they seem to have originated, as they are very high coloured and rich in the flesh. I can, therefore, strongly recommend them as being the two best late Nectarines for cultivation outdoors, as they have the hardiness and free bearing properties of their parents, and come in at least a fortnight or three weeks later. With us the trees are strong, vigorous growers, and are a pretty sight in the spring with their big, fine coloured blossoms. We have tried the Victoria and Stanwick, neither of which are satisfactory on open walls in this district, the one being very liable to crack, and both too tender to do well except under glass. Hardwick Seedling is a valuable Nectarine, ripening just before the Pine-apple and Humboldt, and as it is free and hardy it is a very desirable kind to have to keep up a succession. *J. Sheppard.*

Notices of Books.

Text-Book of Botany—*Morphological and Physiological.* By Julius Sachs. Edited, with an Appendix, by Sydney H. Vines, D.Sc. Oxford. The Clarendon Press, London, 7, Paternoster Row.

Sachs' Text-Book has become so firmly established as a reference book for advanced pupils that it is satisfactory to have to announce the publication of a new English edition by so competent an editor as Dr. Vines. The progress of physiological botany in Germany is so rapid, the numbers of those who devote themselves to it so great, that it is next to impossible for one not of Teutonic nation to keep pace with the current of new publications and new researches. As one result of this incessant activity confusion arises, as it is impossible for the ordinary student to reconcile conflicting views, or even fully to grasp the points upon which differences of opinion among the several workers arise.

Hence the great value of such a treatise as this, drawn up by one not only actively engaged in imparting knowledge, but by one who, as an original worker, has himself greatly advanced the boundaries of the science. Such an author is thus able to appreciate at once the wants of students and the requirements of science. A good text-book should be to separate memoirs what a good monograph is to isolated descriptions of species. The compiler of a monograph not only collects all the available facts, but compares them, co-ordinates them, digests them, and, following a definite plan, weaves them in due sequence into one consistent whole. In this course of proceeding the systematic botanist is as a rule in advance of his colleagues who work at physiological botany and minute anatomy. In these latter branches each man, to a large extent, works for himself, with little reference to what has been done by his predecessors. This is not wholly so, of course, and physiologists would no doubt resent the imputation of indifference to the history of their science. Still we have only to look through the records of recent experimental work and modern observation to see that the worker in one laboratory is, by comparison with the systematic botanist, at little pains to co-relate his work with that done in the same department elsewhere.

The effect of this is lamentable. It is impossible for botanists, whether teachers or not, to be personally familiar with all departments of their science, and, therefore, it is highly essential that the leading text-book should contain correct general views of the present state of science unencumbered, as far as possible, by conflicting detail. Much that passes as new is new only in form and terminology. A new way of looking at old things—a new stand-point—is of course often as important as a new fact; but a new terminology to express an old fact, or a long-known phenomenon, or a trifling modification of it, is a hindrance rather than a benefit. What special advantage, for instance, is there in replacing the old terms wood and bark by "xylem" and "phloem"? The difficulty now-a-days is to ascertain precisely what is new in the plethora of publications, and this difficulty in part arises from the want of system manifest in physiological works. This defect is likely to be diminished by the author himself, in each successive edition of a work like the present, and by each editor engaged in revising the original text.

Dr. Vines has added to the value of this edition by compiling an appendix comprising references to the recent literature, and fortunately to some not otherwise very accessible memoirs, as, for instance, that containing Treub's observations of a group of climbing plants, which compass their ends by means of irritable hooks. In one sense the appendix will be a source of embarrassment, as opposite views are enunciated in the body of the work and in the appendix, as the question of the mode of growth of the cell-wall, while in the case of the female flower of Conifers the latest views of Celakovsky are not inserted; but this is, under the circumstances, inevitable.

Dr. Vines has placed English botanists under great obligations by undertaking this task, and still more so by the way in which he has done it. As gratitude is a sense of favour to come, might we suggest to the Delegates of the Clarendon Press and to Dr. Vines the advisability of issuing an annual review of the progress of physiological botany as a supplement to the important work of Sachs?

The Arboretum.

PINUS AYACAHUITE.*—"A large tree, attaining a height of 100 feet. It has whorled, spreading branches, and long, slender, glaucous leaves, and much resembles P. Strobus in habit and appearance. It is a native of the mountains in Northern Mexico, where it occurs at elevations of between 7000 and 11,000 feet. It rarely escapes injury during severe weather in England even in sheltered situations." This citation from Messrs. Veitch's *Manual of the Coniferæ*, p. 176, gives the history of the tree in condensed form, but omits all reference to the cones. We are, therefore, glad of the opportunity of figuring a cone taken from a tree of very considerable size truly, though it has not yet attained to a height of 100 feet, and which is growing in the nursery of Messrs. Paul & Son at Cheshunt. The climatal conditions of that locality do not impress one as likely to be specially propitious to tender or half-hardy plants, yet there is this Pine with the dreadful Mexican name, there it flourishes, and there it produces its strikingly handsome cones. The leaves have, in section, a 3-sided outline, with a layer of hypoderm or strengthening cells just under the skin of the leaf, and which are also continued around the resin-canals, two of which may be seen just beneath the epidermis on the upper side. In the centre is a single vascular bundle, with a well-marked bundle-sheath. Engelmann says:—"Strengthening cells few, none around the ducts," a circumstance that confirms our notion that while the number and position of the resin-ducts are relatively constant the number of the strengthening cells is variable according to climate, locality, rapidity of growth, or other circumstances. The cones on the living tree (fig, 83, p. 493) measure nearly 9 inches in length by 1½ in width. When fully grown they are pendulous, cylindro-conical, straight, or slightly curved, with ovoid sharply pointed leathery longitudinally striated scales, having on the outer surface at the apex a small boss (apophysis) of elongated pyramidal form. The tips of the scales are recurved, and the body of the scale is wrinkled lengthwise. The seeds are oval, with an oblong acute wing nearly twice as long as the seed itself. It was introduced to Chiswick as long ago as 1840 by Hartweg, and the specimen at Cheshunt is doubtless derived from the original importation. *M. T. M.*

ABIES NORDMANNIANA.—As an ornamental tree for landscape gardening few, if any, of the Conifers of late introduction can compare with this tree for beauty of outline, symmetry, and the rich contrast produced in summer by the dark glossy green of the old, and the light, fresh, lively tints of its young foliage; and whether planted on the lawn, or mixed with other trees for the sake of contrast and variety, along the margins of plantations, it never fails to attract attention, and produce the most pleasing effects. This tree is also capable of accommodating itself to a great variety of soils and situations, though, like other species of Abies, it prefers a strong, deep loam rich in organic matter, and not apt to dry up in summer, or retain too much moisture in winter. The tree flowers early in April. The male flowers or catkins can easily be distinguished from the females or cones, as the former are generally pendent in groups or clusters, whereas the latter are generally solitary, produced upon the upper surface, and always stand erect. After some twenty years' growth, Abies Nordmanniana begins to produce cones, and generally continues doing so for a number of years previous to bearing male flowers. The cones ripen in autumn, and should then be collected, for if left upon the tree after maturity, the scales and seeds fall off and are lost. Each cone contains about 160 seeds, and we find it a good plan to allow the seeds to remain in the cones during winter, and until they are wanted for sowing. This tree thrives remarkably well on peat-bog, and in hollow, boggy places, where the Larch and common Silver Fir suffer from late spring frosts, it is invaluable and stands unscathed. Boggy soils and good loam, where organic and inorganic constituents are richly blended, produce by far the finest specimens of this tree. On the other hand, cold, stiff clay, and poor inorganic surface accumulations are inimical to its growth, more especially where the subsoil consists of hard pan. In all cases where it is desirable to plant this tree on such a soil, the ground should be first prepared by breaking up the pan and adding a quantity of bog or other combustible matter, to establish a proper equilibrium between these two kinds of soil. The timber of this tree when properly matured is highly recommended for durability. No specimen has yet arrived at full maturity in this country, but from the appearance of the timber of trees we have cut up there can be no doubt it will possess the qualities and sustain the reputation of the timber grown upon its native hills, being hard, resinous, and the concentric rings firmly packed. *Emergo.*

PINUS INSIGNIS AT BODORGAN.—The specimen of this mentioned by your correspondent "C. N. G." (see p. 471) is certainly a very fine one, and take it altogether larger than any growing at this place. The highest specimen here is 67 feet high, 46 feet diameter of widest spread, 9 feet girth of bole breast-high. This tree lost its leader a few years ago, and the lateral spread of its branches has been much interfered with by surrounding trees. I believe it was planted from thirty-five to forty years ago. There is one very handsome tree growing in an exposed place which has a girth of stem of 10 feet 3 inches. It forms a dense bushy tree 42 feet high and 43 feet through. There are numerous younger trees of sixteen or seventeen years' growth, ranging from 40 to 48 feet high, with stems 5½ to 6½ feet in girth breast-high. Owing to the exposed position of this place no trees attain a great or even an average altitude, the soil, too, is not particularly favourable to tree growth. It is generally shallow, overlying a bed ofcold hard gravelly clay, and in other places hard impenetrable rock. There can be no question of the merits of Pinus insignis as a tree for seaside localities, it grows more rapidly and stands sea winds better than any others of the Fir tribe. Its free dense habit of growth, and bright lively green foliage render it by far the handsomest of its tribe. With regard to its value as a timber tree, I cannot give a reliable opinion. We have cut up some trees torn up by the wind (in every case trees grown in partial shelter), and found the timber coarse grained, tough, and of no particular value; but it must be borne in mind these were trees of but thirty or thirty-five years' growth. Irrespective of the probability of it ever becoming a good timber tree, all lovers of handsome trees should plant it freely in localities likely to suit it. Its high price in the nurseries will prevent it ever being adopted as an ordinary forest tree, but a few hundreds planted at and towards the boundaries of plantations as well as for single specimens will amply repay their cost. We find it necessary to carefully stake the young trees for a few years, and as they are mostly grown in pots in the nurseries, the roots should be disentangled and spread out when planting. An annual growth of 4 and even 5 feet is not unusual with young vigorous trees. *J. Ellam, Bodorgan, Anglesey.*

* *Pinus Ayacahuite*, Ehrenberg (1838) ex Parlatore in DC. *Prod.*, xvi., p. 407 (1868), c. synon. plur.; Loudon, *Encycl. of Trees* (1842), p. 1023, figs. 1919, 1920; Gordon, *Pinetum*, ed. 2, p. 292; Engelmann, *Revision of the Genus Pinus*, p. 15 (1880); Veitch, *Manual of Conifers* (1881), p. 176.

COLONIAL NOTES.

BARBADOS.—The horticultural exhibition was held at Bridgetown on August 26, and was a success, as far as the plants exhibited were concerned, but financially it was a failure. The ornamental plants were both numerous and fine, and the cut Roses remarkable. *A. A.*

THE "TROPICAL AGRICULTURIST" for June, published at Colombo, is crammed full of original and selected matter relating to Cinchona, Coffee, Tea, Tobacco, and other products of Ceylon. Doubts which had arisen as to the identity of Cinchona succirubra, so largely planted in Ceylon, and a most valuable species, are set at rest. Our colonial friends are sometimes more vigorous than courteous in their remarks, and bandy epithets with amazing vigour. Some of their disputes seem, as in so many similar cases, to turn on the different sense in which words are used in ordinary language. With a little more precision there would be no room for difference of opinion, but then there would be no fun!

SOLANUM LITTLE GEM.—Gardeners having much furnishing to do at this season will find in this plant a gem of the first water. It makes a neat little plant for the dinner-table or for sitting-rooms; it has small green leaves, and the little scarlet berries, which are produced in abundance, are well thrown up above the foliage. It was sent out by Mr. B. S. Williams last year.

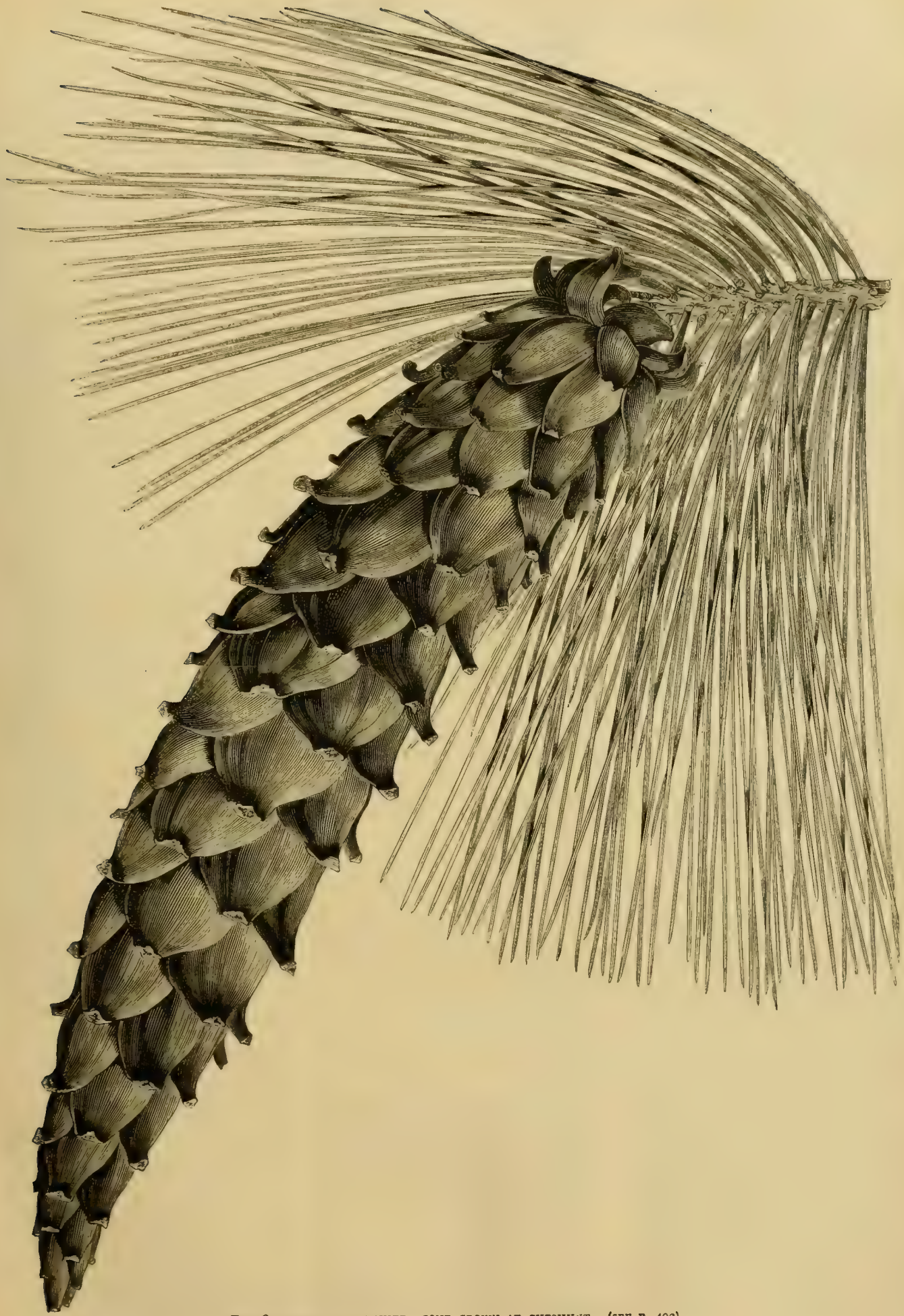


FIG. 83.—PINUS AYACAHUITE : CONE GROWN AT CHESHUNT. (SEE P. 492).

Orchid Notes and Gleanings.

Orchid Cultivation in Demerara.—In cultivating Orchids in Georgetown the great impediments are the sea breeze and the dry seasons. As this breeze is strongest in very dry weather, it is absolutely necessary that some protection, either natural or artificial, be provided to prevent the wrinkling of the pseudobulbs, and ultimate death of the plants. I have grown most of the native species, and though they are not so showy as some of the Indian and Central American kinds, yet some of them are very fine, and others interesting and curious. Since Darwin's researches the genera Catasetum and Coryanthes have become specially interesting, but they do not appear, to judge by your columns, to be very fashionable in England. In my opinion, nothing in cultivation can be more handsome than Coryanthes macrantha, and the Catasetum longifolium, growing just below the crown of the Eta Palm, with long flexible strap-shaped leaves waving in the wind, the flowers in dense racemes, is as fine in its way as some of the best.

The simplest and best way of growing the epiphytes is to wire them on to the forks of a low-growing tree—the Calabash (Crescentia Cujete) is best—with a dome of light foliage, and free from small branches below. In choosing a tree, it may be necessary to take into account the surrounding vegetation, and trim it in such a way that while it keeps away the wind it may let in plenty of light and air. Such trees as the Mango and Tamarind are to be avoided, for, as a rule, the former is too luxuriant, and the latter kills the vegetation beneath it. Low-growing trees are most suitable because the plants can be brought near to the level of the eye and are protected from the winds. Where there are plenty of trees in the garden a collection may be made very easily, and some very large specimen plants may be grown in a few years. Large plants 6 feet through are to be seen now and then of such species as Oncidium altissimum and O. Lanceanum, and such plants are very showy when flowering. In some of the river districts Calabash trees are commonly seen loaded with small plants such as Rodriguezia secunda, Notylia albida, Ornithocephalus gladiatus and Epidendrum. In cultivation I place large plants in the lower forks and the smaller along the branches so that one tree may have 100 or more plants upon it. Where good suitable trees are absent, or where space is no object, some sort of house is necessary. The simplest and best is a strong hardwood frame with a roof of split Bamboo. The irregularity of the Bamboo, which is laid as close as possible, allows plenty of air and light to penetrate but at the same time shades the plants sufficiently.

Whether this house should have latticed sides will depend upon the amount of vegetation or buildings near. In general, shrubs, a hedge, or building will partially shade some of the sides, but where the house is quite open, latticework from the top to about 3 feet from the ground is necessary. In such a house the plants grow well in baskets, some large, of hard wood, where the clumps are simply supported without anything to grow in, and others of wire filled with burnt clay, in which the roots grow well. I have never seen burnt clay used in England, but I think if Orchid growers tried it they would like it better than broken pots or brick. It is the common road-making material here, and I can only compare it to a brick sponge. If a heap is left upon the parapet of the road for a few months it will be covered with a young growth of Gymnogramma calomelanos. All the small Orchids and some of the large kinds do very well in the burnt clay, but Cattleya superba, Catasetum longifolium, and some others require blocks. The species of Coryanthes grow on ants' nests, or the roots of the Orchid form the nidus. The collectors, to drive out these ants, which sting pretty severely, immerse the plants in the water, and very often cause them to rot. When in good condition they require no baskets, but do well hung up in a light place. Some small plants do well on the stems of growing Tree Ferns. Naturally there are many differences between the locality of one Orchid and another; some will grow almost without shade, while others must have a good canopy above. If these differences are studied by the grower he will soon find which plants require most light or moisture and arrange accordingly. *J. R.*

Oncidium prætextum (Rchb. f.) Leeanum, nov. typ.—It was in March, 1881, that Mr. F. Sander sent me a good supply of dried inflorescences of Oncidium prætextum, gathered by Herr Osmer in Brazil. Among these he had picked out some flowers which he regarded as most extraordinary, nay, wished them to be "named and described shortly." "Shortly"! As to regarding them as most extraordinary Herr Sander was quite right. The flowers had in lieu of petals lips, lips in formation, lips in callosity at the base, differing only from the genuine lip in being blotched on their yellow disk as, in the lip of Oncidium Forbesii Borwickianum, instead of being spotless. Alas! this was one of those but too numerous really awkward cases where the mind of the man of science is not the same as that of the collector or the man in the trade, who has often a most admirable talent in discovering "new things." I could not reconcile my mind to the idea that the same abnormal and highly curious state would be reproduced. By writing on the plant, nay, by naming it "shortly," as my highly valued correspondent expected me to do, I was afraid to become responsible for the reappearance of the phenomenon of the three lips. I also felt doubts whether Herr Osmer might have well marked the extra plant. The plant came into the hands of Mr. W. Lee, Downside, Leatherhead, who in July kindly sent some flowers twice, all of which show this remarkable form. Under excellent management they are far superior to the wild-grown flowers. Thus I have now at hand nineteen well developed fine flowers, altogether offering the phenomenon of the triple lip. Mr. Sander had written to Mr. Lee, "Professor Reichenbach will describe it shortly." I feel rather uncertain as to whether Herr Sander calls seventeen months a short period, but I know that Mr. Lee regards such a procrastination as the result not only of scientific doubts but of absence. As very natural, I feel pleased to dedicate the glorious curiosity to its lucky possessor. *H. G. Rchb. f.*

Houlletia Wallisii, Lindl. and Rchb. f.—This has been described by me in *Gard. Chron.* 1869, p. 691. The same plant was named by Director Linden a second time in 1871, and was described with Mons. André in *Illustration Horticole*, July, 1871, as Houlletia chrysantha, Lindl. and André. Later I have reduced this name in *Linnæa*, xli., p. 111, 1876, and I added a variety with rough teeth to the side wings of the lip—Odontoptera. Finally a representation and description of "Chrysantha" were given in this paper Sept. 30, p, 437, by Mr. N. E. Brown, the assiduous monographer of Stapelias and Aroideæ. The plant is said to bear about seven flowers, and its fine yellow perigone with carmine spots is very attractive. I am glad to hear that Mr. F. Sander has just imported the plant, as it would appear in two varieties as to colour. *H. G. Rchb. f.*

Dendrobium aqueum, Lindl.—This old species has reappeared in Messrs. Hugh Low & Co.'s establishment. It has rather thick stems, in the way of those of Dendrobium primulinum, Lindl. The leaves are membranous, cuneate, oblong lanceolate acute, and the stellate flowers appear to stand generally single. They are nearly equal to those of a middle-sized Dendrobium aureum, Lindl. The great feature is the abrupt goitre at the base of the triangular toothletted anterior lacinia of the lip. The lateral laciniæ are curved inwards, and toothletted at their apex. There is some very light yellow on the lip. A hollow is to be seen at the extreme foot of the column. This is very neatly represented by Mr. W. Fitch, whose drawing in Hook. *Bot. Mag.* is far superior to that given in Lindl. *Bot. Reg.* 1843, 54. *H. G. Rchb. f.*

Cattleya Harrisoniæ.—This charming Orchid is now in flower along with several other imported plants in Mr. Wills' garden, Esher, Surrey, and is of the most exquisite colour. The flower is of a deep mauve, the labellum creamy-white shading to lilac with an orange throat and frilled lip. The plant is in excellent health and is grown upon a block suspended from the roof where it seems to be quite at home under ordinary stove treatment.

Phalænopsis amabilis.—It seems strange that more examples of this lovely Orchid are not grown. If the plant is in good health the leaves are of a deep dark glossy shade, and the spikes (sometimes branching) of pearly-white flowers are among the most beautiful of the whole Orchid family. We lately saw such a specimen in Mr. Wills' garden at Esher.

The Kitchen Garden.

Ordinary Work.—Broccoli, Cabbage, Winter Greens, &c., should be divested, when the weather is dry, of all useless and decaying leaves that would be likely to become offensive through decomposition; their removal will enable the stems, through being more fully exposed to light and air, to become hardened and better able to withstand severe weather. Late plantings of Lettuce in the open, which have made a satisfactory growth during the last month, should be taken up forthwith, with good balls of earth attached to the roots, and transplanted carefully into the pits and frames specially reserved for this purpose, and well watered immediately after planting, with a view to re-establishing them in their fresh quarters, where they must have an abundance of air on all favourable occasions. Autumn-planted Cabbages should now have some soil drawn to them; the earthing up of late plantings of Celery and Leeks should also be proceeded with when the plants are sufficiently dry to admit of the work being done. Before the seeds on the Asparagus stems begin to fall off they should be cut and removed to the rubbish-heap, saving a few of the best-berried stems for seed, which should be tied together and hung up in a dry shed in readiness for shelling during inclement weather. This done, the weeds should be removed from the surface of the beds, and then 2 or 3 inches of the loose surface soil should be drawn into the alleys, and the beds covered with 3 or 4 inches thick of the richest and shortest manure that can be obtained from the manure pound, where in most places it will be specially retained for the purpose.

Taking up and Storing Roots.—As long as the present mild weather continues there will be no immediate hurry for the carrying out of this operation, but so soon as a change indicates the approach of frost the work should be proceeded with without further delay, selecting for the operation a fine day, when the ground and tops of the respective roots are dry. The first to require attention in this respect is the Beet crop, which should be stored away out of the reach of frost, and where, at the same time, the roots are not likely to become too dry, as is the case when they are packed closely together in sand in a dry shed. In order to preserve their freshness the roots should be packed in damp material, which will not tend to absorb the moisture from them in a cool situation, and for this purpose the following is, as stated on a former occasion, the most simple and effectual way of procedure:—The roots should be taken up before they get injured by frost, and with care, so as not to receive damage in the process of lifting, which would cause them to bleed—a circumstance to be strictly avoided—and taken to a dry and light border under a south or west wall. An opening should be taken out at the end of the border, 12 or 15 inches deep, and about the same width, and the digging of the ground proceeded with. When the trench is filled and the ground has been levelled in the ordinary way, the soil is cut straight down the whole width of the border, and two or three rows of Beet-roots placed perpendicularly in the opening so formed, and the digging is again proceeded with until the roots are all covered, burying the crowns about 1 inch under the surface of the soil. The operation is thus continued somewhat after the fashion of transplanting young forest trees from the seed-beds in nurseries, until the work is completed. The leaves, which are not removed from the crown, will afford sufficient protection to the roots from several degrees of frost; but in the event of its being very severe, a protection of dry litter or Fern will be necessary. In the spring, before the roots show signs of growth, they should be taken up, the leaves with the crown cut away, and the roots laid in again as above recommended. Thus treated the roots will keep fresh and of a good colour.

Carrots, with the exception of cutting off the tops close to the crown at the time of taking them up, are treated in the same way as the Beetroot; if wintered in this way there need be no apprehension of fermentation ensuing, as is so frequently the case where a bulk of them has been put together, sometimes to the entire loss of the crop. Where Parsnips are not grown in great quantities, or where the ground is not required for some special purpose, they are best left during the winter in the ground in which they have been grown, in which position they will require no

protection whatever from frost further than covering a sufficient piece for present use, so that in the event of severe frost there will be no difficulty in taking up roots sufficient to meet the demand. Salsafy and Scorzonera may be wintered in the same way as recommended above, and will, like the roots enumerated above, be superior in flavour and appearance to those which have been wintered on the "dry shed and sand" principle.

Mushrooms.—Beds which were spawned about the middle of August are now yielding good supplies of excellent Mushrooms, and the appearance of the surface of successional beds is everything that could be desired. These beds, since they were spawned and covered over with soil in the middle of August and the middle of September, have not required any water applied to them in any shape, nor are they likely to require any for some time to come. The top ventilator has been fully open day and night during the whole of that time, with the sliding shutter drawn to exclude the light, but leaving sufficient space to admit of the ingress and egress of air. However, as soon as the weather becomes colder, the ventilators will be all but closed—that is, only leaving on sufficient air to prevent a stagnant atmosphere in the house, and also to allow of any superabundance of moisture necessarily arising from the fermentation of the horse-droppings to escape therefrom. Collect droppings for successional beds and place them in a dry airy shed, where they can be turned over half-a-dozen times or so before being taken into the Mushroom-house to dry, and also to allow of the rank heat escaping—a procedure that should be repeated for a few mornings after the droppings have been placed upon the shelves with the same object in view. This done, the horse-droppings should be beaten together as firmly as possible, and when the heat has declined to 70° the spawn may with perfect safety be inserted in the bed, in pieces about the size of bantam's eggs, at about 6 or 7 inches apart, and a little fresh horse-droppings spread over it; and when it has been ascertained that the heat in the bed is not likely to rise above 70° or 75° it can be covered with about 1½ inch thick of finely sifted maiden loam of the same temperature as the house (the barrow or barrows containing the soil having been placed in it the preceding night) and beaten well together with the back of a spade: the soil must be sufficiently moist to yield to the pressure of the spade, in order to give a firm surface. *H. W. Ward, Longford Castle, Wilts.*

Peaches and Nectarines.

Trees in early houses may now be finally pruned, but where they have been summer-pruned, according to directions given in former Calendars, very little will now be required. Sashes that have been taken off, and which require painting, if not already done, should be completed at once, and made ready to go on at any time when required; at the same time they are just as well off for the present. The Peach season is now nearly over, in fact what few we had out-of-doors have been gone some time. I gathered our last indoors on the 7th inst., and shall about use them all up by the end of this week. The varieties are Barrington and Walburton Admirable, still two of our best late Peaches. Princess of Wales is a fine looking fruit, but deficient in flavour here. From what I have seen of Sea Eagle it promises to be a first-class late variety, being fine in appearance and good in flavour. As a Nectarine Lord Napier retains its position in the front rank, being the earliest, remarkably fine and good in quality, and also an abundant bearer. I am so well pleased with it that I have got several young trees, and intend to have a tree in each of our houses. Downton and Impèratrice are both good Nectarines, and do well here. I am growing some of the newer varieties of both Peaches and Nectarines, but have not yet fruited them. Carry out directions already given for succession and late houses. *J. Wallis, Keele Gardens, Oct.* 10.

The Orchard House.

The weather during the last few days has been very favourable to the ripening of the wood of the trees in the late house, which to all appearance is very well ripened indeed, and the blossom-buds are very prominent. All the trees that we intend to repot have been so treated, and the rest are being surface-dressed; equal parts of good loam and rotten manure being the best material to do this with. The method of top-dressing has been previously described. It is now time to remove all the trees out-of-doors, and in that case it is best to plunge them in cocoa-nut fibre refuse. If hot and dry weather should set in, it may be necessary to water them two or three times, but it may happen that they will require no water at all at the roots after they are plunged outside. The wood and glass work of the house should be well washed, it will then be ready for the reception of the Chrysanthemums; indeed, this is one of the principal objects to which an orchard-house can be devoted—to grow a collection of Chrysanthemums, and if the house is heated they can be grown to a high state of perfection. It is very desirable to examine the trees when they are being removed out-of-doors, and if there is any scale or aphis on them, it should be at once washed off. The brown-scale is very troublesome on Peach and Nectarine trees, and the only way to manage with it is to look out for and destroy it when it first appears. Wash it off with soft-soapy water, taking care not to injure the buds. The Strawberry plants intended to be placed on the shelves are still out-of-doors, and well exposed to light and air; there they will remain as long as it is safe to leave them out, for when it is necessary to water them they cause a considerable amount of damp in the house, which injures the Chrysanthemum blooms. *J. Douglas.*

Plants and their Culture.

Stove Ornamental Foliage Plants.—The value of these in a small state for the embellishment of the mansion during the autumn and winter months cannot be over-estimated. Many of them make the prettiest of dinner-table plants, looking best, we think, under artificial light. Crotons well established in 48-sized pots are excellent, especially the pendulous, narrow-leaved kinds, such as C. angustifolius, majesticus, Johannis, and Chelsoni; while Weismanni, more erect in growth, is also a valuable sort. Of broad-leaved kinds, the best in a small state are Baroness James de Rothschild, Mortii, and pictus. Many more might be named, but some of the choicest and most distinct are C. Queen Victoria, Sunset, undulatus, Hawkeri, and the trilobate varieties, Earl of Derby and Disraeli. Another sort that deserves especial notice is C. Warreni; though of too large growth for a table plant, this will make an excellent subject for vases and other purposes, where its elegant habit and bright colours can be displayed to advantage. The treatment recommended in a previous Calendar (p. 239, August 19), if acted upon, will have given a useful lot of young plants. When these have well filled their pots with roots, keep them liberally supplied with water in preference to giving them another shift. Plants that have been in use for some time will have lost their bottom leaves; where this is the case, cut off the tops if healthy and clean, casting the old stool aside unless it should be necessary to increase any special kind. Dracænas of the bright coloured or variegated section will now be of good service, the white thrips will trouble them and rapidly increase if not closely watched and remedial measures taken. The variegated Pine-apple (Ananassa sativa variegata) should not be overlooked for increasing the stock from the crowns, which make much the neatest plants. Established in 48-sized pots, these make first-class table plants; for the want of a better place they will thrive excellently if suspended from the roof of the stove in a shallow pan: in this manner that peculiar rosy tinge suffusing the variegation is well brought out. Watch for the opportunity of increasing the stock of Cyperus alternifolius from seed. Propagated in this manner more compact plants are obtained, a quantity of small foliage is pushed up which at first sight might easily cause the stock thus treated to be taken for a pigmy variety. We recently saw an extensive lot raised from seed, and were much struck with the result. The ornamental-leaved Gesneraceous plants will now do a good turn; these always light up well, and when in a fit condition may be freely used. If they should be injured somewhat, it will not be of so much moment as in the case of more permanent plants with ornamental leafage. If any of the finely marked forms of Tillandsia push up flower-spikes, look sharp after the perfecting of a few pods of seed. By this means a stock can be easily raised, which will, early in their existence, take on the character of the parent plants. Some cuttings taken off the old stools of Fittonia argyroneura and Pearcei will soon strike in a brisk heat. When these are safely rooted the older ones can be cast aside.

Ferns.—Active growth in the case of most kinds will now have ceased for the season. Water should not be so freely given to such as take a long rest. The deciduous varieties will soon cast many of their fronds; when they show indications of thus ripening off water them but sparingly, though at no time during their dormant state should they be kept quite dry. Do not let these get pushed aside in any odd corner for the winter, to their future injury in many cases. The stock of Maidenhair and other kinds, kept for supplying cut fronds, ought not to be overcrowded if fronds of good lasting quality are desired. Keep also all the oldest fronds thinned out of these as they may appear. Gymnogrammas will now be quickly affected with damp, to obviate this give them the driest position in the stove, and thin out any decaying portions at once. These Ferns should, however, be freely supplied with water at the root, but never overhead; give them also all the light possible. Seedlings of these should be looked after, and grown on to replace the older ones which are not so manageable in a large size. The foregoing remarks also apply to the Cheilanthes, Microlepias, and Nothoclænas. These fine Ferns will thrive well in a dry atmosphere; where such a position can be accorded them, and they will at once become favourites. Give attention to any large specimen Gleichenias that may require the older growths thinning out; these are apt to become somewhat thick in the centre of the plant, and will be detrimental to the future development of young fronds if not removed. Keep all Tree Ferns with large heads freely watered and syringed overhead on favourable occasions, the more so if any thrips are about them. If any rockwork or additions thereto are contemplated another spring, it will be a capital plan to increase some of the best kinds for that purpose. Of such the Nephrolepis, especially N. davallioides, pectinata, and tuberosa, should not be overlooked; these can be readily increased by division, while many of the Aspleniums can be raised in quantity by pegging a few old fronds on to a layer of peat. Woodwardia radicans in like manner, and most of the Pteris, can be secured in numbers by looking after the seedlings, which come up freely in most places. A good number of pots of Selaginellas will also prove useful in the groundwork, for which purpose S. Kraussiana and cæsia, with Martensii, are among the best sorts. *James Hudson, Gunnersbury House Gardens, Oct.* 10.

The Orangery.

This structure will require much more artificial heat than it has had up to the end of September. If the fruit is ripening the temperature should be kept up to 65° at least, and even 70° on mild nights will not be too much. After the fruit is ripe, and it is desirable to allow it to hang for some time, then 55° to 60° would be better with more air and less moisture. The Tangierine Oranges ripen now, and are valuable as dessert fruit. Even if good Oranges could be imported now, which is not possible, they would not be of such good quality as the hothouse-ripened Tangierines. To have the fruit of this delicious Orange ripe at this date—the trees must be started very early in the year—any time after January 1—and they must be started in a temperature of 60° to 65°. It is not necessary to have a house set apart entirely for this purpose; the trees may be placed in an early vinery, in a Pine-stove or Cucumber-house. I have had nice trees in 8 and 9-inch pots that would ripen well from two to three dozen of fruits, and when they bear a good crop of fruit there is not so much danger of it cracking. The later fruiting sorts, St. Michael's, Maltese Blood, and Silver Orange, will require the usual stove temperature to ripen their fruit. See that the leaves are kept clean; if scale or bug should increase it must be washed off carefully and thoroughly by the hand. I do not advise the use of the syringe much after this time. *J. Douglas.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Oct. 16	Sale of Dutch Bulbs, at Stevens' Rooms; and at the Mart, by Protheroe & Morris.
TUESDAY,	Oct. 17	Sale of Bulbs, Roses, and Fruit Trees, at the City Auction Rooms, by Protheroe & Morris.
		Sale of the whole of the Greenhouse Plants, at Osborn's Nursery, Sunbury, by Protheroe & Morris (two days).
WEDNESDAY,	Oct. 18	Sale of Dutch Bulbs and Imported Orchids, at Stevens' Rooms.
THURSDAY,	Oct. 19	Sale of Imported Orchids, at Stevens' Rooms.
FRIDAY,	Oct. 20	Sale of Imported and Established Orchids, at the Mart, by Protheroe & Morris.
		Sale of Nursery Stock, at Grove Park Nursery, Lee, by Protheroe & Morris.
SATURDAY,	Oct. 21	Sale of Dutch Bulbs, at Stevens' Rooms.

GARDENIA BLOOMS in winter used to be unknown, and are still rare at that season. The natural time of flowering was put down as summer or autumn, and they so seldom flowered freely that they ranked low as ornamental plants and were little used or appreciated as cut flowers. Even now, when Gardenia culture has been enormously developed and when thousands of these plants are grown to one that was cultivated ten years ago, it is more than doubtful if all the latent capacity for the continuous or successive blooming of these plants has as yet been fully developed. Certain it is that while some only gather one crop of blooms from their Gardenias, and that perhaps an indifferent one, others reap two full crops of bloom a year. A full crop must also be seen to be appreciated—the plants are weighted down, the very leaves hidden beneath their burden of purity and fragrance. Under the highest culture almost every terminal shoot is crowned by a flower, while from its base the one shoot branches out into three others, that in their turn become crowned with buds and bloom. But not only has the amount of bloom been indefinitely increased by improved culture, but the time of flowering has been regulated by the demands of trade and the wants of private families. This timing of Gardenias blooming is far more difficult than the mere augmentation of the amount of bloom. June, July, and August used to be the season of blooming of the florida section of Gardenias; now, probably, the largest amount of bloom is gathered or cut in February or March. This proves how accommodating the plants are in their habits and seasons of blooming. The acceleration of the season of flowering has added greatly to the value of Gardenia flowers for decorative purposes. The mere fact of their great flush of sweetness becoming contemporary with the London season has quadrupled the commercial value of Gardenias. So popular have they now become that they are considered essential in all the more choice bouquets, wreaths, and other decorations. Singly hardly any flower can compete with them for whiteness and fragrance, while in association with Stephanotis, Bouvardias, Roses, Orange-blossom, Eucharis, and Pancratiums, nothing else is needed for bridal or other chaste and choice floral decorations. Hence the demand for Gardenias has become at once insatiable and incessant. True, we have heard of gluts of Gardenias in some of the London markets, and days and weeks in which prices were driven down to unremunerative figures. But this arose rather from faulty distribution than from any absolute excess of these pure and fragrant flowers. As the flowers become cheaper and better known the demand for them must needs increase, and possibly for all time coming in this country the Gardenia will be coupled with the Rose as the next most popular and useful flower for all floral decorations. Already the popularity and paying price of Gardenias have stimulated cultivators to exercise all their skill and ingenuity to force the plants to flower twice or more a year. That they can be made to do so is proved by the fact that the flower markets are seldom wholly bare of Gardenia blooms.

Observation and experience also show that a second bloom may be obtained in October and November. This is not yet so sure, certain, and plentiful as the first. The finest second crop we have yet seen was a fine houseful at Dupplin Castle towards the end of September. We have also seen another house in flower in October; but in this latter case the major portion of the first bloom was removed to strengthen the growth for the second. But

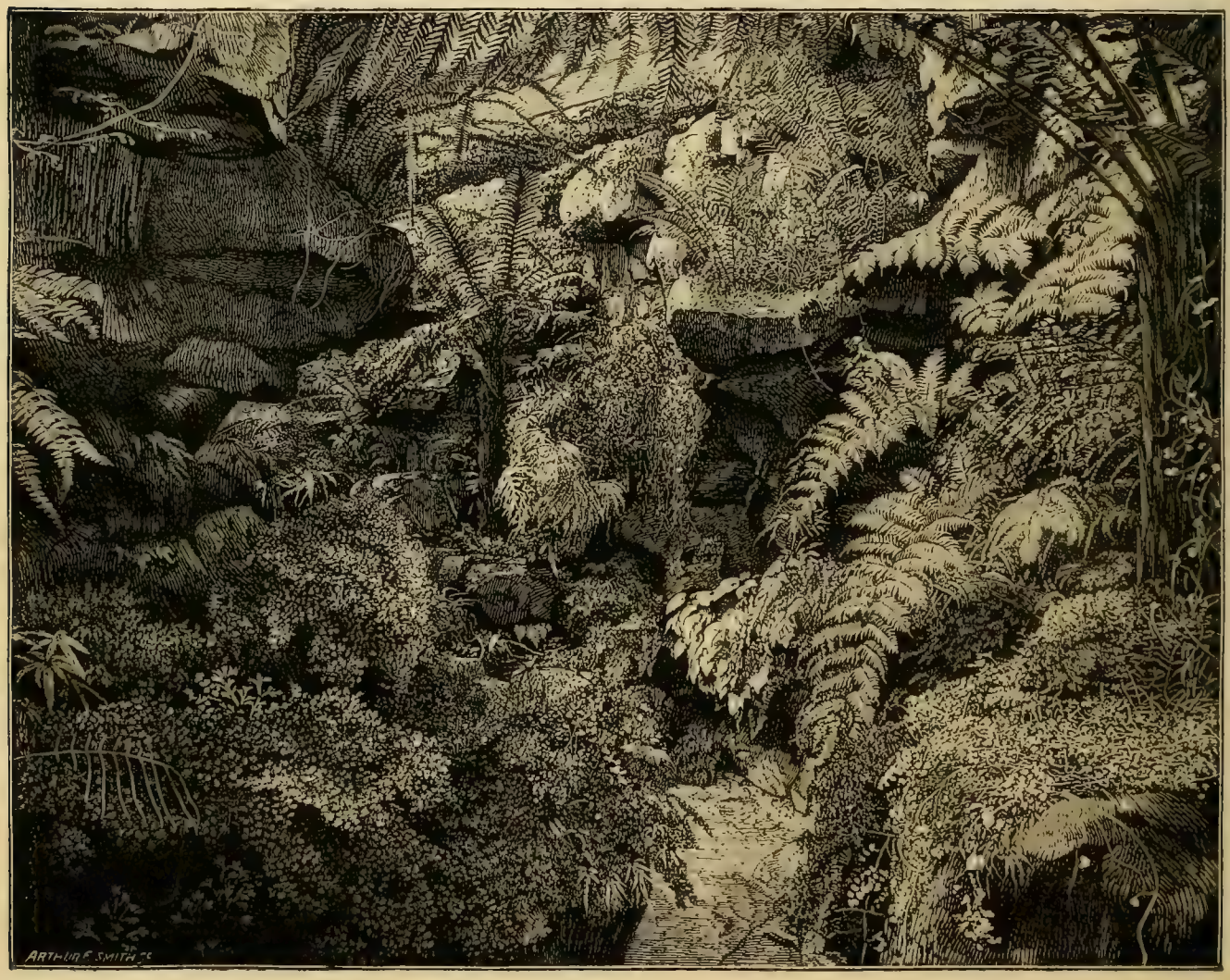


FIG. 84.—THE FERNERY AT CLIVE HOUSE, ESHER. (SEE P. 499.)

Mr. Browning, the gardener at Dupplin, had a liberal first crop, and is now gathering a capital second one from robust plants, perfect pictures of cleanliness and health. The plants are furnished with bottom as well as surface heat, and this evidently brings them under more perfect control.

Though abundant experience exists to show that bottom-heat is not essential to the successful culture of Gardenias, it is obvious that it must prove a most useful means of forcing and hastening growth at any season when such is desired. Withdrawal, or even the partial withholding, of water are likewise powerful means of enabling the plants to enjoy a a greater extent than if the plants had been kept throughout under more tropical treatment. One thing more is needed to have two good crops of bloom a year from Gardenias—that is, a light house to grow them in. This is of less moment in the spring; indeed, throughout the spring and summer months so sensitive are the young and tender leaves of Gardenias to direct sun-heat that shade may sometimes be useful. But in the autumn it is widely different, and it needs all the oblique rays of our autumnal or winter suns to be transmitted through clear glass, to sufficiently strengthen the Gardenia shoots to enable them to bloom freely and strongly again in March.



Fig. 85.—the fernery at clive house, esher. (see p. 499.)

month or two of summer's repose between the two crops of bloom. Neither the drying nor the resting process must be carried too far nor continued too long. Gardenia florida, G. Fortunei, and G. intermedia as it is generally called in gardens—the latter being, in fact, the sort generally grown—though catalogued as greenhouse plants must be treated as tropical ones if one good crop of flowers, to say nothing of two, is to be gathered in the year. But after blooming in the spring, and being forced through a second growth under tropical conditions, a partial rest proves most useful. The plants then readily respond to increased heat and moisture, and thus hasten the development and enlarge the size of the blooms in a more rapid ratio and to

As to the question, Will such plants under any treatment yield as many flowers as those that are treated differently, and are only expected to bloom once? we prefer to invite the experience of our many readers among successful growers of Gardenias than to dogmatise ourselves. But we should answer off-hand—probably not. Nevertheless, the two crops—like the proverbial two heads—must needs be better than one of Gardenias in the autumn. If they can be made to bloom at Christmas, which as yet they can hardly be said to have done to any extent, they would probably fetch double the prices they would in spring.

We have already adverted to enlarged and growing demands for these fragrant flowers as the best means of keeping up prices high enough to leave a good profit on their production. But it will be obvious to all that by spreading and extending the Gardenia season over a wider area, and at the same time reducing the tendency to a glut of them in the early months of the year, much would be done to steady prices and render a great extension of Gardenia culture at once more safe and on the whole more profitable.

—— The Late Messrs. Osborn's Nurseries.—At the sale of the Fulham, Hampton and Sunbury Nurseries (so long the property of the Messrs. Osborn & Sons), and conducted by Messrs. Protheroe & Morris, at the Mart, Tokenhouse Yard, on the 5th inst., the freehold estate at Fulham was purchased for the sum of £10,000 by Messrs. James Veitch & Sons, of Chelsea, who we understand intend to still maintain it as a nursery, principally for the cultivation of fruit trees. The Hampton Nursery was sold for £1500 to Mr. W. Lockyer, formerly traveller to the late Mr. R. A. Osborn. The Sunbury Nursery was bought in for £5600, the reserve price not being reached.

—— Gardeners' Royal Benevolent Institution.—We understand that in consequence of a number of deaths having occurred among the pensioners, and in consideration of the satisfactory state of the funds the committee contemplate adding about twenty pensioners to the list at the next annual meeting. We are glad to hear that careful management of the

funds in hand, and a substantial increase in the annual subscriptions has enabled the committee to add £400 to the reserve fund invested in Consols, which now amounts to £14,450. With regard to the Augmentation Fund, we are informed by the Secretary that the number of collectors has reached 201, the total of whose contributions amounts to £304 12s. 6d.

—— The Commercial Relations of Horticulturists.—We have received the following communication from the "Chambre Syndicale des Horticulteurs Belges": — "In order to give to the representatives of horticultural industry of all countries the occasion to extend mutually their commercial relations and discuss their common interests, an international meeting of horticulturists will take place at Ghent in April, 1883. The programme will be published in due time. As this meeting will coincide with the great quinquennial International Flower Show, organised by the Royal Agricultural and Botanical Society, entertainments will be offered to the congress members."

—— Another Fungus Foray.—The members of the Hackney Natural History Society will make a foray for fungi in Epping Forest on Saturday, the 21st inst. Dr. Cooke is President of this Society. These fungus "forays" during the last sixteen years have done most useful work, and helped to start in this country a school of keen mycologists not excelled, if equalled, in any other. The forays began about sixteen years ago, at the time when the Rev. M. J. Berkeley, W. W. Saunders, Mrs. Lloyd Wynne, and Lady Dorothy Neville inaugurated the fungus exhibitions at South Kensington. Dr. Bull, of Hereford, immediately afterwards started what he termed a "fungus foray," and invited two botanists (Mr. W. G. Smith and the Rev. Wm. Houghton) to Hereford. Since that time the meetings have been continued annually, and have spread to London, Scotland, Yorkshire, and many other places. Every British fungologist of repute has repeatedly attended these meetings, and visitors from the Continent have several times been present. At first the larger fungi were only studied, but of late years the microscopic species have received great attention, especially such species as assail food and garden plants, as the Potato, Tomato, Turnip, corn, &c. We cannot doubt the practical value of such gatherings as first instituted, for social and recreative purposes mainly.

Grapes on the Old Wood.—The *Revue Horticole* for October 1 figures and describes a case wherein Grapes were produced, without either leaves or tendrils, direct from the old wood. It appears that the greater portion of the wood was killed by frost, but one portion remained alive, and from this portion the berries were produced. We do not think the frost had necessarily anything to do with the development of the "adventitious" buds from which these Grapes were produced, though it is possible it was so. At any rate, we remember to have seen on one occasion an analogous case where one berry proceeded from the old wood. As this was from a Vine presumably grown under glass there was no question of frost, though possibly there might have been some other injury. Another instance is recorded in our volume for 1868, p. 1117, where the berries appeared indeed to come from the old wood, but where careful examination showed the existence of a very short shoot produced from the old wood, and concealed within a crack of the bark.

—— Chrysanthemum "Maize."—At no season of the year are flowers more welcome than during the month of October. For cut flowers it is perhaps the dullest month in the whole year, January excepted; therefore any plant coming into bloom about that period is of more than ordinary value. From Mr. Hans Niemand, The Royal Nurseries, Edgbaston, Birmingham, we have been favoured with a specimen of a new Chrysanthemum which comes into flower between the autumn and winter flowering sections. It is said to have been in flower for the past three weeks, and being pure white, it will clearly make a charming plant for the conservatory in autumn. The flowers are freely produced in numbers of from five to six upon a single shoot, and will be as useful in a cut state as they appear to be suitable for conservatory decoration.

—— Davallia polyantha.—Those who are fond of arranging Ferns for effect should endeavour to obtain a little more variety than is usually seen in small collections. There is little more diversity in some collections that we have seen than there is in a field of rich pasture, and this is solely due either to want of knowledge or discrimination; it certainly is not because we cannot do better. This Davallia is very handsome when it is throwing up its young fronds, which are of a dark maroon or red colour, and has the same effect among Ferns that a well coloured Dracæna has among Palms in winter. Surely we might grow Ferns for other purposes than for cutting. We have tried them in many ways, both in a cut and in an uncut state, but give us a nice little collection, including variety, for producing a true effect such as will not soon be forgotten.

—— Foliage in the Twilight. — To many people foliage beds present charms of only one character. A first look, and all is over. We assume that all lovers of plants behold the changes of development, and even colour, in the leaves of plants, but many are slow to perceive the changing effects of foliage under various degrees of light. We were much struck with an example we saw one evening lately in Battersea Park. The bed was composed of the following plants:—A full centre of the variegated Vine (Vitis heterophylla variegata); next to which was a medium-sized band of Lonicera aurea variegata; then a broader band of Alternanthera amabilis surrounded with a deep line of Spergula pilifera aurea; the whole being edged with a raised band about 4 inches in depth of Sedum acre elegans. We passed and repassed this bed many times during the past season, and often admired the arrangement, but the sight was never so soft to the eye, nor so captivating as when we saw it a few evenings ago in the twilight, when the first shadows of evening were passing over the earth's surface, and the plants appeared to assume a freshness of tone from the falling dew, which tended to give them an appearance unequalled at any other period of the day. Whoever was the first to introduce the little grey Sedum acre elegans as an edging plant deserves the thanks of all who love foliage beds, and especially of those who are fond of paying a visit to their plants and flowers in the twilight of the evening.

—— Abutilon braziliense.—A bed filled with this fine-foliage plant in Battersea Park was the best we saw anywhere last season; the same bed was planted with plants equally good this year, but there is a marvellous difference in the colour of the leaves. They are now deeply streaked with yellow, but the green shade is the most plentiful, and although the colour has grown effective lately it is a long way behind what it was last season, proving the want of solar heat for any lengthened period, and also showing the advantage of intermixing foliage plants with flowers, so that what is absent in the one may be compensated for in the other.

—— Chrysanthemum "Chinaman." — The stand of cut blooms of Japanese Chrysanthemums exhibited by Messrs. Dixon & Co., of Hackney, at the meeting of the Royal Horticultural Society on Tuesday last, although perhaps not so much noticed as Roses or single Dahlias, was of an interesting character. It is not often we see a stand of such blooms early in October, and it would be interesting to know how they were obtained so early. The best flower in the stand was "Chinaman," a new one of the present season not yet in commerce. The flower was of good size, well formed, with petals rather narrow, drooping, and of a purple shade, and altogether a very promising flower for exhibition purposes.

—— Gleichenia Mendelii.—When one meets with a plant in what may almost be called a suburban garden the equal of which is probably not in the country it looks as if there might be a great many other good things about that are never heard of in public. Modesty or retirement is not always an advantage to any one, or anything, neither is it good for gardening when specimens that are said to have no rivals are paraded up and down the country and lionised, when there are vastly better elsewhere that are hardly known of in their own neighbourhood. In Mr. Wills' garden at Esher there is a specimen of the above over 7 feet in diameter, and a companion plant of G. rupestris about the same size. These measurements are not what we consider the most remarkable thing about the plants, but their vigour. They are grown in "special sized pots," which are built round with stones to make the border look like a rockery. The idea is well conceived and carried out. The two plants fill one side of a small house, and we noticed, in looking for some explanation of the vigour of the fronds, that the rims of the pots were covered with healthy young roots. The gardener (Mr. Smallpiece), evidently reading our thoughts, volunteered the information that the plants had been cut down about a year ago, or more, as the fronds appeared small, wiry, and unhealthy, and the plants broke away with increased vigour. Since they have been fresh potted and properly treated they seem to have grown marvellously, the young fronds shooting up with nearly as much strength as many common Ferns we often see in our rambles in the woods.

—— Tropæolum canariense.—A plant so useful for covering trelliswork or creeping over hedges should be more largely employed in small gardens than it is. It is so well known that its culture need not be referred to. We have been prompted to write this notice in consequence of a plant that has been in flower almost under our eyes for months, and is still a floral picture, where Clematis and other creepers that were once bright by its side are past and gone—we mean as regards flower. Why, therefore, should not the cottager ornament the paling in front of his door, or the hedge surrounding his garden, with the pale yellow blossoms of this lovely creeper? And might not gardeners do the same, or use it in a variety of other ways?

—— Dabeocias at Gunnersbury Park.—A new and very pleasing feature has been added to the many attractions of this fine place by the addition of a piece of rockwork by Mr. Pulham at the head of the ornamental water in front of the mansion. By the side of the rockwork, and for the purpose of giving a finish to it, Mr. Roberts has made some flower-beds, and one of them is formed of a small group of Dabeocias, purple, white, and lilac. Planted in a peaty soil the plants have done well and bloom profusely, and Mr. Roberts regards them as some of the most satisfactory outdoor plants he has employed this season. They are really charming evergreen subjects, and their copious large bell-shaped flowers are well adapted for garden decoration.

—— Fungus on Roots of Orange Trees.—The roots of some of the large Orange trees in tubs at Gunnersbury Park showing signs of deterioration, they were taken from the tubs, and it was found that fungus had so affected the roots as to almost destroy them. One in particular was so bad that it was necessary to resort to some method to induce the tree to put forth fresh roots. The soil was entirely removed, and the roots bound up with peat and sphagnum moss until a large-sized ball was formed, and then bound tightly round. Then a kind of rough bed of long dung and leaves was made up in the Lapageria-house, and the Orange tree placed in the middle of it, so that it could be acted on by the gentle heat from the fermenting material about it. The result is shown in the tree, for it is already putting forth fresh growth, showing that root-action is active, though the plant had occupied this position but three weeks only. Here it will remain until February, when it will be tubbed in the ordinary form.

—— The "Florist and Pomologist" for October contains coloured figures of various pompon Dahlias and of Warner's King Apple, sent out lately under the name of D. T. Fish. "Weavering" appears to be the oldest name, and should, strictly speaking, take precedence; but in these matters long custom has the force of law.

—— The "Journal of Forestry" for October contains notes on meeting of the American Forestry Convention at Montreal; a report of a lecture on the cultivation of underwood, by Mr. Burrows; a note on the rate of growth of certain select trees planted by distinguished individuals in the Botanic Garden, Edinburgh, a continuation of which is promised yearly; and numerous other articles both varied and interesting.

—— The Atherstone Nurseries.—Mr. Thos. Woodford, late of Quex Park Gardens, Margate, has taken The Nurseries, Atherstone, Warwickshire, where he intends carrying on business as a nurseryman, seedsman, and florist.

—— Tuberous-rooted Begonias: Treatment after Flowering. — Looking through a large collection of these the other day, we were interested in noting the treatment awarded to those plants which had done blooming. The points of the branches were cut away, and the pots laid on their sides underneath a stage in a plant-house, and the soil gradually allowed to dry. It is not wise to hasten the drying off of the bulbs; and by laying them on their sides under a stage, with some of the thick fleshy stalks remaining on the plants, they decay gradually, and without undue haste. It is best to allow them to remain in the pots in which they have flowered. When the stems have died away, and the bulbs have quite gone to rest, they can be put away in a dry shed, or place where the roots will remain dry and be preserved from frost and wet, as damp and cold alike are injurious to them. Plants that are wintered without due care, and especially if allowed to become damp, are apt to rot at the crown, and at the proper time they fail to put forth spring growths. It is best to leave the plants undisturbed until they show signs of growth, and then carefully repot them in suitable soil.

—— Horticultural Club.—At the last meeting at the Club Rooms, Ashley's Hotel, Covent Garden, on October 10, a portrait of the Chairman, Mr. John Lee, which was presented by the members, was hung in the meeting room.

—— The Weather.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending Oct. 9, issued by the Meteorological Office, London:—The weather was fine generally on the 3d, but was afterwards exceedingly cloudy in all but the eastern and southern districts. Aurora was seen in many parts of the country on the evening of the 5th, and thunderstorms or lightning occurred in "England, E.," and "England, S.," on the evenings of the 7th and 8th. The temperature was above the mean in all districts excepting "England, S.W.," the excess being greatest in Scotland. The maxima, which varied between 61° in "Ireland, N.," and 70° in "England, N.E.," occurred generally over the northern and midland districts about the middle of the week, but in the eastern and southern districts the highest readings were registered mostly on the 9th. The minima, varying between 37° and 42°, occurred on various days in different localities. The rainfall was less than the mean in all districts, the deficit being greatest in "England, N.W.," and Ireland. Bright sunshine was very deficient in most districts, the percentage of possible amount varying from 12 in "Scotland, E.," to 35° in "England, S.W." Depressions observed:—At the commencement of the period a depression was passing away to the north of Scotland, and the winds were generally westerly Shortly afterwards an anticyclone spread over our northern districts from the south-west of Ireland, and the wind veered first to N., and then to N.E. and E., from which quarters it then freshened considerably on the 6th and 7th. On the 8th the high pressure travelled eastwards to Sweden, and after a brief period of very uniform readings gradients for southerly winds were being gradually formed at the close of the week. There has been no gale of any importance.

—— Gardening Appointments. — Mr. Jas. Breckenbridge, late Gardener to Sir W. Maxwell, Bart., Calderwood Castle, Lanarkshire, and Mr. Andrew Sommerville, late Foreman at the same place, as Gardeners respectively to Provost Lyle, of Oakly, Greenock, and J. Dunn, Esq., Annet House, Weymss Bay.—Mr. John Storrie, late Gardener to Jas. Campbell, Esq., of Tullichewan Castle, Dumbartonshire, as Gardener to David Hutcheson, Esq., Violet Bank, Longside. —Mr. Matthew Reddie, late Foreman at Elderslie House, Renfrewshire, as Gardener to T. J. Stewart, Esq., Ardenmore Row, Dumbartonshire.—Mr. Thos. Rae, late Gardener to Chas. S. Gordon, Esq., Wimbledon, Surrey, as Gardener to D. Stevenson, Esq., Reddria Park, Stirlingshire (all through the agency of Messrs. J. & R. Thyne).—Mr. W. H. Strangeman, late Gardener to J. Westwood, Esq., Tredegar House, Bow, succeeds Mr. T. Jarrett, (who has gone into business(as Gardener to R. Warner, Esq., Bloomfield Lodge, Chelmsford.— Mr. Alexander Crichton, Gardener, East Craigs, Midlothian, as Gardener to David Wilson, Esq., of Carbeth, Killearn, N.B.—Mr. George McKinley, late Gardener at Tulloch Castle, Ross-shire, as Gardener to the Right Hon. the Earl of Lindsay, Kilconquhar House, Kilconquhar, Fife.—Mr. William Park, lately Gardener at Manor House, Oban, as Gardener to Henry G. Patrick, Esq., Giffen, Dalry, Ayrshire.—Mr. George Craik, lately Foreman at Ardgare, Shandon, near Helensburgh, as Gardener to Captain F. G. Forsyth Grant, Ecclesgreig, Montrose (the above four through Messrs. Downie & Laird).

CLIVE HOUSE, ESHER.

Akin to the pleasure of witnessing the carrying out of new ideas in a garden is the gratification of tracing resemblances to something one has seen somewhere else. We thought of this a day or two ago upon visiting the garden of Alfred Wills, Esq., Q.C., at Esher, where there is one of the most interesting collections of Ferns—and not only interesting, but well cultivated—in the country. Larger collections there are, no doubt, many that we have seen and heard of, but a collection so well arranged among rocks, and presenting such an appearance of taste and skill, and in such charming accord with modern ideas of natural beauty, we have rarely seen.

In order to give the reader an idea of Mr. Wills' garden we may state that it is of moderate size; but upon entering the grounds from the Esher road one experiences a kind of sylvan greeting from the green, sweeping, undulating lawn, and the borders of shrubs and flowers. It is perhaps no advantage to be made aware beforehand of any speciality, however good or however charming, for it is the inherent weakness of human nature to subordinate everything else to the one object that is supposed to possess charms beyond all else. Accordingly we ask first to see the fernery, and our wish is instantly gratified by Mr. Smallpiece, the gardener, who is as proud and as careful of the Ferns under his charge as we were anxious to see them.

The fernery is entered from the garden upon the north side, close to a large glass door which opens from the "morning room" into it. From this room there is a full-length view of the fernery, the size of which is enhanced by the disposition of the rocks and Ferns. The structure itself is a plain but high (we write comparatively) lean-to, presenting no advantages whatever to the workman but the stiff straight lines that are familiar to every one. To transform such a structure into glades of Ferns of unwonted greenness, while concealing from the eye the form of the house, was a work indicating both taste, skill, and originality of on the part of the designer. The walk through the fernery is a serpentine one, and the rockwork is formed of red sandstone. The rafters are faced with cork, and the rocks from the front of the house, now in a broad winding group, then in slim curvilinear outline, ascend towards the roof a distance of from 4 to 5 yards, and are nearly met in zig-zag fashion by rocks descending from the back wall of the house. The easy natural sweeps thus created, and the jutting rocks almost overrun with green fronds, create the illusion that you are not enclosed by straight lines, but by a dell or glade surrounded by banks of Ferns. Over the entrance-door the rocks are covered with fine fresh fronds of Nephrolepis exaltata, Asplenium inæquale, and Pteris umbrosa. A good specimen of Alsophila australis, with bold drooping fronds, marks the curve or angle at the junction of the entrance walk with the main walk through the centre of the house, and upon the summit of the rockwork a specimen of the Bird's-nest Fern (Neottopteris nidus) enjoys a suitable situation. Polypodium scriptum is very pretty at the front of the house in a carpet of Selaginella denticulata, and upon the opposite side a rare specimen of Cyathea dealbata having large healthy fronds half drooping over the path, and in close proximity to a broad tuft of ornamental-leaved Begonia of a beautiful silvery hue enriched with dark markings.

A structure of this kind is much like an unfinished picture where room is left for a few extra touches, or a bold dash of colour, as the idea occurs to the painter. A dozen clumps of those handsome leaved Begonias go a long way towards brightening the sombre hues of deep or light green, the only change of colour we get from Ferns, unless it be the silvery hues of Pteris argyrea, or Pteris cretica albo lineata, or the blueish-green of some of the trailing Selaginellas. All these are used with effect, creeping over the stones, or at the bases of Tree Ferns, some of which are also surrounded with a deep thick carpet of Adiantum assimile. A Fern that is very effective is Asplenium fraxinifolium, owing to the substance and brightness of its fronds. Cibotium princeps overhangs the path with its large light green fronds, and having a background of Selaginella formosa and Ficus repens creeping in a natural manner over the projecting ledges of the rocks. Above the Cibotium a great boulder projects which is covered with Ferns, the drooping fronds of which almost touch the spreading fronds of the Tree Fern below. This is a very attractive spot, and one that arrests sudden attention from the natural beauty of the arrangement. The numerous rhizomes of Davallia dissecta elegans are very pretty creeping over the surface of the rocks by the side of the path, as also Lygodium scandens, which is amenable to any form of training.

Our illustration (fig. 85, p. 497) was taken from the centre of the fernery, looking to the extreme end, and takes in a view of a tall Dicksonia antarctica, several specimens of Woodwardia radicans, Pteris argyrea, and Didymochlæna truncatula, which was brought by Mr. Wills from a stream-bed covered over by the arching foliage of a tropical forest, and in a place singularly protected from wind, growing with every appearance of health and vigour in perhaps the most draughty situation in the fernery, and exposed at times to a temperature as low as 40°. This plant is in a pocket not over-well drained in which a plant of Osmunda regalis had formerly been grown, and it is now producing fronds wonderfully vigorous and healthy. Its native habitat, where thousands are growing, is at the head of the Bay of Rio, about 2000 feet above the sea. There is also a fine plant of Animia tomentosa, brought by Mr. Wills from the top of a mountain 4500 feet high, near Rio. It grew amongst coarse grass, the roots being thus protected from extremes, but the fronds exposed to both tropical sun and occasionally frost. This plant is in a pocket above the hot-air pipes, in a place where it never gets anything approaching the exposure to sun, cold, rain, or wind, that it thrives under at home; and yet the plant is equal to anything of the same kind seen in Brazil. A kind of circular indentation in the rockwork is clothed with Pteris, Aspleniums, Gleichenia flabellata, Polypodiums, Adiantums of sorts, Mosses, and Selaginellas. We noticed, among a great many other Ferns near the extreme end of the house, Cyathea medullaris, Polypodium lingua, Lastrea Standishii, Pteris formosa, P. albo lineata, Adiantum hispidum, A. assimile, Selaginella Wildenovi, and many others.

The second illustration (fig. 84, p. 496) is taken from the north-west side, or from the opposite direction to the preceding one. The large Dicksonia comes out better from this side, and the plant immediately underneath it is a healthy sample of Lomaria fluviatilis. Woodwardia radicans is very effective, drooping naturally over the smaller growing Ferns. There is a rather large stock of Trichomanes radicans, which succeed remarkably well under the shade of the taller growing species, and many of them situated close to little pools which ornament the base of the rockwork at intervals, and no doubt supply the Ferns with moist vapour in abundance. Mr. Wills' success in the management of this fernery is largely owing to a wide range of knowledge acquired by travel, which enables him to select such species only as are likely to thrive under the conditions provided for them, and to a due consideration of the necessity for occasional rest in plants however secured.

There is a collection of hardy Ferns of considerable extent on the north side of the fernery very prettily arranged; the stones are overrun with Oxalis, Saxifrages, and Musk, and the plants generally seem to enjoy their treatment and situation.

The borders are gay with autumn perennials, Dahlias, Phloxes, seedling Œnotheras of great beauty, and a selection of evergreen shrubs. The finest specimen upon the lawn is a large evergreen Oak, near to which there is a clump of Ivy intermixed with Clematis Vitalba, which looks remarkably handsome. A good view of the garden is obtained from the balcony at the front of the house, and from the grass terrace, near to which there are flower-beds filled with Dianthus that look very bright for the season. A large Mulberry has covered the ground with fruit, and looks a venerable specimen. The fruit and plant houses are well managed. Grapes are good crops; and plants, including Orchids, are healthy and well cared for by Mr. Smallpiece, who is an enthusiast in every branch of gardening.

Trichomanes radicans. — A specimen of this well-known Filmy Fern over 3 feet 9 inches in diameter, and in perfect health, is not an everyday sight—nor, indeed, are smaller plants often seen in such vigorous health. The plant alluded to has a little frame to itself out-of-doors, the tips of the fronds being within a few inches of the glass, and kept well shaded from the sun. The fronds were dripping with moisture, and the roots were observed creeping over the brim of the pan. The specimen is in Mr. Wills' collection at Esher.

LIST OF GARDEN ORCHIDS.

(ERIA: *Continued from p.* 469.)

40. ERIA HEMIMELÆNA, Rchb. f., *Hamb. Gartenz.*, xix., p. 11.—Java. Imported and cultivated at Bremen by Mr. Retemeyer.

41. E. HYACINTHOIDES, Lindl., *Gen. and Sp. Orch. Pl.*, p. 66. *Dendrolirium hyacinthoides*, Blume, *Bijdr. Fl. Nederl. Ind.*, p. 346.—Java. Buitenzorg Botanic Gardens, 1866.

42. E. LANATA, Griffith, *Not.*, iii., p. 301; *Journ. Linn. Soc.*, iii., p. 49.—Malacca. Cultivated at Kew in 1870.

43. E. LANICEPS, Rchb. f., *Hamb. Gartenzeit.* 1863, p. 11; *Xenia*, ii., p. 162, t. 168, fig. 4—5.—Moulmein. Discovered and introduced by the Rev. Mr. Parish; and cultivated by Mr. Day.

44. E. LITTORALIS, Teijsm. and Binnend., *Bot. Nat. Tijdschr.* xxiv., reprint, p. 8.—Moluccas. Cultivated at Buitenzorg in 1866.

45. E. LONGICAULIS, Teijsm. and Binnend., *Bot. Nat. Tijdschr.* xxiv., reprint, p. 9.—Java. Cultivated at Buitenzorg in 1866.

46. E. LONGILABRIS, Lindl., *Bot. Reg.* 1841, Misc., n. 69; *Gard. Chron.* 1841, p. 300 (for 400).—Philippines. Introduced by Mr. Cuming for Messrs. Loddiges. Allied to E. bractescens, from which it differs in the long acuminate middle lobe of the lip.

47. E. MERGUENSIS, Lindl., *Journ. Linn. Soc.*, iii., p. 52; *Gard. Chron.*, n.s., xiii., p. 616.—Malayan Peninsula. Imported and cultivated by Messrs. Low, in 1880. Hort. Kew.

48. E. MUCRONATA, Lindl., *Bot. Reg.* 1842, Misc., n. 27.—Singapore. Introduced by Mr. Cuming, and cultivated by Messrs. Loddiges. Habit of Dendrobium chrysanthum; flowers white, with a faint tinge of pink, violet-scented, produced singly opposite the leaves.

49. E. MULTIFLORA, Lindl., *Gen. and Sp. Orch. Pl.*, p. 68. *Dendrolirium multiflorum*, Blume, *Bijdr. Fl. Nederl. Ind.*, p. 349.—Java. Cultivated at Buitenzorg in 1866.

50. E. MYOSURUS, Rchb. f., *Bonplandia*, 1857, p. 54.—Java. Buitenzorg Botanic Garden.

51. E. MYRISTICIFORMIS, Hook., *Bot. Mag.*, t. 5415.—Moulmein. Introduced by the Rev. Mr. Parish for Messrs. Low, of the Clapton Nursery. Six to 9 inches high; flowers medium size, white, fragrant.

52. E. NUTANS, Lindl., *Bot. Reg.* 1840, Misc., n. 196; *Walp. Ann.*, vi., p. 272.—Singapore. Introduced by Mr. Cuming, and cultivated by Messrs. Loddiges. A pretty species, with a single, large, nodding, terminal white flower, tipped yellow; bracts thick, flesh-coloured.

53. E. OBESA, Lindl., *Gen. and Sp. Orch. Pl.*, p. 68; *Bot. Mag.*, t. 5391.—Malayan Peninsula. Introduced into cultivation by Rev. Mr. Parish in 1859; flowered at Kew in 1863. A dwarf plant, with small white flowers. Hort. Kew.

54. E. OBLIQUA, Lindl., *Journ. Linn. Soc.*, iii., p. 55. *Mycaranthes obliqua*, Lindl., *Bot. Reg.* 1840, Misc., n. 184.—Singapore. Introduced by Mr. Cuming for Messrs. Loddiges.

55. E. OBLITERATA, Lindl., *Journ. Linn. Soc.*, iii., p. 51; Miq., *Fl. Nederl. Ind.*, iii., p. 665. *Mycaranthes obliterata*, Blume, *Bijdr. Fl. Nederl. Ind.*, p. 352.—Java. Cultivated at Buitenzorg in 1866.

56. E. ODORATISSIMA, Teijsm. and Binnend., *Bot. Nat. Tijdschr.*, xxvii., p. 17.—Sumatra. Cultivated at Buitenzorg in 1866. Hort. Kew.

57. E. OVATA, Lindl., *Bot. Reg.* 1844, under t. 29; *Walp. Ann.*, vi., p. 277.—Philippines. Introduced by Cuming.

58. E. PANICULATA, Lindl. in *Wall. Pl. As. Rar.*, p. 32, t. 36; *Bot. Reg.* 1842, Misc., n. 33; *Gard. Chron.* 1842, p. 382.—India. Flowered in Loddiges' nursery in 1842. Long leafy stems and dense subterminal panicles of small greenish-white flowers freckled with purple.

59. E. PANNEA, Lindl., *Bot. Reg.* 1842, Misc., n. 79; *Gard. Chron.* 1842, p. 639.—Singapore. Cultivated by Loddiges. Scapes, 1-flowered; flower greenish-yellow.

60. E. PAUCIFLORA, Blume, *Mus. Bot.*, ii., p. 183; Miq., *Fl. Nederl. Ind.*, iii., p. 658. *Trichotosia pauciflora*, Blume, *Bijdr. Fl. Nederl. Ind.*, p. 343.—Sumatra, Java, Borneo. Cultivated in the Buitenzorg garden in 1866.

61. E. PLANICAULIS, Wallich, *Bot. Reg.* 1840, Misc., n. 4.—India. Introduced by Dr. Wallich, and flowered in Sir Charles Lemon's garden in 1839.

62. E. POLYURA, Lindl., *Bot. Reg.* 1841, Misc., n. 144 and 1842, t. 32.—Manilla. First found by Mr. Cuming, who sent it to Messrs. Loddiges, with whom it flowered in 1841. Flowers small, white, purple, pink, and yellow, in slender, loose racemes from the stout, leafy stems.

63. E. PROFUSA, Lindl., *Bot. Reg.* 1842, Misc., n. 3; *Walp. Ann.*, vi., p. 271.—Ceylon. Found by Mr. Nightingale, and sent by him to the Duke of Northumberland. Flowers in numerous racemes nearly a foot long, soft, with brown hairs; labellum bright light green.

64. E. PULCHELLA, Lindl., *Bot. Reg.* 1841, Misc., n. 106. *Calostylis rigida*, Blume, *Bijdr. Fl. Nederl. Ind.*, p. 341.—Malacca. Cultivated at Buitenzorg in 1866.

65. E. PUMILA, Lindl., *Gen. and Sp. Orch. Pl.*, p. 68; *Bot. Reg.*, 1838, Misc., n. 147.—India (?). Cultivated by Messrs. Loddiges, who received it from the Botanic Garden, Calcutta. Small capitate flowers, tinged with pink.

66. E. PUSILLA, Teijsm. and Binnend., *Bot. Nat. Tijdschr.*, xxiv., reprint, p. 8.—Java. Buitenzorg Botanic Garden, 1866.

67. E. RETICULATA. *Porpax reticulata*, Lindl., *Bot. Reg.* 1845, Misc., n. 66; *Walp. Ann.*, vi., p. 266.—Native country not recorded. Cultivated by Loddiges.

68. E. RIGIDA, Blume, *Mus. Bot.*, ii., p. 183; Miq., *Fl. Nederl. Ind.*, iii., p. 657.—Borneo. Cultivated in the Buitenzorg garden in 1866.

69. E. ROSEA, Lindl., *Bot. Reg.*, t. 978; Lodd., *Bot. Cab.*, t. 1817.—China. Brought home for the Horticultural Society by Mr. J. D. Parks in 1824. Flowers rose and white.

70. E. RUFINULA, Rchb. f., *Hamb. Gartenz.*, xix., p. 13.—India. Introduced from Assam, and cultivated by Consul Schiller at Hamburgh in 1863.

71. E. RUGOSA, Lindl., *Gen. and Sp. Orch. Pl.*, p. 66. *Dendrolirium rugosum*, Blume, *Bijdr. Fl. Nederl. Ind.*, p. 345.—Java. Cultivated at Buitenzorg in 1866.

72. E. SONKARIS, Rchb.; Miq., *Fl. Nederl. Ind.*, iii., p. 663.—Java. Cultivated at Buitenzorg in 1866.

73. E. SPHÆROCHILA, Lindl., *Journ. Linn. Soc.* 1858; *Gard. Chron.*, n.s., x., p. 106.—India. Collected in the Khasya Hills by Mr. Freeman for Mr. Bull. Flowers ochre-coloured, with some mixture of violet-purple.

74. E. STELLATA, Lindl., *Bot. Reg.*, t. 904; *Bot. Mag.*, t. 3605.—Java (?). Cultivated by Mr. Cattley in 1825. Leaves ample, like those of a large Calanthe; flowers greenish-yellow or whitish, of medium size, in racemes 12—15 inches long. Hort. Kew.



FIG. 86.—PACHYSTOMA SPECIOSUM.

75. E. STRICTA, Lindl., *Journ. Linn. Soc.*, iii., p. 52; *Gard. Chron.*, n.s., xiii., p. 616.—North India. Cultivated in the Dublin Botanic Garden in 1880. Hort. Kew.

76. E. SUAVIS, Lindl., *Journ. Linn. Soc.*, iii., p. 52; *Walp. Ann.*, vi., p. 272.—India. Collected by Gibson and others.

77. E. VELUTINA, Loddiges, *Bot. Reg.* 1840, Misc., n. 209; *Walp. Ann.*, vi., p. 274.—Singapore. Introduced by Cuming and cultivated by Loddiges. Hort. Kew.

78. E. VESTITA, Lindl., *Bot. Reg.* 1844, Misc., n. 79 and 1845, t. 2; *Gard. Chron.* 1870, p. 104; *Bot. Mag.*, t. 5807. *Dendrobium vestitum*, Wallich; Lindl., *Gen. and Sp. Orch. Pl.*, n. 33.—Indian Archipelago. Sent to Messrs. Loddiges by Cuming. Flowers medium size, reddish-brown without, white within.

39. PHREATIA, Lindl., *Gen. and Sp. Orch. Pl.*, p. 63.—Stems dwarf without pseudobulbs; leaves in two rows. Peduncles lateral, or flowers racemose on a leafless scape from the rhizome; flowers minute. Column very short, extended at the base into a foot. About ten species, inhabiting India, the Malayan Archipelago, and the Pacific Islands. They have inconspicuous flowers. Plexaure and Octarrhena are referred here.

1. P. CORIACEA, Lindl., *Gen. and Sp. Orch. Pl.*, p. 64; Miq., *Fl. Nederl. Ind.*, iii., p. 656. *Dendrolirium coriaceum*, Blume, *Bijdr. tot Fl. Nederl. Ind.*, p. 351.—Java. Cultivated at Buitenzorg in 1866.

2. P. DENSIFLORA, Lindl., *Gen. and Sp. Orch. Pl.*, p. 64; Miq., *Fl. Nederl. Ind.*, iii., p. 655. *Dendrolirium densiflorum*, Blume, *Bijdr. tot Fl. Nederl. Ind.*, p. 350.—Java. Cultivated at Buitenzorg in 1866.

3. P. MICROTIDIS, Lindl., *Journ. Linn. Soc.*, iii., p. 62.—Java. Cultivated at Buitenzorg in 1866.

4. P. MYOSURUS, Lindl., *Journ. Linn. Soc.*, iii., p. 61. *Eria* (*Phreatia*) *Myosurus*, Rchb. f., *Bonplandia*, 1857, p. 54.—Java. Cultivated at Buitenzorg in 1866.

40. PACHYSTOMA, Blume, *Bijdr. tot Fl. Nederl. Ind.*, p. 376.—Scapes leafless, the one-leaved pseudobulb sometimes developed later. Sepals connivent. Column elongated, extended into a foot at the base. About ten species, one inhabiting Tropical Africa and the Himalayan Archipelago. Pachychilus, Apaturia, and Ipsea, are reduced to this genus. Mr. Bentham follows Blume in making two sections—Apaturia and Ipsea—with the remark, however, that it might be better perhaps to restore them to the rank of genera. The species of the former are leafless plants with inconspicuous flowers, whilst some of the latter have quite showy flowers.

1. P. THOMSONIANUM, Rchb. f., *Gard. Chron.*, n.s., xii., pp. 582, 624, and 627, figs. 102 and 103 (Thompsoni); *Xenia*, iii., p. 35, t. 213; *Bot. Mag.*, t. 6471.—West Tropical Africa. Collected by Mr. W. Kalbreyer, and sent to Messrs. Veitch, with whom it flowered in 1879. A very remarkable Orchid, with one or two-leaved pseudobulbs, and one to three-flowered scapes springing from beneath the latter. Flowers about 3 inches across, white, with a purple labellum, which ends in a narrow hook. See fig. 87, p. 501.

2. P. SPECIOSUM, Rchb. f., in *Bonplandia*, 1855, p. 250. *Ipsea speciosa*, Lindl., *Gen and Sp. Orch.*, p. 124; Wight, *Ic. Pl. Ind. Or.*, t. 1663; *Bot. Mag.*, t. 5701.—Ceylon. Sent to Kew, in 1866, by Mr. Thwaites. A very pretty terrestrial Orchid, having grass-like leaves and clear yellow flowers, 2½ inches in diameter, borne singly, or in pairs, on slender scapes, 1 to 2 feet high (fig. 86.) *W. B. H.*

(To be continued.)

HOME CORRESPONDENCE.

Tap-root Pruning of Old Pear Trees.—A large tree of the Beurré Rance Pear, growing here on a south wall, with seven tiers of branches, 33 feet long, was not fertile for many years. It made so much breast-wood every year that the tree seemed determined to grow wood and nothing else. I took to summer pruning it, and that helped a little to get the tree into a bearing state; but even then I found that the fruit cracked and blistered, and not a good one was to be had from the tree. Under these circumstances I determined to examine the roots, which I did in the autumn of 1880, when I found it had three large tap-roots. I had pieces cut out of these, two of them measuring 3½ inches, and the other 1¾ inch in diameter. These pieces were cut out sufficiently large to admit of half a brick being put into their places. Instead of putting the old soil back I had fresh put in, then had the tree mulched with good rotten dung, and gave a good watering to settle the soil round the roots. In the following year we had ten dozen well-ripened and good-flavoured fruit from the tree, and this year—the second year after the tap-root pruning—we have twenty dozen splendid Pears on the tree. This success should tempt others to follow our example, as I cannot help thinking there are many old Pear trees about the country that might be made profitable by tap-root pruning. I treated several other large trees in the same way last autumn, and enclose pieces taken out of the tap-roots. Pear trees grow very fast on our soils, and every tree operated upon is giving me entire satisfaction. I hope this note will set others working in the same direction, but I would add that some responsible person should be present during the operations to show the labourers where and how to cut, as some of the roots are very difficult to get at, and take some time to deal with. I enclose three fruits from the tree of Beurré Rance, and a few other fruits, to show you that the Pear does well here. [All very good samples. ED.] *Robert Smith, Kenward Gardens, Yalding, Maidstone.*

Rubus discolor var.—The yellow-fruited Rubus alluded to in my note of a fortnight ago was shown to the Secretary of the British Naturalists' Society, who believed it to be Rubus discolor; but in order to be certain, however, he forwarded it to a Devonshire friend, well acquainted with the Rubi, who pronounced it to be R. discolor, differing in no respect except in the colour of the fruit—an exceedingly rare variety. An eminent Bristol botanist says that a similar find has not been recorded for upwards of a century and a half. The plant was found on the

western slope of the Mendip Hills, about eighteen miles from Bristol. *Frank Gunning, Beaminster, Bristol.*

When to Lift Potatos.—I have read with much interest Mr. J. L. Jensen's remarks on the lifting and storing of Potatos. I think that the advice given, not to lift them until the tops are thoroughly ripened and dead, is sound and practical. Allow me to give an instance which I think will, to a great extent, corroborate what he says on that head. Although I could not quite account for it at the time, on reading Mr. Jensen's letter it appeared quite clear to me. On February 14 I planted sixteen sorts of Potatos—a small quantity of each—wishing to have some fit to lift by the beginning of August so as to exhibit a small collection at our cottagers' show. I lifted what I required for that purpose, leaving the remainder in the ground till early in September, when, requiring the ground, I had them taken up and laid in their several sorts between the rows of some Magnum Bonums, the haulm of which was green, though spotted with disease. They were then perfectly sound and free from disease, but on examining them some week or ten days after I found nearly every tuber badly diseased, whilst the crop of Magnum Bonums beneath them, and which had the protection of the soil, were quite sound, not a diseased tuber being found in a bushel. I think that the theory put forth by Mr. Jensen, that the covering of earth is a protection from the falling spores of the fungus, is sound, and borne out by facts. Again, every Potato which had thrust itself out of the soil on the top of the ridges was badly diseased. *John Charlton, Summer Vale Nursery, Tunbridge Wells.*

Notable Trees.—The finest specimen Scotch Fir I have ever seen stood, and, I trust, stands still, in a small wood adjoining the highroad from Southampton to Romsey, and in the eastern corner of Lord Mount Temple's estate, adjoining the hamlet of Upton. I saw it on several occasions some sixteen years since, and when visiting it with a friend on one of these occasions made a rough measurement of the circumference of the stem chest-high, that is, at about 4½ feet from the ground, by spanning it. We two clasped the stem to the utmost of our tether, finger points just touching on one side, and we found on the other some 18 inches left uncovered. Allowing, which is, I think, a very fair average, that from point to point of fingers of a man of average build is 5 feet 9 inches, it would make the tree-stem at the height named to be just 13 feet. The stem was a singularly round, clean, and handsome one, and reached about 25 feet from the ground ere it broke, and carried on immense branches a noble rounded head. If the tree still stands, its girth should now be very much larger. Perhaps Mr. Dixon of Thornham Park, who knew the tree well, or Mr. Thirlby, of Broadlands, could give some more recent information respecting this fine specimen. In the pleasure grounds attached to Hanworth Park, Feltham, the residence of A. Lafone, Esq., are a pair of Weeping Beech, that well deserve notice. Of course, compared with the giant trees seen at Ashridge and in parks and woods elsewhere, these are pigmies, but then, whilst the common Beech is a very common tree, and even the deep coloured purple kind is by no means uncommon, such samples of the Weeping Beech as are to be seen at Hanworth Park are rare. The pair have been planted probably some forty years, they reach a maximum height of perhaps 40 feet, but the real beauty of both is found in the splendidly pendulous growth from the lower tier of branches, which, coming out from the stem some 15 feet in height, throw down to the ground all round over a large area a perfect mass of branches and leafage. There are also some fine Cedars, a noble Catalpa, and other interesting trees, but the Weeping Beeches are, to my mind, by far the most rare and pleasing. *A. D.*

Notes on Fruit.—Going into an old orchard a few days ago I was struck with the beautiful appearance of some very old large trees of Winter Pearmain Apples. A fine crop of Apples is this year the exception, not the rule, and in the case alluded to was confined to three varieties—the Pearmain, Winter Quoining, and a sprinkling of Blenheim Orange, and as far as my observation goes, crops are this season confined almost exclusively to early ripening kinds—kinds whose wood matures early—whilst very late kinds have little if any fruit, and that very poor. Under such conditions one instinctively asks, Why? There must be some reason for the fruitful condition of a few trees, while their surroundings are almost entirely barren. The reflection that the seasons lately have been very unfavourable scarcely satisfies; the seasons have been the same for one as for the other. The natural conclusion is that if more care were exercised in selecting suitable varieties, crops would be, as a rule, more uniform. Whether planting for profit or for the supply of a private family, it would be better to plant a number of trees of varieties known to succeed in the neighbourhood of intended plantations than to incur the risk of planting general collections, especially in unfavourable situations. Dr. Hogg, in his *Fruit Manual*, has endeavoured to define the latitude of varieties, but much must depend on the judgment and discretion of the planter. It is a fact that few know the different varieties of Apples and Pears well, and until the constitution and peculiarities of each variety are known and understood, the condition of our fruit crops will continue unsatisfactory. The same thing occurs in Grape growing, where late kinds, such as Muscat of Alexandria, or Barbarossa, are not treated more liberally as to temperature than would suffice to ripen the Sweetwater or Black Hamburgh. With these facts well understood by many clever cultivators, I fear they are frequently lost sight of in determining the position of our hardy outdoor fruits. How often do we see that grand Pear, Easter Beurré, in some cold out-of-the-way corner on an espalier or standard, cracked, gnarled, and wretched, worse than useless; whereas on the corner of a south wall in the same garden it would in all probability ripen its fruit to perfection: clearly demonstrating the cause of failure, viz., insufficient temperature to bring it to maturity. Badly matured fruit means badly matured wood and all its concomitant evils, to which cause the great majority of the failures in fruit growing are referable, certainly not less in the cultivation of outdoor than indoor fruits; therefore I conclude that the selection of suitable varieties for the various localities is of the first importance. For the cultivation of hardy bush fruits, such as Apples, Pears, Plums, Cherries, and even Gooseberries and Currants, the cuttings and embankments of railways are especially adapted, presenting, as they do, every conceivable aspect, all kinds of soil and climate from the South Coast to the far North; here a beautiful curve, miles in extent, with a south sun shining on it, and there the shelter of some friendly wood, presenting to the practical mind the exact conditions necessary to the successful growth of some of our best kinds of fruit. By judicious selection and arrangement there is no portion, however bleak and exposed, of the thousands of miles traversed by the iron roads of the United Kingdom but might by a moderate outlay be rendered eventually a source of immense wealth as well as a great public boon. Trees on the sides of railways would no doubt be objectionable, but not so bushes 5 or 6 feet high, a height which need not in any case be exceeded. Once planted their management would not be a very serious matter, with the facilities of moving from point to point possessed by railways; one intelligent superintendent would manage an immense district. I would strongly recommend the subject of fruit growing to railway companies as a source of revenue; but it has another important aspect, it would convert many a bare unsightly bank into a beautiful garden, and give finish and beauty to what is now in many cases a barren waste; such a change in the landscape of railways is sadly wanted. *Henry Eckford, Boreatton Park, Baschurch, Salop, Oct. 3.*



Fig. 87.—Pachystoma thompsonianum. (see p. 500.)

Exhibition Potatos.—"E. F. B." names Schoolmaster as one of the best Potatos we have. For this I am thankful, as it has also proved to be one of the most popular exhibition kinds. His opinion as to Queen of the Valley must be taken cautiously, because that kind has been in cultivation here but a year or so, and though it has proved a fine and prolific kind so far, we must not be in too much hurry to swear by it. In any case it will make a popular show kind, for its tubers are very handsome. I may have an opinion that there are other kinds of Potatos quite as good as the kinds above named, and as well worthy of general culture, but what I may think is of little moment when "E. T. B." gives utterance to diverse views. If he and some other critics knew as much about the relative qualities of Potatos as I do, and had grown as many sorts, perhaps they would not be quite so assured as they now seem to be. It is rather a harsh thing to say, that many Potatos are put into commerce simply for trade purposes. I do not think any one has sent out a new kind of Potato without believing that it was really a good and useful kind, although perhaps mistaken in some cases. The simple fact that some kinds, which unkindly critics denounce as worthless, are almost universally grown, seems to show that their opinion is far from being universally held. As to the cooking of Potatos at shows, there is little use or sense in the practice. If a Potato is inferior it stands self condemned to the person who has grown it, for if beyond being handsome it has no good table qualities, then he only punishes himself by growing it. If he grows it and likes it, his opinion as backed by practice is worth something. Whilst Potato raisers are doing their very best to put into commerce only really good new kinds, we may safely leave to the public to decide for themselves what kinds they like and what they do not. *A. D.*

Wall Copings.—The utility of these glazed copings can scarcely be overrated, as not only do they assist very materially in warding off frosts during the spring, but they keep the tender blossoms and fruit dry, and it is a well-known fact that wet when trees are in flower is almost, if not quite, as fatal as frost. For Apricots and late Peaches a glass coping is almost indispensable, especially for the first-named, for when exposed to rain or heavy night dews, Apricots rot wholesale, but when protected and kept dry, they remain whole and sound. We had striking proofs of this last year, as half our trees were under copings, and the other half without, and I am quite sure I am within the mark when I say that we got at least 90 per cent. of fine fruit fit for dessert from the former, and not 10 per cent. from the latter, as the majority were specked and decayed little or much. This decided us to cover the whole, and the result has been all we could wish, as during the twenty-five years I have had charge here we never before had such a crop, as from sixteen trees we have gathered between three and four thousand of fruit. One wall is 15 feet high, and the other 10 feet, the higher wall having a coping a yard wide, and the other 2 feet, which is quite wide enough for any wall that height, as it shoots off all wet, and does not obstruct or confine the air too much, as a wider one would do. The Apricots are on a south-west wall, which is a good one for that kind of fruit, as it is not so baking and hot as is the case where the trees get the sun the whole day. Some think the night dews are necessary for Peaches and Nectarines, and no doubt they are very beneficial at certain seasons, but a sprinkling daily during the height of summer from the garden-engine will keep trees in good health. Our Peaches are treated in this way, but the Apricots do not get any, as they

are not liable to insects, and a dry atmosphere seems to agree with them. The sorts of Apricots we grow are the Moorpark, Hemskirk, and Peach, which are the largest and best, the two latter being a little hardier than the first named, and not so likely to go off through canker of the branches in the provoking way Apricots do. I have been told that stocks raised from Apricot stones and worked prevent this cankering, and shall be glad if those who have tried them will give their experience. *J. Sheppard.*

The Stinging Tree of Queensland (p. 465).—This plant, alluded to in *Knowledge*, is, no doubt, Laportea gigas, a native of the warmer parts of Eastern Australia. There is a specimen in the beautiful botanic gardens at Sydney, where, however, it has anything but a "pleasant appearance to the eye," its large deciduous leaves being much attacked by insects. As far as I am aware, there is no species of Urticaria with stinging glands growing in the neighbourhood of Sydney; at all events, though I have rambled many miles there, I never came across one; but the deficiency is quite supplied by the large variety of plants with spiny foliage—such as Macrozamia spiralis, which at Broken Bay is very common, and produces its cone-like fruit in abundance. *Frank Gunning.*

Campanula Hendersoni. — The writer of the description of Edge Hall which appeared in the *Gardeners' Chronicle* at p. 445 seems to have misunderstood something I said about this plant, which I never believed to be a mere variety of C. carpatica. C. Hendersoni seems to me to be a hybrid, and without knowing its history I should say it is the offspring of C. carpatica and C. pyramidalis, as it imitates the latter both in the shape of the flower and of the leaf. I have never known it to ripen seed here, and have never produced anything like it from the seed of C. turbinata, though I have produced carpatica in many shades of colour. C. Hendersoni is one of the best of its genus for garden decoration—the good clear blue of the flowers, the profusion in which they are produced, and their long duration making it very ornamental. It is, however, easily lost, the whole plant often dying after flowering, and not being a very easy plant to divide. A white C. Hendersoni, which I saw offered in a catalogue last spring and ordered, proved to be a white C. carpatica, leaving the former a thing still to be hoped for. *C. Wolley Dod, Edge Hall, Oct.* 7.

Begonias for Bedding-out.—I have before advocated the use of the tuberous-rooted Begonias for bedding purposes in your columns, and now we are nearly at the end of the third season of their growth at this place, this year rather largely, having had four good-sized beds of it, and these were perfect, as many of your readers can testify. Now, on October 9, after all the wet dull weather we have had, they are a blaze of beauty, while all the Pelargonium blooms are spoiled with the long damp nights. I saw a random shot fired at the Begonia as a bedding plant in a contemporary, but I think the cause of failure was not with the Begonias; no doubt some strains are more robust than others, mine is what is known as Sibbald's strain from Bishop Auckland—they are dwarf in habit, but very strong in growth, the flowers almost the substance of Tulips. The real secret of growing the Begonia well in beds is to give the hungry plants plenty of good stuff to grow in. In preparing the beds we take the soil out a foot deep, then put a layer of good rotten dung from an old Cucumber bed, fill up the bed with a good mixture of sand, loam, and leaf soil; with this treatment success is certain. We have no bedding plant for the dull north of Yorkshire to equal it. If the weather is hot and dry in July, it should be liberally supplied with water; the winter treatment is simple enough, the plants might be put in boxes or pots, and placed under a stage in any out-of-the-way place, so long as they are kept from frost. At the end of March they should be potted off, and allowed to stand in a frame without much heat. Treated in this way the plants will be in good trim for the beds by the end of May. *William Culverwell, Thorpe Perrow.*

A Discriminating Alga.—Discrimination is not confined to the fungus tribe. At p. 31 I mentioned a fungus which (according to the printed description quoted) grows in cellars—"but only where good old wine is kept." This bacchanalian fungus has, we now learn, a religious relative—not the flabby sewer fungus, which weighed 170 lb. and recently did temporary religious duty in a London church, but one which sticks to the church and never leaves it. At the recent annual excursion of the Penzance Natural History and Antiquarian Society, Towednack Church was visited, and at that place a gentleman directed the attention of the visitors to "a very rare plant." "Thirty years ago," said this gentleman, "the plant (Alga) was all over the walls, and being of a sky-blue colour it gave a peculiar colour to the interior." This wonderful "plant," termed "a fungus" by its describer, was evidently an early member of the Blue-Ribbon Army, as well became a well-bred water-borne Alga. A good deal of this "rare plant" was, it appears, destroyed in past times by dry-rot and lime-wash, but it still luxuriates in the church tower. The gentleman who undertook the description of the plant then said the "fungus" in question "was only found in churches and nowhere" else; and he left it for others to explain what it "did before churches existed." If this is a fact it would be interesting to learn whether the discriminating Alga here referred to confines itself to the churches belonging to any particular religious denomination, or whether some of its congeners at times appear in dissenting chapels or the meeting-houses of the Plymouth Brethren. More information is needed about this wonder. "The name of the 'fungus,'" said the gentleman, "is Oscillatoria cyanea." Our readers will know this "fungus" (?) to be one of the minute plants (Confervæ) found growing on stones, &c., in pools and wet places, and named Oscillatoria from their oscillating motion; the water probably helps the oscillation in the church Alga, whilst the "good old wine" induces it in the bacchanalian of the cellar. How the Alga lived "before churches existed" it is difficult to say: evolutionists may help us to clear up this point. *W. G. S.*

The Herbaceous Border.

Michaelmas Daisies.—Out of a large collection, consisting of some fifty or sixty varieties of Aster, I select a few for mention because they are nearly new or uncommon. The finest Aster I have, or have ever seen, was bought two years ago from Mr. Robert Parker of Tooting. It was named amethystinus, which may be right. It looks as if it might be a fine garden development of A. Novi-Belgii, of which I have many other fine forms. It grows 6 feet high, with a bold branching habit, and bears large semi-double flowers of very pale and very clear lavender. It increases very fast, being an exception to the rule that good things increase slowly. Whatever its origin may be, it will soon, I hope, be in the garden of every cottager who has an eye for good flowers. A. salsuginosus is the name of a very fine Michaelmas Daisy which was in flower at Kew in the beginning of August, and of which Mr. Lynch lately sent me flowers from the Cambridge Botanical Gardens. The flowers are nearly as large as those of the old Aster sibiricus, with a much better habit of growth. I cannot find it in any nursery catalogue, or I should already have it in my garden. A. ptarmicoides is a new introduction in English nursery catalogues, but is not a showy plant. The flowers are dull white, larger than those of Achillea ptarmica, from their resemblance to which the plant, I suppose, has its name. A. oblongifolius was offered as a novelty last year by Messrs. Woolson in their American catalogue. It is of good habit, 3 feet high, with a wide spreading bushy head of flowers. The flowers are without merit either in colour or form. A. sikkimensis is well worth growing, in spite of its very straggling habit both above and under ground. It grows about 5 feet high, and bears plentifully flowers distinct from those of any other Aster. They are produced in closely set umbels; the rays are in a double row, very regularly arranged and slightly reflexed: quite new in style. Sent me by Mr. W. Thompson. Boltonia latisquama is, I am assured, the correct name of a remarkable-looking Aster which came to me as "prœaltus," was then changed to "laxus," and now has a new label again. It grows 7 feet high, but shorter stalks, 3 or 4 feet high, are produced round the plant, which flower six weeks earlier than the long stalks. The flowers are pure white, like those of a lawn Daisy, but rather sparingly produced. It spreads very fast, but does not run, though a single stalk, if left for three years in rich soil, forms a dense impenetrable forest nearly a yard through. Aster sericeus, rightly called "silky," is another very distinct and neat plant, which I had from Mr. W. Thompson, of Ipswich. It has wiry stalks about 3 feet high, and branches covered with silvery satin-like leaves, and bearing light purple flowers of irregular form. Though not a showy plant, it is elegant and choice. The stems require support as soon as they are a foot high, or they are likely to be broken off by wind. *C. Wolley Dod, Edge Hall, Malpas, Oct.* 9.

Reports of Societies.

Royal Horticultural: *Oct.* 10.—G. F. Wilson, Esq., F.R.S., in the chair. At the conclusion of the usual preliminary business, Mr. Shirley Hibberd proceeded to address the meeting on the subject of plant labels, and after stating how the plant label competition had been originated by the offer of a prize of £5 by their Chairman, Mr. Wilson, remarked that the Society of Arts had generously presented the whole collection sent in for competition, to the Royal Horticultural Society, and he hoped the latter Society would have them arranged in a cabinet and placed in a suitable position, the collection being one of considerable interest and value to horticulturists. If he had to judge labels himself, Mr. Hibberd would first consider their legibility, which, above all things, should be insisted upon, and the man who wrote a good, bold, clear hand without flourishes, should always be the one selected to do the work. Cheapness was the next quality; but this was a dangerous subject to talk about, and he would pass it by with the remark that it was of no use wasting money on a bad article. The third requirement in a good label was durability, a very important point, though he was one of those who thought that a perishable label was not without its advantages, for the man who takes an interest in his plants found a constant source of pleasure, while writing fresh tallies, in renewing afresh his memory of some pleasant circumstance connected with the origin or acquirement of the plants whose names were constantly brought before him. As to the materials for label-making, we have metal, slate, stone, glass, wood, paper, and linen, and each one, considering the circumstances of the locality in which he lived, should adopt that material for labels which was common to the neighbourhood; thus, if he went to live in a slate country he would use slates as being the best for the place. One material which always demanded a paragraph to itself was glass, than which there was nothing so valuable, being absolutely imperishable until it gets broken. There were strong objections to mysterious preparations and proprietary articles in connection with the use of labels, such things being all in the wrong direction and likely to prove more plague than profit. The label awarded the prize by the Society of Arts was prepared with a lot of these mysterious articles, and was not of much use when they had got it. Labels were divided into two classes, those required for temporary use and those which it was desirable should be of a more permanent character. The temporary labels are most in demand by nurserymen, and are made of several kinds of material. In 1870 he obtained a collection of Hollies from Messrs. Veitch's which bore labels of a very durable character. They bore a number as well as the name of the plant, and the advantage of keeping them was that they not only told him what he had but also what he had lost. A neat form of stout paper label was that used by Messrs. Richard Smith & Co., of Worcester, and the advantage which this label had was that it told him the name of the plant and the name of the nurserymen who supplied it—a practice which he thought other nurserymen would do well to adopt. Where parchment labels were used by nurserymen, their customers could not too soon use their own labels, for it is a very objectionable material, which rolls and curls when wet, and soon becomes illegible. The Society of Arts' prize label was neat and pretty, but in its preparation required the use of several acids, and when done was a perishable article—certainly not the durable substantial article they had a right to look for. A glass tube with the name printed on a slip of paper inserted could not be said to be ingenious, and was certainly not durable. Another form of glass label was that which was painted at the back and then written upon—a good label until it was broken. His friend, Mr. Kellock, used glass in another way, writing with a diamond such particulars as he required to know on small pieces of glass, which could be put almost or entirely out of sight. Of combinations of glass and metal there were a great many, and all of a more or less useful character, and a great advantage of the use of glass in this way was, that printing which was cheap and readable could be employed. The best forms were those in which the glass was set in a perfect framework of zinc. Mr. Hibberd next pointed

out a few labels which were too complicated in their construction, and then proceeded to comment on stamped lead, which had been much used, and which was a material of excellent quality, lasting long, and costing little money. Many years ago this form of label was much used in nurseries, a number being stamped on a strip of lead, which was afterwards twisted round a branch; but there was this disadvantage, that the lead did not expand with the growth of the tree, and much mischief was the result. Of waterproof paper labels there was one called the Willesden waterproof label; and there was also a waterproof ink—that made by Messrs. Fisher & Clark. He had written on some of the waterproof labels with waterproof ink, and after forty days' immersion in water the names were as legible as when written. Some of the same waterproof labels written on with Stevens' writing fluid, and submitted to the same test, were in equally good condition. The label which he thought the best of those shown was that made by Mr. Smith, of Stratford-on-Avon, which, for legibility, durability, and neatness, was all that could be desired, and was really trifling in cost, considering its advantages. Another good label of a similar character was the Acme of Mr. Stevens, a trifle too thin, perhaps, but still rigid, and low in price. Mr. Hibberd stated that some years ago he discovered that everything put on glass and covered with copal varnish was of a very lasting character and he therefore provided himself with a copal label. He took a piece of sheet iron, and gave it a coat of paint. He next had the name printed on well sized paper, covered the same with copal varnish and pressed it down, when he had a label as legible as glass but with the further advantage of being practically indestructible. An excellent label, now in use in Hyde Park, was composed of metal and terra cotta, metal standards and frames, and terra cotta panels, on which the name was painted.

The Chairman explained the reason why he offered his prize through the Society of Arts instead of through the Royal Horticultural Society, and remarked that what was wanted was a good rough-and-ready label that could be carried in the pocket, which could be written on without having to be painted first, and which would last about five years. Simple deal labels which had been boiled for twelve hours in paraffin, proved to be a long way on the road to success, but there was still room for experimenters to try their hand in the production of a label that would meet his requirements.—Votes of thanks to the lecturer and Chairman concluded the meeting.

Floral Committee.—G. F. Wilson, Esq., in the chair. One of the most interesting meetings that has taken place at South Kensington for some considerable time was held last Tuesday, the plants and flowers exhibited being characterised by great merit in almost every instance. Messrs. James Veitch & Sons showed some beautifully grown pans of Impatiens Sultani, its bright green leaves and scarlet flowers looking particularly handsome; Mormodes unicolor, bearing a long spike of its beautiful yellow flowers scented as with oil of almonds; Rhododendron Sir Beauchamp Seymour, a hybrid with deep yellow, broad, well reflexed flowers; Rhododendron Sir Garnet Wolseley, the finest of all the hybrids, having large full trusses of flowers, 3 inches in diameter, and of a deep orange colour; both varieties will furnish colours that are very scarce in show-houses during the autumn months. The same firm showed Spathoglottis Fortunei, Cypripedium cardinale, and C. Arthurianum, a hybrid between C. insigne and C. Fairieanum, in which the upper sepal is pale green, with clear dark pencilling, and tipped with white. Ornithogalum thyrsoides, exhibited by Messrs. R. Veitch & Sons, of Exeter, bore fine bold umbels of large white flowers on stout scapes 12 to 15 inches long. This plant seems to be well worthy of extended cultivation. From Mr. L. F. Davis, Ogle Grove Nursery, Co. Down, Ireland, came several new varieties of Cupressus Lawsoniana, one of which, Cupressus Lawsoniana erecta alba, is specially worthy of note. The habit is as stiff and compact as in erecta viridis, but more feathery at the points, and its rich glaucous, silvery hue is likely to establish it a favourite in all pleasure gardens. Mr. Davis also sent a splendid collection of Pernettyas, the following of which were awarded First-class Certificates:—Pernettya mucronata cornea nana, with blush coloured berries; P. nigra major, a strong grower, with berries of a blood-red colour, produced in clusters; P. mucronata alba. P. mucronata sanguinea, a free grower, and profusely covered with scarlet berries; P. mucronata macrocarpa, a vigorous grower, and P. mucronata purpurea, which produces berries in clusters, and the shoots of which branch into tufts at the terminal ends. Messrs. Heath & Son, of Cheltenham, sent a fine group of Orchids, consisting of Dendrobium formosum giganteum, grown upon blocks and well flowered; a large specimen of Oncidium ornithorrhynchum in flower, and the Burmese variety of Vanda cœrulea, having a fine spike bearing ten flowers; also one or two samples of the Burmese variety of Saccolabium. The committee recommended this group for the honour of a Medal. The single and pompon Dahlias were the next feature of importance—Messrs. H. Cannell & Son, of Swanley, Mr. C. Turner, Slough, and Mr. T. S. Ware, of Tottenham, showing respectively some very attractive stands. Messrs. H. Cannell & Son had Yellow Gem, a small round flower of good form, slightly reflexed, and about the proper standard of size to be useful; Tyro, a purple flower, the petals inclining to be erect; and Marguerite, of a light purple shade, with broad petals slightly reflexed. Messrs. Cannell also had a white Cactus Dahlia, Constance, a variety with three tiers of petals, somewhat heavily ribbed, and the edges curving slightly towards the centre. It is pure white, and the flowers will be found very useful for decorative purposes generally. Mr. T. S. Ware, of Tottenham, had amongst his newer ones, Cherry—a variety well named because of its colour; the petals are of a maroon colour at the base, and incline to be erect. Mrs. Goldring is of a rich mauve colour and has large petals, Mrs. Burbidge is a small flower of a purplish-maroon shade, and Francis Fell is of a light maroon shade changing to violet at the tips of the petals, with white blotches near the edge. Mr. C. Turner's collection consisted of show, pompon, and single Dahlias, all of which were beautifully grown, and of exquisite colours. A vote of thanks was awarded for the show varieties, as also for the singles, and First-class Certificates were awarded for the following pompons:—Isabel, bright scarlet; Little Princess, lilac-pink, with the edges of the petals purple; and Little Duchess, having the inside of the cup lilac, and the edges of the petals purplish-red. Mr. Turner also showed a stand of cut blooms of Tree Carnations, and was awarded a vote of thanks. From Mr. B. S. Williams, of Upper Holloway, came a group of Orchids in flower and other miscellaneous plants. The Orchids were the new Phalænopsis Esmeralda, Cypripedium barbatum biflorum, Pleione Wallichii, several varieties of Odontoglossum Alexandræ, Zygopetalum Clayii, and Dendrobium superbiens, also a finely flowered specimen of the fine new Amaryllis Mrs. Garfield. The committee awarded this interesting collection a vote of thanks. Of miscellaneous things Messrs. James Carter & Co. sent Pyrethrum uliginosum in pots; Messrs. William Paul & Son contributed some beautiful stands of cut Roses, and Mr. Barron sent a miscellaneous collection of flowering plants and Ferns from the Society's gardens, Chiswick, as well as a selection of cut blooms of several varieties of Ceanothus. Messrs. Dixon, of Hackney, furnished an early display of cut blooms of Chrysanthemums, the Japanese kinds; and Mr. Smith, of Oakfield, Wimbledon, Begonias, well flowered, named Smithii and semperflorens—varieties that are really invaluable to gardeners at this season of the year. Excellent stands of Dahlias also came from Messrs. Rawlings Bros., Romford, whose new pure yellow self, named Harrison Weir, was much admired for its fine form. A very fine fancy Dahlia named Duchess of Albany, buff-yellow, faintly streaked with crimson, was included in Mr. Turner's stand. Mr. H. Bennett, of Shepperton, again exhibited his fine new dark hybrid H.P. Rose Earl of Pembroke, a Rose of a fine dark reddish-crimson colour, good form, and delightful odour, the perfume being like that of La France.

The awards made were:—

First-class Certificates.

To Messrs. James Veitch & Sons, for Mormodes unicolor.

To Messrs. James Veitch & Sons, for Rhododendron Sir Garnet Wolseley.

To Messrs. James Veitch & Sons, for Rhododendron Sir Beauchamp Seymour.

To Messrs. James Veitch & Sons, for Cypripedium Arthurianum ×.

To Messrs. R. Veitch & Sons, for Ornithogalum thyrsoides.

To Mr. L. F. Davis, for Pernettya mucronata macrocarpa. [nana.

To Mr. L. F. Davis, for Pernettya mucronata carnea

To Mr. L. F. Davis, for Pernettya mucronata alba.

To Mr. L. F. Davis, for Pernettya mucronata sanguinea.

To Mr. L. F. Davis, for Pernettya mucronata nigra major.

To Mr. L. F. Davis, for Pernettya mucronata purpurea. [alba.

To Mr. L. F. Davis, for Cupressus Lawsoniana erecta

To Mr. C. Ross, for Croton Eyrei ×.

To Mr. H. Bennett, for H.P. Rose Earl of Pembroke.

To Mr. C. Turner, for fancy Dahlia Duchess of Albany.

To Mr. C. Turner, for bouquet Dahlia Isabel.

To Mr. C. Turner, for bouquet Dahlia Little Duchess.

To Mr. C. Turner, for bouquet Dahlia Little Princess.

To Mr. C. Turner, for bouquet Dahlia Nymphe.

To Mr. T. S. Ware, for single Dahlia Pantaloon.

To Mr. T. S. Ware, for single Dahlia Mrs. Burbidge.

To Mr. T. S. Ware, for single Dahlia Cherry.

To Mr. T. S. Ware, for single Dahlia Francis Fell.

To Mr. T. S. Ware, for single Dahlia White Star.

To Mr. T. S. Ware, for single Dahlia Mrs. Goldring.

To Messrs. H. Cannell & Son, for single Dahlia Marguerite.

To Messrs. H. Cannell & Son, for single Dahlia Tyro.

To Messrs. H. Cannell & Son, for single Dahlia Yellow Gem.

To Messrs. H. Cannell & Son, for Cactus Dahlia Constance.

To Messrs. H. Cannell & Son, for Pentstemon Mrs. McFarlane.

To Messrs. Rawlings Brothers, for Dahlia Harrison Weir.

Botanical Certificate.

To Mr. B. S. Williams, for Phalænopsis Esmeralda.

Fruit Committee.—H. J. Veitch, Esq., in the chair. It was hardly to be expected at this advanced period of the year that exhibitors would muster in great numbers, as the season for such gatherings may be said to have come to a close. Nevertheless there were one or two exhibits of great excellence, foremost among them being a new Melon from Mr. Gilbert, gr. to the Marquis of Exeter, Burghley, Stamford, called "Burghley Pet," and which was deservedly awarded the honour of a First-class Certificate. It is a green-flesh Melon, a cross between Victory of Bath and Dickson's Exquisite, and notwithstanding the lateness of the season it was undoubtedly the best fruit we have tasted this year. Mr. J. Perkins, The Gardens, Thornham Hall, Suffolk, also sent two Melons which proved to be of no particular merit. Mr. Pettigrew, The Gardens, Cardiff Castle, Cardiff, sent samples of his new Cucumber called Pettigrew's Cardiff Castle, of even size, and evidently a very prolific bearer. From Mr. Charles Howe, The Gardens, Benham Park, Newbury, came a seedling Melon called Eclipse, a hybrid between Benham Park and Wm. Tillery, also three Cucumbers of a new variety called Challenger. Mr. Gilbert, of Burghley, sent samples of Alicante, Gros Maroc, and Gros Colmar Grapes, bunches having large berries, and well coloured, but rather over-thinned, which detracted somewhat from the fine appearance they otherwise would have had. Messrs. James Veitch & Son contributed examples of their Neapolitan curled Kohl Rabi, a very dwarf compact growing variety of a dense healthy green colour. Mr. Taylor, gr. to James McIntosh, Esq., Duneevan, Oaklands Park, Weybridge, obtained a First-class Certificate for Landsberger Reinette Apple, a beautiful fruit of conical form and of a pale yellow colour, having a very bright skin, and said to be a free bearer. Pears and Apples were largely shown, notably by Messrs. James Veitch & Sons, of Chelsea, and Messrs. Lane & Son, of Great Berkhampstead, Herts. The first-named firm had some very fine samples of all the leading varieties, of good size throughout. The varieties that appeared to us especially fine were Cellini, Waltham Abbey Seedling, Red Hollandbury (beautifully coloured), Baumann's Pearmain, Peasgood's Nonsuch, Worcester Pearmain, Stirling Castle, Lord Suffield, Mère de Ménage, Cox's Pomona, Sops in Wine, Potts' Seedling, Robinson's Pippin, &c. Messrs. Lane's collection consisted of thirty dishes of Pears and sixty-six dishes of Apples, among which Warner's King, Grenadier, Lord Grosvenor, Lord Suffield, and Lane's Prince Albert were very fine. Mr. G. Goldsmith, Hollanden, Tonbridge, furnished an excellent collection of sixty-three dishes of Pears, of which the following were the best:—Doyenné Boussoch, Souvenir du Congrès, Durondeau, Beurré d'Amanlis, Bonne d'Ezée, and Pitmaston Duchess. A collection of Pears and Apples, twenty-four of the former and six of the latter, exhibited by Mr. A. G. Bridgeman, gr. to T. S. Cocks, Esq., Thames Bank, Marlow, appeared to attract a good deal of attention, owing to their fine size and quality. The finest Pears were Flemish Beauty, Pitmaston Duchess, Fondante d'Automne, Beurré Clairgeau, and Urbaniste, and the six varieties of Apples were good without exception. The sorts were Golden Noble, Betty Geeson, Lord Suffield, Lady Henniker, Cox's Pomona, and Frogmore Prolific.

The prizes offered by Messrs. Hooper & Co., Covent Garden, for Potatos, brought out several competitors, and very good tubers were shown of the stipulated sorts. For the heaviest tuber of Queen of the Valley Potato, Mr. C. W. Howard, Bridge, Canterbury, obtained the 1st prize with very good samples; Mr. R. Loyd, The Gardens, Brookwood Asylum, Woking, Surrey, being 2d, with a specimen that weighed 1 lb. 7½ oz. This weight was, however, closely run by a sample from Mr. C. Ross, Welford Park, Newbury, shown not for competition, which weighed 22½ oz. For the best dish of nine tubers of the same variety there were ten competitors, Mr. J. Hughes, The Gardens, Eydon Hall, Byfield, being the successful exhibitor. Mr. J. H. Hill, gr. to W. R. Price, Esq., Witham, Essex, was 2d, also showing very good tubers. Mr. R. Dean, Ealing, and Mr. Gilbert, gr. to the Marquis of Exeter, Burghley, were among those who exhibited very handsome dishes of tubers. Eight competitors put in an appearance to contest the prizes offered for the best nine tubers of the variety "Adirondack," and Mr. Hughes again succeeded in carrying off the 1st prize, Mr. C. Howard being 2d. Some of the specimens exhibited were coarse, and wide of the recognised standard of quality.

Florists' Flowers.

GOLD-LACED POLYANTHUSES.—Those who intend growing a selection of these for exhibition in April next should obtain their plants at the earliest opportunity. There is never a plentiful supply of plants, but some good varieties are to be had, such as Cox's Prince Regent, Lancer, Cheshire Favourite, George IV., Formosa, Exile, President, William IV., and some common sorts. At this time of the year young healthy plants root freely if they are planted in good soil. I find that a compost made up of a little well decomposed manure, some leaf-mould, silver-sand, and a good yellow loam suits the plants well; and those I have potted in this compost are growing away merrily. The pots should be well drained, and a layer of moss placed over the crocks to prevent the soil from getting down among the drainage. A stiff retentive cold soil is a bad one to winter Polyanthuses in; the plants are apt to rot and become utterly lost. In spring a heavier soil can be endured, but not in autumn.

I prefer to pot twice; that is, the plants are first of all put into small pots to encourage root-action as soon as possible; and when the roots have reached the sides, and the plants are healthy and vigorous, they are shifted into their blooming pots, large 60's, or small 48's. Polyanthuses will not flower well unless the roots are abroad in the soil, and active. If the second shift can be given during October it is well, but if not, then it is best to defer it until early spring, as soon as the plants show signs of activity. At this season of the year the plants are apt to become infested with greenfly, and cleanliness is of the first importance. A cool but airy position is also necessary.

All the varieties named above are strong growers, Exile being perhaps the least robust. For this reason this sort appears to be somewhat scarce this season, so is Pearson's Alexander, or at least what is grown as such. It is very difficult indeed to get a plant of Lord Lincoln, as it is a spare grower, and puts forth but little increase: Beauty of England is very scarce also. Those named at the head of this paper make a very good and useful lot to show, and the demand for gold-laced Polyanthuses is the best evidence that they are being much more generally cultivated than they were a few years ago.

Brilliant, Lancashire Hero, Congleton Queen, and Staffordshire Queen appear to be scarce also. It is said the two last are but different names for the same variety, but it is a good and useful sort. Lancashire Hero is a good dark ground, and when well grown and bloomed tells on the exhibition table. Brilliant is somewhat coarse, at least this was its general character last year. Lord Morpeth and Bonny Bess, two Northern flowers, did not bloom with me last year, but they are said to be useful red-ground varieties.

Mr. Samuel Barlow has this summer been singularly unfortunate with his new varieties, which were described a few months ago in these columns. The plants were put out in their summer quarters, but the soil used appeared to be unsuitable, and many of the plants perished. It is feared that one or two varieties are hopelessly lost. Mr. Barlow was fortunate enough to secure some seed in the early part of the summer from several carefully fertilised, and it is to be hoped that the plants in course of being raised will reproduce some of the sadly decimated high-class varieties.

It will always be a somewhat difficult matter to carry named Polyanthuses successfully through the summer in the South. The leaves are so liable to attacks from red-spider, and when the leaves are lost the plants are rarely of any value again. Perhaps the most successful plan is to divide the plants as soon as possible after blooming, place them round the sides of pots, using a light rich soil, and then plunging them in a bed of cocoa-fibre in the open air, and mulching with the same when hot weather sets in, keeping the plants well sprinkled overhead when necessary. It is by no means easy to keep some of the more delicate growers through the winter and summer in the North, but they certainly have advantages of climate the Southern growers do not possess. Let what will be said to the contrary, the gold-laced Polyanthus represents a charming class of plants, that will always be highly prized by the florist. *R. D.*

—— SHOW CHRYSANTHEMUMS.—The varying seasons of spring, summer, autumn, and winter have each a special flower that is associated with it, and which enjoys varying degrees of popularity. Spring is the season of the Tulip, the most beautiful flowers that the spring time of the year produces. These are not now shown in quantity, but where grown for the production of exhibition blooms they, at least, vary in no material degree from those grown under the most natural conditions. The summer has the Rose, literally the queen of flowers, and none that is exhibited perhaps has wider culture or is more universally grown. Show Roses, too, are usually grown as all other Roses are, and the character of the plants are maintained. The autumn has the Dahlia, the finest and most massive of all our show flowers, if it be not the most pleasing or elegant. But the plants that produce the noblest of show Dahlias must still be naturally grown, and beyond some essential thinning and disbudding—practices that should not be withheld from Dahlias under any conditions of culture—are not grown diversely from common kinds. The Chrysanthemum seems to be a special exception to this rule, and although the grand flowers of these, seen at the winter shows, are marvels of culture, such as we would not care to miss, yet they are got from such growth as render the plants that produce them little better than scarecrows, and the reverse of pleasing. Plants grown naturally will produce an abundance of flowers even if partially disbudded, all pleasing but none showing the finest qualities. Plants that are to produce the giants intended to win prizes at our winter exhibitions are denuded of side-shoots, and all but perhaps two or three flower-buds. Some are literally hop-poles 8 or 9 feet in height, and as ungainly as a plant well could be. They are generally kept somewhat out of sight because they are far from beautiful, and bloom in vineries and other glasshouses under strange conditions. Still the grand blooms give some recompense at last.



STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, OCT. 11, 1882.

MONTH AND DAY.	BAROMETER.		TEMPERATURE OF THE AIR.					Hygrometrical Deductions from Glaisher's Tables 6th Edition.		WIND.	RAINFALL.
	Mean Reading Reduced to 32° Fahr.	Departure from Average of 18 years.	Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 30 years	Dew Point.	Degree of Humidity. Sat. = 100.	Average Direction.	
Oct.	In.	In.	°	°	°	°	°	°			In.
5	30.20	+0.51	63.2	46.5	13.7	53.2	0 0	51.6	95	N.	0.05
6	29.96	+0.27	58.0	52.0	6.0	54.0	+ 1.1	51.2	88	N.E.; E.N.E.	0.04
7	29.93	+0.24	66.0	50.0	16.0	56.0	+ 3.4	50.8	83	E.	0.05
8	29.92	+0.23	65.0	47.0	18.0	54.9	+ 2.7	51 0	87	S.S.E	0.00
9	29.96	+0.27	67.5	50.2	17.3	57.0	+ 5.1	52.4	85	S.W	0.00
10	29 82	+0.13	61.0	50.1	10.9	55.7	+ 4 1	54 2	95	E: SW	0.03
11	29.42	−0.27	63.0	54.0	6.0	56.6	+ 5 3	55 5	95	S.	0.36
Mean	29 89	+0.20	62.5	50.0	12.5	55 3	+ 3 1	52.4	90	E: SW	0.53

Oct. 5.—Fine day, but overcast; windy afternoon. Wet, rainy night; overcast and dark.
— 6.—A dull, overcast day and night.
— 7.—Rain in early morning; fine day; bright afternoon. Fine night; lightning seen from 8 to 11 P.M.
— 8.—Slight mist in morning; fine day, sun shining; lightning at night.
— 9.—Very fine morning; dull and overcast afternoon. Fine night, still.
— 10.—A dull, overcast day. Fine night, cloudless.
— 11.—A dull, rainy, close day; air nearly saturated with moisture. Wet night.

LONDON: *Atmospheric Pressure.*—During the week ending October 7, the reading of the barometer at the level of the sea decreased from 29.90 inches at the beginning of the week to 29.82 inches by 3 P.M. on the 1st, increased to 30.47 inches by 9 A.M. on the 4th, decreased to 30.46 inches by 3 P.M., and increased to 30.54 inches by midnight on the same day, and was 30.16 inches by the end of the week.

The mean reading for the week at the level of the sea was 30.19 inches, being 0.51 inch higher than last week, and 0.32 inch above the average of the week.

Temperature.—The highest temperature in the shade in the week was 71°, on the 1st; on the 4th the highest temperature was 57°. The mean of the seven high day temperatures was 63°.

The lowest temperature in the shade in the week was 45°.5 on the 4th, the lowest temperature on the 1st was 54°.5. The mean of the seven lowest temperatures was 49°.6.

The greatest range in one day was 16°.5, on the 1st; the smallest was 6°, on the 6th. The mean of the seven daily ranges was 13°.4.

The mean temperatures were—on the 1st, 62°; on the 2d, 57°.7; on the 3d, 54°.4; on the 4th, 51°.2; on the 5th, 53°.2; on the 6th, 54°; and on the 7th, 56°; of these the first three and last two days were above their averages by 7°.6, 3°.5, 0°.5, 1°.1, and 3°.4 respectively, the 4th was below its averages by 2°.3, the 5th being the same as its averages.

The mean temperature of the air for the week was 55°.4, being 1°.7 higher than last week, and 2° above the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun, was 122° on the 1st; the highest on the 5th was 74°. The mean of the seven readings was 96°.9.

The lowest reading of a minimum thermometer with its bulb placed on grass and fully exposed to the sky was 38°.9, on the 4th. The mean of the seven readings was 43°.1.

Rain.—Rain fell to the amount of 0.41 inch in the week.

ENGLAND: *Temperature.*—During the week ending October 7 the highest temperatures were 74° at Sunderland, 71°.8 at Cambridge, and 71° at Blackheath. The highest temperature at Leeds was 64°, at Wolverhampton 64°.8, and at Plymouth 64°.9. The general mean was 67°.6.

The lowest temperatures in the week were 39° at Hull, 41°.3 at Cambridge, and 42°.6 at Nottingham; the lowest temperature at Brighton was 48°, at Bradford 47°.6, and at Liverpool 47°.5. The general mean was 44°.8.

The greatest ranges of temperature in the week were 31° at Hull, 30°.5 at Cambridge, and 29° at Sunderland; the least ranges were 17° at Leeds, 18° at Brighton, and 18°.9 at Plymouth. The general mean was 22°.8.

The mean of the high day temperatures was highest at Sunderland, 66°, at Cambridge 65°.8, and at Blackheath 63°; and was lowest at Bolton, 59°.6, at Sheffield 59°.8, and at Wolverhampton 59°.9. The general mean was 62°.1.

The mean of the seven lowest night temperatures was highest at Brighton, 51°.7, at Leeds 50°.8, and at Truro 50°.6; and was lowest at Wolverhampton, 46°, at Nottingham 47°.2, and at Bolton 47°.5. The general mean was 49°.2.

The mean daily range was greatest at Sunderland, 17°.6, at Cambridge 17° 5, and at Nottingham 14°.7; and was least at Liverpool, 9°.8, at Brighton 10°.1, and at Sheffield 10°.7. The general mean was 12°.9.

The mean temperature of the week was highest at Sunderland, 56°.1, at Cambridge 56°. and at Brighton 55°.7; and was lowest at Wolverhampton, 51°.8, at Bolton 52°.4. The general mean was 54°.5.

Rain.—The largest falls were 0 97 inch at Plymouth, 0.62 inch at Brighton, and 0.59 inch at Bolton and Sunderland; and was smallest, at 0.10 inch, at Cambridge, 0.15 inch at Liverpool, and 0.28 inch at Truro. The general mean fall was 0.48 inch.

Aurora borealis was seen at Bristol on the 2d.

SCOTLAND: *Temperature.*—During the week ending October 7, the highest temperature was 68°.2, at Leith; the highest temperature at Greenock was 63°.5. The general mean was 66°.1.

The lowest temperature in the week was 39°, at Glasgow; at Leith the lowest temperature was 48°.1. The general mean was 41°.8.

The mean temperature for the week was highest at Leith, 55°.6; and was lowest at Greenock and Perth, 52°.8. The general mean was 53°.6.

Rain.—The largest fall was 0.94 inch, at Greenock, and the smallest was 0.10 inch at Glasgow. The general mean fall was 0.40 inch.

JAMES GLAISHER, F.R.S.

INGESTRIE HALL.—We regret to learn from the *Evening Standard* that the noble Elizabethan mansion, Ingestrie Hall—an engraving of which was given in our number for July 29 last (p. 141)—was on Thursday last totally destroyed by fire. The damage is estimated at £100,000.



With great regret and the respect due to a single-minded, laborious, and acute botanist, we have to record the death of Dr. Thwaites, in his seventy-second year, on September 11, at Kandy. In early life, when engaged in Bristol as an accountant, Dr. Thwaites made a name for himself as a microscopist by his researches among British Fungi, into the minute anatomy of plants, and into the structure and life history of the lower Cryptogams. It is to him that we owe the first indication of the existence of the process of conjugation in Diatomaceæ. He was one of the first to discover the antheridia in Algæ, and the beautiful microscopic preparations made and circulated by him, in many cases, illustrated points of structure and physiological detail, published as new in Germany and elsewhere long subsequently. At the time when Thwaites was pursuing his researches cryptogamic botany was little studied in this country, and the value of Thwaites' discoveries was by no means generally appreciated. By the few, however, who devoted themselves to this most important branch of science Thwaites and his work received every sympathy and encouragement. It was a matter of regret to them when in 1849 Thwaites accepted the post of Director of the Botanic Garden, Peradenyia, and in spite of the excellent work done there by him we are not sure that his removal from England was not a distinct loss to science. Thwaites was peculiarly qualified for microscopic research, while, on the other hand, the kind of work that it fell to his lot to accomplish in Ceylon might have been done by some one else destitute of his special powers. Be that as it may, however, the fact remains, that when Thwaites succeeded Gardner as head of the Botanical Gardens, he perforce abandoned to a large extent his microscopic work, and devoted himself to his administrative duties, and to the elaboration of the phanerogamous flora of the island. The specimens he collected were numerous and good, and his "Enumeratio" forms the only approximately complete list of Ceylon plants that we have, and will be invaluable to whomsoever undertakes the preparation of a complete Flora of the island—a desideratum in botanical literature, the supply of which would also ultimately tend to the advantage of tropical agriculture and of horticulture in general. It must not be thought that he entirely abandoned the study of fungi, for the collections formed by him constituted the basis of the extensive lists of those plants drawn up by his friends Messrs. Berkeley and Broome, and published in the *Journal* of the Linnean Society. Dr. Thwaites naturally took a very large share in the introduction and successful culture of Cinchona in Ceylon, and in so doing, to say nothing of the many instances of similar nature, has contributed very largely to the prosperity and welfare of the island he made his home for so many years. A few years since Dr. Thwaites retired from his post as Director of the gardens, a post in which he was succeeded by Dr. Trimen, who returned to Ceylon after a brief visit to England, only to find his eminent predecessor and attached friend lying on his death-bed. The funeral on the 12th was, we learn, attended by the whole of the garden staff, many of the coolies even attending. Dr. Thwaites was, we believe, a strict vegetarian, and was in former years an occasional correspondent of this journal; one of his latest contributions was a brief note wherein he expressed his dissent from the views of Schwendener, Bornet, and others, who regard Lichens as consisting of fungus threads living in association with and deriving nutriment from an Alga. A portrait, accompanied by a short sketch of his career, appeared in our columns April 4, 1874.

—— We have also to record the death, on September 25, at Saffron Walden, of Mr. George Young, aged eighty-five years. Mr. Young was gardener for forty-eight years to the Right Hon. Lord Braybrooke, of Audley End, and was highly esteemed by his employers, who liberally pensioned him off about eight years ago. Mr. Young was a good practical gardener of the old school, and highly respected by the gardeners in his neighbourhood and by many friends at a distance.

Answers to Correspondents

Azaleas and Camellias. *E. T. R.* The reason of your Azalea flowering so early is because a few shoots started early into growth, and monopolised the strength of the plant. If you had pinched these shoots you would have prevented the plant from flowering now. Such a case often happens in Azalea culture, and this can only be regulated when the plant is growing in the spring. Azaleas that are in bad health always go off at the flowering period; you will be able to tell an unhealthy plant by its buds, when they are expanding, being covered with brown scales. Your Camellias are either suffering from drought in the "centre of the ball of earth," or their roots are probably injured by excessive wet and bad drainage, one or other of which will cause the buds to drop.

Books: *Colour.* Douglas' *Hardy Florists' Flowers*, sold by the author at Loxford, Ilford.

Cucumbers: *R. S. T.* You have got the Cucumber disease, and we are sorry to say we know of no cure. It is more troublesome in summer than in winter. Clear the plants of all deformed fruits, and, if necessary, top-dress the roots with some rich compost. Then give a rather high temperature, say from 75° to 85° by day, and syringe the plants once a day in fine weather. If your plants are not too far exhausted, and you can force them into fresh growth, it will be a more advantageous plan than planting afresh at this late period of the year. No. 1 is Niphetos; No. 2 had shed all its petals, and was therefore not recognisable.

Frost: *G., Croydon.* The severe frost referred to began on the Christmas Eve of 1860.

Fuchsia: *W. R.* This spelling is correct, the name commemorating the services of a German botanist named Fuchs, who lived in the sixteenth century.

Fungus on Onion Stems: *A. D.* There are a few small patches of whitish mould which appear to be the common Onion mould (Peronospora Schleideniana, De Bary), but without conidia. The black patches are caused by Cladosporium herbarum (conidia), Macrosporium Cheiranthi (macroconidia), and immature perithecia of Pleospora socialis (Niesse), a fungus closely allied to Sphæria herbarium. The Pleospora does not perfect its fructification until the stems on which it grows are quite dead; but the Cladosporium and Macrosporium are developed upon the stems, in this instance, whilst they are still green, and produce the most conspicuous of the black spots. *Charles B. Plowright.*

Grapes: *M. N.* Your Grapes, when they reached us, had been "disfigured" by post-office punches so badly that we could not see what had originally been the matter with them.—*Subscriber.* The immediate cause of the bad condition of your Grapes is want of sufficient fire-heat to keep out the damp. Keep a mean temperature of 60° for a week or two, and let the atmosphere be quite dry. Give air freely in fine weather, but close the ventilators before the damp air of evening comes on. The Grapes are not ripe, and there are signs of a little shanking, but probably all may be rectified by more judicious atmospheric treatment. Please repeat your question as to the Vine borders.

Heating: *A Constant Subscriber.* You do not say for what purpose you intend your lean-to house, 45 feet long by 8 feet wide, but you appear to have any quantity of heating surface to warm a house of such dimensions almost to any temperature. You are not wrong in having plenty of piping, as in case you only require a low temperature you will have to fire less, and if you want to increase the heat you have the means at command. Had you stated for what purpose you required the house we could have given you more definite information.

Holly, Yellow-berried: *H. Henderson.* By no means uncommon.

Melons: *C. E. W.* Your Melons are certainly far from being in a healthy state, and your treatment seems to be of a somewhat extreme nature. It is not good practice to syringe Melons at all at this season of the year. You might damp the borders and paths about mid-day, or before, in bright weather, but close in with a dry atmosphere, or your Melons will have no flavour. The edges of the leaves are burnt and blistered through keeping a too high temperature and letting water fall upon the over-heated pipes. This causes the leaves to be drawn out and thin, and therefore liable to the attacks of insect pests when exposed to extremes of treatment. You may have the disease you refer to, but there are other causes which are quite sufficient to account for the symptoms. Water the plants carefully at the roots, if at all dry, deep a mean temperature of from 70° to 75°, and you may still save a portion of the crop.

Names of Plants: *J. McDonald.* 1, Cupressus nutkaensis (Thuiopsis borealis); 2, Thuia gigantea.—*Saffron Walden.* The Cornelian Cherry (Cornus mas).—*Frank Norkett.* Zygopetalum crinitum cœruleum.—*H.* Winter Cherry (Physalis Alkekengi).—*W. K.* Lobelia siphylitica; 2, Calluna vulgaris; 3, Aster lævis; 4, Alstrœmeria pelegrina; 5, Linaria purpurea, var.; 6, Artemisia abrotanum. Asters cannot be named safely from little scraps a couple of inches long.—*W. B.* Chrysanthemum (Pyrethrum) uliginosum (figured in *Gard. Chron.*, p. 493, vol. x., 1878).—*H. J. Foss.* Boussingaultia baselloides.—*J. S.* Pyrus latifolia.—*W. P.* 1 and 2, poor seedling forms of Chrysanthemum fruticosum; 3, C. fruticosum var. Etoile d'Or; 4, a Rudbeckia not recognised; 5, Croton interruptus; 6, not recognised; 7, Chrysanthemum uliginosum.

Names of Fruits: *D. & Co.* Your Apple is not known to us.—*W. S.* *Plum:* Belle de Septembre.—*Wm. Heale.* 1, Dutch Fullwood (?); 2, New Rock Pippin; 3, probably Alfriston (poor specimen); 4, Norfolk Beauty; 5, Braddick's Nonpareil; 6, Formosa Nonpareil.—*R. Smith, Yalding.* *Pear:* Beurré d'Amanlis.—*J. H.* 1, large fine Apple, not recognised; 2, Mere de Menage; 3, Flanders Pippin; 4, Vicar of Winkfield; 5, Beurré d'Amanlis; 6, Beurré Rance; 7, Cockle Pippin, probably; 8, Court of Wick; 9, Scarlet Russet.—*J. Richards.* 1, Beurré Rance; 2, Beurre de Capiaumont; 3, Seckle; 4, Ne plus Meuris; 8, 15, Ribston Pippin; 13, Duke of Beaufort; 11, Cat's-head; 10, Hanwell Souring; 9, Golden Reinette.

Petunias: *R. M. L.* Very curious. We shall be glad of more specimens. We have seen something similar in Azaleas. The calyx is normal; the corolla-tube, at first erect, is then suddenly bent downwards, the limb being again bent upwards; the stamens, increased in number, form a tube at the base, and the pistil is a mass of scales.

Primula Variegatld: *Bruce.* Variegated leaved Primulas are not worth propagating or owning by anybody.

Pyrus japonica: *J. Grigor & Co.* We do not remember to have seen a variegated form.

Vines: *J. E.* If your Vines are exhausted by overcropping there is no mistaking the symptoms. This year's wood—not all of it—will be small, and some of the shoots will be green at the points. You cannot adopt a better plan than resting them as you suggest; but if you want the Vines that you have been in the habit of forcing early, to come into bearing at the same time as formerly in 1884, you must start them about the same time as usual, or a little later, and nip the bunches off as they appear. A season's rest works wonders with worn-out Vines.

☞ Foreign Subscribers sending Post-Office Orders are requested to send them to the Publisher of this journal, 41, Wellington Street, Covent Garden, and to make them payable to William Richards, at the post-office, Drury Lane, London, W.C.

CATALOGUES RECEIVED.

G. J. Alberts & Co., Boskoop, Holland—Genera Nursery Stock.

Joseph Schwartz, Lyons, France—Roses.

Ranieri di F. Pini, Livorno, Italy—General Catalogue of Seeds.

Herm. A. Hesse, Weener a. d. Ems, Hanover—Hardy Trees and Shrubs, Gladioli, &c.

Communications Received.—P. McO., Cape Town.—A. D. P.—H. T., Ceylon.—J. B. L.—J. R.—J. S.—H. B.—H. W.—J. O.—O. B., Ghent.—H. C., Geneva—A. S., Barbadoes.—W. I.—G. M. W., Bombay.—C. F., Hong Kong.—A. W.—H.—Col. B—W. G. S.—W. B. H.—M. Y.—H. J. C.—L. F. S—J. G.—H. Lane & Son.—F. Sander & Co.—H. Low & Co.—J. Veitch & Sons.—H. C.—T. H. S. (thanks).—J Don.—J. F.—W. F. & Sons.—W. R.—E. W. B.—F. W. B.—H. G.—G. A. R.—M. S.—R D.—C. M. S.—H. S. R.—W. S.—C. J. B.—G. C. C.—W. D.—J. A. P.—J. B. T.—F. F.—M., Kent.

Markets.

COVENT GARDEN, October 12.

The supply has improved since last week, and prices generally are easier. Kent Cobs are selling freely. *James Webber, Wholesale Apple Market.*

Fruit.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	2 6	5 0	Melons, each	2 0	4 0
Aubergines, per doz.	4 0	..	Peaches, per dozen	2 0	8 0
Cobs, 100 lb.	45 0	50 0	Pears, per dozen	1 0	2 0
Figs, per dozen	0 6	1 0	Pine-apples, Eng., lb.	3 0	4 0
Grapes, per lb.	1 0	2 6	Plums, ½-sieve	5 0	8 0
Lemons, per 100	6 0	10 0			

Vegetables.—Average Retail Prices.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, per doz.	3 0	6 0	Herbs, per bunch	0 2	0 4
Beans, French, English grown, p. lb.	0 8	..	Horse Radish, bund.	4 0	..
Beet, per doz.	1 0	..	Lettuces, Cabbage, per score	1 6	..
Cabbages, per doz.	1 0	2 0	Mint, green, bunch	0 4	..
Carrots, per bunch	0 4	0 6	Mushrooms, p. baskt.	1 6	2 0
Cauliflowers, English, dozen	2 0	4 0	Onions, per bushel	3 0	..
Celery, per head, per bundle	0 4	..	— Spring, per bun.	0 6	..
Cucumbers, each	0 6	1 0	Parsley, per bunch	0 4	..
Endive, per score	1 0	..	Radishes, per doz.	1 6	..
Garlic, per lb.	1 0	..	Small salading, pun.	0 4	..
			Spinach, per bushel	2 0	..
			Tomatos, per doz	2 0	..
			Vegt. Marrows, doz.	3 0	..

Potatos:—Magnum Bonums, 90s. to 100s; Regents, 80s. to 90s.; Myatt's, 100s. to 110s. per ton.

Plants in Pots.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldii, doz.	12 0	24 0	Ficus elastica, each	1 6	7 0
Arbor vitæ (golden), per dozen	6 0	18 0	Foliage Plants, various, each	2 0	12 6
— (common), dozen	6 0	12 0	Fuchsias, per dozen	4 0	9 0
Asters, per dozen	4 0	12 0	Genista, per doz	8 0	12 0
Begonias, per doz.	6 0	12 0	Heliotrope, per doz.	3 0	6 0
Chrysanthems., doz.	6 0	18 0	Hydrangea, doz.	9 0	12 0
Coleus, per dozen	4 0	6 0	Marguerite Daisy, per dozen	6 0	12 0
Cyperus, per dozen	6 0	12 0	Myrtles, per doz.	6 0	12 0
Dracæna terminalis	30 0	60 0	Palms in variety, each	2 6	21 0
— viridis, per doz.	12 0	24 0	Pelargoniums, scarlet, per doz.	2 6	6 0
Euonymus, various, per dozen	6 0	18 0	Solanum per doz.	9 0	12 0
Evergreens, in var., per dozen	6 0	24 0			
Ferns, in var., dozen	4 0	18 0			

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 blooms	0 2–	0 4	Marguerites, 12 bun.	4 0–	6 0
Arum Lilies, per doz.	4 0–	6 0	Mignonette, 12 bun.	1 6–	4 0
Asters, 12 bunches..	4 0–	9 0	Pansies, 12 bunches	1 0–	3 0
Bouvardias, per bun.	0 9–	1 0	Phlox, 12 bunches ..	3 0–	6 0
Calceolaria, 12 bun.	6 0–	12 0	Pelargoniums, 12 sprays ..	0 9–	1 0
Camellias, per dozen	3 0–	6 0	— zonal, 12 sprays	0 3–	0 6
Carnations, 12 blms.	1 0–	3 0	Primula, double, per bunch ..	1 0–	1 6
Chrysanth., 12 bun.	4 0–	12 0	Roses (indoor), doz.	1 0–	3 0
Cornflower, 12 bun.	2 0–	4 0	— (outdoor), doz ..	0 4–	0 9
Dahlias, 12 bunches	3 0–	6 6	— Coloured, doz...	1 0–	2 0
Eucharis, per doz. ..	3 0–	6 0	Stephanotis, 12 spr..	5 0–	6 0
Fuchsias, 12 bunches	6 0–	8 0	Sunflower, 12 blooms	0 6–	2 0
Gardenias, 12 blms..	3 0–	6 0	Sweet Peas, 12 bun.	1 6–	3 0
Gladioli, 12 sprays ..	1 6–	3 0	Tropæolum, 12 bun.	1 0–	2 0
Heliotropes, 12 sp. ..	0 6–	1 0	Violets, 12 bunches..	1 0–	1 3
Lapageria, white, 12 blooms ..	2 0–	4 0	— French Czar, bun.	0 9–	1 0
— red, 12 blooms..	1 0–	3 0	White Jasmine, 12 bunches ..	4 0–	9 0
Lilac (French), bun.	9 0–	10 0			
Lilium various, 12 bl.	3 0–	6 0			

SEEDS.

LONDON: *Oct.* 11.—The seed market to-day was poorly attended, with but little business doing. Poor accounts are received of the new crop of American Clover seed. For Trifolium the demand has nearly ceased. Winter Tares are in good request at a slight rally in value. More money is asked for Rape seed. Mustard is unchanged. For bird seeds the sale is slow. Linseed is advancing. Last month's imports into the United Kingdom of Clover and grasses were 10,677 cwt., value £17,361, against 11,729 cwt., value £22,346, for September, 1881. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

At Mark Lane on Monday English Wheat met a slow sale at the previous Monday's rates. American on the spot showed 1*s.* advance; New Zealand and Calcutta Wheats also dearer. Flour was dull, and country marks the turn lower. Malting Barley met more demand, at hardening rates; grinding descriptions 6*d.* dearer. Maize sustained a similar rate. Beans and Peas were unaltered.—On Wednesday, although the transactions in Wheat were not large, an advance of 6*d.* to 1*s.* was obtained in some cases. Barley showed an increase in the same proportion; and grinding sorts were 3*d.* dearer. Maize was very scarce, and 1*s.* and 1*s.* 6*d.* dearer. Beans and Peas continued firm. For Oats the market was firm, and 3*d.* higher.—Average prices of corn for the week ending Oct. 7:—Wheat, 39*s.* 6*d.*; Barley, 34*s.* 4*d.*; Oats, 19*s.* 10*d.* For the corresponding period last year:—Wheat, 46*s.* 9*d.*; Barley, 34*s.* 10*d.*; Oats, 20*s.* 2*d.*

CATTLE.

At the Metropolitan Market on Monday a scarcity of choice cattle gave firmness to their value, and they realised full to occasionally dearer rates, whilst plain and second qualities met a dull dragging sale. Prime sheep in some cases were rather dearer, though the trade was not by any means fast. Calves upheld late value; a few pigs were quoted at previous figures. Quotations:—Beasts, 4*s.* to 5*s.* 4*d.*, and 5*s.* 8*d.* to 6*s.* 2*d.*; calves, 5*s.* 8*d.* to 6*s.*; sheep, 5*s.* 6*d.* to 6*s.* 4*d.*, and 6*s.* 6*d.* to 7*s.* 4*d.*; pigs, 4*s.* to 5*s.*—Thursday's trade in beasts was firm, the demand quiet, at Monday's prices. Sheep were in demand, and fully as dear; and calves and pigs sold on former terms.

HAY.

Tuesday's Whitechapel Market report states that, with fair supplies, trade was quiet, and prices as follows:—Prime Clover, 115*s.* to 125*s.*; inferior, 75*s.* to 80*s.*; prime meadow hay, 95*s.* to 105*s.*; inferior, 36*s.* to 60*s.*; and straw, 30*s.* to 42*s.* per load.—The supply on Thursday was short, and trade was dull at Tuesday's rates.—Cumberland Market quotations:—Superior old meadow hay, 100*s.* to 112*s.*; inferior, 70*s.* to 88*s.*; new, 65*s.* to 99*s.*; superior old Clover, 130*s.* to 138*s.*; inferior, 95*s.* to 110*s.*; new, 70*s.* to 110*s.*; and straw, 38*s.* to 45*s.* per load.

POTATOS.

There has been a good supply at market this week, and but slight change in prices from those obtained last week. Quotations:—English Regents, 80*s.* to 90*s.* per ton; ditto Magnum Bonums, 70*s.* to 90*s.* per ton; ditto Champions, 50*s.* to 70*s.*; ditto Roses, 70*s.* to 80*s.* per ton; ditto kidneys, 70*s.* to 80*s.* per ton.—The imports into London last week consisted of 2422 cases from Hamburg, 6 from Bordeaux, and 258 bags from Bremen.

COALS.

The following are the prices current at market during the week:—Bebside West Hartley, 15*s.* 6*d.*; East Wylam, 17*s.*; Walls End—Haswell, 19*s.* 6*d.*; Hetton, 20*s.* and 19*s.* 6*d.*; Hetton Lyons, 17*s.* 6*d.* and 17*s.*; Lambton, 19*s.* 6*d.* and 19*s.*; Tunstall, 17*s.*; Wear, 17*s.* 6*d.*; South Hartlepool, 18*s.*; Thornley, 19*s.*; Tees, 20*s.*

Government Stock.—Consols closed on Monday at 100⅞ to 101 for delivery, and 101⅛ to 101¼ for the account. Tuesday's figures were, 100¾ to 100⅞ for delivery, and 101 to 101⅛ for the account. The closing quotations of Wednesday were, 100⅝ to 101 for delivery, and 101⅛ to 101¼ for the account. On Thursday Consols closed at 100 to 101⅛ for delivery, and 101 5/16 to 101 7/16 for the account.

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12 TULIPS, Parrot, mixed
25 ANEMONES, double, mixed
12 ANEMONES, double, Scarlet
25 ANEMONES, single, mixed
12 POLYANTHUS NARCISSUS, mixed
12 Double White NARCISSUS
12 Pheasant's-eye NARCISSUS
6 CAMPERNELLE JONQUILS
25 RANUNCULI, scarlet Turban
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February. The buds appear all to produce flowers, and may be planted in numbers together, like buds of Lily of the Valley. As a personal decoration or in bouquets it is delightful, and in colours, in perfect accordance with the taste of the present day. We call this a major variety, as most of the flowers seem to be nearly double the size we have usually seen them, the sepals in several cases being 4 inches across. Colours, sepals soft brown, labellum or sac, clear yellow.

Strong Crowns, each 1s, 6d.; Six, 6s.; Twelve, 10s.; Twenty-five, 17s. 6d.; Fifty, 30s.

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HEATH AND SON

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They will be pleased to send Sample Blooms to any Address.

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TO BE SOLD, CHEAP, wanting room for other things, 1 Croton Youngii, 1 C. variegata, 2 Areca Verschaffeltii, 9 feet; 1 A. Baueri, 8 feet; 1 Seaforthia elegans, 7 feet; 2 Ixora coccinia, fine plants; 1 Allamanda Hendersoni, 1 Gleichenia flabellata, 5 feet through; 1 Orange tree, 2 Yucca quadrangularis, 18 inches across; 1 Paullinia thalictrifolia, 18 inches across. All the above fine and healthy. Price and size on application.—THOS. POPE, Astley Bridge, Bolton.

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Strong plants, 3s. per dozen; £1 1s. per 100.
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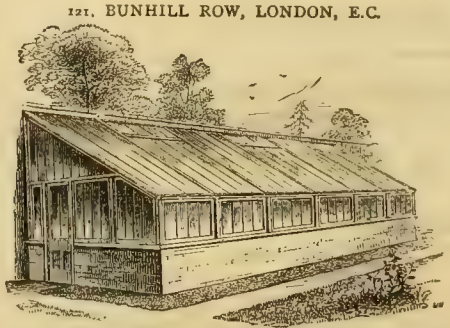
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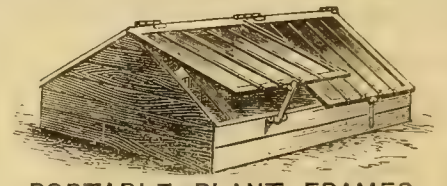


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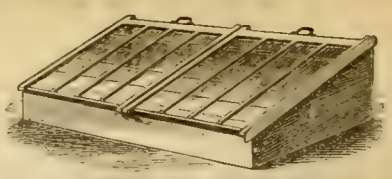


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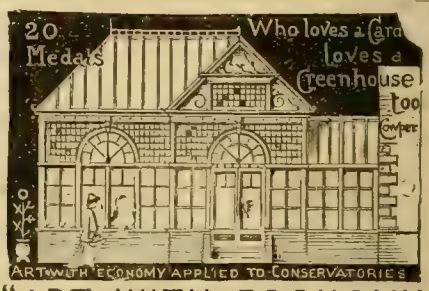


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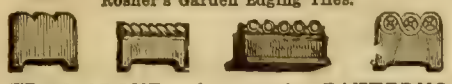
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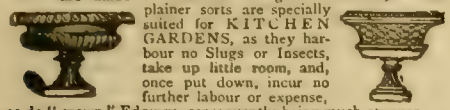
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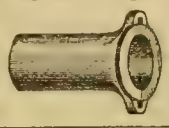
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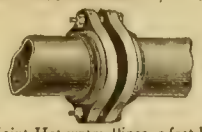
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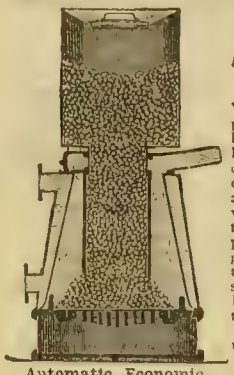
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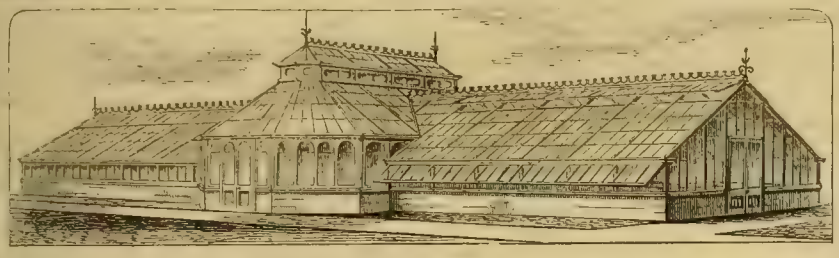
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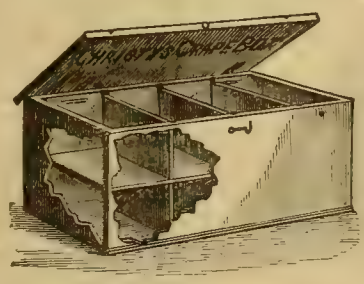
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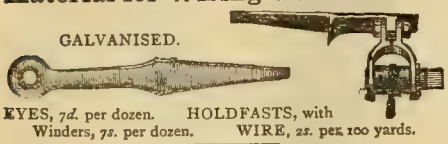
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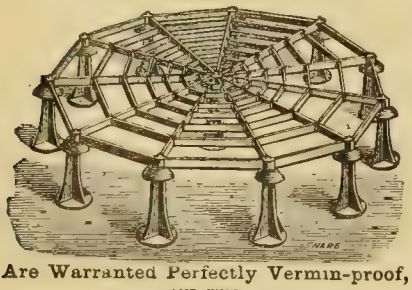


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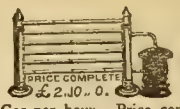
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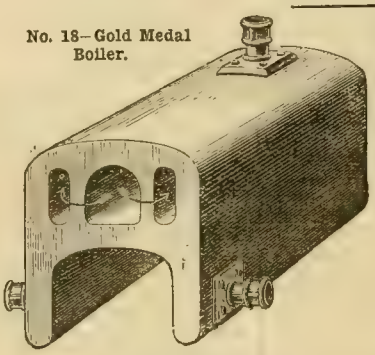
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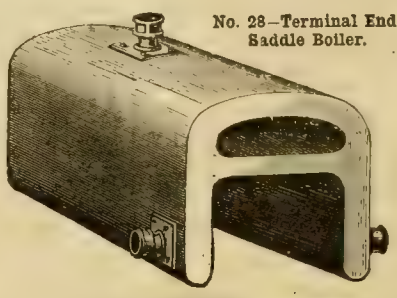
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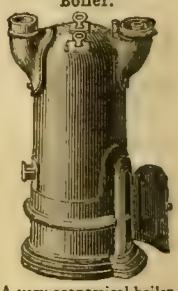


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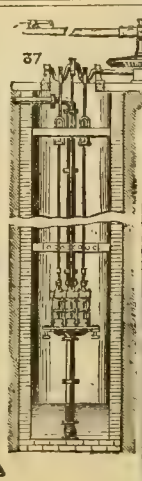
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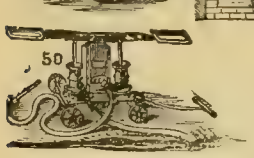
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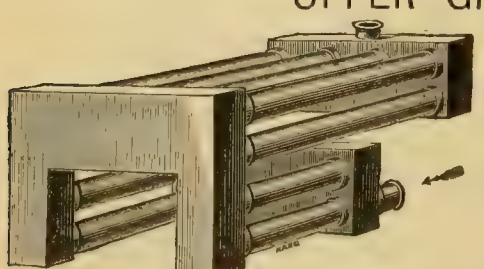
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THE

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MR. J. C. STEVENS will include in his SALE by AUCTION, on TUESDAY NEXT, October 24, several SMALL COLLECTIONS of ESTABLISHED ORCHIDS; 24 ADIANTUM FARLEYENSE, a fine specimen of the Irish Fern; ORCHID BASKETS, &c.; and a SMALL CONSIGNMENT of PLANTS from India.

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Wednesday Next.

BULBS and PLANTS from Holland.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, October 25, at half-past 12 o'Clock precisely, a consignment of first-class Double and Single HYACINTHS of all colours for glasses, pots, and borders; TULIPS, CROCUSES, NARCISSUS, SCILLAS, SNOWDROPS, IRIS, ANEMONES, RANUNCULI, and other BULBS; also Standard, Dwarf, and Climbing ROSES of sorts; high Standard PLANE TREES, and other PLANTS from Holland.

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Thursday Next.

AËRIDES HUTTONI (THIBAUTIANUM).

MR. J. C. STEVENS has received instructions from Mr. F. Sander to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 26, at half-past 12 o'Clock precisely, a splendid importation of AERIDES HUTTONI, one of the rarest of the genus, and one of the very finest; also three new DENDROBES, viz:—Dendrobium Rimanni, D. revolutum, and D. leucolophotum; one plant of a new PHALÆNOPSIS, and one plant of ODONTOGLOSSUM DORMANIANUM in flower; a fine lot of the beautiful and, in its native habitat, distinct ODONTOGLOSSUM MADRENSE; PHALÆNOPSIS SANDERIANA, CATTLEYA DOWIANA and IMPERALIS, &c.

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ESTABLISHED ORCHIDS.

MR. J. C. STEVENS will include in his SALE by AUCTION on THURSDAY NEXT, October 26, about 100 lots of ESTABLISHED ORCHIDS, from recent importations of the New Plant and Bulb Company, and mostly unblowned (consequently fine varieties may be expected), including Cattleyas, Oncidiums, Lælias, Masdevallias, and many other species; also a fine specimen plant of ANTHURIUM SCHERZERIANUM, with about 250 leaves.

On view morning of Sale, and Catalogues had.

Auction Rooms and Offices, 38, King Street, Covent Garden, W.C.

Dutch Bulbs -Sales every Monday.

MESSRS. PROTHEROE AND MORRIS will SELL at the Mart, Tokenhouse Yard, City, E.C., every MONDAY, at half-past 11 o'Clock precisely, over 800 lots of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, SNOWDROPS, and other ROOTS, from Holland; in lots to suit all buyers.

Catalogues at the Mart, and 8, New Broad Street, E.C.

Important Sale of a Choice Collection of Dutch Bulbs, a splendid assortment of 400 Standard and other ROSES, selected FRUIT TREES, Hardy CONIFERS, SHRUBS, AMERICAN PLANTS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION the above at the City Auction Rooms, 38 and 39, Gracechurch Street, E.C., on TUESDAY, October 24, at 12 o'Clock precisely.

On view morning of Sale. Catalogues had at the Rooms and of the Auctioneers, 8, New Broad Street, E.C., and Leytonstone E.

Lilium auratum.—Friday Next.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at The Mart, Tokenhouse Yard, City, E.C., on FRIDAY NEXT, at 12 o'Clock, an importation of 7000 fine bulbs of LILIUM AURATUM, just received from Japan.

Catalogues at The Mart, and 8, New Broad Street, E.C.

Chelsea, S.W.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Tebbutt, to SELL by AUCTION, on the Premises, The Vale Nursery, King's Road, Chelsea, on WEDNESDAY NEXT, October 25, at 12 o'Clock precisely, a large quantity of GREENHOUSE PLANTS, 500 Genista fragrans, 400 Tree Carnations, 2000 Euonymus of sorts in pots, Climbers, and other stock.

May be viewed, Catalogues had on the premises, and of the Auctioneers, 8, New Broad Street, E.C.

Friday Next.

PLANTS from GHENT and DUTCH BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Mart, Tokenhouse Yard, City, E.C., on FRIDAY NEXT, at 12 o'Clock precisely, a consignment from Belgium of CAMELLIAS and AZALEA INDICA, well set with bloom-buds; FICUS, and DECORATIVE PLANTS; also 500 lots of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other bulbs, from Holland, in lots to suit the trade and private buyers.

Catalogues had at the Mart, and 8, New Broad Street, E.C.

Tottenham.

Adjoining the Station, Great Eastern Railway.

SALE of remarkably well-grown NURSERY STOCK, STANDARD ROSES, and HERBACEOUS PLANTS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Hale Farm Nursery, Tottenham, on TUESDAY, October 31, at 12 o'Clock precisely, by order of Mr. T. S. Ware, a large quantity of NURSERY STOCK, comprising 5000 bushy oval-leaved Privet, 2 to 4 feet, all transplanted in the spring; 5000 Planes, Limes, and Poplars; 5000 Single Dahlias, in pots and ground roots; 4000 Veronica Traversii, fine plants; 6000 well furnished Euonymus, 2000 Gynerium argenteum (Pampas), established in pots; 500 extra strong Pinks (Lord Lyons), for forcing; 5000 Standard Roses, with good heads and straight stems, embracing all the leading kinds; a quantity of Moss and Provence Roses; 500 Helleborus niger, Climbers in pots, and several acres of extra strong Asparagus and Seakale for forcing.

May now be viewed. Catalogues had on the Premises, and of the Auctioneers and Surveyors, 8, New Broad Street, E.C., and Leytonstone.

Milford Nurseries, near Godalming, Surrey.

¾ mile from the Milford Station, and 1 mile from the New Godalming Station on the direct Portsmouth Railway.

HIGHLY IMPORTANT THREE DAYS' SALE OF FIRST-CLASS NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises as above, on WEDNESDAY, November 1, and two following days, at 11 for 12 o'Clock precisely each day, by order of Mr. Maurice Young, a large quantity of

BEAUTIFULLY-GROWN NURSERY STOCK,

lotted to suit the Trade and Private Buyers, comprising

4000 SPECIMEN EVERGREENS,

consisting of Retinosporas, Thuias, Cupressus, Golden and other Yews, variegated and fancy Hollies, varying in size from 2 to 8 feet; also

1500 VARIEGATED HOLLIES, 1 to 3 feet;

1200 Golden Yews, 1000 Golden Euonymus, in pots; 1000 Green Hollies, 4 to 10 feet; 500 Cedrus Deodara, 3 to 6 feet;

3000 ROSES, FINEST SORTS;

choice hybrid and named Rhododendrons, common and other Laurels, Berberis, &c.; thousands of Flowering Trees and Shrubs, 1000 Clematis,

ORNAMENTAL PARK TREES, 8 to 10 feet,

in great numbers, consisting of Limes, Beech, Poplars, Scarlet Oaks, Horse Chestnuts, &c.;

STANDARD and DWARF FRUIT TREES;

the whole in fine condition for removal.

The Stock may be viewed any day prior to the Sale.

Catalogues may be had on the Premises, and of the Auctioneers, Estate Agents and Valuers, 8, New Broad Street, E.C.

☞ Purchasers may arrange with the proprietor to have their lots carefully taken up and conveyed to nearest Railway Stations at the cost of labour incurred and material used. Refreshments will be provided on the premises for purchasers.

Rugby.

Expiration of Lease.—Clearance Sale.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Rugby Nursery, Rugby, on WEDNESDAY, November 1, at 12 o'Clock precisely, by order of Mr. W. Bryant, without reserve, the well grown NURSERY STOCK, comprising a large assortment of handsome specimen CONIFERÆ for effective planting, ORNAMENTAL TREES, 5000 PRIVET, 1½ to 3 feet; 3000 fine Standard and Dwarf ROSES, named; 1000 FRUIT TREES, 2000 GOOSEBERRIES and CURRANTS, 10,000 1-yr. MANETTI STOCKS, IVIES and CLIMBERS in pots, and other stock.

May be viewed. Catalogues may be had on the Premises, and of the Auctioneers, 8, New Broad Street, London, E.C.

Kilburn, N.W.

To the TRADE and PRIVATE GENTLEMEN.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Salisbury Road and Avenue Nurseries, Willesden Lane, Kilburn, N.W. (within a short distance of Queen's Park or Brondesbury Park Stations), on THURSDAY and FRIDAY, November 2 and 3, at 12 o'Clock precisely each day, by order of Mr. J. B. Goubert, in order to make room for other stock, a large quantity of remarkably well-grown NURSERY STOCK, including 1000 Cupressus Lawsoniana, 1000 Aucubas, 3000 Laurels, 1000 Rhododendrons, 8000 fine bushy Euonymus, comprising 4000 Golden Variegated, 2000 myrtifolia, 2000 Green, and 300 radicans variegata; 500 Standard and Dwarf Roses, 2000 very fine Double White Primulas, 2000 Adiantum cuneatum, and a variety of Stove and Greenhouse Plants.

May now be viewed. Catalogues had on the Premises, and of the Auctioneers and Estate Agents, 8, New Broad Street, E.C., and Leytonstone.

Sunbury, Middlesex.

By order of the Executors of the late Mr. R. N. Osborn.

PRELIMINARY NOTICE.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from the Executors to SELL by AUCTION, on the Premises, The Nursery, Sunbury, on TUESDAY, November 14, and following days, the whole of the thriving and luxuriant NURSERY STOCK, Fruit Trees, and Roses

Further particulars will shortly appear.

Lewisham, S.E.

CLEARANCE SALE, the Land being required by the Local Government Board for the erection of New Buildings.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, by order of Mr. R. T. Biggs, on the Premises, The Nurseries, High Road, and George Lane, Lewisham, S.E., on TUESDAY and WEDNESDAY, November 7 and 8, the whole of the Outdoor NURSERY STOCK.

Further particulars will appear next week.

Fulham, S.W.

By order of the Executors of the late Mr. R. Osborn.

MESSRS. PROTHEROE AND MORRIS (having sold the Freehold Estate) are instructed to SELL by AUCTION, on the Premises, Osborn's Nursery, Fulham, S.W. (a few minutes' walk from Parson's Green Station District Railway), on THURSDAY, November 9, at 12 o'Clock precisely, in consequence of the large number of lots 10,000 FRUIT TREES of remarkably fine growth, embracing the choicest and most favourite varieties of Standard, Dwarf-trained and Pyramidal Apples, Pears, Peaches, Nectarines, Plums, &c; 44,000 SEAKALE, a few GREENHOUSE PLANTS, the whole of the VEGETABLE and FLOWER SEEDS, the stock of GARDEN TOOLS and SUNDRIES; also the SHOP FIXTURES, including two nests of 508 Mahogany Seed Drawers, very superiorly made and quite new; a 12 feet 6 Mahogany Counter, Office Furniture, Iron Safe, and other effects.

May be viewed. Catalogues had on the Premises; of Messrs. WALKER, BELWARD, AND WHITFIELD, Solicitors, 5, Southampton Street, Bloomsbury, W.C.; and of the Auctioneers and Valuers, 8, New Broad Street, E.C., and Leytonstone.

N.B. The SALE of the STOCK at the SUNBURY NURSERY will take place on NOVEMBER 14 and following days.

Westerham, Kent, adjoining the Station.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. Cattell to SELL by AUCTION, on the Premises, The Nursery, Westerham, Kent, on FRIDAY, November 10, at 1 o'Clock precisely, a large quantity of surplus NURSERY STOCK, in good condition for removal, including a large assortment of Coniferæ and Evergreens, 2000 Ornamental Trees, American Plants, Standard and Dwarf Roses, Rhododendrons, &c.

May be viewed. Catatogues had on the Premises, and of the Auctioneers, 8, New Broad Street, London, E.C.

East Dereham.—*Re* McLaren.

NURSERY STOCK, POTATOS, and SHOP FIXTURES.

About 50,000 twice transplanted young Oak, Ash, Spanish and Horse Chestnut, Hazel, Yews, Thuia occidentalis glauca, Lobbii, Wareana; Cupressus glauca, Retinospora plumosa, aurea leptoclada; Common and Portugal Laurel, Araucaria, Abies Nordmanniana, Pinus austriaca, nobilis, Wellingtonia, Deodara, Hemlock, Spruce, Rhododendrons, Mountain Ash, Sycamore, Crab Stocks, Myrobella, Copper Beech, Holly, Juniper, Cedars, Maple, Fruit Trees, Gooseberry and Currant Bushes, Pæonies, Menziesia, and Azalea; also a variety of other Plants, and about 2 Acres of Potatos in various sized plots.

MESSRS. CLOWES AND NASH are directed to SELL by AUCTION, without the slightest reservation, on WEDNESDAY, October 25, the entire NURSERY STOCK, with POTATOS, now growing in the nursery grounds lately occupied by Mr. C. McLaren, at East Dereham, commencing at 11 o'Clock.

After the above Stock, the FIXTURES, removed from the Shop in the Market Place, will be Sold at the Nursery.

Catalogues may be obtained, or will be forwarded by post, on application at the Auctioneers' Offices, Bank Chambers, Norwich.

Great Sale of Nursery Stock.

MESSRS. PETER S. ROBERTSON AND CO., Trinity Nurseries, Edinburgh, beg to announce that their Third Great ANNUAL SALE of Forest and Ornamental Trees, Seedlings, Conifers, Rhododendrons, Hollies, Game Covert Plants, &c., will take place on THURSDAY, November 2, at 11 o'Clock.

Particulars in *Scotsman*. Details in Catalogues, which may be had on application. All purchases lifted and despatced free. Four months given for removal.

Extensive Sale of Nursery Stock at Melrose, N.B.

MR. A. DAVIDSON will SELL by PUBLIC ROUP, at Melrose, on TUESDAY and WEDNESDAY, November 7 and 8, the whole of the valuable and extensive NURSERY STOCK growing in the Nurseries of the late firm of Ormiston & Renwick, Nurserymen and Seedsmen there. The stock consists of several millions of FOREST TREES, of all kinds and sizes, in splendid condition for removal, and suitable for hill and lowland planting, together with a large number of ORNAMENTAL TREES and SHRUBS, suitable for park and villa decoration; also a fine collection of FRUIT TREES, BUSHES, &c. As the Melrose Nurseries have been long celebrated for producing trees and shrubs unequalled for hardiness and strong fibrous roots, parties will have an opportunity of supplying themselves with trees and shrubs of a quality seldom offered at a public sale. The Roup will commence each day at half-past 11 o'Clock A.M.

Catalogues will be obtained on application to Mr. A. DAVIDSON, Auctioneer, Melrose: or to Mr. JOHN RENWICK, sole surviving partner of the late firm of Ormiston & Renwick, who will continue the business in all its branches as hitherto.—Melrose, September, 1882

WANTED TO RENT, a NURSERY, with Cottage and some Glass, near London. Particulars by letter to

A. B., Mr. Peto, Rose Cottage, Parson's Mead, Croydon.

FOR SALE, an old-established NURSERY and FLORIST'S BUSINESS, 4 miles from Covent Garden, S.W. district.—Eight Glasshouses, all heated and stocked. Will sell cheap to immediate purchaser. Satisfactory reasons for disposal. For full particulars apply, by letter only, to

W. G., 32, Great Portland Street, London, W.

FOR SALE, a NURSERY, 4 miles from Covent Garden. Nearly an Acre of Land, 3 long Greenhouses fitted with hot-water, 28 Lights on Frames. Ground well stocked. Cottage and Large Shed. Lease 18 years. Apply, H. CROOK, Grove Nursery, Brabourne Grove, Hollydale Road, Nunhead, S.E.

IMPROVEMENT OF ESTATES.—For Professional Instruction *see* Prospectus of the CRYSTAL PALACE COMPANY'S SCHOOL of LANDSCAPE GARDENING and the IMPROVEMENT of ESTATES. Principal, Mr. EDWARD MILNER, F.L.S. Apply in the Library, Crystal Palace, Sydenham.

F. K. J. SHENTON, Sup. Educational Dept.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

NOTICE IS HEREBY GIVEN, that an ADDITION to the PENSION LIST of this Institution will be made in JANUARY NEXT. All persons desirous of becoming candidates are requested to send in their Certificates to the Committee on or before November 6 next, after which date none will be received. Preference will be given to those candidates who have been subscribers for 15 years and upwards. Should there not be a sufficient number of this class of applicants to fill the vacancies, then the cases of those who have not been subscribers so long, or not at all, will be considered.—By order

EDW. R. CUTLER, Sec.

14, Tavistock Row, London, W.C.—October 10, 1882.

P.S. The requisite printed forms may be procured from the Secretary.

To Gardeners and Others.

THE NEWTOWN and LLANLLWCHAIARN (Montgomeryshire) LOCAL BOARD solicit PLANS for LAYING-OUT and PLANTING a CEMETERY of about 6 Acres, with Specifications and Estimate of Cost.

The Specifications to include number and species of trees, together with all information necessary to enable the Board to procure Tenders.

A Premium of Five Guineas will be given for the best Design, &c., &c., which will become the sole property of the Board. The person whose plan is accepted may be appointed to superintend the work.

Plans, &c., to be sent to the undersigned, on or before November 3 next.

WM. COOKE, Clerk.

Newtown, Montgomeryshire.

LANDSCAPE GARDENING, ARBORETUMS, PINETUMS, PLANTING, ROCKWORK, GARDEN ARCHITECTURE, &c., by Mr. W. SHORT, eminent Artists and Assistants. Address,

Mr. W. SHORT, Landscape Gardener, Red Hill, Surrey.

NEW CURRANT, BLACK CHAMPION.

JAMES CARTER AND CO. are now booking orders for this the best BLACK CURRANT in the World.

It was awarded a First-class Certificate by the Royal Horticultural Society Committee, and greatly admired by all who saw the fruit exhibited last year. Stock limited.

Price, each, 5s.; per dozen, 55s.; so long as unsold.

237 and 238, High Holborn, London, W.C.

VIOLETS that will continue flowering up to next April. We have an acre, consisting of 24 distinct varieties. For full particulars send for a CATALOGUE.

NEAPOLITAN, large clumps for cold frame, 20s. per 100, fine plants in 5-in. pots, in flower, 8s. per doz., £2 10s. per 100.

MARIE LOUISE, clumps ditto, 25s. per 100; splendid plants in 5-in. pots, full of flower, 9s. per doz., £3 per 100.

H. CANNELL AND SONS, Home for Flowers, Swanley, Kent.

STEPHANOTIS FLORIBUNDA.— Good plants in 48's, 2s. each, 18s. per dozen, £7 per 100. Prices of larger on application.

W. M. CROWE, Boleyn Nursery, Upton, Essex.

STRAWBERRY PLANTS.—The best: Amateur, British Queen, Crimson Queen, Dr. Hogg, Duc de Malakoff, Duke of Edinburgh, James Veitch, Lucas, President, Sir Harry, Sir Joseph Paxton, Viscomtesse H. de Thury, &c., from 3s. per 100; potted, 12s.

FREEMAN, Seed Grower, Norwich.

POTATOS FOR SALE.—Reading Hero, also a few Schoolmaster, for Seed (true). Cash.

R. B. McCOMBIE, Christchurch.

BOX EDGING.—10,000 Nursery Yards, of the usual quality and value, £9 10s. per 1000 yards

J. B. YOUNG, Landscape Gardener, Bridge of Allan.

To the Trade.

FERNS—FERNS—FERNS.—The following are all good stuff, in 60-pots:—Lomaria gibba, Pteris serrulata, P. serrulata cristata, P. cretica alba lineata, Polystichum plumosum, Doodia media, 20s. per 100, £9 per 1000; A. cuneatum, 25s. per 100; Lastrea aristata variegata (new), 30s per 100; Cheilanthes elegans (the Lace Fern), 35s. per 100. Prices of 48's stuff on application.

W. M. CROWE, Boleyn Nursery, Upton, Essex.

SPIRÆA JAPONICA, strong clumps, for forcing, will bloom well, 12s. per 100, 100s. per 1000.

CATALOGUE of Ornamental Trees and Shrubs, Roses, and Fruit Trees, &c., on application.

W. C. SLOCOCK, Goldsworth Nursery, Woking.

150 Bulbs for 5s.

CONSISTING of 6 mixed HYACINTHS, 6 double TULIPS, 6 single TULIPS; 25 yellow, 25 blue, 25 white, and 25 striped CROCUS; 5 NARCISSUS POETICUS, 5 NARCISSUS INCOMPARABLE, 6 RANUNCULUS, 6 ANEMONES, and 10 SNOWDROPS, for Post-office Order payable to

J. L. WATSON, Manor Road Nursery, Gravesend.

LILIUM AURATUM (home-grown).—A large stock of home-grown Bulbs, in fine condition, and almost every other sort in cultivation. Samples and prices on application.

THOMAS S. WARE, Hale Farm Nurseries, Tottenham, London.

Fifty Thousand.

BERLIN LILY OF THE VALLEY CROWNS. Samples and prices forwarded on application. Also a few thousand WHITE ROMAN HYACINTHS cheap. SAMUEL HAY, Seed Merchant, Leeds.

THUIA AUREA, T. ELEGANTISSIMA, T. COMPACTA, JUNIPERUS CHINENSIS, IRISH JUNIPER, CUPRESSUS ERECTA, &c., nice bushy trees for pots or boxes, 15 to 20 inches high, 40s. per 100.

W. JACKSON, Blakedown, Kidderminster.

Gardenia intermedia.

CLEAN HEALTHY PLANTS, in 5-inch pots, to flower this winter, 2s. each, 18s per dozen; nice plants in 60's, 9d. each, 6s. per dozen. A few large plants, about 4 feet, which will be full of flowers this winter; price on application. CATALOGUE free.

W. M. CROWE, Boleyn Nursery, Upton, Essex.

SHALLOTS, extra fine, 3d. per pound, 18s. per cwt.

W. HOPWOOD AND SON, Seed-men, Hewlett Road, Cheltenham.

ROSES—Carriage Paid—ROSES.

(To any Railway Station in England.)

Twelve distinct varieties, Perpetuals, 1st Prize flowers, 10s. 6d. 100 in fifty varieties, 1st Prize flowers, 65s.

The plants are very fine, stout, and well-rooted. Terms cash. Usual Trade Discount.

The EXORS. of the late H. BLANDFORD, The Dorset Nurseries, Blandford.

Special Cheap Offer of Amaryllis.

DICKSON, BROWN AND TAIT, SEED MERCHANTS, Manchester, can offer 500 large flowering Bulbs of Amaryllis aulica, at 30s. per dozen, £10 per 100. Also 500 Choice Hybrids, all flowering bulbs, 30s. per dozen, £10 per 100. These bulbs are well worthy the attention of purchasers. The bulbs are really fine, and not to be met with at prices named.

5000 **Cyclamen persicum.** 5000

ALL from the finest procurable strains, good plants in 60-pots, 3s. 6d. and 5s. per dozen; extra large, 10s. per dozen: for early flowering.

W. M. CROWE, Boleyn Nursery, Upton, Essex.

Special Offer.

CEDRUS DEODARA, fine plants.

3 to 4 feet, 15s. for 12, 60s. for 50, 110s. for 100.

4 to 5 feet, 18s. for 12, 70s. for 50, 130s. for 100.

THOMAS PERKINS AND SONS, 31, Drapery, Northampton.

Gardenias.

MESSRS. JOHN STANDISH AND CO.'S Stock of GARDENIAS was never so extensive or good as it is this season. They have thousands of plants to select from, in all sizes, from fine specimens in 18-inch pots to small plants in 60's. All clean and healthy, and to a large extent well set with buds for winter-flowering. VERY REASONABLE Prices will be quoted on application.

Royal Nurseries, Ascot, Berks.

Game Covert.

THOMAS METHVEN AND SONS have a fine Stock of MAHONIA AQUIFOLIA, 1½ to 2 feet, RHODODENDRON PONTICUM, and COTONEASTER SIMONSII, suitable for above, and will be happy to quote prices. Leith Walk Nurseries, Edinburgh.

SIMPLY AN ANNOUNCEMENT.

H. CANNELL & SONS

Beg to say that their CATALOGUE of ROSES, CHRYSANTHEMUMS, VIOLETS, Single DAHLIAS, PICOTEES, CARNATIONS, and all WINTER BLOOMING PLANTS, NEW FLOWERS, BULBS, HERBACEOUS PLANTS, &c., is now ready, and all who require the very best at the least expense, and to be successful, should send for full particulars.

The finest Collection of Soft-wooded Plants and Florist Flowers in Europe.

THE HOME FOR FLOWERS SWANLEY KENT.

8000 **Winter-Flowering Carnations** 8000

TWELVE WELL-ROOTED PLANTS, in six best varieties, by post, 4s.; larger, in 54's, 6s. per dozen, 42s. per 100; in 48's, 15s and 18s. per dozen, £5 and £6 10s. per 100 See CATALOGUE.

W. M. CROWE, Boleyn Nurrery, Upton, Essex.

Planting Season.

JOHN PERKINS AND SON beg to draw attention to their large stock of the following, the whole of which have excellent roots:—

AUCUBA JAPONICA, 1 to 3 feet.
CUPRESSUS LAWSONIANA, 1½ to 10 feet.
HOLLY, Variegated, 1 to 4 feet.
" Green, 1 to 3 feet.
LAURELS, Common, 1 to 3 feet.
" Portugal, 1 to 4 feet.
" ROTUNDIFOLIA and CAUCASICA, 1 to 3 feet.
LAURUSTINUS, 1 to 2 feet.
PICEA NORDMANNIANA, 2 to 6 feet.
THUIA AUREA, 1 to 3 feet.
" GIGANTEA, 1 to 6 feet.
" LOBBII, 3 to 4 feet.

YEWS, English, 2 to 3 feet, 3 to 4 feet, and 4 to 5 feet: also large stocks of transplanted FOREST TREES, ASH, ALDER, BIRCH, ELMS, HAZEL, HORNBEAM, Evergreen PRIVET, PINUS AUSTRIACA, LARCH, Scotch and Spruce FIRS, various sizes, 1 to 4 feet; WHITETHORN QUICKS.

An inspection particularly solicited.

WHOLESALE and RETAIL CATALOGUES on application.

52, Market Square, Northampton: Nurseries—Billing Road.

4000 **Azaleas, Camellias, Ericas, and Epacris.** 4000

AZALEA INDICA, in best varieties, for forcing, including Whites, well set with buds, 24s., 30s., and 42s. per dozen, £8 to £15 per 100.

AZALEA MOLLIS, good bushy stuff of these invaluable plants for early forcing, in all shades of colour, 21s., 30s, and 40s. per dozen, £8 to £15 per 100.

HEATHS and EPACRIS, best varieties, well set with flower, 18s. and 24s. per dozen.

CAMELLIAS, in best varieties, including Whites, 25s., 30s., and 42s. per dozen, £9 to £15 per 100.

CATALOGUE free.

W. M. CROWE, Boleyn Nursery, Upton, Essex.

NOTICE.

SELLING OFF OF NURSERY STOCK.

EWING & CO.,

EATON, near NORWICH.

Great Reduction in Price for Cash Payments, viz,

15 per Cent. for Cash before delivery.
10 per Cent. for Cash within One Month of date of invoice.
5 per Cent. for Cash within Three Months of date of invoice.
After Three Months no discount can be allowed.

We shall be pleased to quote prices for the following in small or large quantities:—

Standard and Half-Standard H.P. Roses.

STANDARD, HALF-STANDARD, and DWARF MARÉCHAL NIEL ROSES.

TEA and NOISETTE ROSES in Pots.

PURPLE BEECH, best selected dark, broad-leaved variety, of all heights up to 8 feet.

BEECH, Cut-leaved, Fern-leaved, Crested-leaved, and Weeping.

KENTISH COB and other best kinds of NUTS and FILBERTS.

POPLARS, Black Italian, small or large.

POPLARS and WILLOWS of many choice kinds, in variety.

Scarlet-flowered and Common HORSE CHESTNUTS, large or small.

SWEET VIOLETS for Winter Blooming.

DOUBLES—New York, an improved Marie Louise, a large stock 2s. 6d. per dozen, 18s. per 100, extra large clumps 7d. each, 6s. per dozen; also De Parme, Double Red Russian, Tree, Belle de Chatenay, Margaret de Savoie, 4d. each, 3s 6d. per dozen; Blandyana, Patriæ, 6d. each, 5s. per dozen; Chatenay cœrulea, Duchess of Edinburgh, 1s. each; New Mazarine Blue, 2s. each; Swanley White, the grand new double white, small plants 5s. each.

SINGLE VARIETIES.—Argentæflora, Odoratissima, White Czar, 4d. each, 3s. 6d. per dozen; Victoria Regina, and Large White, 2s. per dozen.

CATALOGUE, with directions for Culture, 1½d.

Mr. R. W. BEACHEY, Fluder, Kingskerswell, Devonshire.

FERNS, &c., in SMALL POTS.

	Per dozen.—	s.	d.
ADIANTUM CUNEATUM .. .. .. 21s. per 100		3	0
" CONCINNUM		3	6
" " LATUM		3	6
" EXCISUM		3	6
HEMIONITIS PALMATA		4	0
GYMNOGRAMMA LAUCHEANA vars. 21s. per 100		3	0
" DECOMPOSITA		3	0
PTERIS MAGNIFICA .. .. .. 18s. per 100		2	6
" CRETICA .. .. 20s. per 100		3	0
" PALMATA		4	0
BRAINEA INSIGNIS		6	0
LYGODIUM SCANDENS .. .. .. 21s. per 100		3	6
DRACÆNA VEITCHII and AUSTRALIS, PANDANUS UTILIS, LATANIA BORBONICA, CHAMÆROPS HUMILIS, C. EXCELSA ..		3	0
ARALIA SIEBOLDII, GREVILLEA ROBUSTA ..		2	6
ALLAMANDA GRANDIFLORA		15	0
CLEMATIS INDIVISA LOBATA		15	0
CHOISYA TERNATA		6	0
DIPLADENIA BREARLEYANA		15	0
" of sorts	6s., 9s., and	12	0
ALLAMANDAS, CLERODENDRONS, and BOUGAINVILLEAS of sorts	6s., 9s., and	12	0
STOVE PLANTS in great variety	per 100	50	0
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As good varieties and plants as generally sold at treble the prices. Catalogues free.

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CHARLES TURNER'S Descriptive LISTS of the following can be had free on application:—

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CARNATIONS, PICOTEES, and PINKS,
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DICKSONS AND CO., NURSERYMEN and SEEDSMEN, Waterloo Place, Edinburgh, are now sending out well-rooted Plants of the above, which has been awarded a First-class Certificate by the Royal Caledonian Horticultural Society, and as a forcing Strawberry has secured the First Prize wherever exhibited. It is hardy, vigorous, a most abundant cropper, and the fruit is large and handsome. Its firmness will make it an invaluable market variety. 10s. per 100, or 3s. per dozen. Liberal terms to the Trade.

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VIOLETS, Double Russian, full of flower-buds, very strong compact plants, fine for potting. Single ditto, The Czar, also full of flower-buds, 2*s.* 6*d.* per dozen, 16*s.* per 100, package included.
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Descriptive and Priced Catalogue of
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FOREST TREE SEEDLINGS.
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Having a splendid stock, we offer 100 Stove and Greenhouse Ferns and Selaginellas, nice healthy plants, in 50 species and varieties, for 42*s.*; 50 in 50 varieties, 25*s.*; 50 in 25 varieties, 21*s.*; 25 for 10*s.* 6*d.*; 12 for 4*s.* or 6*s.*
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ROSES—ROSES—ROSES.
50,000
STANDARD, HALF STANDARD,
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DWARF ROSES,
Of the very best sorts, to choose from, at the lowest prices.
Those who have witnessed my Roses at the Exhibitions could judge of their quality.
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TRADE SUPPLIED.

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CYPRIPEDIUM CALCEOLUS MAJOR.
This beautiful hardy ORCHID in its old form is by no means new to botanical science; but if its only merit were that it had never been seen before, we should have less confidence in recommending it than we now have, upon the more satisfactory grounds of its great beauty and easy management. Grown in pots in a cool house, this plant will be in full bloom about



February. The buds appear all to produce flowers, and may be planted in numbers together, like buds of Lily of the Valley. As a personal decoration or in bouquets it is delightful, and in colours, in perfect accordance with the taste of the present day. We call this a major variety, as most of the flowers seem to be nearly double the size we have usually seen them, the sepals in several cases being 4 inches across. Colours, sepals soft brown, labellum or sac clear yellow.
Strong Crowns, each 1s, 6d.; Six, 6s.; Twelve, 10s.; Twenty-five, 17s. 6d.; Fifty, 30s.
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"*March* 10, 1882.—Crocus, &c., in borders, purchased and planted last autumn, are making a fine show, and giving every satisfaction. Hyacinths in pots have been very fine and much praised, having spikes of bloom 9 *inches in length and so close that they appeared to be solid.* Tulips have been very fine and highly praised. Hyacinths in border now showing very strong bloom."
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Our GUINEA BOX of choice Hardy Flower Roots for Outdoor Planting
Contains the following liberal assortment, all in sound picked Bulbs, with full instructions for cultivation (case, packing, and carriage free to any railway station in England or Wales):—
25 HYACINTHS, choice, mixed
200 CROCUS, in fine variety
12 TULIPS, Rex rubrorum
12 TULIPS, La Reine
12 TULIPS, double, mixed
12 TULIPS, single, mixed
12 TULIPS, Parrot, mixed
25 ANEMONES, double, mixed
14 ANEMONES, double, Scarlet
25 ANEMONES, single, mixed
12 POLYANTHUS NARCISSUS, mixed
12 Double White NARCISSUS
12 Pheasant's-eye NARCISSUS
6 CAMPERNELLE JONQUILS
25 RANUNCULI, scarlet Turban
25 RANUNCULI, mixed Turban
50 SNOWDROPS
50 WINTER ACONITES
12 SPANISH IRIS
6 TRITELEIA UNIFLORA
2 LILIES
559 *Roots in all. Double quantity,* 40*s.*; *half do.,* 12*s.* 6*d.*
Other Collections for Greenhouse and Conservatory, Windowboxes, &c., 12*s* 6*d*, 21*s.*, 42*s.*, 63*s.*, *and* 84*s.*
Beautifully Illustrated CATALOGUE, post-free on application.
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Pansy Seed, Show and Fancy.—For Present Sowing.
JAMES COCKER AND SONS beg to announce that, having this season been successful in harvesting a quantity of the above from their famous collection, they are now prepared to offer it in packets at 6*d.*, 1*s.* and 2*s.* 6*d.* each. Plants now ready, 6*s.* to 18*s.* per dozen.
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HERBACEOUS CALCEOLARIAS, out of pots ..	1	0
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SOLANUMS, full of berries, in 5-inch pots 6*s.* and	9	0
CYCLAMEN, very fine, in 5-inch pots .. 6*s.*, 9*s.*, and	12	0
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AZALEA INDICA, Ghent or Mollis, with buds, 21*s.*, 24*s.*, and	30	0
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All the above Florists' Flowers of the finest varieties, many new. Herbaceous Plants, many thousands of the most showy kinds—12 sorts, 3*s.*; 50 sorts, 11*s.*; 100 sorts, 20*s*
Spring-blooming Plants, such as POLYANTHUS, Seedling PRIMROSES (all colours), WALLFLOWERS, CANTERBURY BELLS, ARABIS, AUBRIETIAS, DAISIES (Red, White, or Rose), MYOSOTIS, SILENE COMPACTA, 4*s.* per 100, 35*s.* per 1000.
TULIPS, for Bedding, to name, 5*s.* per 100.
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TEN THOUSAND ROSES IN POTS.
On own roots and Seedling Briers.
TEA, NOISETTE, CHINA, and HYBRID TEAS, a select LIST of the leading varieties.
5-inch pots (1st selection), fine, bushy, 1½, 2 to 2½ feet.
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7-inch pots, suitable for forcing.
CLIMBING ROSES, 5 to 7 inch pots, 4, 5, 6 to 8 feet.
Second to none in quality.
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P. J. PERRY, NURSERYMAN, Banbury, offers:—
ALDER, 4 to 6 feet. | BEECH, 3 to 10 feet.
ASH, 4 to 10 feet. | BROOM, 2 to 6 feet.
CHESTNUTS, double Scarlet, 10 to 16 feet; stems, 2 feet in circumference.
HOLLIES, Gold and Silver Variegated, 2 to 4 feet.
,, standards, 5 to 12 feet.
LARCH, 1½ to 5 feet. | ELM, English, 6 to 12 feet.
LIME, 6 to 9 feet, 10 to 12 feet, 12 to 15 feet.
PICEA NORDMANNIANA, 2 to 7 feet.
PINUS AUSTRIACA, 3 to 9 feet.
FIR, Scotch, 2 to 3 feet
,, Spruce, 18 inches to 2 feet 6 inches.
THUIA GIGANTEA, 5 to 6 feet.
YEW, common, bushy stuff, 2 to 5 feet.
,, Golden, 1 to 2 feet 6 inches
,, Irish, 10 to 15 feet; 4 to 5 feet in diameter at 3 feet from the ground.
LAUREL, Portugal, 2½ to 3½ feet.
ROSES, standard, dwarf and pot; including most of the leading sorts.
700 GENISTA FRAGRANS, in 48 pots, 9*s.* per dozen.
500 CHRYSANTHEMUMS, in 32 and 24-pots, chiefly large flowered variety, 18*s.* per dozen.
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400 FERNS, in variety, chiefly Adiantum cuneatum, Pteris cretica, Asplenums in variety, in 48-pots, 15*s.* per dozen.
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100 GERANIUMS, Zonal, well-grown, full of bud, in 24-pots, 20*s* per dozen.
500 ARALIA SIEBOLDII, in 60-pots, 4*s.* per dozen.
200 AZALEA INDICA, full of bud, in various sizes, from 30*s.* to 36*s.* per dozen.
800 BOUVARDIAS, 8*s.* per dozen.
Prices and samples on application.

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TEA ROSES—TEA ROSES.

40,000 splendidly grown, extra strong and healthy TEA ROSES, of all the leading kinds, still left, in 4½-inch pots.

Purchasers' Selection .. £3 3s. per 100 | Purchasers' Selection .. .. £30 per 1000
My own Selection .. £2 16s. per 100.

DOUBLE WHITE PRIMULAS.

Strong Plants, in 4½-inch pots, to bloom this Winter, 10s. per dozen, 70s. per 100.

The above Prices are subject to 10 per Cent. Discount for Cash. CATALOGUES free.

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DANIELS' WHITE ELEPHANT,

The best Second Early and most wonderful productive Potato in the World; cooks beautifully white and floury, and of splendid flavour.

From J. Tuck, *Burnham, Wells, Norfolk, September* 18, 1882.—"From three-and-a-half stones of Daniels' White Elephant Potato I grew, on poor soil, thirty-five hundredweight (35 cwt.) of fine marketable tubers, of splendid cooking quality."

LOWEST PRICE PER TON ON APPLICATION.

DANIELS BROTHERS (Seedsmen to Her Majesty the Queen, and His Royal Highness the Prince of Wales), NORWICH.

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CATTLEYA AMETHYSTOGLOSSA, PHALÆNOPSIS INTERMEDIA PORTEI.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY NEXT, October 24, at half-past 12 o'Clock precisely, by order of Messrs. Hugh Low & Co., a grand lot of Imported plants of the lovely CATTLEYA AMETHYSTOGLOSSA in the best possible condition, amongst them splendid masses of a size rarely seen—some will be offered in flower, having bloomed in the cases (Collector saw many with 16 flowers on a spike, each bloom 4 inches across); CATTLEYA ACKLANDIÆ, LÆLIA PERRINI, ODONTOGLOSSUM VEXILLARIUM, dark variety; ONCIDIUM KRAMERI, &c. At the same will be offered established plants of PHALÆNOPSIS AMABILIS, P. SCHILLERIANA, one P. INTERMEDIA PORTEI, ODONTOGLOSSUM ROEZLII, MASDEVALLIA TOVARENSIS in bud, VANDA HOOKERI, ANGRÆCUM CITRATUM with flower-spikes, and other choice Orchids.

On view morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

THURSDAY NEXT.

AËRIDES HUTTONI (THIBAUTIANUM)

MR. J. C. STEVENS has received instructions from Mr. F. Sander, to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 26, at half-past 12 o'Clock precisely, a splendid importation of AËRIDES HUTTONI, one of the rarest of the genus, and one of the very finest; also three new DENDROBES, viz:—DENDROBIUM RIMANNI, REVOLUTUM, and LEUCOLOPHOTUM; one plant of a new PHALÆNOPSIS, and one plant of ODONTOGLOSSUM DORMANIANUM, in flower; a fine lot of the beautiful and, in its native habitat, distinct ODONTOGLOSSUM MADRENSE, PHALÆNOPSIS SANDERIANA, CATTLEYA DOWIANA and IMPERIALIS, &c.

On view morning of Sale, and Catalogues had.

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SEAKALE—SEAKALE.

VERY LARGE.
ANY QUANTITY.

Apply to the Grower for Particulars.

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MILLSHOT FARM, FULHAM, S.W.

FLOWER ROOTS, &c.

BEST QUALITY. CARRIAGE FREE.

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D. & R.'s COLLECTIONS of SELECT FLOWERING BULBS for the Decoration of the Conservatory or Greenhouse, and for Outdoor Flowering in Spring:

10s. 6d., £1 1s., £2 2s., and £3 3s. each.

For Contents of these Collections see our **AUTUMN CATALOGUE.**

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AZALEA MOLLIS, strong bushes, well set with flower-buds.
DEUTZIA GRACILIS, extra strong plants.
DIELYTRA SPECTABILIS, extra strong roots.
HELLEBORUS NIGER (Christmas Rose), extra strong roots.
LILY OF THE VALLEY, imported extra strong clumps.
LILY OF THE VALLEY, imported extra strong single crowns.
SPIRÆA (Hoteia) JAPONICA, imported extra strong clumps.
SPIRÆA PALMATA, bright crimson flowers, strong clumps.

For Descriptions and Prices of the above see our Illustrated AUTUMN CATALOGUE, sent gratis and post-free.

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MANCHESTER.

GEORGE JACKMAN & SON,



WOKING NURSERY, SURREY.

ESTABLISHED 1810.

Select List of Choice Fruit Trees. Suitable for Large or Small Gardens.

Select List of the Best Varieties of Roses. Dwarfs, Standards, and in pots.

Select List of American Plants. For Peat and Loamy Soils.

Select List of Hardy Trees, Shrubs, and Forest Trees. Suitable for Parks and Private Gardens, and adapted for Belts, Shrubberies, Screens, Covers, &c.

Select List of Conifers. For Lawns and Pleasure Grounds, also for Winter Bedding, Box and Window Plants.

Select List of Hardy Climbers. Including their celebrated Clematises.

Geo. Jackman & Son's Descriptive Catalogue free on application.

THE BEST BULBS.



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COLLECTIONS of CHOICE TULIPS

		s.	d.
12 in	6 superb varieties, Single	1	9
25 ,,	8 ,, ,, ,,	3	6
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100 ,,	12 ,, ,, ,,	12	0
200 ,,	25 ,, ,, ,,	14	6
12 in	6 superb varieties, Double	1	9
25 ,,	8 ,, ,, ,,	3	3
50 ,,	10 ,, ,, ,,	5	9
100 ,,	12 ,, ,, ,,	11	6
200 ,,	25 ,, ,, ,,	14	0

From Mr. W. S. WARDEN, *Head Gardener to* Lord Saye and Sele :—
"The Bulbs we have had for use here have given every satisfaction. I think the Roman Hyacinths were the best I have ever seen."

WEBBS' 21s. COLLECTION of BULBS
FOR OUTDOOR CULTIVATION

CONTAINS :—

36 Anemones, fine double, mixed	6 Polyanthus Narcissus
25 ,, fine single, mixed	50 Ranunculus, double, mixed
200 Crocus, choice varieties	25 ,, Turban, scarlet
1 Crown Imperial	100 Snowdrops, double and single
20 Hyacinths, choice mixed	6 Tulips, Duc Van Thol
30 Iris, Spanish, mixed	6 ,, early double, mxd.
12 Jonquils, Campernelle	6 ,, La Candeur, dble.
1 Lilium candidum	6 ,, Parrot, fine mixed
25 Narcissus Poeticus	12 ,, single, mixed
12 ,, double white	50 Winter Aconites.
25 ,, Van Sion	

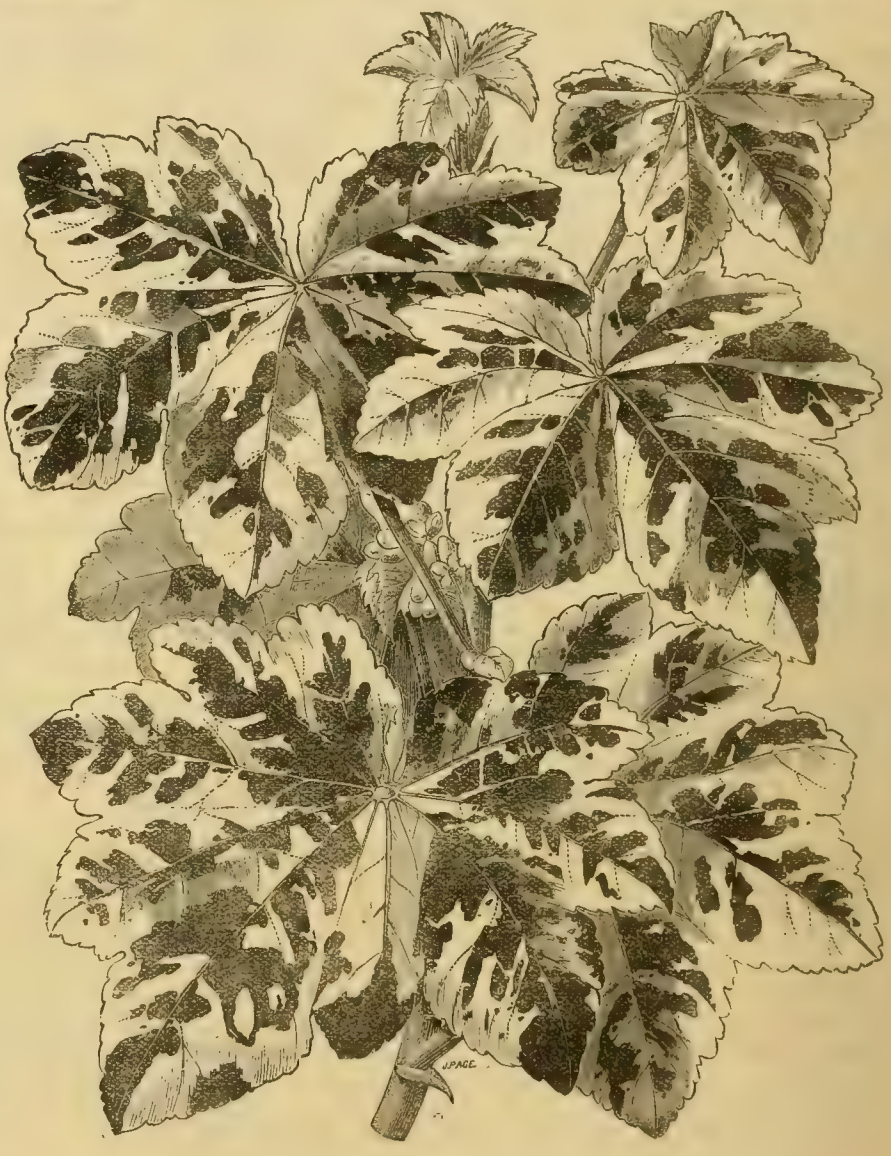
Set 654 Bulbs in all.

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GRATIS and POST-FREE.

20s. Value Carriage Free. 5 per Cent. Discount for Cash.

THE QUEEN'S SEEDSMEN,
WORDSLEY, STOURBRIDGE

THE
BEST NOVELTY of the SEASON.



LAVATERA ARBOREA VARIEGATA.

Received First-class Certificate from the Floral Committee of the Royal Horticultural Society in May, 1882.

Price, 5s. per Packet of Thirty Seeds. Plants, 10s. 6d. each.

Mr. WILLIAM BULL, having purchased the entire stock of this attractive novelty, has now the pleasure of offering it for the first time.

The JOURNAL of HORTICULTURE, in which an admirable illustration appeared June 9, 1881, thus speaks of it :—

"Very rarely indeed does it fall to our lot to figure for the first time, and introduce to our readers a new border plant so striking in appearance as the variegated Tree Mallow which we now submit. When Mr. Smith first sent us leaves of his new acquisition we were almost startled by their markings, and on subsequently receiving flowering sprays of the plant we were still more convinced of its distinctness and beauty.

"The irregular mixture of very dark green, pale greenish grey, and pure white, impart to the plant a remarkable appearance. The plant appears to us to occupy a position amongst border plants similar to that of the Variegated Maple in shrubberies. We may add, that although the variegation is so pronounced, and the white so pure, there is not the slightest indication of weakness in the sprays, but, on the contrary, they are as strong and vigorous as green specimens."

Mr. SMITH, from whom the entire stock has been purchased, writes: -

"I have propagated many plants, and I have not yet seen one but what is beautifully variegated. I have proved that it comes true from seed, but it must be understood that it is something like the Variegated Maize, does not show much variegation in a young state. The plants from seed sown last spring are now beautifully variegated. There is not the least doubt but it will be one of the finest and most effective plants for large beds and borders that has ever been introduced. I find the leaves very useful for garnishing late Grapes when Vine leaves are not to be had. Last winter it stood out without injury; it is best, however, to pot some up and keep them in a cold house, and turn them out in spring, but a slight protection outside would be sufficient to keep the plants undisturbed in beds or borders, which is desirable, for in spring of the second year the beauty of such plants is beyond description."

WILLIAM BULL, F.L.S.,
ESTABLISHMENT FOR NEW AND RARE PLANTS,
536, KING'S ROAD, CHELSEA, LONDON, S.W.

TO THE TRADE.

NEW WHITE GODETIA,
DUCHESS OF ALBANY.

We have pleasure in introducing to commerce this superb hardy annual, one of the grandest additions to this class of plants which has ever been brought under notice. The plants are of handsome, pyramidal growth, about 1 foot high, branching from the bottom, and producing large clusters of Œnothera-like flowers, of a beautiful, glossy, satiny white, each about 4 inches across when fully expanded. When in full bloom the plants resemble beautiful miniature Rhododendrons or Azaleas, profusely covered with trusses of flowers, which entirely hide the foliage. This magnificent variety will be found a most valuable addition to our hardy annuals, being perfectly hardy and withstanding our severest winters in the open border without protection.

Awarded a First-class Certificate by the Royal Horticultural Society, July 11, 1882; and from the Royal Botanic Society it received a similar award in July, 1882.



OPINIONS of the HORTICULTURAL PRESS:—

"Godetia Duchess of Albany.—A charming variety, having large, pure white blossoms, borne numerously, in dense clusters. The plants shown were dwarf, sturdy in growth and very floriferous. It is one of the finest of all the Godetias, and one that will inevitably take high rank among annuals."—*The Garden*, July 15, 1882.

"Godetia Duchess of Albany (Daniels Bros.)—A handsome form, with large white Œnothera-like flowers, which are produced in great numbers near the points of the branches."—*Journal of Horticulture*, July 11, 1882.

"Godetia Duchess of Albany (Messrs. Daniels Bros., Norwich).—A valuable variety, dwarf and compact in growth, and bearing most profusely flowers of a pure satiny white."—*Gardeners' Magazine*, July 15, 1882.

Retail price, 1s. 6d. per sealed Packet.

Special Terms to the Trade on application.

The following Houses have already made arrangements for supplies:—

Messrs. Barr & Son	London.
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A further List will be published early in November.

DANIELS BROS.,
NORWICH.

BEAUTIFUL FLOWERS
FOR
WINTER and SPRING.

RANUNCULUS | ANEMONES

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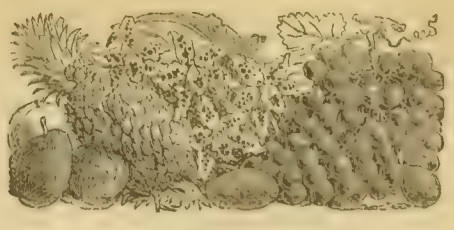
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THE

Gardeners' Chronicle.

SATURDAY, OCTOBER 21, 1882.

APPLES FOR THE MILLION.

We commented about this time last year somewhat fully upon the admirable collections of Apples then shown by Messrs. Veitch & Sons, Messrs. Lane & Sons, and other trade growers, and there seems little that is fresh to say concerning the very fine collections each of these firms exhibited at South Kensington last week. None the less we welcome these collections thus publicly exhibited, not only because they must ever prove instructive, but also because they serve to show that, although Nature has denied Apples to the larger mass of growers of those acceptable fruits, yet that some at least are not sent empty away. Whilst, however, a huge collection of some 200 dishes from one firm leads to the conviction that Apples must with that firm be very abundant, we must not forget that they represent the produce, not of a score or even of a dozen score of trees, but rather of hundreds of scores, though small ones. Still, we naturally ask how it is that whilst tens of thousands of big trees all over the kingdom are this year fruitless, there should have been such excellent crops upon the two or three year old trees, such as are grown in great abundance at Fulham, for instance, and not least remarkable in a locality so near the smoke and fog of the great metropolis?

Probably the chief secret of success in fruit-growing is found in the abundant employment of dwarfing stocks, for these without doubt do promote fruiting even ere the trees have passed out of their maidenhood. At Chiswick during the past autumn were to be seen tiny trees, some 3 or 4 feet in height, literally laden with remarkably fine fruit, whilst big trees in all directions were without an Apple. They were of such fine kinds as Stirling Castle, Ecklinville Seedling, Lord Suffield, &c., and the produce, for the small space of ground covered, evidently a very profitable one. At Syon, on young trees on similar stocks, Warner's King has during the past season reached to a circumference of 16 inches, proportions which were truly Brobdingnagian. No trees worked on free stocks would produce such fruit, for the simple reason that whilst the dwarfing stocks get their nutriment from the upper and richest soil, the free stock sends its roots down into the poorer soil.

To set against these advantages we have the undoubted fact that when we get fruitful seasons, trees on free stocks produce the heaviest crops of fruit. It is these which in fact furnish the masses with their supplies, though, unfortunately, these supplies must ever be contingent upon climatic conditions which often, as we see this year, prove detrimental. It does not follow that dwarfing stocks will never fail because they have this year helped so freely to produce fruit where free stocks have so largely failed. Amongst a thousand trees some will bear, of course, but when in small gardens the number is limited to dozens, entire failures are very possible. Still, we cannot but hold that the fact that the dwarf

trees have this year proved so fruitful shows their value when other trees fail, and for that reason, if for no other, it is wise to have a number planted, so that uncertainty as to an Apple crop may be materially reduced, and failure minimised.

In planting down an Apple orchard it may well be worth consideration whether, if standards on free stocks were planted in rows as usual at convenient intervals, it would not prove most remunerative were all the intervening spaces to be planted with dwarfs on Paradise stocks, at say 4 feet apart, and anglewise, and even then for a year or two the soil might be utilised for the growth of flowers, Strawberries, or small Gooseberry bushes. The outlay for trees is not necessarily large, as they may be purchased in bulk very cheaply. Again, if these dwarfs are not so long-lived as are standard or free-growing trees, at least they would suffice to crop the ground profitably until the top trees had become large and plentiful.

One of the most marked features seen in the samples from Fulham was the remarkable size of some that are not usually so large. King of the Pippins was indeed unusually fine—we have seldom seen larger ones; and Ribston Pippin was also finely represented, so that it was difficult to believe that it was really that old but seldom handsome kind. The chief feature, however, was seen in the fine samples of cooking Apples—sorts that are always so much admired, because they not only look well on the trees, but help to profitably fill the bushel. One of the finest and handsomest was Peasgood's Nonsuch, truly a handsome Apple, and one not easy to select from good samples of Blenheim Orange, except when seen on the trees. Growth, however, differs materially, and the trees crop much earlier than does the elder kind. Beauty of Kent, a smooth conical Apple, eye much depressed, skin yellowish-green, was remarkably fine, but it is an awkward grower, and wants plenty of room.

Very handsome were the samples of Winter Hawthornden, a kind that does not seem to differ from what is widely grown as the New Hawthornden, although no doubt the former appellation is the more expressive. This is a first-rate keeping Apple, flattish-round in form, handsome, skin yellowish, and in some instances much tinted with red. Frogmore Prolific is less known, but is another grand Apple, rather early, a great cropper, and is a kind that should be found in every market orchard. The fruits are broad, rounded, slightly ribbed, and much streaked with red. We have seen this fruiting finely at Maiden Erleigh, where it is a great favourite. Stirling Castle is another coming market Apple. It is an early and very reliable cropper, and on dwarf trees turns out splendid samples. The fruits are handsome, roundish, skin pale green, quality first-class. Cobbett's Fall Pippin is at Fulham found not to be the Reinette Blanche, as described in the Fruit Books, but rather a kind of Warner's King. Indeed, taking these two, with the more recently named D. T. Fish, the Fall Pippin is found to be the best. The samples shown were large, somewhat conical, and ribbed on the top, skin pale green, and much speckled with russet. Alfriston is better known, and is indeed a grand late kitchen Apple. Its fine, somewhat square, conical form, deep green skin, much streaked with russet, and distinctive appearance, enable it to be easily selected. It is perhaps not the most prolific kind, but it is a longer keeper than many of the other large sorts. Lady Henniker is another large kind, the fruit conical, squarish built, ribbed, and somewhat streaked with red. Stone's Pippin is a fine kind too, and has now become one of our most popular market kitchen Apples. It is a free grower, and a heavy cropper, even on free stocks, but on the dwarfing stock the fruits come of great size. These are broad, conical, slightly ribbed, and coloured. Lord Derby presents a skin as yellow as that shown on Golden Noble, but the fruits are upright, not handsome, and very crumpled about the eye. Lord Suffield needs no descriptive mention, neither does Warner's King, nor Cellini Pippin. Mère de Ménage comes very fine on the dwarfing stock, and its deep red stripe on a ground of coppery-red renders the fruits specially striking. Waltham Abbey Seedling is a really good conical Apple, handsome, and a very reliable cropper; Grenadier, shown by the Messrs. Lane, is large, flattish, prominently ribbed, streaked with russet; Lady Grosvenor, a true Codlin-shaped fruit, but having a crumpled top; Cox's Pomona, not unlike the Emperor Alexander, but more ribbed; Lord Derby, another conical shaped fruit; and, last not least, Lane's Prince Albert, a handsome smooth conical Apple, much striped with red, are all kinds more or less known, but well worthy a place in any good collection of kitchen varieties.

New Garden Plants.

PHALÆNOPSIS ANTENNIFERA, *Rchb. f.*

Mr. B. S. Williams has kindly sent me fresh flowers of this, which are most probably the first which have appeared in Europe. I am informed that the plant resembles in growth Phalænopsis Esmeralda, but that it is much stronger, having a stem 8 inches high, leaves 6 by 1¾ inch, and spikes 2 feet 3 inches long. It is said to be an exceedingly free flowerer, and certainly it is very pretty. The chief features are to be found in the three keels of the disc of the lip running over the anterior lacinia, in the angles at the base of the column, being remarkably strong; and in the colour of the sepals and petals which is light rose, and the tips of the sepals brick-red outside. The contrast of the orange-red striped side laciniæ with the middle one which is of the purest amethyst, is very pleasing. So far Mr. B. S. Williams' plant. I had a fine living plant (!) and a peduncle sent by M. Godefroy Lebeuf, the successful traveller in Cochin China, now of Argenteuil. That strong plant comes very near the description of Mr. B. S. Williams'; but the flowers appear altogether like those of P. Esmeralda, though distinct in colour. They are not fully developed, and may prove later to be P. antennifera. *H. G. Rchb. f.*

Saccolabium flexum, *n. sp.**

The various Saccolabia extend even to New Guinea. This one has most probably scarlet flowers in small racemes, not unlike those of Dendrobium secundum, but the flowers themselves must be compared to those of Saccolabium ampullaceum. It is a discovery of the Rev. Mr. Macfarlane, and I have to thank Messrs. Veitch for it. *H. G. Rchb. f.*

Saccolabium calopterum, *n. sp.*†

This may be a beauty. The flowers are much like those of Vanda cœrulescens. They appear to be of a rich purple, and are probably white at the base of the sepals and petals. The inflorescence is a panicle. It was discovered in New Guinea by the Rev. Mr. Macfarlane, and the specimens at hand came from Messrs. Veitch. *H. G. Rchb. f.*

Dendrobium vandiflorum, *n. sp.*‡

A curious small-flowered Dendrobium. Flowers equal to those of Dendrobium aggregatum, probably pure white and the lip much darker (green). It reminds one of a Vanda, till one looks very near to it. Bracts very small. It comes from New Guinea, where it was discovered by the Rev. Mr. Macfarlane. Materials sent by Messrs. Veitch. *H. G. Rchb. f.*

Dendrobium Macfarlanei, *n. sp.**

A very good thing, no doubt, provided that it flowers freely. The flowers are equal to those of the best Dendrobe. It is very characteristic in them that the petals are very much larger than the sepals. In lieu of being antennate, as is so frequently the case, they are rhomboid, with blunt side edges. The lip has a great purple stain at the base of each side lacinia. This is a discovery of the Rev. Mr. Macfarlane in New Guinea. I have to thank Messrs. Veitch for materials. *H. G. Rchb. f.*

Dendrobium pleiostachyum, *n. sp.*†

This has stems perhaps as thick as a goosequill, and very numerous short inflorescences, with dense flowers in the way of Dendrobium secundum, but not one-sided. They are all-sided, and apparently white. As a species it ranks very near D. catillare in its blunt retuse spur, but the setaceous bracts are a very good mark of distinction from the species named, which has broad ovate ones. It is a discovery of the Rev. Mr. Macfarlane in New Guinea, and was kindly sent by the possessors, Messrs. Veitch. *H. G. Rchb. f.*

Cypripedium reticulatum, *Rchb. f.*‡

This was described in *Xenia*, ii., 223. The plant belongs to a small group at present only known to consist of three species. Altogether they have a great tendency to crisp undulations and to reticulation of the nerves. The two sepals are quite crisp and reticulate—more crisp, in fact, than in any other species. The lip has two hollow anguli over the sac, as is seen also in Cypripedium dariense, longifolium, and their allies. The bracts are like those of a Heliconia.

The first species is Cypripedium Boissierianum, bearing the name of the modern father of Spanish and oriental botany, now also the possessor of a collection of living Orchids that must be very extensive if I may judge from a catalogue I have seen. It was only met with by Ruiz and Pavon. Its staminode is much acuminate in front. The upper sepal is nearly equal to the lip. Cypripedium reticulatum has smaller flowers, which agree as to the length of the lateral sepals, but its staminode is pentagonal and bears a blunt apex. Finally Cypripedium Czerwiakowianum is immediately recognised by its very long lateral sepal, much surpassing the lip.

Until the present day all these fine species were only known in herbaria—I am afraid only at Geneva and at Hamburgh, no collection containing all three. The unique Cypripedium Boissierianum is one of the very, very numerous Palladia preserved *à l'hôtel de ville de Genève* in Mons. Edmond Boissier's herbarium, which will require by and bye more space in the town hall, it having extended itself in a most alarming manner. The other types are in my collection. The Cypripedium Czerwiakowianum was only met with by my late friend, J. v. Warscewicz, whose specimen I have. As to C. reticulatum it was discovered by poor Gustav Wallis, when he was travelling for Mons. Linden. I need not say that he dried no specimen. He prepared, however, a sketch,

* *Saccolabium flexum*, n. sp.—Racemo porrecto densifloro, multifloro, paucifloro; sepalis tepalisque ligulatis obtuse acutis; labello trifido, laciniis lateralibus obtusangulis minutis, lacinia media triangula limbo incrasato, basi bene obtuseque saccato, tuberculo semilunari in basi. *H. G. Rchb. f.*

† *Saccolabium calopterum*, n. sp.—Panicula flexa, pluriflora, laxiflora, floribus majusculis, longipedicellatis, sepalo summo impari cuneato oblongo obtuso, sepalis lateralibus cuneato oblongis obtuse acutis; tepalis spatulatis acutis; labelli laciniis lateralibus elongatis apice libero acutis, lacinia media triangula acuta multo minori; sacco calcaris elongato apice ampliato antrorse vacuo. Nov. Guinea. Macfarlane; Import. Veitch. *H. G. Rchb. f.*

‡ *Dendrobium vandiflorum*, n. sp.—Racemo laxifloro sepalis tepalisque ligulatis acutis undulatis tortis; labello pandurato, laciniis lateralibus minoribus obtusangulis, isthmo recto, acinis anticis majusculis profundee marginatis, carinis geminis sulcatis a basi in discum, mento retrorso. N. Guinea. Macfarlane; Import. Veitch. *H. G. Rchb. f.*

* *Dendrobium Macfarlanei*, n. sp.—Racemo paucifloro (ad 8), grandifloro, mento acutangulo; sepalis triangulis tepalis duplo majoribus rhombeis acutis utrinque obtusangulis; labello trifido; laciniis lateralibus semiovatis, lacinia media porrecta ligulata acuta, callo emarginato in disco inter lacinias laterales. Ex Nova Guinea ubi detexit Rev. Mr. Macfarlane; Import. Veitch. *H. G. Rchb. f.*

† *Dendrobium pleiostachyum*, n. sp.—Caule flexo sulcato; racemis multis brevibus, pluribloris, densiflöris; bracteis setaceo triangulis minutis, perula mentali retusa; sepalis acute triangulis; tepalis ovatis; labello lineari pandurato callo sagittiformi retrorso in disco; columna trifida, laciniis lateralibus semiovatis denticulatis, lacinia media in triangula setacea — In Nova Guinea det. Rev. Mr. Macfarlane, in ss. cl. Veitch. *H. G. Rchb. f.*

‡ *Cypripedium reticulatum*, Rchb. f., *Xenia*, ii, 223.—Aff. Cypripedio Boissieriano: foliis ligulatis acuminatis; pedunculo plurifloro; bracteis ligulatis acutis ancipitibus carinatis ovaria pedicellata superantibus; sepalo dorsali ligulato obtuse acuto valde crispo; sepalo inferiori oblongo labello subæquali; margine valde crispo utroque retinervi; labelli sacco obtuso, ostio incrassato, cornubus suprapositis angulatis parvis; staminodio transverse rhombeo antice acuto. *H. G. Rchb. f.*

and those who understand from long experience and documents how to judge Wallisian sketches, will know it must be this plant. Then I have obtained from Mr. S. Low, my oldest British correspondent, two flowers of this, dried by his traveller, Smith. One of these has the inferior sepal quite divided into its elements, which looks very peculiar. Finally I had a single flower, dried by Mr. Davis, which was kindly presented to me by Mr. Harry Veitch, and the plant now flowers at the Royal Exotic Nursery of Messrs. James Veitch & Sons.

The plant must be capable of great improvement. A memorandum of Herr G. Wallis states that it is very vigorous in habit, with a strong woody rhizome. He found several grand paniculate inflorescences. Thus one peduncle had seven flowers and buds, and two branches, one with four, the other with three flowers and buds.

The leaves are stated by Wallis to exceed 3 feet in length. The fresh leaf at hand is light yellowish-green underneath, dark blackish-green on the upper side and very uneven, looking like shagreen leather. It is very acuminate.

The flower is very peculiar in its uncommon light green tints, reminding one of some kind of Apple. If the flower were well painted (a difficult task, green and white being the most difficult colours, and nearly impossible to match), the representation might be regarded as a caricature by those who had not seen the fresh flower. The light whitish yellowish inflexed part of the lip is covered with blotches, a few of which are sepia-brown but the majority are green. The fresh ovary has a green apex, and three narrow green ribs. Excepting this it is dark brown, with numerous very short hairs. This striking peculiarity does not appear much, the ovary being nearly concealed by the Heliconia-like light green carinate bract.

The best recommendation for the plant is that it is a fresh type. We had nothing of the kind before in European gardens. I would, however, not take the responsibility of stating that something of the kind may not be lurking somewhere unknown even to its possessor. *H. G. Rchb. f.*

DISA GRANDIFLORA.

Our illustration (fig. 88) represents a handsome group of Disa grandiflora grown by Mr. Jacques, gardener to J. D. Perrin, Esq., Davenham Bank, Malvern. On August 18 last, the date when the photograph was taken, there were 160 fully expanded blooms upon the plants, and on September 1 there were no fewer than 200 blooms open. The group consisted of fourteen plants, grown on from clumps imported three years ago. Since this lovely species was first introduced into this country abundant time has elapsed to have rendered the plant a favourite in every garden, either amongst Orchids or without them. Cultivators should endeavour to procure the plant in larger quantities than they have done previously, and pamper it less in heated structures. Over-kindness has almost banished the plant from many private gardens; immediately it is put into a warm temperature it begins to go back, but kept in an intermediate-house in winter,



Fig. 88.—Group of Disa grandiflora in Mr. J. D. Perrin's collection.

and in a cool house in summer, or even out-of-doors in a frame, the young growths are produced with much vigour, and the flowers in point of appearance rival those of the choicest of the whole Orchid family. Owing to the extreme beauty of the flowers and the rich green leaves the plant is especially well adapted for the embellishment of sitting-rooms, and it makes a very distinct, not to say brilliant, floral object associated with Odontoglossums of a white or creamy-white hue which afford an extremely pleasing contrast.

A HOLIDAY IN SWITZERLAND.

WE are prepared in these days of rapid steam travelling for quick transport from one country to another, but the reality that met us on awaking one morning in August, and finding the Swiss mountain scenery around us, when the smoke of London enveloped us the preceding one, was not a little startling; but who can doubt the satisfaction of such a change of scene!—one that promised the attainment of a long cherished desire, that of witnessing the glories of alpine scenery, and finding in their native haunts the botanical treasures whose beauty can be only partially realised cultivated in the precincts of a garden.

Our destination was Interlaken, and the important town of Berne was our first resting-place. Its well-built houses, quaint arcaded streets, fine public buildings, and commanding position, all combined to give us a favourable opinion of municipal Switzerland; but the glistening mountains of the Oberland, seen from the terraced promenade of the town, seemed to invite our further progress, and with little delay the railway carried us on to Thun, a small town full of varied interest, situated on the banks of the Aar, and near one extremity of the lake that bears its name. Going on board a steamer which awaited our arrival, and which acts as a connecting link between two railways, we entered the lake, and looking back, the picturesque character of the town, with its pretty châlets and bright gardens, formed a picture of great beauty. The lake is bounded by mountains, the lofty Niessen being conspicuous amongst them. Touching at Oberhofen and Spiez, the latter a picturesque village on a promontory on the south bank, we steamed quietly down the green and tranquil waters of the lake to Darlingen, where we landed and took the train to Interlaken, a town situated, as its name implies, between two lakes, Thun and Brienz, which have a communication by rapid rivers running with the force of alpine torrents through the place. The houses are crowded together in the more ancient part of the town, it is not until we join the fashionable suburbs that we realise the value of its position, and its importance. A broad and well kept road extends southward for a considerable distance, on the left are lofty houses and magnificent hotels embellished with gardens, fountains, and statuary. Two lines of immense Walnut trees shade the broad promenade with well placed seats on the opposite side. The view that is gained from the chief hotels of portions of the mountains of the Bernese Oberland, gives great value to the position they occupy. Seen through an opening valley in front, and terminating the view in the giants of the range lifting their snowy peaks aloft, the Mönch, the Eiger, and Jungfrau form a landscape of great beauty, and in the varying aspects of the day always a delight to look upon.

In a town so favoured by natural scenery, and when the eye is continually attracted by surrounding beauties, more minute and artificial embellishments may well be overlooked; but at last we turn from gazing at the mountains, and the eye rests with particular satisfaction on the charmingly picturesque châlets that line the branch roads of the town, their balconies garlanded with Vines, Aristolochia, Virginia creepers, and Roses, and their window-sills and stages adorned with Pelargoniums, Carnations, Petunias, whose bright blossoms stand out from the dark woodwork behind them and give a particularly good and cheerful effect. To complete the general picture we need the Swiss in proper costume, and occasionally we meet country,women with white puffed sleeves, velvet bodices and low-crowned hats, but the native element certainly did not at the time of our visit predominate.

Establishing ourselves in a quiet *pension* near the Lake of Thun, we were not long before we commenced our explorations of the hilly regions about us. Rising abruptly from the shores of the lake, the face of the mountain exhibits a picturesque irregularity of cliff, grassy slope, and Fir forest, and at wide intervals châlets, with groups of trees and cultivated patches. Although not rich in alpine plants, the neighbouring range afforded examples of good spring flowering plants which it was interesting to find in their native habitats, and instructive to observe the conditions which favoured their growth. On the wooded slopes Erica carnea was very generally distributed. The rock is a hard limestone, and fragments of it are interspersed amongst the vegetable soil which the decay of trees, leaves, and herbage has in the course of ages accumulated. In the same circumstances Polygala Chamæbuxus finds congenial conditions. Hepaticas grow abundantly throughout the wood, and Cyclamen europæum is commonly found. On exposed declivities, but at no great altitude, Teucrium montanum clustered upon the almost bare rock, associated with Thymus Serpyllum, Globularia minor, and Calamintha Acinos; and wherever a little soil has collected in crevices, Anthericum Liliago had established itself. In the deep shade of the Fir trees, and in moss, Goodyera repens peeped out from the deep elastic cushion of decaying and living vegetation. In the level land between the Lakes of Brienz and Thun, much of which is rich meadow, and some reedy and wet waste, we found, chiefly on the latter, the beautiful Gentians asclepiadea and pneumonanthe in great vigour and beauty, and on portions of the grassy land Gentiana verna and Primula farinosa are very common; their blooming season had long passed, but a friendly guide described their beauty in early spring.

Wherever the meadow land is sufficiently elevated in this valley three crops of herbage are often cut in the season. We say herbage advisedly, it would not be correct to describe it as grass. The produce of the meadows is largely Clover, Dandelion (which is sown to secure constancy in it, as it is credited with great milk giving properties), and Caraway, both the leaf and seed being esteemed valuable. The cutting of green crops and haymaking seem always in progress, and in a country so largely dependent on stock the importance of such provender is fully recognised. Handsome Pear trees bound the road between the town and St. Beatus, at the lake's southernmost end, but they were all Catillac or some hard baking Pear, and so could with safety be planted free from marauders. The idea is perhaps worth imitation.

Interlaken is a recognised centre for excursions, and it is an especially convenient starting point for the Bernese Oberland, Lauterbrunnen and Grindelwald being the stations from which the more extended expeditions are made. The valley leading to Lauterbrunnen is singularly picturesque; the road runs by a rapid glacial stream, mountain heights rise sometimes abruptly from the road, grand and precipitous; sometimes they tower above in grassy slopes, when châlets are seen dotted about on their pasturages. Fir woods recur again and again, and still by the roadside foams and roars the rushing river, often fed by waterfalls, which leap in silver threads or splash in foam down the steep declivities. As we approach Lauterbrunnen the snow mountains seem to rear their crests to more lofty heights, while the nearer hills seem to diminish by the contrast. The lower reaches of the valley are in pasture, and the châlets appear to be distributed with great regularity over the grassy slopes, each on its own little domain; and in the centre of this busy district cluster the more important hotels, shops, and residences. We were beset with guides at the entrance of the village, and the hotel-yard afforded additional opportunities of selection by a parade of sturdy fellows as porters or guides; there were also horses and men with hand-chairs to carry ladies, or those desirous and yet unable to achieve the ascent to Mürren—the goal of most alpine tourists. Duly equipped with alpenstock and knapsack, we took the steep mountain track which leads to the crest of the hill. Bædeker, the great authority in all matters relating to Switzerland, gives two and three-quarter hours for the ascent, but that time, we presume, does not admit of any diversion from the path either for regarding the scenery or for the pursuits of the naturalist; at any rate, we exceeded the allotted time by an hour, for there was the waterfall called the Staubbach to see from above, which takes a leap of 900 feet, and breaks into spray before it reaches the ground; hence its name—Dustfall. There were plants to collect, and flowers we could not pass, amongst others Mulgedium alpinum, Astrantia major, several Veronicas, Ranunculus, Saxifrages, of more or less interest; but still, toiling upwards, weighted with our specimens, we at length gained the summit, when our toilsome climb was forgotten as the glorious panorama of mountains burst on the view. The great array of snow-covered peaks, diversified in height and contour, seemed to pierce the skies, and so dazzling was their clothing of snow that it seemed like materialised light. The stately Jungfrau, the Mönch, the Eiger, gain in majesty and altitude with a near approach, and dwarf the surrounding mountains; and looking upon them we begin to understand the finer delight of surmounting these barriers of ice, and plunging into the deep solitudes of the bleak wastes of eternal snow. Switzerland has become the recreation-ground of Europe, if not of the world at large, and it is the wise policy of the Goverment to make and improve roads and mountain tracks, construct bridges, and in every way to facilitate the passage of travellers through the country. In these matters private proprietors find it their interest to co-operate by rendering practicable tracks which lead to spots of special interest. Accommodation for weary travellers has sprung up in remote districts in the shape of hotels and châlets, and Mürren, 5347 feet in altitude, and only visited for a few months in summer, has three large hotels. Although beyond vehicular transport every luxury both of the table and drawing and bed room is provided for the guest. Having unfortunately arranged to return to Interlaken our stay was too short to permit extended excursions to the neighbouring heights, but a hasty visit to the Blumenthal procured us the pleasure of gathering Gentiana purpurea and G. lutea, and late blooms of G. verna and nivalis, on some immense blocks of stone which stood like blooming islands in a verdant sea. Saxifrages, Sedums, Sempervivums clustered thickly; the scythe had been busy all around reaping more blooms than grass, but where the fallen rocks clustered more thickly a better promise opened, but the signal for return was given and we were obliged to hurry down the steep declivity to Lauterbrunnen.

An excursion to the Grindelwald glaciers promised to be exceptionally interesting, and favoured by fine weather, so essential for mountain excursion, we travelled up the valley of the white Lutshine, a rapid mountain stream, and ascending thence to the black Lutshine, passing through magnificent scenery marked by lofty mountains, profound valleys, and rushing water, we reach Grindelwald, finding commodious hotels, numerous châlets and shops, a great parade of guides, and everywhere abundant indications of the great business of the time, mountain excursions and dining. Securing a guide we started for the upper glaciers and Mettenberg, first through pastures and by châlets, and then crossing a stream the tract carried us along the side of the mountain that bounds the glacier, and after a climb, made more trying by intense sunshine, we reached a châlet, and enjoyed a welcome draught of milk. Descending by ladders fastened to the face of the rock we reach the glacier, now like a giant asleep, for from whatever cause, its progress is arrested and it is rapidly diminishing in volume—not so evident in these high regions, but at its lowest point very observable. Crevasses traverse it in many directions, like cruel gaping jaws of destruction; we hear the washing waters beneath, and look upon the mighty mass of ice with absorbed interest, seeing an agency still active here that has in the earlier ages of the world worked in denudation and in the degradation of rocks, and their distribution in the form of gravel and soil—results so largely beneficial to the multitudes of creatures dependent on the fruits of the earth. We noticed the shrinking of the glacier from the sides of the mountain in the summer season, thus permitting the crumbling fragments of rock to fall in the circle of the great mill, and as the mass moves the fragments are crushed and carried down to the moraines, or borne away by the stream that issues from the glacier at its lowest point. Leaving the glacier we gained, by means of ladders clamped to the perpendicular rock, the heights above, and continuing the ascent attained the region of the much coveted Edelweiss, and near it found thickly clustering Saxifrages and Sempervivums and Auriculas, and above the declivities of slaty rock courting the alpine breezes great stretches of Rhododendron ferrugineum flourished, and with it Azalea procumbens and Silene acaulis, with frequent tufts of Dryas octopetala, and occasionally specimens of Gentiana campestris, perfectly white. While in this elevated region, with the snow mountains around us, it was startling to hear the rush and roar of descending avalanches. We passed over the fresh graves of a young Englishman and his guide, killed by falling snow as they were crossing the Wetterhorn. Returning to Grindelwald we planned an excursion for the following day to the lower glacier and the neighbouring Fir woods, which proved more interesting than we had ventured to anticipate.

W. Ingram, Belvoir.

INDIAN GARDENS.

There are few things in India which disappoint a stranger more than an Indian (native) garden. The newcomer remembers the gorgeous descriptions of gardens in Eastern tales, and expects to see trees loaded with delicious fruits, to breathe an air laden with perfume, and to listen to the songs of countless bulbuls; the only jungle. The place of all this he will probably see different from ours, and if idea of a garden is very poets and princes should have evolved that oriental from their inner consciousness gardens resembling those of Europe. Hafiz and the Emperor Baber, for example, write of gardens in Afghanistan and India which call to mind Corisande's famous paradise of flowers in *Lothair*, though in reality the Afghan gardens are simply orchards, and the gardens of Hindostan only "topes," that is to say, woods of umbrageous Mangos and Bamboos. True, the heavy dark green of the Mango and Jack-fruit tree, of which Indian gardens are generally full, is relieved at certain seasons by the crimson of the Pomegranate blossom, and the scarlet flowers of the Hibiscus and the Gold Mohur tree; but of flowers in our sense of the word—that is, of flowers on the ground—there is little or none, the natives of India having apparently small regard for flower-beds. All their flowers seem to grow on trees or shrubs, and there is scarcely anything of lower growth than the Rose and the Jasmine that they trouble themselves about cultivating.

The native garden—the Lal Bagh (red garden), Dilkhoosha ("heart's delight"), or some such fantastic name—has, however, a beauty of its own. In a country where the sun beats so fiercely on the dusty parched earth, Nature's two great boons, shade and water, are paramount to effects of colour or anything else; and a patch of jungle is sometimes a garden in itself. The Convolvulus hangs in purple or white clusters from the lofty shade trees; the Bamboos, like great bunches of feathers, quiver in the breeze; the brilliant crimson flowers, vulgarly called the "bloody fingers," tower high above the green and tangled undergrowth, and there is probably some long creeper bearing lovely flowers of yellow or blue trailing over the ground like a great variegated snake. But the whole effect is different from that produced by an English wood, which is often in spring itself a garden. Like the native garden it so much resembles, the jungle is unkempt and wild, and painfully suggestive of such unpleasant creatures as cobras, green whip snakes, scorpions, and mosquitos. No European ever thinks of sitting down on the grass there, nor is there any inducement to do so. There are no songbirds to listen to—only the melancholy cooing of the dove breaks the silence—and there is considerable risk of being badly bitten by huge red or black ants. Sometimes there is a small stream running through these native gardens, which is all the Indian asks to make the spot an earthly paradise. And when that is the case, one gets reconciled to the wildness of the scene; the music of the running water is inexpressibly delightful in such a climate.

There are gardens and gardens in India. Some are simply groves of Cocoa-nut trees designated by the Indians of untutored mind gardens. Pat, too, sometimes calls a Potato field "an illigant gyarden.' Others are gardens where native vegetables, such as Yams and Egg-fruit, Betul and Sugar-cane, are grown—places chiefly remarkable for weeds and untidiness. Some are the fantastic conceits of rajahs and wealthy natives, full of fountains, conduits, sunflowers, and the native æsthetic craze generally. One of the kings of Oude used to spend hours in his garden pelting his courtiers with the round soft yellow balls which serve as the blossom of a popular Indian plant, and if report does not sadly belie them, it is in such gardens that the native proprietors sometimes drink to excess. Some of the Indian poets, indeed, speak of gardens and wine as synonymous terms, therein resembling the Germans, whose beer gardens are notorious. To enjoy his garden thoroughly the native gentleman does not, like the Englishman, take a leisurely stroll in it when the shower has passed away and the perfume is sweet from the flowers; he likes it best when the atmosphere is hottest, and when a chunamed bench by the side of a conduit, and under the shade of a Banyan, invites him to sleep. Here, if socially disposed, he brings a friend who has the gift of reading poetry through the nose in the most approved Indian fashion. Here his servants, too, bring a tray of sweetmeats and potent arrack or humbler toddy. Here the worthy pair emulate one another in droning the praises of moon-faced houris between the whiffs of their hookhas; and here, "drinking for drunky not for dry," the two in due course become *behosh* or senseless with the fumes of liquor and the potency of their sonnets. As to entering a garden to look at flowers, the average native never thinks of such a thing. But he has sometimes a passion for sticking up stucco busts and statuary all over his ornamental grounds, not caring if the sculpture gets very much mixed. Thus, we have seen the three Graces shivering under the reproving stare of a great nasal bust of the Duke of Lincoln, a Venus cheek by jowl with Abraham often, too, hung reflective balls from Birmingham are with the statuary, an incongrues of trees, producing, a monumental sculptor's yard in London suggestive of

There are Government gardens in many parts of India which aim at a combination of the native and the English horticultural styles. In the English portion of the grounds the flowers are, of course, superb. The Lal Bagh at Bangalore used to be famous for its Roses, and the Government gardens at Ootacamund on the Nilgiri Hills are very delightful. Here the natural jungle of the hillside serves as an effective background to the terraced parterres of the brightest hued English flowers and the gaudiest Indian shrubs; but the hill gardens of India are of course exceptional, and the climate at an elevation of 8000 feet enables one to lie on the grass under the spreading Oaks and evergreens as one might sprawl and smoke on a clean shaved lawn at home. Quite different are the Government gardens of the hot and steaming plains of India. There the air is that of a Kew Palm-house, and there is no escape from it. Stagnant ponds of water are covered with the Victoria regia and the common Indian Lotus. Indigenous Cocoa-nut and foreign Mahogany trees, Indian Teak, and Ceylon Traveller's Palms jostle one another for space; but everywhere are well kept lawns, and, as far as they go, flower-beds evincing the natural desire of Englishmen to carry their gardens with them wherever they go. In this commendable practice they are only exceeded by the Dutch, who had Dutch gardens actually growing on their East Indiamen at sea. The Orchids in some of these Indian Government gardens, especially those from the Burman and Malayan forests, would make a duchess' mouth water. Nor is there any expense in rearing them. A simple conservatory, often open at the sides, and a number of old rotten logs suspended from the roof. *Voila tout!* Yet some of those Orchids, if they could be brought to Covent Garden, would fetch more than their weight in gold, and are as beautiful as rare. Here, too, we may see the curious Papau tree, common enough in Indian gardens, whose fruit tastes like Apricot raw; is indistinguishable from Apples in a pie; and has farther the curious property of making the toughest meat tender when it is rubbed upon it. It is even said that a joint of meat hung under the crown of the tree will soon become putrid. Surely a Upas tree if ever there was one! The pleasant twittering of birds, however, is missed in these gardens. All the birds which haunt the Indian gardens on the plains—the little bulbul excepted, and his song is not worth much after all—have unpleasant voices. The khel or Indian cuckoo, which is particularly fond of gardens, has the most monotonous note of all the birds that fly, the bell bird of the Malayan jungles not excepted. "His is a song," as a griffin once expressed it, "to give you a pain in your stomach." And to make it worse, it is interminable. The curses, not loud but deep, which this discordant fowl—likewise called the "hot-weather bird"—has had to carry away from those who would slumber, but couldn't for his song, ought to have sent him to Hades long ago. Then there is the ubiquitous Indian crow (Corvus splendens), who is also fond of gardens, especially when there is any fruit ripe, or toddy to drink; for it is a curious fact that the Indian crow shares with the elephant the distinction of affecting spirituous liquors, and this bird will get drunk very often on the Palm wine. But his voice, drunk or sober, is hateful in the extreme. His horrid "Caw, caw," dispels all sense of that rest one expects to find in a garden, and the glossy black villain, to judge from the glance of his diamond bright eye, seems to know how much he annoys and to enjoy it. The dove's note would be pretty if it were not so melancholy as it is: it seems in thorough keeping with only tombs and Cypress. Sometimes a vision of green and scarlet flushes out of a Pomegranate bush, and the harsh scream of a flock of paroquets simultaneously affrights the ear; or, as the shades of evening fall, the screech-owls and the squirrels, the one bound for bed and the other for dissipation lasting till daylight doth appear, makes the gloaming hideous, and the gardens dreary indeed. One of these Indian gardens, though, by night, and when there are floods of moonlight on the flowering forest trees and the Lotus-leaved pools, is very beautiful in its way. Pity that gardens at such times are the favourite haunts of the cobra, the deadly russet viper, and of swarms of mosquitos.

A very different garden is that of the Tea and Coffee planter on the Nilgiris. As one ascends the Coonoar Ghat, on the way to Ootacamund, the Tea and Coffee gardens form a remarkable feature of the scenery. They cling to the face of the mountains on the right hand and on the left, and at a distance appear to clothe what are precipices. They are surveyed by forest jungle, a dense and tangled mass of or more acres in fact only clearings of 10, 50, 100, the Coffee shrubs, whilst the original jungle. When for the shelter of game in able Laurels cut down covered with the crimson berry, the sea covert, are the Coffee of commerce, the effect is striking is even beautiful. But for a garden the surroundings are wild. Monkeys chatter in the trees overhead, and it is very possible that a panther, or even a tiger may be lurking within a few yards of the clearing. Enormous pythons, too, are sometimes found in this jungle, creatures that are somewhat out of keeping with our ideas of horticultural repose. Tea gardens are less pretty than Coffee gardens. They look scrubby. The plants are kept cut to about the height of a three-legged stool, and they have a circumference big enough for Daniel Lambert to sit down upon. They are planted in formal rows, but their white blossoms are pleasing, though there is a considerable sameness about a Tea garden. The Nilgiri Orange Pekoe is perhaps the most delicious Tea there is when the palate becomes accustomed to its peculiar flavour and exquisite aroma; but it is an expensive Tea even upon the spot—3*s.* or so per pound—and there is an immense difference between the Teas of different estates.

Cinchona gardens are another peculiarity of the Nilgiri Hills. Perhaps they ought more properly to be called plantations, for the Cinchona tree, of which our quinine is made, grows to a great size, and is a handsome tree, with its large broad leaves, in some varieties tinged with red underneath. This is one of the most profitable gardens extant. No market gardens near London, worth perhaps £100 per acre, can come near the Indian Cinchona, which, under favourable circumstances, is said to pay 100 per cent. on the original outlay.

(To be continued.)

PINES IN THE BAHAMAS.

An acre of good land in these islands, says Consul McLain, will easily support 6000 plants of the sugar-loaf variety, or about 5000 of the scarlet kind. The price of good land varies between £1 and £4 per acre, and as much of the fruit is taken on board vessels which call along the coast during the season, a plantation which borders upon some cove, bay, or good anchorage, is a valuable one. The average life of the scarlet Pine is three years, and that of the sugar-loaf about five. The average weight of the fruit in the Bahamas is from 3 to 3½ lb. A field is generally gone over three times during the season, affording three grades of fruit, called first, second, and third cuttings. The scarlet variety ripens a month or two earlier than the sugar-loaf. Owing to the sharp serrated leaves of the plant, the gathering of the fruit is a tedious and difficult matter, the men, women, and children engaged in the work being obliged to wear heavy canvas leggings and gloves with gauntlets to protect themselves against the sharp spikes of the plant. The Pine-apple plants furnish but one regular crop during the year, although the local markets are seldom without Pine-apples for sale. The first cuttings of the scarlet Pines are made about the middle of April, and the last is made about July 1. The sugar-loaf Pine is at maturity during July and August. The shipping season is one of great activity in the Bahamas, as when the fruit is ready for the knife it must be cut and hurried with all speed to market, or it will be lost. It is estimated that from seventy-five

to one hundred cargos of fruit are shipped from April 15 to July 15, and about 40,000 Pine-apples make an average cargo, the total exports reaching from 4,000,000 to 5,000,000 Pine-apples during the season. The fruit for shipment is never allowed to ripen, but is cut when green, as soon as it is full of juice, otherwise it would spoil before reaching a market. The average price paid for the fruit is about 1*s.* 9*d.* per dozen for first cuttings, 1*s.* 6*d.* for seconds, and 1*s.* 3*d.* for thirds. Some growers export their own fruit, others sell to local buyers, who purchase the crops at the foregoing figures.

The Pine-apple business, though lucrative, is very hazardous; if everything is favourable good profits are realised, but a few untoward circumstances will bring ruin. Occasionally there is too much rain or there is drought; at times armies of rats and land crabs invade and devour whole fields; and, again, bush fires frequently devastate a plantation. As a rule, the Scarlet Pine-apple is consigned. As United States, the sugar-loaf goes Pine-apple plant the latter voyage is a long- ant and fruit are shipped is cut off at the ro whole of the Pine-apple crop is unsepara ported, a portion being put up or pre- ved in tin cans, several factories upon the islands being engaged in this work; at one alone, in Nassau, it is estimated that about 25,000 Pine-apples per diem are consumed, and 200,000 to 250,000 cans of fruit are put up during the season. The wages paid to the workmen are at the rate of about 2*s.* a day for men, 1*s.* for women, and 6*d.* for children, and even lower wages are paid to plantation hands. For several years prior to 1880 the Pine-apple industry was unprofitable to the colonists, owing to a succession of disasters in the way of bad weather, low prices, and decay; but during 1880 and 1881 good crops were made, better prices prevailed, and business materially revived. In 1880 about 340,000 dozen Pine-apples were exported, in 1881 about 363,000. There were also shipped about 200,000 tins of preserved Pine-apples; in 1880 and in the following year this number was increased to 287,000 tins.

VINE AND GRAPE INSECTS.

An article appeared in the *American Agriculturist* for August of the present year, by an anonymous writer, giving the details of the economy of a small moth belonging to the family Tortricidæ, which appears to be closely allied to the Lobesia botrana described in a preceding article, but which in certain portions of its economy, as well as in the markings of the perfect moth (if reliance is to be placed on the figures), can scarcely be identical with our English species.

The writer of this article says that it is within a comparatively few years that the Western vineyardists have found their Grapes attacked by an insect much in the same way that the Codling moth does the Apple, the caterpillar living *within the green fruit*. Thinking it to be a new species, Prof. Packard named it Penthina vitivorana, but later observations led to its being considered as identical with Lobesia botrana. "When the Grapes are examined early in July, a small spot will be found *where the worm entered a berry*, within which, if opened, will be found a small white caterpillar with a cinnamon-coloured head, which feeds upon the pulp of the berry and usually eats out the contents of the seeds. If one Grape is not enough, it fastens the remains of that to a sound one by means of silken threads, and makes its way into the second berry. The result is that the berries thus attacked shrivel and die. At maturity the caterpillar is olive-green, or dark brown, with a honey-yellow head, and it then leaves the ruined Grape to seek a place *on the leaves of the Vine*, where it forms its cocoon. Having selected a spot it spins a covering of silk over it, and *then cuts out an oval flap*, which is attached on one side, as if hinged; this flap is rolled over, its free edge fastened to the leaf, thus forming a shelter within which in two days it turns to a chrysalis. The cocoon is sometimes made by cutting two pieces, and joining them together in the middle. In about ten days the moth appears. There are two, if not three broods, the pupæ of the last brood passing the winter in the cocoons." It occurs abundantly in Ohio, Illinois, and Missouri, attacking in preference the Grapes with the most tender skins. The passages which we have printed in italics disagree with the recorded economy and habits of our European Vine species, whilst a comparison of the figure of the moth in the wood with our own in the preceding article will sufficiently show that the species are distinct.

On several previous occasions, and especially at the beginning of August last, we received from "J. H." and other correspondents accounts of the injury done to ripened berries of Grapes in Vine-houses in this country. A short account of the proceedings of this insect is given by "J. H.," published in the *Gardeners' Chronicle* for August 19 last, p. 246, col. 3. From the last-named correspondent we received a few of the caterpillars, and have been successful in rearing the perfect insect which proves to belong to a different to Grapes. any previously described as..ch long when fully The caterpillar is of a dirty greenish-grey colour, stretched ..me down the middle of the back; the wit is pale buff, convex, very glossy, nearly square; the eyes small, black, and placed near the anterior angles of the head; the segment following the head is nearly lunate and of the same colour as the head: each of the following dark coloured segments of the body bears ten whitish tubercles, each with a black central dot, emitting a thin white seta or hair. Our detached figures (fig. 89) represent one of these segments seen from above, showing the six dorsal tubercles, whilst the other represents a segment seen laterally, showing the five tubercles on either side of the dark

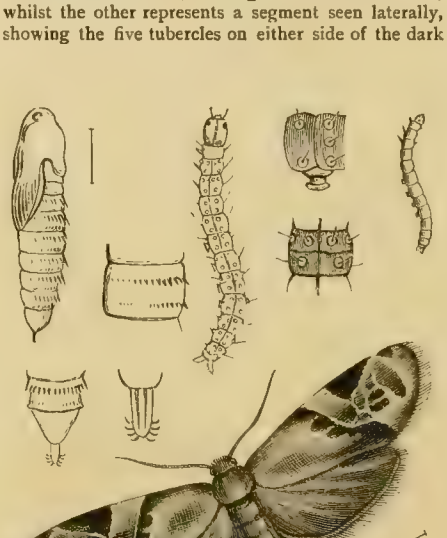


Fig. 89.—A VINE-MOTH: TORTRIX ANGUSTIORANA.

dorsal line, and extending to the feet. The anal pair of feet are flat and splay outward considerably, their inner edges being fringed. We had no opportunity of seeing whether the insect made any tent on the leaf as described in the *American Agriculturist*, as our only caterpillar which went into chrysalis was found loose in the box in which it was sent.

The chrysalis is of a pale fulvous colour, with the hinder portion of the middle abdominal wings darker chesnut coloured. Each of these segments is armed with two rows of numerous sharp spine-like points directed backwards (those in the front row being the largest). These are employed by the chrysalis in forcing its way out of its cocoon, the backward position of the spines preventing the chrysalis from slipping backwards when making its way out, the extremity of the body is armed with a short slender appendage with about eight spinelets, the tips of which are recurved.

The perfect moth made its appearance on August 18, having been about a fortnight in the chrysalis state. It is a pretty little creature, the forewings, of reddish-brown, having a darker patch towards the base, followed by an oblique chestnut irregular bar, extending from before the middle of the fore-margin towards the anal angle, followed by a pale buff patch on the middle of the fore-margin, which is succeeded by a larger, darker chestnut triangular patch, behind which the middle of the wing is varied with pale buff, leaden coloured and darker marking, and with a liver-coloured bar, edged with pale buff towards the tip of the wings. The hind wings are dark brown, and the thorax is reddish-brown, with a dark patch in the middle of its hinder part. The natural size of the moth is indicated by the crossed lines. The moth is the Tortrix (Batodes, Ditula, or Pœdisca) angustiorana of Haworth (rotundana Haworth var., Dumeriliana of Duponchel). We have reared it from Grape Vine leaves on former occasions, as well as trees, Apricot leaves; it feeds also on Curtis gave an Whitethorn and Privet, gnawed a Pear in the month account of one while *Gardeners' Chronicle* for 1850, of Jan. 54, 71; and see Loudon's *Gardeners' Magazine of Botany*, vol. i., p. 244), from which it would appear that its attack upon the Pear was an exceptional occurrence, owing to the fruit being kept in a warm temperature, inducing the caterpillar of the moth to continue feeding through the winter when it would otherwise have been dormant out-of-doors. *J. O. Westwood.*

The Rosery.

Autumn Roses.—The stands of cut Roses exhibited by Messrs. William Paul & Son at the last meeting of the Royal Horticultural Society at South Kensington, presented a feature of no ordinary interest. Possibly people have grown so accustomed to see and hear of fine Roses from Waltham, that it would not surprise many to hear of a Rose exhibition from Messrs. Paul at Christmas; but, to keep within practicable lines, the exhibition in itself was instructive. We looked over most of the names, and found many of the old sorts and a good many of the new ones side by side, which seem to bloom freely in autumn, indeed some of them bloom on into winter. It appears, from what has appeared in our columns, the Rose harvest has not been a bountiful one everywhere this autumn. It is a well known fact that Roses succeed in certain soils and situations better than they do in others, but it is possible that a great many Rose growers do not make wise selections, and that variety is often as much at fault as anything else; we therefore give the names of a few of the best varieties for autumn blooming, to which no doubt a great many more might be added:—Dr. Andry, Mdme. Montet, Paul Néron, Lady Sheffield, Souvenir de la Malmaison, Star of Waltham, Captain Christy, almost as fine as we have seen it at any time through the summer; Pride of Waltham, Hippolyte Jamain, Alfred K. Williams, Countess of Rosebery, and beautiful bunches of Safrano in various stages of development. A climbing Tea Rose, named Mdme. Barthélemi Levet, of a deep canary colour, was exhibited in bunches by Messrs. Paul in very fine form, and the flowers upon the whole reminded one more of July than October.

Roses on their own Roots.—I am so strongly convinced of the importance for garden decoration of Roses being on their own roots, that I have for many years past been in the habit of raising a good many from cuttings, and as I may claim to have been fairly successful, a statement of my practice may, perhaps, be deemed useful to other amateurs. I am of opinion that nearly the whole of the year is available for striking cuttings out-of-doors. Directly the first bloom on any shoot is over, that shoot may be used for the purpose. It will be found ripened enough to give every chance of success, and if the whole of it except two or three of the bottom buds be removed for this use, the growth from the remaining buds will give a further supply of cuttings in the autumn after flowers have been produced, which will be the case in a majority of instances. By following this plan from the earliest period, when the current year's growth is in a fit condition for yielding cuttings of sufficient ripeness to give the best chances of success, all the summer and autumn months will be found to yield a supply of cuttings, and by planting them directly they are ready it will be possible to produce well-rooted plants from the cuttings first put in before the frosts of winter arrive. I have a number of vigorously growing plants from cuttings put in a north border early in July last, while those put in in August are well callused, and have the appearance of being likely to grow into plants next year. I should regret their starting into growth now, unless they were housed in a cold frame.

During the month of September I put in a large number of cuttings: these were chiefly lateral shoots cut cleanly from the branch on which they grew, as close as possible to the older wood from which they proceeded. This is the kind of cutting which I find most certain to grow, and is that which I should advise the young beginner to use most largely. October has so far yielded me a good supply of the right sort of growth for my purpose, and will continue doing so. By adopting this method, every bit of available wood is utilised at the earliest moment, and many of my Rose trees are now sufficiently shortened back to require nothing being done in the way of pruning until next March, when I shall prune close, as I have found I get better results in my neighbourhood from doing so than when I left longer branches.

In November I shall get a further supply of cuttings from wood that is now bearing flower-buds, some of which, if the present genial weather continues, will open right up to the frost, which will be severe enough to arrest further blooming for the present year. These November cuttings will be put in at once, and then no more will remain to be done until March, when the spring pruning takes place. I shall then have the choice of some more good cuttings, which I shall put in a north border.

During the summer months I find it better to make cuttings of wood with not more than four or five buds at most. Of these, the larger part should be placed below the surface of the soil. Two buds with the leaves on that part of the shoot above-ground will be found sufficient to encourage the formation of callosities and then roots. The leaves should be well-matured, and not soft and sappy; they will then be less liable to dry up and fall off. Their continuance on the cuttings until roots are formed and the new growth of leaves commences, is of great importance. The autumn cuttings I prefer to be 8 or 9 inches long, of which I put two-thirds in the ground.

On one point I must lay considerable stress. It is that the cuttings must be so firmly fixed in the soil, that nothing short of a vigorous tug will pull them out of it. I am keeping careful notes of the cuttings I have put in during the present year, and will, in due course, report whether success or failure attends my efforts, and also which batch of cuttings succeeds best—those put in during July, August, September, October, or November, or those which I hope to put in next spring. *Philanthes.*

Hybrid Perpetual Roses. — These have been very fine here during the past season. The heavy rains that we had in June thoroughly cleansed the plants of aphides and insects of all kinds; the consequence was the plants made a clean healthy growth, and the flowers were all that could be desired. Many hybrid perpetuals do not bloom freely a second time, they merely produce at best a stray flower or two. The following flowered more or less freely a second time:—Velours Pourpre, Princess Louise, Prince Camille de Rohan, Charles Lefebvre, Fisher Holmes, Annie Laxton, Marquis de Castellane, Dupuy Jamain, Madame Victor Verdier, Richard Wallace, Abel Grand, Louis van Houtte, Baroness Rothschild, Duke of Edinburgh, Lyonnaise, Edward Morren, &c.; these are continuous bloomers, and deserve a place in every garden. Louis van Houtte is not only a beautiful Rose, but is also a continual bloomer; so also is Dupuy Jamain, the habit of which is also good. It grows nearly as freely as a common Laurel. Madame Victor Verdier is also a free bloomer, but late on in the season the buds do not open well. As the season for planting is at hand no time should be lost in securing good plants and getting them planted. *M. Saul, Stourton Castle, Yorkshire.*

Rose Helène Paul.—A correspondent sends us a note concerning this so-called white Rose. Allowances must, of course, be made for the season; but we are assured that the flower in question was pink, as deep in colour as Baroness Rothschild, and, like it, apparently scentless. It is, however, a good Rose, and may ultimately justify the description of its raiser—Lacharme, whose testimony is the more to be regarded from the excellence of other Roses sent out by him.

Artemesia laciniata.—This is a new species recently sent from North China to Kew, where it is now flourishing in the herbaceous department. Although its flower-heads are small in size and inconspicuous in colour, the plant is well worth growing on account of its graceful habit, and its very finely-cut foliage rivalling that of many delicate fronded Ferns.

THE POTATO DISEASE.

In further illustration of the life-history of the Potato Fungus, and of the sclerotia in particular (see p. 460) I may here add that the phenomena on which are based the complete theory of the parasitic life of P. infestans are shown in combination in fig. 90, reproduced from p. 461. The germination of the hard masses of fungus threads called sclerotia begins by plasmodiation, or the breaking up of the hard masses into soft irregular masses of protoplasm. The granules enlarge into sporules, and these throw out tubes which at their rise are scarcely to be detected, except in a favourable light. The substance of the leaf prevents a very high power from being applied, and the teasing out in general breaks all the connections between the plasmodiating edges of the sclerotia and the delicate hyaline threads which give rise to the conidiophores.

The reasons why the simple stalks which bear the conidia usually come out at the stomata of the lower



Fig. 90.—Complete plant of Peronospora infestans,

As seen on mounted slide lying beside a fragment of teased-out leaf. A delicate line of mycelium arising from plasm of germinating sclerotia ends at the base of the conidiophore, the tube there becoming much stronger as it enters the air through the stoma which has here been broken off. In this specimen the branches are short and without nodes. ×285.

side of the leaf are, that the lower half of the leaf is formed of loose cell-tissue, and that the lower side is darker and longer moist than the upper. But by proper manipulation the mycelic lines may be seen to pass between the palisade cells and emerge on the upper side of the leaf. Place a few leaves, in which disease has just begun, with their lower sides pressed against the inside of a bowl, then invert the bowl on a plate and pour in a little water to keep the air moist within. In a few days the stomata on the upper side of the leaves will present a crop of the fruiting stalks.

It is not because the leaves of the Champion and other sorts are not infested with the sclerotia that they sometimes escape disease, but because in their tissue, from some specific peculiarity, the gestation of the sclerotia is more protracted, or is never brought to parturition at all. This season I observed the first spot in Ashleaf on August 1, and the last leaves of Champion are going down with disease on this day (October 5). But it will be found that the period of apogestation in this and other fungi is somewhat variable, depending partly on the rate of the season and peculiarities of the gestating tissues. But that the tissues of one plant should become in effect the ovaries, the gestating receptacles of the germs of plants of a wholly different order, is a very marvellous thing, showing a marvellous unity in the life of Nature. *A. Stephen Wilson.*

Orchid Notes and Gleanings.

Work in the Houses.—With the days rapidly shortening, another reduction in both the day and night temperatures should now be made in all the houses. The East India-house will be safe at 65° at night and 70° by day, the Cattleya-house 58° at night and 63° by day, the cool-house 50° at night and 55° to 60° by day. The watering of the plants should now be done early in the day, and special care must be taken with plants that are forming young growths. If these get filled with moisture at this season of the year they will be very liable to rot. The ripening up of the growths on the Dendrobiums will now occupy attention. Plants of D. nobile, D. Wardianum, and D. crassinode that have made good growth will now be losing their foliage, and sufficient water must be given them for the present to maintain the bulbs in plump condition; but as soon as the foliage has all turned yellow very little, if any, water will be necessary for two or three months. Another section of Dendrobiums, represented by D. thyrsiflorum, D. Farmeri, D. densiflorum, &c., will require thorough maturation during the next three months to ensure their blooming satisfactory when their season of flowering comes round. As most of the Dendrobes look "seedy" when going to rest, there is temptation to put them in out-of-the-way corners, and under the shade of more respectable-looking plants, but treatment of this sort is sure to lead to failure in the flowering of these plants. Suitable positions for the kinds grown in pots would be on elevated shelves in an intermediate temperature, while the kinds grown in baskets should be hung about 18 inches from the glass. Trichopilias that have made up their growths will need but very little water while at rest, and should be put in the driest part of the house during the winter. Any plants of Cœlogyne cristata that have been parted in the spring, and are now late in making up their growths, should be encouraged with a little extra warmth and moisture; others that have made up their bulbs will require a slight moistening occasionally to keep the bulbs from shrivelling too much. Any Aërides or Vandas that have been lowered, as recommended in a former Calendar, will require to be kept somewhat moister at the root than the general stock; but as soon as they are seen to be putting forth fresh roots less water will be necessary. All established plants of these should be kept as quiet as possible during the next four months, giving them only sufficient water to keep the sphagnum damp. Among Cypripediums that flower at this season none are so useful as C. Sedeni. It is a plant well worth growing in quantity, as it is very free in growth and flower. It delights in a mixture of rough fibry peat, with a liberal root-run, and should be kept moist at the root at all seasons of the year. The old C. insigne will now be found useful for supplying cut flowers and also for indoor decoration, as it will stand rough usage with impunity. Other kinds that will succeed these are C. venustum and C. Hookeræ—the latter especially is a valuable winter blooming plant Another kind, C. Pearcei, when well cultivated and the plant attains a good size, is a continuous bloomer the year through; but is not often seen in good condition. All plants flowering at this season of the year of which it is desired to preserve their beauty as long as possible, must be kept in a drier atmosphere than the ordinary houses. *J. Roberts, Gunnersbury Park Gardens.*

Aërides Emerici, Rchb. f. — This beautiful Aërides has just flowered in Lieut.-Colonel Berkeley's collection for the first time in England, thanks to careful cultivation by his brother, Rev. C. J. R. Berkeley. It was named in 1881 by Professor

Reichenbach from dried racemes of flowers sent home by Lieut.-Col. Berkeley. A description will shortly be given by the Professor, fresh flowers having been required to enable him to describe it to his satisfaction. The flowers have a stripe of pink down each of the sepals and petals. It is more elegant in form and habit than its near ally, Aërides viscus, but the fragrance so acceptable in A. viscus is absent in the plant under notice. Being a plant that grows in moist places and may be said to have no resting season, it has been a most difficult plant to get home in flowering condition. Its flowering season is September and October.

ODONTOGLOSSUM HISTRIO VAR. LEEANUM.—A very distinct Odontoglot of the O. histrio type has just flowered in Messrs. Shuttleworth, Carder & Co.'s collection at Clapham. In habit and mode of flowering it closely resembles O. (crispum) Alexandræ, except that the ground colour of the flower is of a soft pale or sulphur-yellow colour heavily blotched with cinnabar. It is no doubt a native hybrid, and may have been produced between O. crispum and O. Lindleyanum, or O. triumphans and O. histrix, which it somewhat resembles in form and size of flowers. Whatever its origin may have been it is a distinct and beautiful plant, and one of which Mr. Lee may well feel proud to have acquired for his collection at Leatherhead. The more we see and know of these natural hybrid Odontoglots the more interesting (one might also say the more perplexing) they become. The plant now under notice is, however, of all, perhaps one of the most distinct and also most beautiful. *F. W. B.*

ORCHIDS AT FERRIÈRES.—Whenever we pay a visit to the Orchid-houses of Baron A. de Rothschild at Ferrières we are sure to find something good or new to interest us. Though at a dull time of the year the houses are now gay with flowers. We found in the India-house Vanda tricolor, V. suavis, V. cœrulea, Calanthe Veitchii, Dendrobium oculatum, Cypripedium Sedeni, Pearcei, Ashburtoniæ, Harrisianum, Dominanum; Oncidium Krameri, O. Papilio, Phalænopsis amabilis, grandiflora, violacea, and Schilleriana, all showing well. In the Cattleya-house we noticed Dendrobium formosum, Cypripedium insigne, C. insigne Maulei, and C. Chantinii; Pleione lagenaria, maculata; Lælia anceps, anceps Barkerii, Perrinii, autumnalis atrorubens; Pilumna fragrans, Cymbidium giganteum, Cattleya Harrisoni violacea, Odontoglossum vexillarium, Lycaste Skinneri, Maxillaria grandiflora, &c. In the new house devoted to cool Orchids the stock of Odontoglossum crispum are doing remarkably well, and throwing long healthy flower-stems. Amongst the cool Orchids already in bloom we noted Odontoglossum crispum, Cypripedium longifolium, Mesospinidium vulcanicum, with its pretty dark pink flowers; Oncidium Forbesii, tigrinum, verucosum; Masdevallia Harryana, tovarensis, Veitchii; Miltonia Clowesii, and Odontoglossum hebraicum with a long branched spike, very fine. In the winter garden several forms of Stanhopea are perfuming the whole place; and there is here also a grand plant of Cœlogyne assamica, with ten long racemes of flowers, each raceme having about twenty-five flowers; it is a very free-flowering species, and seldom seen. *X.*

MR. BULL'S COOL ORCHIDS.—In Mr. Bull's houses there are a considerable number of plants of Odontoglossum crispum in flower in fine varieties, while the air is laden with the sweet perfume of the flowers of Oncidium tigrinum, of which there are some immense spikes. C. Forbesii, also in flower in many richly coloured varieties, forms a striking contrast to the paler tinted Odontoglossums. In the intermediate-house there are now some very showy Orchids in flower—amongst them an immense Lælia purpurata, a fine variety which has been imported only six weeks. The sepals and petals are pure white with a richly coloured lip. C. intermedia is a very pretty species, also in flower; and C. guttata, although not quite such a showy Orchid as C. Leopoldii, to which it is allied, is very distinct, the sepals and petals being prettily spotted with reddish-chocolate on a greenish-yellow ground colour. C. gigas, of which there are two fine forms, is doubly welcome when it can be prevailed upon to flower at this season. This species succeeds remarkably well with Mr. Bull. Acineta Barkerii, with its long pendulous spikes of rich yellow flowers, is a conspicuous boject suspended from the rafters. This genus of Orchids should not be quite neglected, as the allied species, A. Humboldtii, is even more showy, and is a distinct and fine Orchid.

INDIAN "CROCUSES."—These charming orchidaceous bulbs, Pleione lagenaria in particular, are now in full beauty, and though much may be done by the introduction of Selaginellas, and by allowing seedling Ferns to grow as a surfacing, yet the food they appropriate necessarily militates against them ever becoming satisfactory substitutes for Pleione foliage. Recognising the above-mentioned objection, I have this season plucked the flowers as they have developed, and pricked them into pots and pans of various sizes suitable for their various receptacles in the boudoir and drawing-room, the surfaces and sides of the said pots and pans being covered by Selaginella denticulata (Kraussiana) already established; of course the flowers are not quite so durable plucked, but fewer are required for a given area, and the foil afforded by the Selaginella is very pleasing. Last, but not least, the bulbs themselves may be allowed to remain in their growing quarters, and the incipient growths and roots, which follow the flowers so quickly, receive no untoward check. *J. U. S.*

ORCHIDS AT CLOVENFORDS.—The Orchids here comprise both the hot and intermediate temperature species, as well as the cool section; amongst the former are quantities of Aërides, Saccolabiums, Dendrobiums, Cypripediums, Phalænopsis, Vandas, and others of like description, all in excellent condition, with leaves of a robust character, such as is only to be found where the plants meet with common-sense treatment, which combines plenty of light and air, without which the growth is always wanting in solidity. Mr. Thomson's Vandas have long been noted for their unusual vigour, and the way in which they flower every leaf that is made appears to ultimately produce a spike of bloom from its base, the plants carrying their foliage for an indefinite time, so that there is an absence of the bare stems which so often disfigure this fine family of Orchids. The house in which these plants are grown is a lean-to facing east; the robust character of the growth being such that the plants bear without injury a low night temperature during their season of rest in the winter, the thermometer often being allowed to get considerably below 50°. Amongst the Cattleyas, Lælias, and others that succeed best in an intermediate temperature there is a good stock of the best old and new varieties, all in strong healthy condition with foliage of a leathery appearance, stout and short. The houses devoted to the cooler section are span roofed; here are large numbers of the best varieties of Odontoglossums, Masdevallias, Epidendrums, and others, that thrive in a low temperature. It would be difficult to imagine a collection of plants in a more satisfactory condition than are these cool Orchids, with bright healthy foliage and bulbs of unusual size bristling with flower-spikes. I noticed one example of O. Alexandræ with two leads, each showing a couple of spikes; one of these had six side branches, and the other, from the opposite side of the same bulb, had four, which may be taken as tolerably fair evidence of the condition they are in. *T. B.*

THE COLLECTION OF CYPRIPEDIUMS at Messrs. Veitch's may be fairly termed unique, for besides the numerous species there are about thirty or more named hybrids and many more which are under probation. There are now a number of beautiful forms of C. Spicerianum in flower, and none of them are less beautiful than that which obtained a First-class Certificate at South Kensington. The rare C. Fairrieanum is now in flower; it is a distinct and singularly pretty species. The dorsal sepal is large in proportion, and of singular formation, creamy-white, beautifully marked with maroon-purple. The lateral sepals curve backwards like horns. The plant is doing remarkably well at Chelsea in a rather cool house; those who have failed to do it well in a high temperature should make a note of this. C. reticulatum, also well in flower, is one of the most singular and distinct species at present in flower. When the flowers first open they are pale green, with greenish veins; after awhile the centre of the dorsal sepal and lateral sepals become whitish. The leaves are nearly a yard long, dark green, and curved like those of C. longifolium. C. albo-purpureum is a valuable hybrid from C. Schlimii, crossed with C. Dominianum. The sepals are about half the length of those of the pollen parent, and, like it, are twisted. The colour is very pleasing for a Cypripedium. C. Arthurianum, recently certificated, combining, as it does, in a marked degree the qualities of both parents, is another valuable addition to our winter-flowering Orchids. The little Comparettia rosea, a pretty Orchid for a botanist, is also in flower in the Cattleya-house.

The Flower Garden.

ALTERATIONS.—After a fairly good summer and autumn display in the flower-garden comes very often the winter of discontent with existing arrangements, which have been suggested during the past season, and the necessary work connected therewith cannot be put in hand too soon, more particularly so as the falling leaves, if they may be left, will throw many of the hands at liberty for a time, and it is as well to take advantage of it to carry on the work as soon as possible. Of course where extreme neatness is required there is no spare time, but where the leaves and other harmless matter may be allowed to accumulate for a good clearing up at least once a week, the time and labour thus saved become most valuable for carrying out any proposed alterations. More especially is this desirable where much removal of the turf is concerned, as this is a most important consideration where the ground is already occupied by a sward which is capable of being relaid, because if it is left too long we are liable to be overtaken by frost, and this, if long continued, will render the turves rotten, and, in fact, useless for relaying; thus showing the greater necessity for getting all such work off-hand in good time. With plenty of labour at command planting may also be commenced at once, but where there is only a limited amount, and time being an object, the groundwork connected with relaying turf should be finished off at once.

PLANTATIONS AND SHRUBBERIES. — In any case the time has come for replanting and thinning-out and regulating plants and shrubs that have overgrown their position, and this can all be carried out in a more satisfactory manner before the advent of severe weather; but where new work is contemplated the ground should be prepared at once; and it is as well to bear in mind that the first expense in a thorough preparation of the soil will always be found the cheapest in the end, when the satisfactory well-doing of the plantation is considered; and although involving more time and labour, the ground for new plantations should always be moved a good 2 feet in depth. It is astonishing the progress which trees will make in deeply trenched ground to that which has been merely dug over and the trees planted in holes, always premising that the drainage is effective, for want of which important caution I have noticed plantations that have flourished well for a time, but when the roots have reached the cold, hard and unbroken subsoil, have very much deteriorated; particularly is this the case with those grand ornaments of the shrubberies, the flowering and berry-bearing Thorns, and many other hard-wooded trees, which will always be found very impatient of a cold and wet subsoil; hence we may conclude that thorough drainage, with a good outlet and deep trenching, are the great essentials of success.

PLANTING ROSES.—The time has arrived when this becomes an important consideration, because if planted at once, even before the leaves have fallen, the earth will still retain an amount of warmth which induces a free emission of roots at once, thus placing the plants in a very superior position to late-planted ones. In these, as in many other cases, the great element of success consists in a thorough preparation of the soil. Drainage, of course, must first be attended to; and as the border should be trenched 3 feet deep, the depth of the drain should be at least 4 feet, and over the pipes should be put a foot of rubble. This may seem an unnecessary precaution, but no Roses can be expected to flourish long in a satisfactory manner whose roots are in a cold wet medium charged with stagnant moisture. With these precautions the nature of the soil is not of that great importance which some consider indispensable, provided it is well broken up, and a good amount of well-decomposed manure is incorporated with it during the operation; for choice, however, a soil which is strong and what is called holding, and in texture stiff, approaching clay, is preferable to a very light soil.

MIXED HERBACEOUS BORDERS. — The principal flowering plants here now will be Asters and Chrysanthemums. These should be neatly tied up, and have all decayed flower stems, and other unsightly

matter, constantly removed, so as to keep up evidences of care until severe frost comes, and all are laid up snug for the winter. The roots of Dahlias should, however, be left in the ground as long as they will be safe, and when lifted they should be turned upside down for a few days, to get rid of the moisture which lodges about the crowns; they may then be stored in a place from which frost and heat can be excluded. *John Cox, Redleaf.*

The Hardy Fruit Garden.

The storage of late Apples and Pears now demands attention, but, unfortunately, the labour entailed in this operation in fruitful seasons will be much reduced this year, and it will be necessary to take every pains to preserve in the best possible condition the reduced number of specimens that require our care. Thin storage is of itself one of the best means of preventing the speedy decay of the specimens in the fruit-room, and this condition will certainly be easily secured this season. Admit sufficient air to dispel moisture, and strive to keep as equal a temperature as possible, to prevent the certain injury resulting from sudden and extreme changes. Gather the fruits of Pyrus japonica and P. Maulei before sharp frosts set in, if they are required for preserving in any way; they certainly make a most delicious and appetising marmalade, having a peculiar aroma much appreciated by many and relished as a change by all because of its distinct flavour. Medlars and Quinces may with advantage be left a little longer upon the trees, as both fruits will improve by remaining until the leaves begin to fall.

Forward as far as possible all preparatory operations requiring to be done in order to prevent delay when planting commences. When any scheme of drainage is to be carried out during the winter, and the contemplated work cannot be commenced at once, it may be well not to delay any planting of fruit trees that requires to be done until its completion, but to decide the depth of the outfall and main drains, and to effect the drainage of the particular site to be planted at a sufficiently high level to insure a good fall when the work is completed further on. By this means the planting need not be delayed nor disturbed subsequently.

In addition to the suggestion of approved sorts of stone fruits given in last Calendar, a further note of desirable Plums, also of Pears and Apples, may usefully be given at this time, when the replacement of worn out specimens and inferior sorts is one of the most important operations in this department.

Soil and locality have so much effect on varieties, and so affect the crops as to considerably reduce the value of any selection of sorts made for general planting, yet certain kinds prove themselves so fairly constant under varying conditions as to demand the attention of intending planters, and at least offer better chances of a successful result than the indiscriminate planting of a general collection would do. Of Plums that may be recommended for their cropping qualities we may mention Rivers' Prolific, Cox's Emperor, Victoria, Ickworth, Impératrice, Kirk's Golden Drop, and, of course, the Green Gage and its purple companion Reine Claude Violette must be included for their other high qualities, although they do not always crop as well as might be desirable. Of the larger kinds, Magnum Bonum and Prince Englebert are the most prolific, and are far superior in flavour for tart-making to such varieties as Pond's Seedling, Goliath, and others of a similar type of flesh.

Dessert Apples that succeed well in most districts and are of high quality are Irish Peach, Duchess of Oldenburg, Kerry Pippin, King of the Pippins, and Kiddleston Pippin, Margil, and Scarlet Nonpareil. Ribston Pippin is too subject to canker in some soils, and in such cases Cox's Orange Pippin must be relied upon for a similarly high-flavoured Apple. For the general supply of the kitchen the Keswick and Manx Codlins, Cockpit (too seldom seen in the South of England), New Hawthornden, Tower of Glamis, Alfriston, Rymer, and Wellington will be found as suitable as any; while if large fruits are coveted, Warner's King, Lord Suffield, Ecklinville Seedling, and Monstrous Leadington may be added.

Pear crops seem of late years to have been more fickle than even those of Apples, and sorts that were considered the most certain of croppers have been unable to resist the hyperborean blasts that have recurred so regularly during the blooming period of late years. None can be recommended as certain croppers without protection during this critical period; but of those that are naturally productive and fine may be mentioned Jargonelle (always indispensable), Autumn Bergamotte, Beurré d'Amanlis, Beurré Hardy, Beurré Superfin, Marie Louise, Louise Bonne of Jersey, Doyenné du Comice, Duchesse d'Angoulême, Zépherin Grégoire, Josephine de Malines, Ne Plus Meuris, and Beurré Rance, which later is invaluable when the season has proved sufficiently fine to cause it to be thoroughly matured and to become a melting fruit in the spring; it requires the best position on a favoured wall, and is not to be depended upon under inferior conditions of culture. Williams' Bon Chrétien is omitted from the above comparatively short list as, although one of the most largely grown and most generally productive, it is of a peculiar flavour that is anything but acceptable to many people. The Vicar of Winkfield is perhaps the most fruitful amongst the stewing varieties, and should be largely planted for that purpose, although neither so large nor so highly coloured as some other well-known but less fruitful sorts.

The hardy fruit department will now require to be kept scrupulously clear of weeds, to have all fallen leaves gathered up, and all evidences of trampling done in gathering fruits obliterated, in order to make this part of the garden at all attractive during this part of the year. *Ralph Crossling, Penarth.*

The Pine Stove.

All the plants that have shown fruit since October should be placed in one division by themselves, and at the hottest end of the pit or stove. If the aspect is direct south so much the better for the plants. Keep the glass thoroughly clean both inside and outside, so that the plants can have the advantage of all the light possible, which is more essential in winter than summer. Coverings may now be applied over the glass to diminish the use of fire-heat, and to keep the night temperatures more regular, which is a point of considerable importance. The temperatures for fruiting plants in all stages, as advised in my last, still holds good for the present. Different batches of autumn-rooted suckers will now be well established. Keep them, if possible, in a direct south aspect, close to the glass, to prevent them getting drawn or the centre leaves becoming blanched. Scarce varieties, such as Smooth Cayenne, Charlotte Rothschild, and Black Jamaica, may be kept gently moving and growing all through the winter. This makes the most of time and space. The suckers of these varieties are often taken off and rooted when very small, and small suckers and crowns take a long time before they are large enough to transfer to the fruiting pots; and where a large number of these varieties are grown it is a great and decided gain to adopt this plan, both in regard to time and likewise in obtaining more vigourous plants. These remarks do not apply so forcibly in the case of all varieties of Queens, as they are prolific in producing suckers, and a selection of large suckers can be made every autumn. However, much future success depends on the growing of the rooted suckers and succession plants in the case of Queens, for if starved in the early stages of growth the fruits never attain to a large size. They are best grown in divisions by themselves, and where a large number are grown this can be easily managed. Queens also, being grown generally in smaller pots, take more water, and being all together this operation can be the better performed. This variety is more susceptible than others to injury from being over-forced in winter, and injudiciously ventilated during the winter months, as they become more quickly drawn, and the centre leaves blanched, and this defect is not so easily corrected with the advent of longer days in spring as is the case with many other varieties. Keep the temperature for rooted suckers about 65° at night, with a rise of 10° by day, Watering of all plants from this time up to the end of March requires sound judgment and discrimination to water them at the right moment. Succession plants and young stuff are better not overwatered with liquid-manure during the winter months. Fruiting plants may have it given them oftener—say a little weaker at every alternate watering than was given them in the summer. The autumn fruits should be staked before they get too large or one-sided. Use for this purpose well dried stakes. *D. Wilson, Castle Hill.*

Grapes and Vineries.

If not already done, the Vines in the earliest house must be pruned at once. In pruning do not cut them back so hard as Vines started later, but prune to a good plump eye; the rods after a few years will not have such a tidy appearance, but will show better bunches than if cut back to the first eye. A few hours after pruning dress the cuts with styptic to prevent bleeding, and wash all the woodwork and glass thoroughly. Do not scrape the Vines, but only take off the loose pieces with the thumb and finger; if the Vines have had red-spider or mealy-bug on them, wash them well before painting them with Gishurst Compound, 8 oz. to the gallon of water, working it into every crevice with a painter's brush; then go over them again in a few days to see if any remain, and paint them with a mixture of Gishurst Compound, 8 oz. to the gallon of water, adding sulphur, soot, and clay, to give it the consistency of paint. After painting, tie the Vines in a horizontal position, and keep the house cool until it is started. If very early Grapes are required, the house may be closed by the end of the month. Before starting, give the inside border a good soaking of clear tepid water at a temperature of 85°, and keep the night temperature between 45° and 50°, with a rise of 10° by day, damping the rods whenever they become dry. Where fermenting materials are used on inside borders, it is generally sufficient for the first fortnight without fire-heat; make a ridge along the centre of the house, and turn it over every morning to liberate the ammonia; put fermenting material on the outside border, enough to give a gentle heat without exciting the Vines too quickly, then put on the shutters to throw off the rain, place a few trial-sticks in the bed so that fresh material can be added as the heat declines. Late Hamburghs will now require great care to keep them in good condition until the end of the year. It is the best plan, when cutting them for use, to cut all those bunches first that are not severely thinned, as those in which the air can circulate freely among the berries will keep much the best. Be very careful how air is admitted, for on foggy days, when the external atmosphere is damp, it is better to keep the house nearly closed, only keeping a little on the back ventilators, and sufficient fire-heat to keep the atmosphere light and buoyant on bright days. Ventilate freely, and look over the bunches several times weekly for decayed berries, for if allowed to remain they soon disfigure the bunches. Late Muscats can be kept at the same temperature as advised in my last Calendar, and the outside borders covered with shutters to throw off the cold autumn rains. Admit air on the back ventilators on all favourable occasions, but front air will only be required on the brightest days, and then only for a few hours. The latest house of Grapes for keeping through the winter will require a little fire-heat to dispel the damp, and can be kept at a night temperature of 50°, with a few degrees more by day. Give plenty of air on bright days, and close early in the afternoon before the external atmosphere is damp. Look over the bunches every few days for bad berries, for if not carefully looked over they soon spoil many more, and disfigure the bunches. Go over all the corners of the house weekly to dislodge the spiders with a hair broom; keep the internal atmosphere as dry as possible, and protect the outside borders with shutters to throw off the rain. The earliest pot Vines ought now to be pruned, but do not shorten them back very much; it is better to tie them in a partly horizontal position if they are too long for the space they have to occupy, as they always show the best bunches towards the top. Be careful to dress the cuts well with styptic, to prevent bleeding, and keep them as cool as possible until they are started. *Joshua Atkins, Lockinge Gardens, Wantage.*

NOTES ON VEGETABLES.

Globe Artichokes.—With reference to your note on Globe Artichokes at p. 434, I would observe that they may be grown very well in one season from seeds. These should be sown early in March and afterwards transplanted, but not in their permanent situations, as no doubt many of the plants will be of an inferior type. When the plants are in bearing, the good kinds should be marked by placing a stick to each, and these only retained for permanent planting. If a great many people would try this system of cultivation, there would be less complaints about a dearth of "chokes," as they are called in the country, in summer. *X.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Oct. 23	Sale of Dutch Bulbs, at Stevens' Rooms; and at the Mart, by Protheroe & Morris.
TUESDAY,	Oct. 24	Sale of Lilium auratum, Bulbs, and Orchids, at Stevens' Rooms. Sale of Roses, Fruit Trees, Bulbs, &c., at the City Auction Rooms, by Protheroe & Morris.
WEDNESDAY,	Oct. 25	Sale of Dutch Bulbs, at Stevens' Rooms. Sale of Greenhouse Plants at Tebbutt's Nursery, Chelsea, by Protheroe & Morris.
THURSDAY,	Oct. 26	Sale of Imported Orchids, at Stevens' Rooms.
FRIDAY,	Oct. 27	Sale of Lilium auratum, Plants, and Dutch Bulbs, at the Mart, by Protheroe & Morris.
SATURDAY,	Oct. 28	Sale of Dutch Bulbs, at Stevens' Rooms.

THE ORIGIN of CULTIVATED PLANTS might at first sight seem an easy matter to determine. We are so accustomed in gardens to cultivate what is put before us that the great majority of gardeners speedily forget, in the face of the changes that are brought about by cultivation, what the original form really was. The uncertainty and in some cases complete ignorance of the origin of many of our commonest drugs is another case in point. It is for this reason among others, that we in this journal have from the very first endeavoured carefully to describe the original types as they first appear and to note the progress made by careful selection, hybridisation, and crossing as time goes on. We may justly, we think, take some credit to ourselves for this part of our work, and express the hope that the future historian of garden-plants will, as DARWIN notably did, find a vast store of material to his hand in our pages. This remark of course applies more particularly to the hosts of decorative plants that have been introduced within the last forty years. Nevertheless it is rather remarkable how ignorant we are of the real origin of some of our commonest plants. Who, for instance, knows the origin of the cultivated Mignonette? In a truly wild state it is not known, yet it must have originated from some presumably well-known species, so altered by long cultivation that definite traces of its source are lost. But if this is the case with what we may for convenience sake call decorative plants, much more so is it with plants like Wheat, which have been cultivated on a large scale from time immemorial. The truth is that these, as it were, artificial products differ more from the wild types than these do among themselves.

To clear up the history of many of these plants demands a combination of peculiar qualifications. He who would devote himself to this branch of knowledge must be, first and foremost, a systematic botanist, and he must be versed in history, in archæology, in geography, in ethnology, and in various ancient and modern languages. By the combined and comparative study of the indications furnished from these several sources we may arrive ultimately at a decision as to the native country and original form of many plants whose history is not at present known. Proceeding on these lines, M. ALPHONSE DE CANDOLLE has lately issued a volume, which will for all time prove a most valuable mine of information for the student.* In his invaluable *Géographie Botanique* M. DE CANDOLLE also treated on this subject. Since 1855, however, many additions have been made to our knowledge, so that the present volume is no mere reprint, but an entirely new work, including the information derived from various sources down to the present period. Some 250 plants in common cultivation in various parts of the world are passed in review, and their history briefly epitomised. The aim of the author has been to investigate the original form and the native country of each of these selected plants prior to its being generally cultivated. LINNÆUS and the older botanists paid so little attention to this part of the subject that the majority of their indications have proved erroneous. As a matter of fact, names of cultivated plants and the localities wherein they originated were taken on hearsay and accepted without any investigation. Gossypium barbadense—the source of some of the best American varieties of Cotton occurs to us at the moment of writing as a case in point—assuredly it did not originate in Barbados, and a very little research would reveal numerous other instances, but let this one suffice for illustration. With all his care and his laborious research of varied character, M. DE CANDOLLE has not in all cases succeeded in tracing the origin of the plants in question. He is led, therefore, to adopt, according to circumstances, one of two hypotheses: either the plant in question has been so changed by ages of cultivation that it is impossible to refer it to its wild original, or the wild species has absolutely disappeared from the face of the globe. The Lentil, and the Chick Pea, probably no longer exist in a state of Nature, and other species, like the Wheat, the Maize, the Bean, the Carthamus, which are very rare in a wild state, are in process of extinction. Just as the aborigines of Tasmania have disappeared, and as those of New Zealand and Australia are rapidly disappearing, so it would seem that some plants have vanished, or are likely speedily to do so, being no longer fitted to maintain themselves in the universal struggle among living beings.

In discussing these matters M. DE CANDOLLE first indicates the manner and period at which cultivation commenced in various countries. The process was everywhere very gradual in the first instance, so gradual and slow that it is difficult to see how a savage race, devoted to fishing, hunting, and the excitement of the chase, should have gradually become agriculturists. We get little help in this department from the study of animal instincts and practices; ants store up food, and the gardener-bird, figured in these columns in 1878, vol. ix., p. 333, makes a sort of garden; but between this feeble commencement—if it be really commencement—and regular systematic cultivation on a large scale, the difference is vast and not at present to be bridged over, save by authoritative statements beyond the scope of scientific investigation.

There are whole regions of the globe, such as Australia, Patagonia, and even the Cape of Good Hope, which have not as yet furnished a single native plant adapted for cultivation on a large scale. And that this arises not so much from a low state of civilisation marked by defective intelligence, or by that want of peaceful security required for the successful carrying on of agrictural pursuits—as from unsuitability of natural conditions—is shown by the fact that during the century or more in which Europeans have colonised these regions they have only succeeded in cultivating a single native species, the Tetragonia expansa, or New Zealand Spinach. It is open to question, however, whether the facts alluded to by M. DE CANDOLLE do not find another explanation in the circumstance that Europeans are always more zealous to cultivate plants of known utility in the old country, than to experiment with those growing beneath their feet. Considering that these cultivated plants represent ages of successive improvement and inherited qualifications, it is not surprising that colonists should be indifferent to native weeds as they consider them; nevertheless, we believe they would do well to turn their attention much more freely than they do to the cultivation and amelioration of native plants, which, as Nature herself shows, are well suited to the climatal and other conditions of the country. While the grass grows, however, the steed starves; the time required to develope a wild plant into one suited for agricultural purposes on a large scale is so great, that of course it is requisite, in the meantime, to cultivate plants of assured value as the mainstay.

Of the actual commencement of cultivation on a large scale little or nothing is known. A Fig is represented in the pyramids of Ghizeh which have an antiquity estimated by various writers at a period varying from 1500 to 4200 years before the Christian era. In China, 2700 years before Christ, religious ceremonies were instituted in connection with agricultural pursuits. But these dates, even if trustworthy, evidently do not go back far enough. In the period described in Genesis cultural pursuits had already attained considerable proportions, but no hint is given as to what was the original form. It is remarkable that in the Danish mounds no trace either of agricultural pursuits or of the possession of metals has yet been found. In the Swiss lake dwellings, however, numerous traces have been discovered, which suffice to show, not only that cultivation was practised, but that plants had been imported from the countries on the southern side of the Alps.

The origin of cultivated plants then receiving so little elucidation from history or archæology, M. DE CANDOLLE naturally turns to the facts of botanical geography, and the inferences based on them, and here he is on surer ground. Let us give an illustration of the way in which the author applies his principles. The majority of species, says he, inhabits a continuous or nearly continuous area [the limits of which are, of course, determined by climatal and other considerations, which it is the business of botanical geography to elucidate]. There are, however, "isolated" species—*espéces disjointes*—that is to say, the individuals composing them do not occupy one continuous area, but occur in widely separated regions, with or without any trace now existing of their previous existence in the intervening space. Consequently when a cultivated species is represented in a wild state, very frequently in Europe and less so in the United States, it is probable that in spite of its appearing to be wild in the last-named country, it has become naturalised there after having been accidentally introduced.

We cannot find space for other instances in which botany may and does serve to elucidate the problems of the origin of cultivated plants, nor, indeed, as they will readily be appreciated by thoughtful cultivators, is it requisite to do so. There is no difficulty either in appreciating the value of such scanty evidence as is afforded by the archæologist. Historical documents are, if more numerous, less trustworthy, from the vague way in which plants are mentioned, and the difficulty or impossibility of determining precisely the exact application of particular names.

China, south-west Asia (with Egypt), and tropical America, are the three principal regions in which the cultivation of leading agricultural plants originated, and from which it spread. M. DE CANDOLLE devotes a short space to the general consideration of the plants cultivated in each of these regions from the earliest times, and then passes on to the consideration of the evidence afforded by the native names of plants.

Rightly to appreciate the evidence so afforded, the reader should be a scholar profoundly versed in linguistic studies. Etymologies afford such frightful pitfalls for the unwary that the greatest care is required in basing an inference upon them. If, however, they be supported by other and independent evidence their value becomes great. Here the absurdity and frequent uselessness of popular names become very apparent. The French call Maize "Turkish Wheat," when the plant isnot a Wheat, and originated in America. Our Jerusalem Artichoke is another illustration. It has nothing to do either with Jerusalem or with Artichokes! Again, our word Potato is the result of a confusion with the Batata, a totally different plant. Still, after making allowances for the fallacies attaching to popular names, there remains a substantial body of evidence of a most valuable character,

* *Origine des Plantes Cultivée.* Par A. de Candolle. Paris: Germer, Baillière et Cie., 1883. (Issued in October, 1882.)

but one, as we have said, that demands for its interpretation a skilled linguist.

We have said enough to show the general principles on which M. DE CANDOLLE has constructed his work. Needless to say, it is conscientiously and carefully done, and exhibits an amount of comparative research and general knowledge of the subject he has to treat such as few, if any, could rival, and none excel. Of the more detailed portion of his work—that in which the history of the several species is dealt with individually—and the general results of the whole summed up, we hope to speak on another occasion.

—— THE BADGE OF THE CAMPBELLS.—On the occasion of the recent visit of the Duke and Duchess of ALBANY to Blythswood, Renfrew, the seat of Sir A. CAMPBELL, a pretty idea was successfully carried out in the presentation of a bouquet to the Duchess, which was largely composed of the fragrant Bog Myrtle (Myrica Gale), which is the badge of the CAMPBELLS. The Myrtle was obtained in the vicinity of Loch Lomond, and the arrangement of the bouquet was entrusted to Messrs. J. & R. THYNE, of Glasgow.

—— WHAT OUR NEIGHBOURS THINK OF COVENT GARDEN.—"This market is dirty and disorderly, and unworthy a great capital. We have seen the markets of Paris and those of Vienna; compared with Covent Garden they are palaces. The indescribable confusion, the hoarse cries, the disorder and filth, have no other excuse than the bewildering rapidity with which the business is conducted and the imperative necessity of providing without delay for the needs of more than 4,000,000 of people." Such is the opinion of the Belgian visitors who paid us a visit in June last. Unfortunately they tell us in this matter nothing that we did not know before. The fact that the market and its surroundings are private property is no doubt the cause of the present condition. Sooner or later a great change must be made, and public convenience over-ride private interest.

—— HURST SIDE, MOULSEY.—We are requested to state that the lean-to fruit houses and the vegetable house described by us last week as being so "substantially built, well heated, and ventilated" were erected for Sir HENRY THOMPSON by Mr. JAMES GRAY, horticultural builder, of Danvers Street, Chelsea, S.W.

—— NEW PUBLIC GARDEN AT MATLOCK.—The Directors of the Matlock Baths Company recently offered a prize of £25 for the best design for laying out the piece of ground they have acquired for the purpose of forming a public garden. The site is a little over 9 acres in extent, and rises almost precipitously to a height of nearly 300 feet. The eastern portion is of a very rocky and romantic character, while from every part of the ground extensive and beautiful views are obtained. On Saturday the directors awarded the prize to Messrs. BARRON & SON, of Elvaston Nurseries, Borrowash, near Derby. Their plan shows a broad terrace in front of the pavilion on the same level. A flight of steps leads to a second terrace, 20 feet lower down, which is laid out in three compartments as a flower garden, with a fountain in the centre of the end compartments. At the back of the pavilion are archery-grounds, tennis-lawn, and bowling-greens. Numerous walks at an easy gradient connect these, and wind among the rocks on the eastern side;



FIG. 91.—THE "EYOT" AT KEW.

—— THE KEW EYOT.—So much has been said lately of the condition and prospects of this beautiful islet in the Thames that it may be of interest to many not familiar with the spot to see an illustration of it as seen from Kew Bridge (fig. 91), and taken from a water-colour drawing of Mr. W. H. FITCH made some two or three years ago. Since that time the continual wash of tides and steam-tugs, and the fierce gales of winter, have sadly thinned the trees, and if something be not speedily done to prevent the waste, the islet will become a thing of the past in no very long period. A charming bit of river-scenery will thus be lost; but that is not all; its removal will bring into full view, in all its hideous ugliness, the town of Brentford, with its smoke-bellowing chimneys and noisome factories. The attempt on the part of the Government authorities to sell the "Eyot," or "Ait," has happily been averted; it now remains to

and band-stands, rustic arbours, and shelters are provided in the most convenient places.

—— FINSBURY PARK. — We understand that the annual display of Chrysanthemums made in Finsbury Park will be opened to the public this day, Saturday. We hear that Mr. COCHRANE has a capital lot of plants ready, and the show will, we have no doubt, be well worth visiting.

—— KEW GARDENS.—On Monday last a deputation waited upon Mr. SHAW-LEFEVRE, the First Commissioner of Works, with reference to the restricted facilities for entrance to Kew Gardens. The deputation complained that not only were the public excluded from the Gardens every day until after 1 o'clock, but that the temperate-house gate, close to the very handsome picture gallery recently presented by Miss NORTH, was being bricked up, and another entrance made 350 yards further down the road towards Richmond. It was pointed out that a large number of houses, ranging in value from £100 to £300 per annum, had been erected near the temperate-house gate, and a new road made leading from the railway-station to it, in the hope that it would be opened to the public; but the new gate would be at a spot where there was no population, and would give access to the least interesting part of the gardens. Mr. SHAW-LEFEVRE informed the deputation that the work was being carried out on the recommendation of Sir JOSEPH HOOKER, the Director, who had represented to the department that it was for the public advantage. It was not desirous to multiply entrances to the Gardens. It was intended not only to brick up the temperate-house gate, which had never been open to the public, but also to close the entrance now available for the public near Richmond, opening instead the new gate, which would be very ornamental, between the two. He would consider whether railings could be substituted for bricking up the temperate-house gate, so as not to shut out the view from the road.

—— ARBUTUS UNEDO, VAR. RUBRA.—There is no more beautiful shrub than this at the present time, now that it is covered with clusters of its elegant red and white flowers. Although all the species and varieties of Arbutus suffer more or less in unusually severe winters, there are many other shrubs that could be better spared, and this variety especially one has only to see to wish to possess. AITON names it in the first edition of his *Hortus Kewensis*, and there is a tolerably fair coloured figure of it in LODDIGES' *Botanical Cabinet*, vol. ii., plate 123, and LOUDON says it is the handsomest variety in cultivation, yet it is still comparatively rare.

—— Mr. WILLIAM SHAND, who has been Head Gardener to the late Earl of LONSDALE at Lowther Castle for the last ten years, has entered into partnership with Mr. WM. HALSTEAD, nurseryman, seedsman, florist, and landscape gardener, Lancaster; and the business, which was established in 1803, will now be carried on under the name of HALSTEAD & SHAND.

—— CYCAS SEEMANNI.—Baron VON MUELLER describes this Fijian Cycad in the *Melbourne Chemist and Druggist*. It was originally described by ALEXANDER BRAUN. SEEMANN considered it as not distinct from C. circinalis, but the Baron points out that the present plant has no thorns on the petiole, besides which there are other differences.

—— A BOUQUET OF AUTUMN FLOWERS.—We have within the last few days received a charming mixed bouquet of flowers from Mr. W. M. CROWE, of the "Boleyn" Nursery, Upton, Essex, consisting of single Dahlias, tuberous Begonias, and Carnations of the tree section, clearly showing that our resources in the way of cut flowers need not fall short during the month of October. The single Dahlias were chiefly seedlings of various colours, from the richest crimson and white to red, purple, and even violet shades, thus yielding in themselves an infinite variety of colours of the most pleasing kind for decorating glasses for the sitting-room or dinner-table. The tuberous Begonias (also seedlings) were very fine, consisting of white, scarlet, crimson, and other shades; some of the finest white blooms, we were informed, were grown under glass, but the others were grown in the open, having loose lights placed over them for the past three weeks, but having nothing like enclosed protection. That such beautiful flowers can be produced by such simple means is a fact that cannot be too widely known among amateurs, or, indeed, among all classes. Among the Carnations were several splendid flowers. Two of the varieties are named respectively Prince Imperial and Sarah Bernhardt. The former is a beautiful dark red flower, of good form and much substance of petal, and a very showy kind for cutting purposes. The flower called after the famous French actress has petals of a deep buff ground flaked with reddish-maroon, and of very good form and substance. Both the above varieties are to be distributed by Mr. Crowe this autumn. Among the seedlings sent are four distinct varieties of great promise, indeed one, a large scarlet flower, is to our minds the best of all. There were also pink flowers, and white streaked with pink, the delicate pink stripes having a charming effect upon the white groundwork. The bouquet was one of the prettiest and most interesting that we have seen for some time.

—— A LARGE NUMBER OF SPECIES OF TREES ON A SMALL AREA. — In his interesting essay on forest geography and archæology Dr. ASA GRAY gives the number of species of timber trees composing the forests of the Atlantic States of North America at 155, belonging to sixty-six genera. Few at least of the deciduous trees grow gregariously, and in some parts the mixed forests contain a surprisingly large number of species on a small area. Thus we find that Mr. R. RIDGWAY, in his description of the forests of Illinois and Indiana, states that forty to fifty species grow intermixed on areas of 50 to 75 acres.

—— EARLY CHRYSANTHEMUMS.—One dare hardly suggest that Chrysanthemums might be forced for an early display, and yet it is probable that some of our friends who intend exhibiting shortly have a late "Barbara" or two, or a "Hero of Stoke Newington" tilted up close to the glass in a fairly high temperature. What is, therefore, not injurious to show flowers, cannot be very bad for those that are only required for ordinary decorative purposes. But what do we mean by forcing? We do not mean to force a collection, or even half a one. The Chrysanthemum is the queen of winter flowers—it has no rival, but its season of flowering is sadly shorter than it need be. Too much attention is given to cultural matters, and too little to the prolongation of the season of flowering. We should coax (force) the early kinds into flower at once and retard the late flowering sorts; the bulk of every collection will come into flower at the natural time as a matter of course. Chrysanthemums are not injured, but rather improved, by a warm dry atmosphere when they are developing and expanding their petals. A few of the early kinds put into a house with a temperature of 60°, and kept near to the glass with air on night and day, will soon be in full blow, and perhaps none are more sweet to the eye than the first blooms of Mrs. George Rundle, which are white as snow, and its great rival of the Japanese section, Elaine. James Salter (lilac), Mrs. Dixon (yellow), and George Glenny (straw colour), are among those that will respond most freely to the action of gentle heat.

—— WINTER CUCUMBERS.—Of all indoor crops the supply of winter Cucumbers is among the most important in private establishments. There are places where they are even more prized than Grapes, and it is a fact that there are certain times through the winter when it is a greater task to get a brace of good Cucumbers than it is to get a basket of Grapes for dessert. More, therefore, need not be said in regard to the importance of securing a good supply of Cucumbers for winter. Their scarcity at mid-winter and afterwards is mainly due to over-cropping at this season, and to the cultural treatment the plants receive during the present month. Although, so far, the weather has been mild, we have not had much sunshine, and closed ventilators will in all probability have been the result. This is an error plain to many but not generally acted upon. Cucumbers are plants that must have a rather high temperature, and a certain degree—a good deal at times—of moisture, in order to secure palatable fruits. While, therefore, these conditions are admitted to be requisite—indispensable—it should be borne in mind that the tissues of the stems and leaves should be hardened by giving air daily even when there is no sunshine. The large, green, deeply-ribbed leaves, such as are produced by strong feeding at the roots and a steaming atmosphere, will be non-existent after a few nights' frost, or a whiff or two of the east wind. Upon the other hand, if the leaves are kept in a hardy state by giving air daily, even if the temperature has to be raised two or three degrees higher, the plants will continue to bear much longer than others that appear to be in much more robust health just now. Now is the time to nurse the energies of the plants, to enable them to tide over the critical period at the turn of the year.

—— LATE MELONS.—In view of the fact that dessert fruits are not over-plentiful this season—we mean, of course, hardy fruits—it might be thought that late crops of Melons would be grown as a substitute. The season for Melons is very much shorter than it need be; in many places, indeed, it does not last quite three months. Those who have but limited means act very wisely in not attempting to grow them after the middle of September, but where there are suitable houses with a fair command of bottom-heat very good Melons may be obtained up to the end of November. It is obvious, from every-day experience of the markets, that Melon growing for profit is out of the question late in the season. The requirements of private families are, however, different. A fairly flavoured Melon about the end of October or beginning of November is worth twenty better fruits in the eyes of a great many employers in the early part of the season. Pears fail, Apples fail, and many other crops fail at times, but the Melon crop is one that may be relied upon. The fruits, too, have a fine effect upon the dinner-table, and late crops, like early ones, are always more creditable to the cultivator as an effort of cultural skill. Plants that are now swelling their fruits require careful treatment to bring them to maturity. But with occasional blinks of sunshine there ought to be no difficulty in having very good fruits for several weeks to come. In dealing with late crops of this kind, as long as the weather is mild, and a little air can be given at some time or other during the day, there is not much fear of the crop going wrong. Late crops are oftener spoilt by over-kindness, by watering, by atmospheric conditions, by a variable temperature, sometimes high and at other times low. A safe line of treatment is to keep the plants upon the dry side at their roots, and to keep the surface of the border mulched with some light material through which the sun's rays will pass freely. Size of fruit is not so much an object at this time of year, as appearance and quality. The best late crops that we have seen were grown in a house that was abundantly supplied with top and bottom heat, the flow and return pipes (the mains) running under the path in the centre of the house and covered with flags. In fine weather (with air on) the borders and path were sprinkled over two or three times a day, and the moist atmosphere thus created kept the foliage fresh and clean, but the atmosphere was perfectly dry when the house was closed in. The mean temperature at night should range about 70°. Medium-sized fruits—small by comparison to those attainable in summer—should not be sacrificed as they sometimes are. Be kind to the plants until the fruits are nearly ripe, then cut them and keep them in a high dry temperature for a few days, and if it is even necessary to put three fruits upon the dessert dish instead of one, they will not look amiss or be despised a few weeks hence.

—— NEW FORMS OF PERNETTYA MUCRONATA.—It is some two or three years since Mr. L. J. DAVIS, of the Ogle's Grove Nursery, Hillsborough, Co. Down, exhibited at one of the meetings of the Royal Horticultaral Society some new seedling varieties of Pernettya mucronata, and was awarded First-class Certificates of Merit for some of them. At the last meeting of the Royal Horticultural Society Mr. DAVIS again sent a batch of a dozen seedlings obtained from the varieties shown previously, and being decided improvements on them. There were some dozen or so of varieties, and they were conspicuous for their vigorous yet close and compact habit of growth, the size and striking colours of the berries, and the freedom with which they are produced. Of these not less than six were selected for First-class Certificates of Merit, viz., P. nigra major, with large maroon-coloured berries, almost black—very fine and striking; P. macrocarpa, large dull crimson berries, borne in large clusters: P. sanguinea, deep crimson berries, in profuse clusters; P. purpurea, pale purple berries, large and fine; P. carnea nana, flesh-coloured berries, distinct and attractive; and P. alba, with white, almost pure white, berries. These are the best forms

in the collection, and they represent a batch of new varieties of the highest value as hardy evergreen berried plants. Nor must their excellence as flowering subjects be overlooked, as the plants supply an abundance of beautiful bell-shaped flowers of a very pleasing character during summer, followed by berries during autumn and winter. The following varieties among the non-certificated ones were scarcely less valuable than those so distinguished:—P. rosea lilacina, the berries not quite so deep in colour as P. purpurea; P. rosea purpurea, rose and purple, very pretty; P. atrosanguinea major, the berries a little deeper in colour than P. macrocarpa; P. coccinea, not so bright as P. sanguinea; and P. angustifolia, purplish-rose. All are so handsome and useful that they should be in great demand, but we we protest against the application of misleading Latin names as if they were so many distinct species instead of varieties of one. The Horticultural Society does not act up to duties in sanctioning such names.

—— The Weather.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending Oct. 16, issued by the Meteorological Office, London:—The weather has been extremely dull and gloomy in all parts of the kingdom, and, except at the north-western stations, very rainy. Towards the end of the period the rain over England and in some parts of Scotland was very heavy and continuous. The temperature has continued above the mean in all districts, and, as the excess has been least in England and greatest in Scotland the average readings have been very uniform. The maxima were generally registered during the earlier part of the week, and were as high as 64° in "Scotland, W.," and 65° in "Ireland, S.," and from 61° to 63° elsewhere. The minima, which occurred in most districts on the 16th, ranged from 33° in Ireland and 35° over central and south-western England to 41° in the east of Scotland. The rainfall has been rather less than the mean in "England, N.W.," and "Ireland, N.," but more elsewhere, the excess over central, southern, and south-western England being exceptionally large. Bright sunshine, except in "Ireland, S.," showed a very striking decrease, and over the greater part of the kingdom was almost entirely absent. The percentages varied from 37 in the south of Ireland to 16 in "England, S.W.," 15 in "Ireland, N.," and to between 4 and 11 in all other districts. Depressions observed:—At the commencement of this period the barometer was falling steadily in nearly all parts of our area, and by the 11th a depression had advanced to Ireland from the Atlantic, with freshening southerly and south-westerly winds. This disturbance, which was very clearly defined, travelled in a south-south-easterly direction, and by the 14th had disappeared over southern France. During its progress the winds in our islands backed to east or north-east, and in some places blew freshly. At the close of the period another and more complex disturbance had reached the south-west of England, and, moving along eastwards, was accompanied at all but the more northerly stations by fresh south-easterly to north-easterly breezes. In Scotland and the north-east of England strong southerly winds or gales were experienced.

—— Gardening Appointments.—Mr. John C. Brown, from The Gardens, Dalkeith, and previously Foreman to Mr. James Brown, Abercairny, to be Flower Gardener to C. S. H. D. Moray, Esq., of Abercairny, Crieff, Perthshire, N.B.—Mr. James Martin, Drylan Mains, Edinburgh, as Gardener to Murdoch G. Maclaine, Esq., Lochbuy, Mull.—Mr. Gavin Watson, lately Gardener at Ardgave, Shandon, near Helensburgh, as Gardener to Thomas S. Aitchison, Esq., Monkwood, Kilgraston Road, Edinburgh.—Mr. Donald McKay, lately Gardener at Wardie House, Edinburgh, as Gardener to General Paterson, Melfort Cottage, Lochgilphead, Argyllshire.—Mr. John Clapperton, lately Gardener at Borthwickshiels, Hawick, as Gardener to General Cockburn Hood, Stainrigg House, Coldstream (the last four through Messrs. Downie & Laird).—Mr. Duncan Mackenzie, lately Foreman to Mr. Fox, Holker Gardens, as Gardener to Mrs. Cotterell Dormer, Ingmire Hall, Sedburgh, Yorkshire.—Mr. Edward Fox, lately Plant Foreman to Mr. Selwood, at Eaton Hall Gardens, Chester, as Gardener to Major Cresswell, of Cresswell, near Morpeth.—Mr. Frank Lowe (late of Messrs. F. & A. Dicksons, Chester), as Gardener and Forester to Viscount Bangor, Castleward, Downpatrick.

TRADE MEMORANDUM.

Enquiries are made for the present addresses of Mr. A. Knight, nurseryman, late of Wallheath, near Dudley; and Mr. J. Kirk, late of Fairview Nursery, Wollaston, near Stourbridge. When we last heard from Mr. Knight, his address was Finchfield, Wolverhampton.

NOTES FROM EDGE HALL.

Hardy Border Plants.—The summer flowers did well this year in Cheshire, the autumn flowers still better, and now, when St. Luke's Day is close at hand, the garden is full of colour.

Lilium auratum.—The late bulbs, some of them in their second or third year of domestication, which are planted about in the mixed borders, continue to open their flowers well; they have been more free from spot than those in the beds especially prepared for Lilies. It will be interesting to mark whether the great difference of season in the flowering of individual bulbs of this Lily is a peculiarity inherent in the nature of the bulb, or an accident due to circumstance and capable of being altered by education.

Gladiolus gandavensis has flowered and is still continuing to flower better than ever before in this garden. Some bulbs which were planted late, perhaps in the middle of April, in the well drained borders of made soil, amongst mixed herbaceous plants, have done better than they ever did when they had beds to themselves. None of them have gone off as if their sap had suddenly turned to water, and they had suffered from a stroke of paralysis.

Helianthus lætiflorus.—This is a safe ornament for a garden in October. The flowers are of good solid substance and capable of withstanding both frost and rain, and the form of the plant is all that could be wished. There are two forms, one with black stalks, the other with green. The latter seem to bear rather larger and more flowers, but both are good, and grow in just the same style, making fine branching heads, and growing about 8 feet high. A lady offered yesterday to take a photograph of two of my plants, whichever I pleased, and, after looking round, I fixed upon a black-stalked H. lætiflorus as the best plant in the garden.

Aster paniculatus var. albus was the other plant selected, though I give the name with some hesitation. It is an elegant plant, about 5 feet high, with heart-shaped, radical leaves, and three stalks growing close together. The flower-head is about 3 feet high and 2 feet across, consisting of a dense mass of feathering branches of white flowers. The plant was sent to me from Devonshire two years ago, and I have never seen it anywhere else. But Asters depend as much upon the cultivation as the kind. If gardeners would divide Asters more frequently, and give them good soil and situations, they would show themselves worth the attention. Asters should be obtained by sight rather than by name, as names are not to be depended upon. I find that to obtain good Asters it is a good plan to exchange a box of numbered Aster flowers with some one who has a good garden, and afterwards to exchange the plants selected in this way. Even when Asters are correctly named, the varieties of the same species differ so much that they may be either good or worthless as garden plants. Some forms of Novæ-Angliæ, for instance, are so late in coming into flower as to be useless in a backward climate. It is only by careful selection and elimination that a good stock of Asters can be obtained.

Aconitum autumnale.—If a plant is sure to flower we can hardly find fault with it for flowering late, and though this flower does not come out till September, I have never known it fail. It is 5 feet high, of a delicate clear blue in colour; the flowers are large and I consider it the best of the Aconites. All the Aconites, especially the choicer kinds, prefer peaty soil, and pine away in clay. This species makes upright stalks, without branches, increases slowly, and is not common in gardens.

Doronicum Clusii.—We hardly expect Leopard's-bane in autumn, but I give this name to a variety most persistent in its flowering, and continuing to produce flowers quite to the frost. It is an improvement on the normal D. Clusii, having been raised recently from seed by Mr. Harpur-Crewe, and like many other new varieties seems determined to make most of its youth by growing and flowering incessantly. The flowers are as good in colour as those of the Corn Marigold, fully 4 inches across, and as regular in form as if they were artificial.

Grindelia grandiflora.—This was raised from Mr. W. Thompson's seed, and came into flower in July, and has flowered ever since. It has the upright growth of an annual, but is making fresh shoots from the ball, and is evidently of perennial nature. The habit is good, and the flowers strongly resemble those of the Corn Marigold.

Rudbeckia pinnata.—In size and form the plant sent under this name resembles R. subtomentosa, but the colour of the outer rays is paler; they are larger and more drooping, and the centre is purple instead of black, and more conical. The flowers are more conspicuous and less involved in the leaves, and it seems of more vigorous and free habit.

Monarda Russelliana.—This comes into flower nearly two months later than M. didyma, which it resembles, but is not nearly so showy a plant; the flowers are crimson, and from its time of flowering the plant is decidedly an acquisition.

Liatris pycnostachya.—This is rather a provoking plant, as the flower-stalks seem to grow on to an indefinite height without developing any colour; but when they have been in flower for some time they apparently assume a rich purple tint. In warmer soils and sunnier climates than this it would probably be a more ornamental plant. The spikes are 3 or 4 feet long, and require support.

Hardy Rock Plants.

Sedum Sieboldi is not so often grown on rocks and edges of facing walls as it deserves. It is now very gay, and though it flowers late I have never known it miss flowering. There is a variegated form of which I never could see the merit, as it looks like a sickly plant of the green form; and both are often seen in a greenhouse; but for growing where they can hang over a perpendicular face, they are amongst the best of plants. I have plants with from thirty to forty flower-stalks, some of the flower-heads are 4 inches across. The shoots strike readily at any time before the buds are formed. Slugs are troublesome, and it is better to put some anti-slug material round the base.

Tunica Saxifraga is very easily raised from seed, and less easily divided; it makes a pretty late little bush, covered with lilac flowers on delicate stalks.

Œnothera pumila flowers quite to the end of the season, and is so hardy, and so easily grown, as to deserve to find its way wherever there are facilities for growing plants of this sort.

Origanum pulchellum makes branching flower-stalks 2 feet long, which are all flower, little bunches of lively pink and green. It should be grown on a perpendicular side, so as to droop down. O. dictamnus is much dwarfer, and has more downy leaves.

Half-hardy Rock Plants.

Many of these are sold as hardy, and no doubt are hardy in such climates as Devonshire and the Isle of Wight, but they cannot be depended upon to stand a hard winter in other parts of England. So they are easily lost, and many of them after such winters as those of 1879 and 1880 are not easily recovered, though a single light in a cold frame will preserve fifty kinds, and the trouble of putting in a pot of cuttings at the end of summer, or a piece of the plant in November is well repaid.

Polygonum vaccinifolium, a dwarf kind, covered with pretty pink tufts of flower in October. Hardy in mild winters, but killed in most soils in very hard frosts. It has the habit of a dwarf shrub, but is easily divided. *C. Wolley Dod, October* 14.

FRUIT AND FLOWER SHOW IN PARIS.

The autumn show of the Société d'Horticulture de France took place recently in the Pavillon de la Ville de Paris, in the Champs Elysées. It was a successful exhibition as regards fruits and vegetables, which were numerous and good, but the display of flowers was rather thin. One group of plants, however, especially drew the attention of the visitors. It was a collection of Nepenthes—plants not seen at a French show since 1878, when they were exhibited by Messrs. Wills, Veitch, &c. M. Bergman, gardener to Baron A. de Rothschild, at Ferrières, had tastefully arranged this group, which consisted of the following Nepenthes:—Veitchii, Hookerii, albo-marginata, Stewartii, Kennedyana, bicalcarata, Sedeni, Dominiana, intermedia, &c.; also a large specimen plant of Anthurium crystallinum, A. Lindleyanum, A. Andreanum with seven large and beautiful flowers; and A. ornatum, also in flower. The latter were exhibited to show the parentage of the seedling obtained by M. Bergman by crossing A. Andreanum with A. ornatum. This seedling, which of course stood between its parents, has been named after its birth-place, Anthurium Ferrierensis ×. It partakes of both parents,

and has the foliage and vigour of Andreanum, while the flowers more resemble those of A. ornatum, the latter being pink-magenta or deep rose, a shade not before obtained in Anthuriums. The remainder of the group consisted of a dozen good plants of Crotons of the best varieties, and also a dozen Dracænas. M. Bergman was awarded for the whole a large Gold Medal. M. Bleu, the Caladium raiser of Paris, had a small group of Orchids consisting of Cattleya bicolor, Acklandiæ, Lælia Pineli (Præstans variety), Lælia Perrinii, Miltonia Clowesii, spectabilis, &c. These Orchids were well arranged with Ferns, &c. M. Saison-Lierval, nurseryman, of Neuilly, staged a good group of Palms, Ferns, and sundry other hothouse plants, well grown. M. Duval, of Versailles, had some well flowered Cyclamens, Bouvardias, single flowered tuberous Begonias, well grown; and cut flowers of Gloxinias, remarkably fine. M. Lemoine of Angers, showed Tillandsia magnifica, a hybrid between Tillandsia Zahni × Vriesia splendens. M. Edouard André had also some novelties, including Bromelias and Anthurium corrugatum. M. Paillet, of Chatenay, had a dozen of well formed and well berried Cratægus Lalandii.

The exhibitors of tuberous Begonias were rather numerous, the best coming from M. Crousse, of Nancy, who had some cut flowers of double varieties, very large blooms of good shape and of all colours—sulphur, pink, salmon, flesh, blush, red suffused with yellow in the centre, dark red, &c. Then came Messrs. Robert & Couturier, of Chaton, with some very good plants; M. Lequin, of Clamart, &c. Cut Dahlias were also well represented, collections of cut flowers being sent by many of the best seed firms of Paris. MM. Vilmorin-Andrieux & Co. had a good group of annuals, and also a collection of vegetables well to the front. Cut Roses were rather poor, owing to the wet weather which has now lasted for a considerable time: they were exhibited by MM. Lévêque. M. Eberlé, of Paris, showed some Cyclamens in pots, well flowered; also a new Crassula, which he has named gracilis; it is covered with small dark red flowers, and will be a useful subject for autumn carpet bedding, especially as it is said to be able to resist 5° of frost easily. Croux et fils showed a small group of green foliaged shrubs.

In the fruit and vegetable department MM. Croux et fils had the best collection of Pears and Apples, good sized fruits in a good state. The town of Paris showed some large vegetables which had been watered with sewage, and also, to show the growth making powers of sewage, they showed two Poplars eighteen months old, of 15 feet in height, and well branched. M. Mayeux, of Ville Juif, had some handsome Potatos, including Merveille d'Amerique, Vosgienne, Imperiale, &c. M. Lavallée, the President of the Society, sent a basket of Japanese Pears, gathered at his place at Segrey; it is a variety of the Pyrus sinensis, and is a pretty shaped fruit, rather small, pale yellow, dotted with darker yellow spots. What it tastes like we do not know. M. Salomon, Vine grower of Thomery, staged some good Grapes, including amongst others the Chasselas de Fontainebleau, Frankenthal, Muscat of Alexandria, Lady Downe's Seedling, &c., also Peaches, Belle Bauce, Grosse Mignonne, &c. M. Ferdinand Jamain, of Bourg la Reine, had a good lot of Pears, well-shown, and of good sorts. M. Bertant, of Rosny, had some good Apples—Reinette du Canada, Calville Blanche, &c. M. Cottin had also some very good Pears. M. Crapotte, of Conflans, had Grapes—Chasselas de Fontainebleau, &c. M. L'hérault, the Asparagus grower of Argenteuil, had a collection of outdoor Grapes with very small berries. M. Hèdiard, of Paris, showed Algierian fruits; and from M. Cremont came some Smooth Cayenne and Charlotte Rothschild Pines, not ripe. M. Chevalier, of Montreuil, sent a good collection of Peaches, of fine size and colour. M. Jourdain, of Andressy, had some splendid Pears, including Doyenné d'Hiver, Duchesse d'Angoulême, Belle Angevine, and Beurré d'Aremberg. M. Arthur, an amateur, showed some enormous Apples—Josephine, Reinette du Canada, Grand Alexandre; also Pears—Duchesse d'Angoulême, Uvedale's St. Germain, Doyenné du Comice, Beurré Diel, &c. M. Remy père, of Pontoise, contributed a seedling Apple, Belle de Pontoise, something after the Grand Alexandre, but smaller. M. Audibert, of La Crau, staged some thirty varieties of Olives, and eighteen varieties of Diospyros Kaki; and M. Paillet, of Chatenay, had a large collection of English and American Potatos, well-grown and well shown.

Want of space prevents our naming more exhibitors in fruit, fruit trees, and vegetables, but the above are about the best lots.

LIST OF GARDEN ORCHIDS.

(*Continued from p.* 500).

41. SPATHOGLOTTIS, Blume, *Bijdr. tot. Fl. Nederl. Ind.*, p. 400.—Scapes loosely racemose, borne on the rhizome distinct from the 1 or 2-leaved pseudo-bulbs. Leaves elongated, prominently veined or almost plicate. Sepals spreading. Column elongated, not extended at the base into a foot. About ten species, inhabiting India, Southern China, and the Malay Archipelago. Some of them have very showy flowers. Paxtonia has been doubtfully referred to this genus. It is remarkable in the labellum being uniform in size and shape with petals. Lindley thought it might be a peloria, or regular form of a usually irregular type.



FIG. 92.—SPATHOGLOTTIS LOBBII: FLOWERS CANARY-YELLOW.



FIG. 93.—PAXTONIA ROSEA: FLOWERS ROSE.

1. S. FORTUNEI, Lindl., *Bot. Reg.* 1845, t. 19. *Pachystoma Fortunei*, Rchb. f., *Walp. Ann.*, vi., p. 464.—Hong Kong. Originally introduced by Mr. Fortune. A yellow-flowered Bletia-like plant.
2. S. LOBBII, Rchb. f., *Walp. Ann.*, vi., p. 455; *Gard. Chron.*, n.s., v., 1876, p. 534.—Birma. Introduced by Messrs. Rollisson, and cultivated by Sir Trevor Lawrence in 1876. Hort. Kew. (See fig. 92.)
3. S. PACIFICA, Rchb. f., in Seem. *Fl. Vit.*, p. 300.—Fiji Islands. Cultivated by Messrs. Veitch in 1877. A handsome species, with pink or white flowers.
4. S. PAULINÆ, F. Muell.; Fitzgerald's *Austr. Orch.*, p. 6.—North Queensland. Cultivated by Sir W. McArthur.
5. S. PETRI, Rchb. f., *Gard. Chron.*, n.s., viii., p. 392; *Bot. Mag.*, t. 6354.—South Sea Islands. Introduced by Mr. Peter Veitch. A handsome species, with pale purple flowers.
6. S. PLICATA, Blume, *Bijdr. tot Fl. Nederl. Ind.*, p. 401; Lindl., *Gen. and Sp. Orch. Pl.*, p. 119; De Vriese, *Ill. d'Orch. Bletia angustata*, Gaudich., *Voy.*, t. 32.—Java, Luzon. Cultivated in the Buitenzorg Botanic Garden in 1866. Tall, ribbed leaves, and a taller scape bearing a few rather large purple-brown flowers.
7. S. PUBESCENS, Lindl., *Gen. and Sp. Orch. Pl.*, p. 120; Wight, *Ic. Pl. Ind. Or.*, v., t. 1739. *Pachystoma Wightii*, Rchb. f., *Walp. Ann.*, vi., p. 464.—India. Cultivated at Kew in 1882.
8. S. (?) (PAXTONIA ROSEA, Lindl., *Bot. Reg.* 1838, Misc., n. 113, t. 60).—Philippine Islands. Discovered and introduced by Mr. Cuming, and cultivated by Messrs. Loddiges. A very curious Orchid, having rosy-purple flowers, in which the labellum, or that part of the perianth answering to it, is like the other parts, the result being a regular flower. It has been suggested that it is a peloria of some species of Spathoglottis. (See fig. 93.)

(*To be continued.*)

PLANT PORTRAITS.

AMARYLLIS RETICULATA VAR. VITTATA, *Flore des Serres*, t. 2427.—A hybrid between A. reticulata and a seedling hybrid Amaryllis. Flowers of medium size, bell-shaped; segments ovate, pointed at both ends, greenish at the base, with a central stripe and reticulated red veins.

AZARA GILLIESII, Hook. et Arnott, *Flore des Serres*, t. 2445; *Bot. Mag.*, t. 5178.

BAPTISIA LEUCOPHÆA, Nutt, *Flore des Serres*, t. 2449; *Bot. Mag.*, t. 5900.

BRYOPHYLLUM PROLIFERUM, Bowie, *Flores des Serres*, t. 2446.—A curious species, bearing tufts of green leaves on the inflorescence among the flowers.

CATTLEYA SUPERBA SPLENDENS, Lemaire, *Williams' Orchid Album*, t. 33.—Flowers 6 inches across, sepals oblong acute, lilac; petals similar, but narrower, deeper violet; lip 3-lobed, basal lobe purplish-crimson wrapped round into a tube, central lobe flat spreading transversely oblong, two-lobed, magenta coloured. Brazil, Rio Negro.

CRINUM GIGANTEUM, Andr., *Flore des Serres*, t. 2423.

IRIS KÆMPFERI, *Flore des Serres*, t. 2431-36.—We can only cite the names of the fifteen varieties:—Emma Lefebvre, Grand Mogul, Madame Charles van Eekhaute, Paul De Nocker, Valentine De Nocker, Benjamin Davies, Dos Santos Viana, James Eckersley, Jos. Broome, Madame Langaard, Edward Mucklow, Gabrielle De Nocker, G. van Eekhaute, Jean Andries, J. B. Masson.

NERINE, *Garden*, March 25.—1, pulchella; 2, Plantii; 3, pudica; 4, humilis; 5, filifolia; 6, corusca.

PAPHINIA CRISTATA, Lindley, *Williams' Orchid Album*, t. 34.—Flower-spikes from the base of the ovate pseudobulbs; flowers 3 inches across. Sepals and petals lanceolate acuminate, yellow, closely barred with brownish-purple; lip purplish-black, stalked, oblong, 3-lobed, the two lateral ones spreading, the central one hastate acute, apex fimbriate. Trinidad and Guiana.

PEPEROMIA ARGYREA, Hort., *Flore des Serres*, t. 2438.—This is noted as P. Sandersii, Cas. de Cand., *Prod.*, xvi., pars. 1 (1869), p. 400.

PYRUS COMMUNIS, L., *Flore des Serres*, t. 2450.—The wild form of the common Pear, showing variations in the form of the fruit.

PLEROMA MACRANTHUM, Hook. f., *Flore des Serres*, t. 2430; *Bot. Mag.*, t. 5271; *Illust. Hort.*, xvi., t. 594; Lasiandra macrantha, Seemann, *Journ. of Bot.*, t. 413.

RHODODENDRON ELLEN COOK, *Flore des Serres*, t. 2439.—Large flowers, in a compact truss; colour rose-pink, upper petal spotted.

SANCHEZIA NOBILIS, Hook. f., *Flore des Serres*, t. 2437; *Bot. Mag.*, t. 5594; *Belg. Hortic.* 1867, p. 227.

SAXIFRAGA PELTATA, Torrey, *Flore des Serres*, t. 2441; *Bot. Mag.* 1874, t. 6074.

SONERILA SPECIOSA, Zeuk., *Flores des Serres*, t. 2442; *Bot. Mag.*, t. 5026.

SOUDAN VINES, *Flore des Serres*, t. 2452, with some interesting remarks on the five so-called species imported from Soudan by the late M. Lecard.

STONE'S APPLE, or LODDINGTON SEEDLING, *Garden*, March 18, 1882.—See *Gard. Chron.* 1877, vol. viii., p. 745.

STREPTOCARPUS BIFLORO-POLYANTHUS ×, *Flore des Serres*, t. 2429.—A hybrid between pollen of S. biflorus as pollen parent and S. polyanthus the seed parent, raised by M. Lemoine of Nancy. Leaves broad, velvety; flowers cymose, on long scapes, corollas violet, tube long, narrow, curved; limb flat, unequally 5 lobed, lobes obtuse.

Home Correspondence.

Dahlias: Double *v.* Single.—In spite of the supreme contempt of your correspondent, "T. W." (p. 470) for double Dahlias I think they can still hold their own as a deservedly popular flower. What flower in appearance could be more chaste and beautiful than the best forms of our double white Dahlias, when grown in a natural and not over stimulating compost?—and as we well know they are in great request for wreaths, crosses, grave and church decoration, in the eyes of the general public they can hardly be the painted Jezebels your correspondent so *naïvely* describes them. I must beg to dissent from the modesty of his Ruth. We have seen the smaller varieties used with good effect in bouquets, and I think it will be generally admitted that Dahlias are almost scentless unless crushed, at least far from any unpleasant rankness of odour which our friend tones down in his singles to a scarcely perceptibility. Ladies come to our nursery specially for double Dahlias, while cartloads realise a good price in Covent Garden Market—a convincing proof that they cannot be so obstinately unmanageable in any arrangement of cut flowers, at least not utterly intolerable. Single Dahlias are undoubtedly very effective flowers, and as we now worship Paris Daisies and Sunflowers we must not say too much in respect of their eyes, or we may have to look to our Ruths for similes. As our admirer and respecter has also such respect for his weird beauties I can hardly understand how he expects florists to give them form and refinement, unless his primeval pet is to be evolved into a double variety incapable of improvement. *G. A. Roberts, Feltham.*

Dipladenia amabilis.—In the gardens at Heslington Hall, York, the seat of G. Bateson de Yarburgh, Esq., there is a splendid specimen of the above-named plant that fully merits a notice in the *Gardeners' Chronicle*. The plant in question is growing in a lean-to low-pitched house, formerly used as a fruiting Pine-stove, consequently it is well heated, which I think most plant growers will agree with me in saying is a necessary point in the culture of Dipladenias, especially the rose-coloured varieties, as I find that the white Dipladenia boliviensis can be grown fairly well in a temperature several degrees lower than the coloured varieties. It is trained up the roof about 8 inches from the glass, covers a space of 12 feet by 6 inches, and has about fifty flowers open, each flower being fully 5 inches in diameter. It began to bloom in June last, and has continued to do so without intermission until now. Mr. Hornby, the gardener, informs me that last year it began to bloom at the same time, continued to do so until November, and produced altogether close on 400 blooms. I noticed that it bore six seed pods, each pod being about 10 inches long and about as thick as a good-sized garden lead pencil. At present they are quite green, and are growing in pairs, the whole six evidently being set at the same time. It was planted three years ago, in a well-drained brick enclosure, about 2 feet square, situated at the front part of the bed in which the Pines used to be plunged. The compost in which it is growing is a mixture of equal parts of tough fibrous peat and sandy loam. Some of the nodes on which the flowers are produced show twenty-three flower-scars. Associated with it on the roof are healthy well-flowered plants of Allamanda Hendersoni and A. Schotti, and Stephanotis, while on the bed underneath are a quantity of well-bloomed plants of Eucharis amazonica, with about one hundred flowers open, and a number of well-coloured Crotons and Dracænas of sorts; the whole presenting, as can well be imagined, a very fine floral picture at this dull season of the year. *H. J. Clayton, Grimston, October* 10.

Fruit Trees: "The Yellows."—The time has arrived when those who have trees affected by the above complaint ought to endeavour to do something to get rid of it. Although it is a curable disease if taken in time, it is, nevertheless, one which, when allowed to have its own course too long, very frequently ends in the death of the trees which are suffering from it. Without wishing to go into details too minutely respecting its origin, it would be as well to remark that it can be brought about in various ways, but when investigated thoroughly it will be found that, in nine cases out of ten, two things are its progenitors, viz., cold, wet, and badly-drained soils, and soils of a poor, poverty-stricken nature; remedy these two defects, and it is rarely indeed that the "yellows" will give any trouble; but, on the other hand, neglect trees which are affected by them, and the result will only too surely prove to be short crops and an early death. Peaches and Nectarines are probably more susceptible to the yellows than any other kind of fruit we grow, and this is doubtless owing to the fact of their being the most tender—Figs excepted—of our hardy fruits. Nevertheless, when it is seen that they are suffering from it, if only in a mild form, they should be taken in hand, and the only known remedy applied, viz., lifting and replanting in a better soil. "What is worth doing is worth doing well," should be the motto in this case; I would therefore recommend that the soil be taken out to a depth of not less than 18 inches, the top spit and a shovelling to be cast on one side, to be mixed up hereafter with the fresh compost, which should consist of good turfy loam from a pasture with a little well decomposed manure added thereto. Replant the trees with their roots somewhat near the surface, and give a mulching of about 4 inches of half-decayed stable manure. Many evils arise from planting too deep, and also from defective drainage; indeed, if success is to be attained too much attention cannot well be bestowed on the latter point. Apples, Pears, Plums, Cherries, and Apricots are also at times affected with "the yellows," but in their case the remedy is precisely the same as with Peaches and Nectarines. Replant in a better soil, well drain it if necessary, and the evil will disappear. *J. Horsefield, Heytesbury.*

Double and Single Flowers.—Fashion has much to do with the estimation in which most, if not all things are held, and flowers are no exception in this respect. The time was when double flowers were generally considered as improvements upon the single forms; and the double Dahlia was regarded as an extraordinary advance upon the single varieties, which were introduced into this country from Mexico nearly a century ago. But the wonderfully full form of the modern double Dahlia may possibly, in a great measure, be the result of a blending with the double variety of Dahlia excelsa, which was known as Dahlia excelsa anemonæflora, and which was introduced from the same country about the year 1830. The double forms of the Dahlia have now, however, to some extent got out of favour, notwithstanding their perfect form and rich colouring, and are somewhat unkindly pronounced inelegant, heavy, and lumpish; and the single forms are all the rage, and exceedingly beautiful they certainly are. It is quite possible that the double condition of the Rose may in like manner ere long be considered objectionable, and the beauty of the single varieties may, as in the case of the Dahlia, be improved and diversified. At a time when the double Dahlia has to some extent been condemned on account of its lumpish aspect, as it has been somewhat irreverently expressed, it is strange to think that the Sunflower in either its single or double form should have come so greatly into favour. But such is, nevertheless, the case; it has already been elevated to a position in the lady's hat, and may ere long be considered the correct thing for the buttonhole bouquet or other personal decorative purpose; and as soon as a divergence from the normal yellow ray with black disc can be secured, it will doubtless become the flower of the day, for a time at least. Still its admirers, however highly they may extol its beauty, can hardly attempt to altogether exonerate it from the charges brought against the unfortunate double Dahlia. There are, however, Sunflowers and Sunflowers, and the above remarks will, of course, be understood to apply to the well-known annual Sunflower (Helianthus annuus); while against such species as the Helianthus multiflorus the charge of lumpishness cannot certainly be preferred; on the contrary, it is one of the most elegant and attractive of our many yellow autumn-flowering Composite plants, and ought to be found in every collection of hardy perennials. It is a native of North America, but has long been grown in this country, although perhaps not so extensively as it deserves to be. It attains to a height of 4 feet or upwards, and the individual blooms are some 2 inches in diameter, and are of a bright yellow colour, while the plant continues in flower throughout the entire months of September and October, or even to a later period if the weather prove mild. The blooms are useful for the purpose of placing in vases, &c., as they keep well in water. It is easily increased by division in spring, and will succeed in any kind of soil. There is also a double-flowered variety of this plant which is equally beautiful, and does not grow quite so tall. *P. G.*

Single Dahlias.—That we are a people of extremes can hardly be denied: let a fashion once be set, "make a thing the thing," and there seems to be no bounds to the excess to which we may go in carrying it out. It is so in dress: let our French neighbours but once set the fashion and it is so outrageously carried out here that it almost becomes another thing. Look at the unusual mania for lawn tennis: really the *raison d'être* of existence with some people seems to be that they may play the game—if they cannot "life is not worth living;" and so again in that on what you so fitly wrote last week, harvest decorations—the incongruity of some of these displays, the entire spoiling of the character of the building, and the exertions made to supply them are all the outcome of this propensity of running into extremes. And so in floriculture. Some time ago bedding-out was the fashion, and greenhouses, pits, conservatories, were all brought into use for the purpose of supplying plants for the purpose and the great point seemed to be to outvie one's neighbours in the number of plants used; well, a change has come, and we are now in danger of having our gardens flooded with a lot of rubbish, or filled with single Dahlias. I do not in the least want to disparage these beautiful flowers—they are most valuable for cutting—there are bright and beautiful colours amongst them, but I do think we may have too much of them; and what is one to think of the Floral Committee which at one sitting gave First-class Certificates to no less than nine of these flowers! It must be borne in mind that there are no fancied or fanciful (as people may imagine) lines drawn for their perfection; not, for example, as the double Dahlias, where the flower must be well built, as it is called—the centre well up, and the florets regularly disposed. Not as it is in the Picotee, where the marking must be confined to the edge, without bars or splashes; and it is not, I think, too much to say that from a 1*s.* packet of carefully saved seed flowers in every respect as good as those certificated can be produced. Would it not have been wiser, *i.e.*, more in the interest of the public, if that had been done which has for a long time held in some other flowers, such as Calceolaria and Cineraria, *i.e.*, give a certificate for the strain instead of for the individual flower? But, indeed, it seemed to shower certificates last Tuesday, for no less than six Pernettyas were also decorated. Some beneficent conjunction of the planets must have been over the Council-room, which, had other exhibitors known, they might have been induced to avail themselves of. I think, too, that it is a mistake to look for rather large flowers, or flowers with a double set of petals. The great beauty of these flowers is for cutting. The show Dahlias, or the bouquet Dahlias, are, it must be confessed, more showy in the garden, and it would be well that we should not lose the singular beauty of these flowers by attempts to improve them either in size or doubleness. May I say that the complaint which I sometimes hear made concerning them, that they do not last long in water, is not borne out by my experience. I am sitting in front of a vase, in which are two or three of them, and they are still fresh and sweet [although gathered some days since?]. *Wild Rose.*

Rubus laciniatus.—I believe this is the finest of all the Rubus. The bush from which I cut specimens forwarded to the Editor is about 5 feet high and 4 feet through, completely laden with fine branches of this delicious fruit, which should be grown in every garden for its usefulness, as well as for its ornamental foliage. The Vaccinium monspeliense is also worth extended cultivation on account of its luscious fruit, which is borne in great abundance. *D. Dartnall, 52, Lynton Villa, Frant Road, Tunbridge Wells.*

Trees at Moor Park, Farnham.—In giving the girth of trees at Moor Park, the figures relating to the Alder stated to be 21 feet 10 inches at the narrowest part should be 13 feet 10 inches. There are several others upwards of 8 feet in girth at 4 feet from the ground. Your correspondent, "H. E.," asks some particulars of the Scotch Fir measuring 12 feet 8 inches in circumference. It separates into noble branches at 6 feet and 9 feet from the ground, the branches extending to a distance of 40 feet from the centre of the tree, but the main trunk maintains an upright position, and is perhaps 90 feet in height. The tree is one of seven or eight near together, varying in girth from 9 feet 9 inches to 12 feet 8 inches. There are scores measuring from 5 or 6 feet to 10 or 11 feet. Silford should be Tilford. *J. Fred. Bateman, Moor Park, Farnham.*

The Colours of the Autumn Foliage.—Standing in front of Marlfield House, the residence of Mr. and the Hon. Mrs. Bagwell, near this town, yesterday—mid October—and letting the eye wander from the closely cut velvety carpet at my feet, skirting the graceful sweep of the river Suir in front, my attention was irresistibly arrested by those glorious autumn tints of the slowly declining foliage. One seems intuitively driven to reflect on the beneficent prescience of the Creator, in reserving for this dull time vivid colours not to be seen in summer, when Nature is decked in her brighest costume. Even the high hills in the background seem to wear a fresher bronze hue; and the Conifers and Rhododendrons, with the undergrowth of adjoining mosses and lichens, seem to compete with the bright glowing tints of the Ghent Azaleas. Turning around in front of the mansion, what can exceed in brilliancy, just now, Vitis purpurea, Ampelopsis Veitchii, Cotoneaster velutinus, &c.? *W. J. Murphy, Clonmel.*

Cotoneaster microphylla.—For covering banks, trailing over rockwork, or low walls or fences, Cotoneaster microphylla is quite unsurpassed, and not only is it well adapted for any of these purposes, but it is very suitable for embellishing the front of a house, the only drawback to using it in that way being that

it takes a long time to cover any great space. The finest specimens I have ever seen of it are on a dwelling at Felixstowe, where the plants have reached the eaves and are just now in splendid sheen, as they are clothed from base to summit with a rich profusion of their bright coral berries, and are greatly admired by all passers-by. It is strange that a plant so persistently trailing or pendulous as this Cotoneaster is should go up a wall, but it appears if it cannot travel its own way it will go another, and so gradually creeps up aloft. As the berries are red, it is seen to greatest advantage against white or light-coloured bricks, where it shows up in pleasing contrast; and being evergreen and having very small, shining green leaves, it is always cheerful looking whether in fruit or not. Those who are not so fortunate as to have plants of it will find this a good time to obtain them, and this is also the right season for layering if an increase in stock is desired. To induce roots to form quickly, the stem to be buried should be slightly twisted or scraped, so as to remove a portion of the bark, at which injured parts callus soon forms, and young fibrils then follow. Sharp sandy soil encourages these, and enables the plants to be lifted with plenty of ball. *J. S.*

Florists' Flowers.

PROPOSED PINK SHOW IN 1883.—Having in the course of conversation with friends assured myself that a Pink show was a thing much to be desired, and might be accomplished by means of a little effort, I thought it best to wait for the completion of the Royal Horticultural Society's programme for 1883 before taking any further steps in the matter. But time flies. The exhibitions to be held next year at South Kensington are not as yet determined on, and if I wait any longer for the signal for action the project may be prejudiced, for one season at least. I think it proper to say, therefore, that the object I have in view is to revive an interest in the Pink as a florists' flower, and it seems for the present likely that this can best be accomplished in the first instance by an exhibition in London. What may be attempted subsequently must rest with the cultivators. It will be understood, of course, that my intention is simply to initiate a movement that may lead to something more than a mere exhibition, for I should hope to see the gardens of England made the richer for renewed attention to one of our oldest, sweetest, and most interesting flowers. The matter being now before the public, I think it proper to say that I will act as honorary secretary to the proposed exhibition, and in due time hand over my portfolio to any better man who may be appointed to take my place. In the meantime I will seek the counsel and help of growers of Pinks, and secure from them as many subscriptions of 5*s.* each as will be likely to suffice for a respectable schedule and a few merely nominal expenses. That opinions are divided about the properties of Pinks, adds, I think, very much to the interest of the proposed exhibition. In a multitude of counsellers there is wisdom; let us then have many views and voices on what constitutes the Pink of perfection. As the place of the proposed Pink show has not been mentioned, I would propose that we take a lesson from our friends the exhibitors of Auriculas and Carnations. They have done well at South Kensington, which is now the proper centre of horticultural energies, and peculiarly accessible from all parts of the country. The last week in June will probably suit more growers than any other time, but an earlier date will not suit anybody. *Shirley Hibberd*, 15, *Brownswood Park, London, N.*

NEW SINGLE DAHLIAS.—The rapidity with which these are produced in new forms was again most forcibly illustrated at the meeting of the Royal Horticultural Society on the 10th inst., as Messrs. T. S. Ware, of Tottenham, and H. Cannell & Son, Swanley, staged many seedlings of great promise. First-class Certificates were awarded to Mr. Ware for the following:—Mrs. Goldring, pale pinkish-mauve, large and very fine, petals stout and well shaped; Pantaloon, maroon, with a white flame shaded with carmine filling up a large portion of the centre of the petals, very novel and attractive; Cherry, cherry-rose in the centre, paling off to rosy-magenta towards the points of the petals, very novel and distinct in colour; Mrs. Burbidge, crimson, suffused with purple on the edges, fine form and very pretty; and White Star, pure white, slightly reflexed, excellent form. The same award was made to Messrs. Cannell & Son for Marguerite, dashed with pale rosy-purple round the eyes, paling off to a silvery magenta-pink at the points of the petals, very attractive; Tyro, orange-red round the centre, the petals tipped with pale purple, very novel; and Yellow Gem, pale yellow, clear in colour, and good form. Other fine new varieties, shown for the first time by Mr. Ware were Lucy Ireland, rich crimson lake, flushed with purple, very fine; A. F. Barron, pale purple, the sides of the petals having a narrow stripe of whitish lilac, and in a few cases broadly flamed in this way; Mauve Queen Improved, pale purplish-mauve, large and finely formed petals; Red Light, very rich scarlet, perhaps the very best scarlet yet raised, extra fine; Violet, crimson, much flushed with bright purplish-violet, distinct and very good; Walter Ware, shaded crimson, novel and good; Thalia, the centre rich reddish-crimson, paling off to purple towards the points of the petals; Single Zinnia, bright orange-scarlet, distinct and pleasing; Clown, pale lilac striped with reddish-purple, and flamed with purple; and George Clarke, really a Paragon improved, being in the same way; but the bright margin at the sides of the petals, which are inconstant in Paragon, are always present in the case of the improved variety. It appears to be quite certain that the seedlings are increasing in size, as might be expected, and there is a fear that many will come unduly large, while others are taking on the semi-double form. Single Dahlias will be most popular when they are of the size of White Star, with its broad well formed, and slightly reflexed petals. *R. D.*

DAHLIA SHIRLEY HIBBERD.—Those who attended the meeting of the Royal Horticultural Society on October 10, and were interested in the Dahlias shown on that occasion, both single and double, could not help being struck with the peculiar marking on a bloom of this variety on a stand of flowers shown by Messrs. Rawlings Bros., of Romford. It served to illustrate in a remarkable manner how nearly some of the shaded show Dahlias approach the fancy varieties. The variety under notice is in its general character a dark self shaded with bright crimson on the surface. In this particular case the crimson shadings have taken the form of a distinct and decided edging or tip to the petals, and very attractive it was; and in this form it made an excellent and undeniable fancy. Seeing that the leading characteristic of a fancy Dahlia is that the ground colour shall be dark, with an edging or tip of a brighter colour—reverse these and we have a tipped show Dahlia—it will soon be very difficult to decide where a show Dahlia ends and a fancy variety begins.

NEW POMPON OR BOUQUET DAHLIAS.—Mr. C. Turner, of the Royal Nursery, Slough, set up a charming group of new varieties of these at the Royal Horticultural Society's recent meeting. They were all seedlings raised at Slough, and at this late period of the year were blooming freely in the open air at Slough. Of these new varieties First-class Certificates of Merit were awarded to the following:—Nymphe, pale yellow ground, slightly tipped with amber, very pretty, and of exquisite form; Isabel, pure bright scarlet, petals slightly reflexed, good form; Little Duchess, pale ground, tipped with crimson purple, finely-formed petal, exquisite shape, small; and Little Princess, French-white ground, slightly tipped with reddish-purple, small, good form, pretty and distinct. The varieties that did not receive certificates were very fine also, viz., Gem, rich crimson, fine shape; Peacemaker, pale rosy-mauve, very pretty and distinct; Garnet, pale orange-scarlet, fine form; Cupid, like little Princess, but larger; Favourite, shaded crimson, very fine; Mabel, bright lilac, flushed with mauve, very pretty and good shape; The Khedive, pale ground, heavily tipped with maroon, fine form and good petal; and Coquette, mottled red and yellow, very novel and attractive, good form. It was worthy of notice that all these new varieties have medium-sized, full, and very symmetrical flowers. It seems superfluous to state that they are all very free of bloom, as it is a peculiarity of the bouquet Dahlia to flower with amazing freedom. Lastly, they are all of dwarf habit, averaging from 2½ to 3 feet. Each variety was set up in large bunch in that elegant way adopted by Mr. Turner at the Crystal Palace Dahlia Show; and they formed a very attractive feature in common with the single Dahlias at one of the pleasantest October meetings ever held by the Society. *R. D.*

Reports of Societies.

Nottinghamshire Horticultural and Botanical: *Oct.* 9.—The monthly meeting of this Society was held at the Mechanics' Institution, Nottingham, Mr. Alfred Pearson, of the Chilwell Nurseries, in the chair, Mr. W. H. Frettingham, of Beeston, read a paper on "The Rose and its Cultivation," which was both interesting and instructive, the reader dealing with the subject in a thoroughly practical manner, giving details of soil, situation, manures, &c., most suited to the successful cultivation of the Rose, more especially for exhibiting, together with a list of the kinds most suitable for different situations, and describing the numerous varieties of insects, &c., injurious to the Rose. A lively discussion followed, and a vote of thanks was accorded to Mr. Frettingham for his paper. A fine collection of Dahlias, including the beautiful white Cactus Dahlia Constance, and a splendid collection of Apples, were exhibited by Mr. J. R. Pearson, of Chilwell. Mr. Pownall, of Lenton Hall Gardens, exhibited some peculiar samples of different varieties of Apples growing on the same tree, and sporting from the original variety; while Mr. German, of Malvern House, contributed a grand spike of flowers of Oncidium crispum, which was much admired. Mr. Edmonds, of Bestwood Lodge, sent a collection of very fine fruits of Tomatos, most noticeable among them being the new variety, Dedham Favourite; and from Mr. Anderson came some splendid specimens of Pears, supposed to be Doyenné d'Eté, but in respect to which some doubt seemed to exist. Mr. Frettingham exhibited what was for the time of year a very fine box of cut blooms of Roses. A vote of thanks to the different exhibitors and the Chairman for presiding concluded the business of the meeting.

Fungus Foray near Huddersfield.—On Sunday evening, the 8th inst., a large number of botanists in connection with the various societies in the neighbourhood of Huddersfield assembled at the Sun Inn, Highgate Lane, Lepton, and held a meeting specially for the display of the fungi of the district. The result of the day's hunt was arranged on tables in the large room, and the meeting being also open to the general public a large number of people assembled, the room being crammed.

Mr. Richard Jessop, President of the Lepton Botanical Society, occupied the chair. He opened the meeting by expressing his pleasure at seeing so many persons assembled to see and hear what was to be said about a class of plants so generally despised and so little studied by our local botanists; he hoped that though this was the first meeting of the kind ever held in the district, it might not be the last. He called upon Messrs. A. Clarke and John Carter, of the Huddersfield Botanical Society, to name and describe the specimens on the table. The following is a list of those named:—Agaricus (Armillaria) melleus, A. (Tricholoma) imbricatus, A. brevipes, A. (Collybia) maculatus, A. velutipes, A. (Psalliota) albo-cyaneus, A. æruginosus, A. semiglobatus, A. campestris, A. (Hypholoma) fascicularis, A. (Psilocybe) Fœnisecii, A. (Panæolus) separatus, A. fimiputris, Coprinus conatus, C. atramentarius, Hygrophorus virgineus, H. niveus, H. pratensis, H. puniceus, H. psittacinus, Lactarius acris, L. blennius, L. subdulcis, Russula emetica, R. heterophylla, Marasmius oreades, M. ureus, Polyporus versicolor, P. squamosus, P. sulfureus, Clavaria inæqualis, C. fumosa, Phallus impudicus, Scleroderma vulgare, Geoglossum olivaceum, Peziza aurantia, Xylaria Hypoxylon. Several large dishes of fungi, cooked by the landlady, were placed upon the table and the contents handed round, that the flavour of each species might be compared. They comprised Coprinus comatus, Hygrophorus pratensis, and H. virgineus. The first-named was very generally considered to be the finest in flavour. Considerable amusement was caused by the sceptical part of the company, first declaring that they would never eat such rubbish, then sipping gently, and finally indulging heartily in the contents of the several dishes. After considerable discussion and conversation the usual votes of thanks terminated the first fungus meeting in the district.

Obituary.

WE regret to record the death, on the 12th inst., of Mr. HENRY MCMILLAN, aged seventy-four. Mr. McMillan was with Mr. Cattell, of Westerham, for thirty years as manager, and was also for several years manager at Messrs. Veitch's Combe Wood nurseries, and for the last sixteen years had been in business at St. James' Road, Kingston-on-Thames.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON, FOR THE WEEK ENDING WEDNESDAY, OCT. 11, 1882.

Month and Day.	Barometer. Mean Reading Reduced to 32° Fahr.	Barometer. Departure from Average of 18 years.	Temperature of the Air. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 30 years.	Hygrometrical Deductions from Glaisher's Tables 6th Edition. Dew Point.	Degree of Humidity. Sat. = 100.	Wind. Average Direction.	Rainfall.
Oct.	In.	In.	°	°	°	°	°	°			In.
12	29.30	—0.30	55.5	49.0	6.5	51.5	+ 0.5	47.9	90	S.S.W. S.S.E.	0.15
13	29.65	—0.05	58.5	45.5	13.0	52.8	+ 2.1	48.6	86	E. E.S.E.	0.04
14	29.81	+0.12	56.0	49.0	7.0	51.8	+ 1.4	46.0	83	E: N.E.	0.62
15	29.74	+0.04	56.0	47.2	8.8	50.3	+ 0.1	46.3	■	S: N.W.	0.12
16	29.46	—0.24	49.5	45.5	4.0	47.3	— 2.7	46.5	97	E: S.E.	1.14
17	29.71	+0.01	49.0	44.5	4.5	46.8	— 3.0	44.7	93	N.	0.12
18	29.93	+0.23	49.5	42.0	7.5	45.9	— 3.8	44.0	94	SW: W	0.00
Mean	29.67	—0.03	53.4	46.1	7.3	49.5	— 0.8	46.3	89	E.	1.59

Oct. 12.—Raining from early morning; dull, overcast day and night.
— 13.—Raining in early morning; generally cloudy throughout. Occasionally misty. Rain at night.
— 14.—Overcast. Occasionally thin rain in early morning.
— 15.—Overcast day and night; rain from 9 P.M.
— 16.—Heavy rain almost continuously throughout day and night.
— 17.—Dull, overcast, with showers of rain. Dark, damp night.
— 18.—A dull, misty day; fog from 11 to 1 A.M., with slight rain. Foggy during evening. Very dense fog from 8 to 9 P.M.

LONDON: *Atmospheric Pressure.*—During the week ending October 14, the reading of the barometer at the level of the sea decreased from 30.16 inches at the beginning of the week to 30.09 inches by 9 A.M. on the 8th, increased to 30.17 inches by 9 A.M. on the 9th, decreased to 29.52 inches by 9 A.M. on the 12th, and was 30.02 inches by the end of the week.

The mean reading for the week at the level of the sea was 29.89 inches, being 0.30 inch lower than last week, and 0.02 inch above the average of the week.

Temperature.—The highest temperature in the week was 67°.5, on the 9th; on the 12th the highest temperature was 55°.5. The mean of the seven high day temperatures was 60°.5

The lowest temperature in the shade in the week was 47°, on the 8th; on the 11th the lowest temperature was 54°. The mean of the seven lowest temperatures was 49°.3.

The greatest range in one day was 18°, on the 8th; the smallest was 6°, on the 11th. The mean of the seven daily ranges was 11°.2.

The mean temperatures were—on the 8th, 54°.9; on the 9th, 57°; on the 10th, 55°.7; on the 11th, 56°.6; on the 12th, 51°.5; on the 13th, 52°.8; and on the 14th, 51°.8; and these were all above their averages by 2°.7, 5°.1, 4°.1, 5°.3, 0°.5, 2°.1, and 1°.4 respectively.

The mean temperature of the air for the week was 54°.3, being 1°.1 lower than last week, and 3° above the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun, was 119°.4 on the 8th; the highest on the 12th was 71°.5. The mean of the seven readings was 91°.3.

The lowest reading of a minimum thermometer with its bulb placed on grass and fully exposed to the sky was 38°.7, on the 8th. The mean of the seven readings was 41°.7.

Rain.—Rain fell on four days, to the amount of 0.24 inch.

ENGLAND: *Temperature.*—During the week ending October 14 the highest temperatures were 67°.5 at Blackheath, 67°.1 at Cambridge, and 65° at Truro and Sunderland; and was 58°.7 at Bradford, 59°.8 at Wolverhampton, and 60° at Hull and Leeds. The general mean was 62°.4.

The lowest temperatures in the week were 36° at Truro, 38°.5 at Bolton, and 38°.8 at Wolverhampton; the lowest temperature at Leeds was 47°, at Blackheath 45°.5, and at Bradford 45°.4. The general mean was 41°.6.

The greatest ranges of temperature in the week were 29° at Truro, 24°.1 at Cambridge, and 23°.2 at Bristol and Leicester; the least ranges were 13° at Leeds, 13°.3 at Bradford, and 17°.7 at Liverpool. The general mean was 20°.8.

The mean of the seven high day temperatures was 62°.3 at Truro, 60°.8 at Cambridge, and 60°.5 at Brighton and Blackheath; and was 56°.5 at Bradford, 57° at Wolverhampton, and 57°.2 at Liverpool. The general mean was 58°.9.

The mean of the seven lowest night temperatures was highest at Brighton, 49°.7, at Leeds 49°.6, and at Blackheath 49°.3; and was lowest at Wolverhampton, 42°.6, at Truro 44°.6, and at Plymouth 45°.4. The general mean was 46°.8.

The mean daily range was greatest at Truro, 17°.7, at Wolverhampton 14°.4, and at Plymouth 13°.8; and was least at Bradford, 8°.1, at Leeds 8°.3, and at Brighton 10°.8. The general mean was 12°.1.

The mean temperature of the week was highest at Blackheath, 54°.3, at Brighton 54°.1, and at Cambridge 53°.3; and was lowest at Wolverhampton, 48°.8, at Bolton 50°.5, and at Liverpool 50°.6. The general mean was 51°.8.

Rain.—The largest falls of rain were 1.60 inch at Wolverhampton, 1.35 inch at Truro, and 1.11 inch at Leicester. The lightest falls were 0.24 inch at Blackheath, and 0.37 inch at Brighton and Liverpool. The general mean was 0.84 inch.

SCOTLAND: *Temperature.*—During the week ending October 14 the highest temperature was 61°, at Dundee; at Edinburgh the highest temperature was 57°.3. The general mean was 59°.1.

The lowest temperature in the week was 37°, at Perth; at Greenock the lowest temperature was 46°.4. The general mean was 42°.3.

The mean temperature in the week was highest at Glasgow, 53°.7; and was lowest at Perth, 51°.8. The general mean was 52°.8, being 0°.8 below that of the week immediately preceding, but 6°.9 above that of the corresponding week of 1881.

Rain.—The largest fall was 1.30 inch, at Greenock, and the smallest was 0.80 inch at Dundee. The general mean fall was 1.06 inch.

JAMES GLAISHER, F.R.S.

Variorum.

THE INTRODUCTION OF THE POTATO.—Solanum tuberosum, the common Potato of our fields and gardens, was first introduced by Sir Walter Raleigh, who brought the roots from Quito, and caused them to be planted in his own garden at Youghal, in Ireland. On the plants arriving at maturity Sir Walter's old gardener, availing himself of the privileges of his situation, gathered some of the fruit, or "Potato-apples," as they are now called, and tasted them. Those of our readers who have eaten of this particularly unpalatable and unwholesome production will feel no wonder that the ire of the old man should have been raised. Breaking in unceremoniously on his master's studies, he exclaimed, "If this is your fine foreign fruit, I would not give it garden room, not I!" "Well," said Sir Walter, "if it is as bad as you say, dig it up at once; but if you find any roots worth looking at, bring them to me." It is, perhaps needless to say that the roots proved very well worth examining. It was not, however, until about 1732 that regular Potato crops were cultivated in Scotland. England followed the example set by the Scottish farmers, and grew the new root. So deep was the prejudice existing against this plant in the minds of the ignorant that when the Russian Government issued seed Potatos to the native cultivators, with orders to attend to the increase of the crop, the new tubers were called the "Devil's Apples," a name which in some remote districts of the Oural they still bear. *Cassell's Popular Educator.*

CANADIAN PLANTS.—Some of the Canadian botanists have lately been investigating the flora of Point Pelee, Essex, Ontario, the most southern point on the mainland of Canada, and they have published some of the more interesting results in Coulter's *Botanical Gazette.* Point Pelee, we may remind the reader, is the extreme southern point of the wedge-shaped tract of country between the lakes and ending in Lake Erie. Its latitude is about 41° 45', or about the same as that of Rome, and its climate is warmer in summer, and much colder in winter, than that of England. The list of plants is remarkable for the southern nature of most of the species enumerated. To this locality never before having been thoroughly explored is attributed the seemingly extraordinary fact that of the following twenty-one plants the first eleven had apparently heretofore not been recorded as found in Canada, while the remaining ten have but very rarely been noted:—Corydalis flavula, Hibiscus Moscheutos, Ptelea trifoliata, Gleditschia triacanthos, Opuntia Rafinesquiana, Nyssa multiflora, Ipomœa pandurata, Fraxinus quadrangulata, Morus rubra, Quercus palustris, Smilax tannoides, Asimina triloba, Sisymbrium canescens, Cerastium oblongifolium, Phaseolus helvolus, Baptisia tinctoria, Galium pilosum, Vernonia fasciculata, Acerates viridiflora, Fraxinus viridis, and Quercus Prinus. The large size and plenitude of the Papaw (Asimina), Mulberry, Blue Ash, and Sour Gum (Nyssa) trees, were taken as evidence of their being indigenous, and would indicate that they are not merely chance survivors, but that the soil and climate fully meet their requirements. Along Lake Erie, at Amherstburg, Pelee Island, and in the neighbourhood of Port Stanley the following plants were found, no less than eight of which had not previously been ascertained to belong to the Canadian flora:—Viola cucullata var. palmata, Euonymus atropurpureus, Gymnocladus canadensis, Agrimonia parviflora, Geum vernum, Rosa setigera, Cratægus subvillosa, Heuchera hispida, Thaspium trifoliatum, T. barbinode, Cynthia virginica, Chærophyllum procumbens, Tecoma radicans, Plantago cordata, Prosartes lanuginosa, Carex Steudelii and C. Grayi. Gymnocladus was seen with a trunk 2 feet in diameter.

Answers to Correspondents.

BROCCOLI AND CABBAGE: *Broccoli.* Cauliflowers were tried at Chiswick in 1876, and the report thereon is published in the *Journal of the Royal Horticultural Society*, vol. iv., part 5. The trial of Cabbages took place in 1877-78 (see vol. v., part 8); and Savoys in 1877 (see vol. v., part 5).

COPROSMA BAUERIANA VARIEGATA: *J. L.* Propagate by cuttings in spring. Insert them in sand in a little heat.

CUCUMBERS: *John Smith.* Many thanks. A well-grown sample of Telegraph, but not the best strain that we have seen.

FRUIT TREES—ESPALIERS: *W. A.* Determine the character of your espalier-trellis from the surroundings of your place. A trellis of woodwork may be made very ornamental, and will last for several years; but if you elect to have lighter material consult a wire-worker, who will put you up a neat trellis at a trifling expense. Three of the best Apples that you can plant are Lord Suffield, Stirling Castle, and King of the Pippins. Espalier training simply means that posts, or supports of any other kind, shall be inserted into the ground perpendicularly, and that wires shall be fastened to them horizontally at about a foot apart. When ordering your trees you have only to state that you want them for espalier training, and they will be sent to suit your purpose. In planting the trees give no manure whatever, but use good maiden loam, well chopped up, and keep the roots of the trees near to the surface of the ground. Then lay 1 or 2 inches in depth of light manure upon the surface of the soil over the roots, as a means of keeping the temperature of the soil equable. Do not train the shoots to the wires after planting, as the fresh soil may subside a little, and it will be soon enough to fasten the shoots of the young trees to the wires in the spring. The height of your trellis should be about 4 feet.

FUNG: *F. F., Ravensdale.* 1, from the dead branch of a Beech tree, is Agaricus mucidus, a very handsome white glutinous fungus peculiar to the Beech; 2, the large, red, and handsome fungus from the grass, is Hygrophorus puniceus; 3, also from the grass, is the buff-coloured Hygrophorus pratensis, a valuable edible species; 4, the small yellow species, also from grass, is Hygrophorus ceraceus. The different species of Hygrophorus are great ornaments to lawns, short pastures, and grassy places in late autumn; their substance is somewhat waxy. Many of the species are edible, of which your No. 3, and the white Hygrophorus virgineus, are perhaps the best.

GREEN DAHLIAS: *Lexham.* Such cases are not very uncommon. The flowers are not formed, but the scales, by way of compensation, are developed into leaves. The case is interesting from a botanist's point of view, and one of them in a collection is sufficiently attractive to make it worth while to grow it. No blame attaches to the seedsman, as the occurrence is a "natural accident."

INSECTS: *J. G.* The small objects on the shoots of your decaying Thuia aurea are masses of the cocoons of a minute parasitic Ichneumon (Microgaster alvearius), which have destroyed some caterpillars which have been feeding on the foliage of the Thuia. *I. O. W.—W. F. & Sons.* The green grasshopper sent is a Brazilian species of Conocephalus, probably imported in the egg state with Orchids, and quite distinct from our large English species. *I. O. W.—J. H.* The two small kinds of two-winged flies sent us as connected with diseased Cucumbers (see Answers to Correspondents, p. 442), are—1, a species of Anthomyia very like a small house-fly; and, 2, a very small obscure species of Chlorops. Both feed on vegetable matter chiefly in a state of decay or ill-health. We know no means of arresting their ravages unless their larva states can be detected. *I. O. W.*

LABELS: *E. C. L.* The Lincrusta labels have, we believe, not yet been offered in commerce, but from a slight experience we are inclined to think very highly of them. Messrs. F. Walton & Co., Sunbury-on-Thames. The "Acme" labels are manufactured by Mr. John Pinches, 27, Oxenden Street, London, W.

NAMES OF FRUITS: *J. B. T.* 1, Beauty of Kent; 2, Court-pendu Plat; 3, Beurré Superfin; 4, not recognised.—*J. A. Phillips.* 1, King of the Pippins; 2, Cellini; 3, Small's Admirable; 5, Dumelow's Seedling; 7, Waltham Abbey Seedling; 8, Beurré Hardy; 11, Glou Morçeau; 12, Shobden Court; 15, Carter's Beurré; others not recognised.—*G. C. C.* 1, Louise Bonne of Jersey; 1 do., Bishop's Thumb; 9, Duchesse d'Angoulême; 13, Glou Morçeau; 9, 10, not known. We do not understand your duplicate numbering.—*C. J. B.* 5, 10, Beurré Diel; 4, Glou Morçeau; 6, Josephine de Malines; 12, Beurré Superfin; 11, not known.

NAMES OF PLANTS: *G. T. P.* A variety of Epiphyllum truncatum.—*Clark Brothers & Co.* Staphylea pinnata.—*W. Adams.* Ampelopsis Veitchii of gardens, but properly Vitis tricuspidata.—*W. S.* 1, Juniperus recurva; 2 and 4, J. virginiana var. Chamberlaini; 3, J. chinensis; 5, Cupressus nutkaensis (Thuia borealis); 6 and 7, Cupressus Lawsoniana.—*C. M. S.* 1, Hedera Helix var. digitata; 2, H. H. Donerailensis; 3, Jasminum revolutum? (no flower); 4, J. humile?—*M., Kent.* 1, Quercus Ilex var. Fordii; 2 and 4, Cratægus Crus-Galli var. splendens; 3, Veronica Traversii.—*A. Gray.* Quercus Cerris var. heterophylla.—*E. Bennett.* Oncidium Papilio majus.—*W. C. B.* 1, Pleopeltis phymatodes, *alias* Polypodium phymatodes; 2, Trichomanes radicans (Madeira form); 3, Pteris argyrea; 4, Anemidictyon Phyllitidis; 5, Asplenium marinum; 6, A. Colensoi.—*C. F. F.* 1, Lastrea dilatata, a small mountain form approaching the var. alpina, but not quite agreeing with it; 2, L. spinulosa, true.—*H. Mason.* 1, Biota orientalis aurea; 2, Cupressus Lawsoniana erecta viridis; 3, Biota orientalis pyramidalis; 4, Retinospora obtusa; 5, Cupressus Lawsoniana; 6, Abies Nordmanniana.—*Constant Subscriber.* 1, Sempervivum arboreum variegatum; 2, Echeveria scaphophyllum; the others are all varieties of Tradescantia discolor.

NUTS: *A. H.* The Frizzled Filbert.

ONION MAGGOT: *J. Coupland.* Water the ground with carbolic acid, one tablespoonful to a gallon of water, as soon as you discover the presence of the maggot. If the dose is not strong enough increase it until you get the exact proportions.

ROSES: *Newcastle.* You will require both care and patience to eradicate the brown scale from your Roses. Not knowing their exact condition, as regards "maturity," we cannot recommend drastic measures, and would advise you to err on the side of caution. No solution that we could mention would thoroughly eradicate the pest by applying it in the hap-hazard manner so often recommended. Unless great care is taken a number of the insects are left, and these multiply largely during the heat of summer. When the leaves have all dropped and the Roses are pruned, or thinned out, as the case may be, go over every shoot that is to be retained for next year's flowering, and wash it with a solution of soft-soap-water at the rate of about 4 oz. to the gallon. As the autumn has been mild it is probable that the buds upon the shoots may have broken, and care must be taken that these buds are not rubbed off or injured by a too strong solution of the soft-soap. Endeavour if possible to unfasten every scale from its hold, and then syringe all the shoots with a solution of the same strength indiscriminately. Let the shoots then get dry, and go over them a second time in the same way; after which remove the surface soil to a depth of about 2 inches or more, and replace with fresh compost. If this advice is carefully followed out you will find a great diminution in the numbers of your enemies, next autumn, but we do not say that they will have entirely disappeared.

SCLEROTIA: *M.* These are globular masses, consisting of fungus threads very densely felted together so as to form a hard mass.

SEEDLING APPLE: *W. Dance.* Your seedling Apple is a very good one, somewhat resembling Fearn's Pippin.

TEA CULTIVATION: *Cachar. Tea Cultivation in India*, by Colonel Nassau W. Lees, published in London in 1863, will probably suit you. Several papers on this subject have been published in the *Journal of the Agricultural and Horticultural Society of India*—as, for instance, "The Cultivation and Manufacture of Tea in Cachar," by H. A. Shipp (vol. xiv.), and "Remarks on the Pruning of Tea" (vol. iii., part 1). There is also Dr. Jamieson's *Short Guide to Planters Cultivating Teas in the Himalayas and Kohistan of the Punjaub.*

TELEGRAPH PEA: *J. W.* Telegraph was raised by Mr. Culverwell, of Thorpe Perrow, Bedale, Yorkshire, and Telephone is a selection from it. Both were sent out by Messrs. James Carter & Co.

THE CAUSE OF LIGHT: *Strado.* We regret our inability to tell you the cause of light, but we had supposed that the "matter commonly called the sun *was* the source if not the cause of light." Of the supreme *causa causans* this is not the place to speak. See the first chapter of Genesis.

TOMATOS: *W.* The fruits of this are said to contain solanin (see Watts' *Dictionary of Chemistry*). Solanin is very poisonous, but is scarcely soluble in hot water, and if it exist in the ripe fruit at all it must be in extremely minute proportions. We do not believe there is any arsenic in them under ordinary circumstances, nor do we believe, in the face of their large use, cooked and uncooked, that they are more deleterious than mutton chops, partaken of in moderation. To be sure there is the celebrated case of Bardell *v.* Pickwick, but that is hardly applicable. We think the American doctor's practice very unscientific and very unprofessional—indeed, we think he writes himself down as a quack, and his patient must have been a pig—if, indeed, we do not thereby malign that much abused animal.—*R. L.* Your seedling Tomato, a round, plum-shaped, citron-yellow coloured variety, is a very good one, but not distinct from "Carter's Green Gage," already sold by the trade.

VINES: *O. Herold.* Your Vines are suffering from two dreadful scourges, viz., mildew and red-spider. The mildew is a far worse enemy to the Vine than the red-spider, because it utterly destroys the crop of fruit, and spreads, under certain conditions, with amazing rapidity. We gather from your statement that your greenhouse is not heated. Your first step, therefore, should be to have the house heated with hot-water pipes, and armed with this means of defence you will be able to keep a "dry atmosphere," which is the most effectual means of keeping the enemy at bay. In case your house is heated, and you used the hot-water pipes judiciously during the past summer in damp weather, we would advise you to examine the roots of your Vines and give them fresh soil. If the roots are in a badly drained border they will always be liable to the attacks of mildew; but we suspect in your case that the mischief is caused by unfavourable atmospheric conditions owing to want of heat.

WEEDS: *W.* If you have such a dislike to so many weeds, why let them grow at all? Why not kill them before they flower, and so prevent them reproducing themselves? There is nothing in the nature of a powder that we know of, except salt, which of course must be used only on walks. You cannot do better than continue to use the carbolic acid, and keep the hoe going more frequently.

CATALOGUES RECEIVED.

J. CHEAL & SONS, Crawley, Sussex—Ornamental Trees and Shrubs, Fruit Trees, Forest Trees, Hedge Plants, Roses, Climbers, Rhododendrons, &c.; and List of Dutch Flower Roots.

E. P. DIXON, Hull—Roses, Fruit Trees, and Ornamental Trees and Shrubs.

W. FARREN, How House, Cambridge—Roses.

M. SAUNDERS & SONS, Friars' Walk Nurseries, Cork—Roses, Conifers, &c.

J. M. THORBURN & CO., 15, John Street, New York, U.S.A.—American Seeds for the European Wholesale Trade Only.

E. WILSON SERPELL, Plymouth—Fruit Trees.

CHARLES TURNER, Royal Nurseries, Slough—Roses, Fruit Trees, Coniferæ, Hardy Trees, Shrubs, Climbing Plants; also List of Carnations, Picotees, Pinks, and Auriculas.

HERRMAN A. FROMMER, Budapest, Hungary—Agricultural and Garden Seeds.

COMMUNICATIONS RECEIVED:—W. B. H.—J. G. B.—C. W. D.—Far North.—H. Mason.—J. L. Jansen, Paris.—N. S.—M. R.—J. U. S.—W. G.—J. C. M.—D. T. F.—J. W.—E.—C. Y. M.—Sir Trevor Lawrence.—C. W. D.—W. G. S.—S. K. M. (next week).—D. C.—J. S.—C. E. B.—Transon Frères, Orleans.—C. M. Grant.—H. E.—R. W.—A. W.—T. M.

Markets.

COVENT GARDEN, October 19.

A steady business has been doing during the week, and prices have been well maintained. Pines are in demand, and will command higher prices. Kent Cobs quiet at old rates. ***James Webber, Wholesale Apple Market.***

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Aralia Sieboldii, doz.	12 0	24 0
Arbor-vitæ (golden), per dozen	6 0	18 0
— (common), dozen	6 0	12 0
Asters, per dozen	4 0	12 0
Begonias, per doz.	6 0	12 0
Chrysanthems., doz.	6 0	18 0
Coleus, per dozen	4 0	6 0
Cyperus, per dozen	6 0	12 0
Dracæna terminalis	30 0	60 0
— viridis, per doz.	12 0	24 0
Euonymus, various, per dozen	6 0	18 0
Evergreens, in var., per dozen	6 0	24 0
Ferns, in var., dozen	4 0	18 0
Ficus elastica, each	1 6	7 0
Foliage Plants, various, each	2 0	15 6
Fuchsias, per dozen	4 0	9 0
Genista, per doz.	8 0	12 0
Heliotrope, per doz.	3 0	6 0
Hydrangea, doz.	9 0	12 0
Marguerite Daisy, per dozen	6 0	12 0
Myrtles, per doz.	6 0	12 0
Palms in variety, each	2 6	21 0
Pelargoniums, scarlet, per doz.	2 6	6 0
Solanum per doz.	9 0	12 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Abutilon, 12 blooms	0 2	0 4
Arum Lilies, per doz.	4 0	6 0
Asters, 12 bunches	4 0	9 0
Azalea, 12 sprays	1 0	2 0
Bouvardias, per bun.	0 9	1 0
Calceolaria, 12 bun.	6 0	12 0
Camellias, per dozen	3 0	6 0
Carnations, 12 blms.	1 0	3 0
Chrysanth, 12 blms.	2 0	5 0
Cornflower, 12 bun.	2 0	4 0
Dahlias, 12 bunches	3 0	6 6
Eucharis, per doz.	3 0	6 0
Fuchsias, 12 bunches	6 0	8 0
Gardenias, 12 blms.	3 0	6 0
Gladioli, 12 sprays	1 6	3 0
Heliotropes, 12 sp.	0 6	1 0
Lapageria, white, 12 blooms	2 0	4 0
— red, 12 blooms	1 0	3 0
Lilac (French), bun.	9 0	10 0
Lilium various, 12 bl.	3 0	6 0
Marguerites, 12 bun.	4 0	6 0
Mignonette, 12 bun.	1 6	4 0
Pansies, 12 bunches	1 0	3 0
Phlox, 12 bunches	3 0	6 0
Pelargoniums, 12 spr.	0 9	1 0
— zonal, 12 sprays	0 3	0 6
Primula, double, per bunch	1 0	1 6
Roses (indoor), doz.	1 0	3 0
— (outdoor), doz.	0 4	0 9
— Coloured, doz.	1 0	2 0
Stephanotis, 12 spr.	5 0	6 0
Sunflower, 12 blooms	0 6	2 0
Sweet Peas, 12 bun.	1 6	3 0
Tropæolum, 12 bun.	1 0	2 0
Violets, 12 bunches	1 0	1 3
— French Czar, bun.	0 9	1 0
White Jasmine, 12 bunches	4 0	9 0

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Apples, ½-sieve	2 6	6 0
Aubergines, per doz.	4 0	..
Cobs, 100 lb.	45 0	50 0
Figs, per dozen	0 6	1 0
Grapes, per lb.	1 0	2 6
Lemons, per 100	6 0	10 0
Melons, each	2 0	4 0
Peaches, per dozen	2 0	8 0
Pears, per dozen	1 0	2 0
Pine-apples, Eng., lb.	4 0	6 0
Plums, ½-sieve	5 0	8 6

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.
Artichokes, Globe, per doz.	3 0	6 0
Beans, French, English grown, p. lb.	0 8	..
Beet, per doz.	1 0	..
Cabbages, per doz.	1 0	2 0
Carrots, per bunch	0 4	0 6
Cauliflowers, English, dozen	2 0	4 0
Celery, per head, per bundle	0 4	..
	1 0	..
Cucumbers, each	0 6	1 0
Endive, per score	1 0	..
Garlic, per lb.	1 0	..
Herbs, per bunch	0 2	0 4
Horse Radish, bund.	4 0	..
Lettuces, Cabbage, per score	1 6	..
Mint, green, bunch	0 4	..
Mushrooms, p. baskt.	1 6	2 0
Onions, per bushel	3 0	..
— Spring, per bun.	0 6	..
Parsley, per bunch	0 4	..
Radishes, per doz.	1 6	..
Small salading, pun.	0 4	..
Spinach, per bushel	2 0	..
Tomatos, per doz.	2 0	..
Vegt. Marrows, doz.	3 0	..

POTATOS:—Magnum Bonums, 90s. to 100s.; Regents, 80s. to 90s.; Myatt's, 100s. to 110s. per ton.

SEEDS.

LONDON: *Oct.* 13.—Messrs. John Shaw & Sons, of 37, Mark Lane, report that, owing to the recent excessive rains, agricultural operations throughout the country have come to a standstill, and consequently few consumptive sowing inquiries are taking place. Great firmness continues to characterise all descriptions of Clover seed, and the reports of not only the English, but also of the American crops are unfavourable. For winter Tares the demand is just now meagre. In Mustard and Rape seed the tendency is upwards. Canary seed is steady. Lower rates are quoted for Hemp seed. Some fine new French white Millet, for birds, has just arrived.

CORN.

At Mark Lane on Monday trade in Wheat was slow, but an advance was established in some instances. Flour was firm but quiet. Fine malting Barley met inquiry, and tended against buyers; secondary and grinding sorts were quiet on the spot. Beans, with reduced supplies, were firm, and in some cases dearer. Maize was strong at last Friday's advance, or 1*s.* 6*d.* to 2*s.* higher on the week. Oats improved, making the rise 9*d.* since Monday se'nnight.—On Wednesday English Wheat was in small supply, and good dry samples were firmly held, but very little sold. Monday's rates remained unaltered for foreign. Flour was quiet and unchanged. Barley, Beans, and Peas were in moderate request. Maize was scarce and firm, and Oats realised rather better prices.—Average prices of corn for the week ending Oct. 14:—Wheat, 39*s.* 2*d.*; Barley, 34*s.*; Oats, 19*s.* 1*d.* For the corresponding period last year:—Wheat, 47*s.* 1*d.*; Barley, 34*s.* 9*d.*; Oats, 19*s.* 7*d.*

CATTLE.

At the Metropolitan Market on Monday trade in beasts was slow, but really prime qualities being scarce upheld their value; second qualities sold badly. Sheep fully supported late values in all cases, and for choice small very high rates were paid. Prime calves were scarce and dear, and pigs realised about late value. Quotations:—Beasts, 4*s.* 4*d.* to 5*s.*, and 5*s.* 4*d.* to 6*s.* 2*d.*; calves, 5*s.* to 6*s.* 2*d.*; sheep, 5*s.* 6*d.* to 6*s.* 2*d.*, and 6*s.* 6*d.* to 7*s.* 4*d.*; pigs, 4*s.* to 5*s.*—On Thursday beasts were in slow request. Best breeds were steady, but other sorts dull. Monday's prices were maintained. Sheep were sparingly offered, and were readily sold at full prices. Calves and pigs were quiet and dear.

HAY.

Tuesday's Whitechapel Market report states that supplies were short on account of wet weather, and trade dull, at the following quotations:—Prime Clover, 115*s.* to 125*s.*; inferior, 75*s.* to 80*s.*; prime meadow hay, 95*s.* to 105*s.*; inferior, 36*s.* to 60*s.*; and straw, 30*s.* to 43*s.* per load.—On Thursday there was a moderate supply of hay. The trade was dull, as follows:—Prime Clover, 100*s.* to 125*s.*; inferior, 60*s.* to 95*s.*; prime meadow hay, 90*s.* to 105*s.*; inferior 50*s.* to 90*s.*; and straw, 30*s.* to 42*s.* per load.—Cumberland Market quotations:—Superior meadow hay, 98*s.* to 110*s.*; inferior and new, 65*s.* to 92*s.*; superior old Clover, 126*s.* to 134*s.*; inferior and new, 80*s.* to 110*s.*; and straw, 36*s.* to 43*s.* per load.

POTATOS.

The Borough and Spitalfields Markets reports state that supplies are fair and the demand quiet. Quotations:—Kent Regents, 90*s.*; ditto Champions, 70*s.*; Essex, ditto, 60*s.*; ditto Regents, 80*s.*; Magnum Bonums, 80*s.* to 90*s.* per ton.—The imports into London last week consisted of 121 bags from Hamburg, and 358 from Bremen.

COALS.

The following are the prices current at market during the week:—East Wylam, 17*s.*; Ravensworth West Hartley, 15*s.* 6*d.*; Walls End—Hetton, 19*s.* 6*d.*; Hetton Lyons, 17*s.*; Lambton, 19*s.*; Wear, 17*s.*; Chilton Tees, 17*s.* 6*d.*; Thornley, 18*s.* 6*d.*; Hawthorn, 17*s.* 3*d.*; South Hetton, 19*s.* 6*d.*; Tunstall, 17*s.*; Caradoc, 19*s.* 6*d.*; Tees, 19*s.* 6*d.*

Government Stock.—Consols closed on Monday at 101⅛ to 101⅜ for delivery, and 101⅜ to 101½ for the account. Tuesday's final figures were, 101⅛ to 101⅜ for delivery, and 101 15/16 to 101 31/32 for the account. The closing quotations of Wednesday were, 101⅛ to 101⅜ for delivery, and 101 15/16 to 101 31/32 to the account. The final figures of Thursday were 101 15/16 to 101 31/32 for delivery, and as on Wednesday for the account.

AUTUMN PLANTING.

THE LAWSON SEED AND NURSERY COMPANY (LIMITED),

EDINBURGH,

Respectfully invite the attention of intending Planters to their large Stocks of

SEEDLING and TRANSPLANTED FOREST TREES,

ORNAMENTAL TREES and SHRUBS, FRUIT TREES, ROSES, &c.;

And will be glad to submit Special Offers upon application.

NEW POTATOS FOR CHRISTMAS

May be had without difficulty by planting, any time before October 20, in pots or frames,

THE

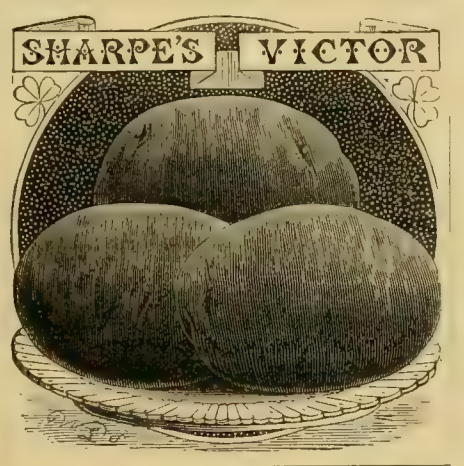
EARLIEST OF ALL POTATOS,

"SHARPE'S VICTOR."

Sharpe's Victor is a seedling raised from the Alma Kidney and the old early short-top round Potato. It is earlier than any present variety, and having a very short top is especially suitable for frame cultivation; its precocity is such that it has been fit for the table in nine weeks from the time of planting, and the raiser assures us that at this date, October 17, 1881, he is now growing his fifth successive crop this year, the first being lifted in January. Thus there is no difficulty in **securing new potatos for the Table every day in the year** Victor is a flattened roundish oval in shape, with a beautiful clear skin and extremely shallow eyes, being one of the handsomest as well as the heaviest cropper of any variety adapted for Frame-work, or for a first early crop outdoors. It is dry and mealy when cooked, and the flavour and quality of the flesh are superior to nearly every other variety at present in use.

Retail Price, 1s. per pound.

The Stock being very limited, early Orders are solicited to prevent disappointment.



CHARLES SHARPE & CO., SLEAFORD.

TO AUTUMN PLANTERS.

The Subscribers invite Inspection of their Stock of

FOREST AND ORNAMENTAL TREES,

SHRUBS, ROSES,

RHODODENDRONS, FRUIT TREES, VINES, &c.,

WHICH IS ONE OF THE MOST COMPLETE IN EUROPE,

HARDY, HEALTHY, and WELL ROOTED.

Samples and Prices sent free on application, and Special Freights furnished to all parts of the Kingdom. Catalogues free by Post.

LITTLE & BALLANTYNE,

NURSERYMEN AND SEEDSMEN TO THE QUEEN,

CARLISLE.—Established 1812.

A

CATALOGUE of ROSES,

BY THE

CHAMPION ROSE GROWER,

BENJAMIN R. CANT,

COLCHESTER,

POST-FREE ON APPLICATION.

"." **Be careful to Write Christian Name in Full.**

DUTCH BULBS,

DIRECT FROM THE GROWERS.

ANT. ROOZEN & SON'S CHOICE FLOWER ROOTS.

OUR GUINEA PACKAGE

Of Choice Hardy Flower Roots for Spring Gardening

contains the following well selected, first-class sound Bulbs, viz :—

35 HYACINTHS, mixed, in distinct colours
50 TULIPS, single early, best mixed
50 ,, double, best mixed
30 NARCISSUS, POLYANTHUS, best mixed
30 ,, Incomparable, yellow, double
50 ANEMONES, double, best mixed
50 RANUNCULUS, double, best mixed.
400 CROCUS, in four distinct colours
36 GLADIOLUS, best mixed
50 SNOWDROPS, single.

782 Bulbs in all.

Other COLLECTIONS for INDOOR and SPRING GARDENING at 10s. 6d., 21s., 27s. 6d., 50s., 55s., and 100s.

The above-named Collections may be had from our Agents, Messrs. MERTENS AND CO., 5, Billiter Square, London, E.C., during the season, against cash payment.

Our complete and revised CATALOGUE for 1882 may be had *free*, on application to our Agents, or ourselves direct.

Early Orders respectfully requested.

ANT. ROOZEN & SON, Nurserymen,
Overveen, near Haarlem, Holland.

KENT, the GARDEN of ENGLAND

350,000 Fruit Trees, True to Name.

The Largest Stock of Standard Cherries in Britain.—Cherry Orchards are a paying investment.

The Largest Stock of Black Currants.
A lucrative market crop.

The Largest Stock of Gooseberries and Red Currants.—These have again returned large profits per acre.

The Largest Stock of Cluster or Farleigh Damsons.—A grower takes 2500 bushels this year (when fruit is short), and sells at 13s. per bushel. A plantation of these will soon buy the ground they stand on.

The Largest Stock of Plums and Gages in Britain.—Many thousands of Standard and Half-Standard **Pears** and **Apples.**

The Stock of Garden, Wall, Pyramidal, and Trained Fruit Trees is equally extensive.

The Descriptive Catalogue of Fruits free for two stamps.
The Fruit Trees in these Nurseries are not equalled for vigour, freedom of growth, and abundant fibrous roots. Success in removal is certain.

THE KENT ROSES DO LIVE,
because they are wonderfully rooted.
New Descriptive List free by post.
Remarkably fine H. P.'s and Teas, Standards, Half-Standards, and Dwarfs.

Evergreens, Hollies Coniferæ, Forest Stuff
—many acres—are in finest order.

GEORGE BUNYARD & CO.,
FRUIT TREE and ROSE GROWERS,
GENERAL NURSERYMEN, FLORISTS & SEEDSMEN,
MAIDSTONE, KENT.

N.B.—Frequent Trains from London by North Kent or London, Chatham and Dover Line.

CARTERS' NEW CYCLAMEN GRANDIFLORUM.

Price, per Bulb—*s. d.*

Cyclamen White Swan, the most beautiful white Cyclamen in commerce. (Awarded First-class Certificate, Royal Horticultural Society) 3 0

Cyclamen Duke of Connaught, rich purplish-crimson, flowers of unusually large size and substance; a grand flower. (Awarded a First-class Certificate by the Royal Botanic Society.) 2 0

Cyclamen Rosy Morn, clear bright and delicate rose, with massive flowers of magnificent appearance. (Awarded First-class Certificate by the Royal Horticultural Society.) 2 0

Cyclamen picturatum, pure white ground faintly shot with delicate pink, rich claret-purple base, finely-formed smooth petals, superb appearance. (Awarded a First-class Certificate by the Royal Horticultural Society.) 2 0

Trade price on application.

237 and 238, High Holborn, London, W.C.

GRAPE VINES.—Best sorts, at moderate prices, specially prepared for Fruiting in Pots and for Border Planting.

E. TURVEY, Brixton Hill, S.W.

FOR SALE, a large quantity of HARLINGTON WINDSOR BEANS, grown from the original Harlington Stock.—Apply to

J. SMITH AND SON, Growers, Sipson, near Slough; and North Side, Covent Garden Market, W.C.

Double Primulas.

H. B. MAY has to offer a splendid lot in 48's, with from two to four crowns each plant. Price for 100 or 1000 on application.

ADIANTUM CUNEATUM, fine stuff, in 48's, at 50*s.* per 100, package included.

Dyson's Lane Nursery, Edmonton.

AZALEA MOLLIS, Seedlings, 3-yr., from two of the best varieties, each colour kept distinct, 10*s.* per 100, £4 per 1000.

Stronger, twice transplanted, 4 to 6 inches high, 6 to 9 shoots, from the three following varieties, each kept distinct, viz.:—Comte de Gomer, Consul Fécher, and Isabelle Van Houtte, in equal quantities of each, 25*s.* per 100, £10 per 1000.

ISAAC DAVIES AND SON, Nurserymen, Ormskirk.

To the Trade.

STANDARD and HALF STANDARD ROSES, of good quality, at reasonable prices.

L. WOODTHORPE, Glazenwood Nurseries, Braintree.

To the Trade.

WHITE CAMELLIA BLOOMS.—Arrangements can now be made for a regular supply of perfect blooms—extending over Christmas next; also MAIDENHAIR FERN. Apply for prices, &c., to

JAMES PAGE, Camellia Grower, The Hornsey Nurseries, Hornsey, Middlesex, N.

MANETTI STOCKS and CUTTINGS. Fine clean Stocks, 30*s.* per 1000; Cuttings, 9 inches long, 7*s.* per 1000.

KIRK ALLEN, The Rosery, Fen Drayton, near St. Ives, Hunts.

SPECIAL OFFER.

GLOBE ARTICHOKES, strong, 3*s.* per dozen.
CURRANTS, White, strong, 8*s.* per 100.
SPRUCE FIR, 2-yr. 2-yr., 7*s.* per 1000.
CHESTNUTS, Scarlet, fine Standards, 6 feet stems, 8*s.* per dozen, 55*s.* per 100

THOMAS PERKINS AND SONS, 34, Drapery, Northampton.

Immense Sale of

VIOLAS, PANSIES, PERENNIALS, ROCK and ALPINE PLANTS, at one uniform price, 1*s.* per dozen — separately transplanted, not weakly rooted offshoots—our land being sold to the L. & N.-W. Railway Co. Hampers and packing gratis. CATALOGUES free. Our collection is admitted to be the largest and choicest collection ever brought together.

JOHN PIRIE AND CO., Stetchford, Birmingham.

CARNATIONS, PICOTEES, and PINKS. —We beg to offer a very fine and extensive stock of the above, in strong well-rooted plants, CARNATIONS and PICOTEES, at 12*s.* and 15*s.* per dozen pairs; PINKS, 5*s.* per dozen pairs; true old Crimson CLOVE CARNATIONS, 3*s.* per dozen, 16*s.* per 100 plants; Prince of Scarlets CLOVE, 4*s.* per dozen, 20*s.* per 100 plants. LIST of varieties on application. Special quotations to the Trade.

ISAAC BRUNNING AND CO., Great Yarmouth Nurseries.

BEAUTIFUL WINTER and SPRING FLOWERS.—All who wish to see their conservatories and flower gardens gay with beautiful flowers in winter and spring, should apply to the subscribers, who make a speciality of the flower-root branch of their business, and supply complete collections of choice flower roots at low prices, delivered free. Orders should be sent in early to secure finest bulbs.

Descriptive Price Lists free on application.

LITTLE AND BALLANTYNE, The Queen's Seedsmen, Carlisle.

SPIRÆA PALMATA:

The largest stock for forcing in the world.

LAURUS CAUCASICA:
The finest Laurel ever introduced.
RHODODENDRONS:
All kinds and all sizes.
STANDARD RHODODENDRONS:
You may select from thousands.
HARDY TREES, SHRUBS, ROSES, &c.:
For general planting, acre after acre.

Intending planters are invited to come down and see the stock. The Nursery is ten minutes from Sunningdale Station, S.-W. Railway.

CHARLES NOBLE, Bagshot.

To Planters

JAMES BIRD offers the undermentioned Forest stuff, price on application:—

LARCH FIR, 3 to 4 feet, and 4 to 5 feet.
SCOTCH FIR, 1½ to 2 feet, and 2 to 3 ft. [to 5 ft.
SPRUCE FIR, 1½ to 2 feet, 2 to 3 feet, 3 to 4 feet, and 4
PINUS AUSTRIACA, 1½ to 2 feet.
HAZEL, 2 to 3 feet, and 3 to 4 feet.

The Nurseries, Downham.

Cabbage Plants.

CABBAGE PLANTS!—Extra strong Autumn-sown plants, in any quantities, well rooted and free from club, of Early Enfield Market, Battersea, Nonpareil, and Robinson's Champion Drumhead Cabbage, at 3*s.* per 1000, delivered on Rail; cash or reference from unknown correspondents.

W. VIRGO, Wonersh Nurseries, Guildford, Surrey.

STRAWBERRIES.—Strong roots for present planting and for fruiting next year, 4*s.* per 100. Descriptive LIST and price for plants in pots for forcing on application. — RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Special Cheap Offer.

ISAAC MATTHEWS AND SON are prepared to make special offer to the Trade and Large Buyers. Samples and Price List on application:—

ASH, Common, 3 to 4 feet, 4 to 5 feet, 5 to 6 feet.
,, Mountain, 3 to 4 feet, 4 to 5 feet, 5 to 6 feet, 7 to 8 feet, 8 to 9 feet.
OAK, English, 1½ to 2 feet.
POPLAR, Black Italian, 3 to 4 feet, 4 to 5 feet, 5 to 6 feet.
SYCAMORES, 2 to 3 feet, 3 to 4 feet.
CHESTNUTS, Horse, 9 to 10 feet, 10 to 12 feet.
ELDER, Golden, 2 to 3 feet, 3 to 4 feet.
THORN QUICK, strong, 2-yr., 3-yr., 4-yr. strong.
HOLLIES, Hodgins', maderensis, Bay-leaf, Golden Queen, Silver Queen, Old Silver, myrtifolia, ovata, Shephardii, common Green, in all sizes.
LAURELS, Common, 12 to 18 inches, 1½ to 2 feet, 2 to 2½ feet, fine.
CUPRESSUS, in variety, from 1½ to 7 feet.
RETINOSPORA PLUMOSA, 1 foot, 1½, and 2 feet, bushy.
YEWS, English, 18 to 24 inches, 2 feet, 2½ feet, 2½ to 3 feet.
AZALEA Pontica, 1½ to 2 feet, 4 to 6 inches.
RHODODENDRONS, Hybrid and Pontica, 3 to 4 inches, 4 to 6 inches, 6 to 9 inches, 9 to 12 inches, 12 to 15 inches, 15 to 18 inches, 1½ to 2 feet, 2 feet; ditto, choice named sorts, bushy, in 100 varieties.
,, CUNNINGHAM'S WHITE, 9 to 12 inches, 12 to 15 inches, 15 to 18 inches.
,, CAUCASICUM PICTUM, 9 to 12 inches, 12 to 15 inches, 15 to 18 inches.
RHODODENDRON STOCKS, strong.
PANSIES, in 100 varieties.
IVY, Irish, 2-yr., 3-yr., 4-yr., strong.

The Nurseries, Milton, Stoke-on-Trent.

PLANTS FOR POTTING AND FORCING:—

AZALEA MOLLIS, with from 10 to 30 buds
,, a selection of the best hardy kinds, including PONTICA, NARCISSIFLORA, and GRAF VON MERAN, well budded.
KALMIA LATIFOLIA, nicely grown plants with flower-buds on wellnigh every shoot.
RHODODENDRONS, well budded and the best varieties for the purpose.
DEUTZIA CANDIDISSIMA, fl.-pl., established in pots.
HYDRANGEA PANICULATA GRANDIFLORA, very strong.
ANDROMEDA PULVERULENTA or SPECIOSA.

These can be obtained in satisfactory plants and at fair prices from

ANTHONY WATERER, Knap Hill Nursery, Woking, Surrey.

Planting Season.

ANTHONY WATERER begs to invite attention to the following well-grown and properly rooted NURSERY STOCK:—

AUCUBA JAPONICA, 1½, 2, and 3 feet. Thousands.
BOX, Green and Variegated, 2, 3, 4, 5, 6, and 7 feet. Thousands.
YEWS, English, 2, 3, 4, 5, 6, 8 to 10 feet. Thousands.
,, Golden, all heights up to 10 feet, and various shapes—Globes, Pyramids, &c. Thousands.
,, Irish, 5, 6, 7, to 10 feet.
JUNIPERS, Chinese, 5, 6, 7, to 10 feet.
PICEA PINSAPO, 5, 6, 7, to 10 feet.
,, NORDMANNIANA, 5, 6, 7, to 10 feet.
SPRUCE FIRS, well furnished, 3, 4, 5, 6, and 7 feet. Many thousands.
,, Black, 3, 4, and 5 feet.
SPRUCE, Hemlock, 4, 5, and 6 feet.
WEARE'S ARBOR-VITÆ, 4, 5, 6, and 7 feet.
HOLLIES, common Green, of all heights, up to 10 feet. Thousands.
,, Green, of sorts, such as LAURIFOLIA, MYRTIFOLIA, HODGINS', ALTACLARENSE, Yellow-berried, &c. An enormous Stock.
,, Variegated, from 3 to 5, 6, 7, 8, and 10 feet.
,, Waterer's, beautiful Specimens.
,, Golden Queen, up to 10 feet. Hundreds.
,, Silver Queen, up to 10 feet. Hundreds.
,, Perry's Weeping Standards and Pyramids.
,, Golden Weeping Standards and Pyramids.

The Stock of Hollies of various kinds comprises many thousands, and affords a choice quite unequalled.

CUPRESSUS LAWSONIANA ERECTA VIRIDIS, 3, 4, 5, 6, 7, and 8 feet. Thousands.
,, ,, GRACILIS, 3 and 5 feet.
,, ,, ARGENTEA, 3 and 5 feet.
,, ,, LUTEA, hundreds of fine plants, 3, 4, and 5 feet high.
RETINOSPORA PLUMOSA AUREA, 3, 4, and 5 feet.
,, OBTUSA AUREA, 4, 5, 6, and 7 feet.
,, PISIFERA AUREA, 3 and 4 feet.
THUIOPSIS DOLABRATA, 3, 4, 5, and 6 feet. Hundreds.
BEECH, Purple, 6 to 10 and 12 feet. Thousands.
LIMES, 10, 12, 14, 15, and 16 feet. Thousands.
PLANES, 10 to 20 feet.
MAPLE, Norway, 10 to 15 feet.
CHESTNUT, Horse, 10 to 16 feet.
,, Scarlet, 10 to 16 feet.
POPLAR, CANADENSIS NOVA, 10 to 16 feet. Thousands.
OAKS, Scarlet American, 10 to 12 feet.
ACER DASYCARPUM, 10 to 16 feet.
,, SCHWEDLERII, 10 to 12 feet.

And a vast and Miscellaneous Stock of Flowering DECIDUOUS SHRUBS and EVERGREENS, which intending purchasers are respectfully invited to come and see.

Knap Hill Nursery, Woking, Surrey.

Bulbs—Bulbs—Bulbs.

SEGERS AND CO., BULB GROWERS, Lisse, near Haarlem, Holland, are now booking Orders for LILY OF THE VALLEY, very strong clumps and crowns; SPIRÆA JAPONICA and PALMATA, LILIUMS, GLADIOLUS BRENCHLEYENSIS, and others. They keep also fine samples in stock of HYACINTHS, TULIPS, CROCUS, &c.

CATALOGUES may be had free on application. No Auction Sales or Retail Trade supplied, but the Wholesale only.

☞ Please observe name and address.

JOHN SCOTT, The Royal Nurseries, Merriott, Somerset, offers:—

PICEA NORDMANNIANA, in large or small quantities. This noble Pine is one of the handsomest and hardiest of the Fir tribe. On the Crimean and other mountains it attains a height of 100 to 150 feet, clothed with lovely dense green branches to the ground. J. S. offers the following sizes:—500, 18 inches high by 18 inches in diameter, at £5 per 100; 500, 2½ feet by 2½ feet, at £10 per 100; 300, 3 feet by 3 feet, at £15 per 100; 400, 4 feet by 4 feet, at £25 per 100: and a few fine specimens, 8 feet high by 6 feet. All the above are densely feathered to the ground.

J. S. also offers BIOTA SIEBOLDI, 6 feet high by 8 feet; and fine healthy collections of all the best EVERGREENS, from 1½ foot to 2, 2½, 3, 3½ and 4 to 8 and 12 feet, all transplanted during the last six months, at 12*s.* to 40*s.* per dozen. DECIDUOUS and FOREST TREES by the 1000, and FRUIT TREES in large numbers at low prices. For sorts see Scott's *Orchardist.*

NEW ROSES of 1882, in pots.—Vendors' Selection, 30*s.* per dozen; Purchaser's, 36*s.* per dozen. The above comprise all the best English and French-raised Hybrid Perpetuals, Perpetual Polyantha, Teas, Hybrid Teas, and Perpetual Moss.

ROSES of 1881, of above-named classes, 18*s.* to 24*s.* per dozen, in pots.

CHOICE ROSES. — Tea-scented, Hybrid Tea, Noisette, China, and Bourbon, 18*s.* to 24*s.* per dozen, strong plants in pots.

Descriptive LIST on application.

RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

EIGHTY THOUSAND CLEMATIS, in Pots, of all the finest double and single varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12*s.* to 24*s.* per dozen, strong plants.

Descriptive LIST on application.

RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

To the Trade.

H. AND F. SHARPE will be pleased to give special quotations for all the leading varieties of VEGETABLE and AGRICULTURAL SEEDS they have grown this season. The quality will be very fine, the Seeds having been harvested in fine condition. They have been grown from the finest selected stocks. The prices will be found very low.

Seed Growing Establishment, Wisbech.

LARGE TREES for Screens, Blinds, and Immediate Effect.

CHINESE ARBOR-VITÆ, 8 to 10 feet, 10 to 12 feet; THUIA GIGANTEA, 10 to 12 feet; CRYPTOMERIA JAPONICA, 8 to 10 feet; THUIA LOBBII, 10 to 12 feet; DEODARAS, 6 to 8 feet, 10 to 12 feet; WELLINGTONIAS, 8 to 10 feet, 10 to 12 feet; GREEN HOLLIES, 10 to 12 feet; SPRUCE FIR, 6 to 8 feet; PORTUGAL LAURELS, 5 to 6 feet, 6 to 8 feet; CUPRESSUS LAWSONIANA, 10 to 12 feet; THUIOPSIS BOREALIS, 10 to 12 feet; HORSE CHESTNUT, SYCAMORE, Black Italian POPLAR, English OAK, Purple BEECH, &c., 10 to 12 feet.

The above are well rooted, with good Tops. The Evergreens are well furnished to within a few feet of the ground.

Should this catch the eye of any Autumn Planter requiring such furniture, we will be pleased to quote prices, and arrange for carriage to any part of England or Wales according to the number that may be required.

WM. MAULE AND SONS, The Nurseries, Bristol.

Special Offer.

STUART AND MEIN are prepared to make special cheap offer of the following to the Trade and Large Buyers. Samples on application:—

ALDER, 6, 8, 10, and 12 feet.
ASH, Common, 2 to 5 feet.
,, Mountain, 4 to 9 feet, transplanted.
BEECH, Common, 2 to 3 feet.
BIRCH, 4 to 6 feet.
BROOM, Common, 2 to 4 feet.
CHESTNUT, Horse, 2 to 3 feet.
,, ,, 6, 8, 10 and 12 feet, fine clean stems.
ELDER, Common, 1½ to 3½ feet.
HAZEL, 3 to 6 feet.
LARCH, 1½, 2½ to 5 feet.
,, 3½ to 4½ feet, transplanted 1882.
MAPLE, English, 4 to 6 feet.
,, Norway, 10 to 14 feet, fine clean stems.
OAK, English, 1 to 1½ foot.
PINUS AUSTRIACA, 1, 2, 3, to 6 feet, transplanted, fine.
SCOTCH FIR, 2-yr. 2-yr.
,, 1½ to 3 feet.
POPLAR, Black Italian, 3, 5, 10, to 14 feet.
SYCAMORE, 1, 3, 5, to 9 feet.
MAHONIA AQUIFOLIA, 1½ to 2 feet,
BERBERIS VULGARIS, 2 to 3 feet.
BOX, Tree, 9 to 12 inches.
COTONEASTER SIMMONDSII, 1 to 3 feet.
PRIVET, Common, 1½ to 3 feet.
YEW, Common, 1 to 3 feet.
SPIRÆA CONFUSA (fine for forcing, pure white).
,, FORTUNEI ROSEA, NOBLEANA, THUNBERGIANA.
DEUTZIA of sorts.
SYRINGA, Common.
,, White.
VIRGINIAN CREEPER.
CLEMATIS FLAMMULA.
THUIA ERICOIDES, 9, 12, to 24 inches.
HYPERICUM CALYCINUM.
ESCALLONIA MACRANTHA.

Fruit Trees.

APPLES, on Paradise and Crab Stocks, Pyramid, Bush, and trained trees, in all the leading hardy and free-bearing varieties, very fine.
PLUMS, ditto.
CHERRIES, ditto.
GOOSEBERRIES.

The Nurseries, Kelso, N.B.

JAMES DICKSON & SONS.

GRAPE VINES of the usual excellent quality can now be supplied, price 5*s.*, 7*s.* 6*d.*, and 10*s.* 6*d.* each; the stronger will fruit next year either in pots or planted out.

CHRYSANTHEMUMS.—Well-grown plants of leading kinds, for immediate blooming, can be supplied at 12*s.* per dozen and upwards.

STRAWBERRIES.—By now planting transplanted runners a crop may be depended upon next year. Strong plants in large and small pots for forcing and planting can also be supplied.

AZALEAS, CAMELLIAS, WINTER FLOWERING and other PLANTS.

CATALOGUES with full particulars on application to

"NEWTON" NURSERIES, CHESTER.

THE

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(Established 1841)

CONTAINS ARTICLES ON ALL DEPARTMENTS OF

GARDENING, PRACTICAL AND SCIENTIFIC,

REPORTS OF EXHIBITIONS,

REVIEWS of BOOKS, and NOTICES of all HORTICULTURAL MATTERS of CURRENT INTEREST,

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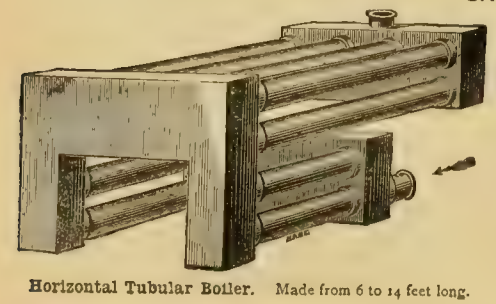
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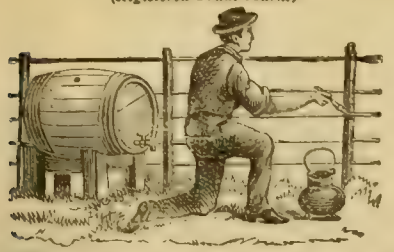
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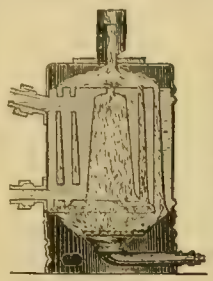
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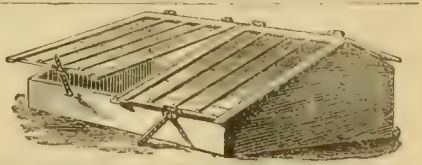
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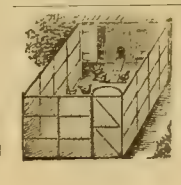
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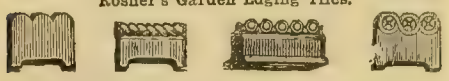
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JOURNEYMAN, in the Houses in a large establishment.—Seven and a half years' experience; good character. Bothy preferred.—E. DAVIES, Upper Hergest, Kingston, Herefordshire.

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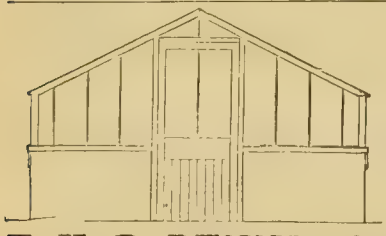
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THE

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NOTICE to SUBSCRIBERS and OTHERS. The King Street, Covent Garden, Post Office being closed, Post-office Orders and Postal Orders should now be made payable at DRURY LANE.

STOKE NEWINGTON CHRYSANTHEMUM SOCIETY.—The ANNUAL EXHIBITION of this Society will be held in the Assembly Rooms, Stoke Newington, N., on NOVEMBER 13 and 14. Particulars on application to WM. GOLDSMITH, Hon. Sec., Stafford's Place, Grove Road, Stamford Hill, N.

THE ROYAL SOUTHAMPTON HORTICULTURAL SOCIETY.
GRAND EXHIBITION of CHRYSANTHEMUMS, FRUIT, and CAGE BIRDS, TUESDAY and WEDNESDAY, November 14 and 15. Entries close—Birds, November 4; Plants, &c., November 7.
54, York Street Avenue. C. S. FUIDGE, Secretary.

ROYAL AQUARIUM, Westminster, NOVEMBER 15 and 16.
CHRYSANTHEMUM, FRUIT, and VEGETABLE EXHIBITION. Schedules and all particulars of WILLIAM HOLMES, Frampton Park Nursery, Hackney, London, E.

BRIGHTON AQUARIUM.—EXHIBITION of CHRYSANTHEMUMS, POMPONES, TABLE PLANTS and DESSERT FRUIT, November 21, 22, and 23. Schedules on application to I. WILKINSON, Manager and Secretary.

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See last week's advertisement in *Gardeners' Chronicle*.

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MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, the above, at the City Auction Rooms, 38 and 39, Gracechurch Street, E.C., on TUESDAY, October 31, at 12 o'Clock precisely.

On view morning of Sale. Catalogues had at the Rooms and of the Auctioneers, 8, New Broad Street, E.C., and Leytonstone, E.

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BEAUTIFULLY-GROWN NURSERY STOCK,

lotted to suit the Trade and Private Buyers, comprising

4000 SPECIMEN EVERGREENS,

consisting of Retinosporas, Thuias, Cupressus, Golden and other Yews, variegated and fancy Hollies, varying in size from 2 to 8 feet; also

1500 VARIEGATED HOLLIES, 1 to 3 feet;

1200 Golden Yews, 1000 Golden Euonymus, in pots; 1000 Green Hollies, 4 to 10 feet; 500 Cedrus Deodara, 3 to 6 feet;

3000 ROSES, FINEST SORTS;

choice hybrid and named Rhododendrons, common and other Laurels, Berberis, &c.; thousands of Flowering Trees and Shrubs, 1000 Clematis,

ORNAMENTAL PARK TREES, 8 to 10 feet,

in great numbers, consisting of Limes, Beech, Poplars, Scarlet Oaks, Horse Chestnuts, &c.;

STANDARD and DWARF FRUIT TREES

the whole in fine condition for removal.

The Stock may be viewed any day prior to the Sale.

Catalogues may be had on the Premises, and of the Auctioneers, Estate Agents and Valuers, 8, New Broad Street, E.C.

☞ Purchasers may arrange with the proprietor to have their lots carefully taken up and conveyed to nearest Railway Stations at the cost of labour incurred and material used. Refreshments will be provided on the premises for purchasers.

Rugby.

Expiration of Lease.—Clearance Sale.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Rugby Nursery, Rugby, on WEDNESDAY, November 1, at 12 o'Clock precisely, by order of Mr. W. Bryant, without reserve, the well grown NURSERY STOCK, comprising a large assortment of handsome specimen CONIFERÆ for effective planting, ORNAMENTAL TREES, 5000 PRIVET, 1½ to 3 feet; 3000 fine Standard and Dwarf ROSES, named; 1000 FRUIT TREES, 2000 GOOSEBERRIES and CURRANTS, 10,000 1-yr. MANETTI STOCKS, IVIES and CLIMBERS in pots, and other stock.

May be viewed. Catalogues may be had on the Premises, and of the Auctioneers, 8, New Broad Street, London, E.C.

Kilburn, N.W.

To the TRADE and PRIVATE GENTLEMEN.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Salisbury Road and Avenue Nurseries, Willesden Lane, Kilburn, N.W. (within a short distance of Queen's Park or Brondesbury Park Stations), on THURSDAY and FRIDAY, November 2 and 3, at 12 o'Clock precisely each day, by order of Mr. J. B. Goubert, in order to make room for other stock, a large quantity of remarkably well-grown NURSERY STOCK, including 1000 Cupressus Lawsoniana, 1000 Aucubas, 3000 Laurels, 1000 Rhododendrons, 8000 fine bushy Euonymus, comprising 4000 Golden Variegated, 2000 myrtifolia, 2000 Green, and 300 radicans variegata; 500 Standard and Dwarf Roses, 2000 very fine Double White Primulas, 2000 Adiantum cuneatum, and a variety of Stove and Greenhouse Plants.

May now be viewed. Catalogues had on the Premises, and of the Auctioneers and Estate Agents, 8, New Broad Street, E.C., and Leytonstone.

Westerham, Kent, adjoining the Station.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. Cattell to SELL by AUCTION, on the Premises, The Nursery, Westerham, Kent, on FRIDAY, November 10, at 1 o'Clock precisely, a large quantity of surplus NURSERY STOCK, in good condition for removal, including a large assortment of Coniferæ and Evergreens, 2000 Ornamental Trees, American Plants, Standard and Dwarf Roses, Rhododendrons, &c.

May be viewed. Catatogues had on the Premises, and of the Auctioneers, 8, New Broad Street, E.C.

Lewisham, S.E.

To PRIVATE GENTLEMEN and the TRADE.

CLEARANCE SALE, by order of Mr. Biggs, without the slightest reserve, the Land and Premises being required by the Local Government Board for the erection of a New Infirmary.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nursery, High Road, Lewisham, S.E., on TUESDAY and WEDNESDAY, November 7 and 8, at 12 o'Clock each day precisely, in consequence of the large number of lots, the whole of the OUTDOOR NURSERY STOCK, including about 200,000 Coniferæ, Evergreen and Deciduous Shrubs, in great variety; 10,000 Golden and Green Euonymus, 10,000 Irish and other Ivies, 15,000 Gooseberries and Currants, 5000 Lilium candidum and longiflorum; also the remaining stock of STOVE and GREENHOUSE PLANTS, comprising 10,000 Lomaria gibba, 25,000 Maidenhair Ferns, and thousands of other Ferns, Palms, and various Plants too numerous to mention; also the Erection of GREENHOUSES, HOT-WATER PIPING, and BRICKWORK, Stack of prime Meadow HAY (about 25 loads), nearly new Village CART, 300 loads of MANURE and MOULD, and other effects.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 8, New Broad Street, E.C., and Leytonstone.

Fulham, S.W.

By order of the Executors of the late Mr. R. A. Osborn.

MESSRS. PROTHEROE AND MORRIS (having sold the Freehold Estate) are instructed to SELL by AUCTION, on the Premises, Osborn's Nursery, Fulham, S.W. (a few minutes' walk from Parson's Green Station District Railway), on THURSDAY, November 9, at 12 o'Clock precisely, in consequence of the large number of lots, 10,000 FRUIT TREES of remarkably fine growth, embracing the choicest and most favourite varieties of Standard, Dwarf-trained and Pyramidal Apples, Pears, Peaches, Nectarines, Plums, &c; 44,000 SEAKALE, a few GREENHOUSE PLANTS, the whole of the VEGETABLE and FLOWER SEEDS, the stock of GARDEN TOOLS and SUNDRIES; also the SHOP FIXTURES, including two nests of 508 Mahogany Seed Drawers, very superiorly made and quite new; a 12 feet 6 Mahogany Counter, Office Furniture, Iron Safe, and other effects.

May be viewed Catalogues had on the Premises; of Messrs. WALKER, BELWARD, AND WHITFIELD, Solicitors, 5, Southampton Street, Bloomsbury, W.C.; and of the Auctioneers and Valuers, 8, New Broad Street, E.C., and Leytonstone.

N.B. The SALE of the STOCK at the SUNBURY NURSERY will take place on NOVEMBER 14 and following days.

Sunbury and Hampton, Middlesex.

By order of the Executors of the late Mr. R. A. Osborn.

GREAT UNRESERVED SALE of the whole of the unusually well grown NURSERY STOCK, FRUIT TREES, and ROSES.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, Osborn's Nursery, Sunbury (about ten minutes' walk from the station), and Osborn's Nursery, Tangley Park, New Hampton (about ten minutes' walk from Fulwell Station), on TUESDAY, November 14, and following days, at 12 o'Clock punctually each day, the whole of the exceedingly well grown and thriving young NURSERY STOCK, in the best possible condition for removal, comprising large quantities of various Coniferæ and Evergreens in all sizes, 5000 Aucubas, 4000 Privet, 10,000 Limes, also other Ornamental Trees, 2000 Yews, 5000 Euonymus of sorts, 18,000 Green Hollies, 6000 Variegated Hollies, very fine; 84,000 Fruit Trees, consisting of 62 000 Dwarf-trained, Pyramid, Standard, and Maiden Apples, Pears, Plums, Peaches, Nectarines, Apricots, and Damsons of all the best sorts in cultivation, and for the growth of which the firm of Messrs Osborn has been so long celebrated; also 22,000 Gooseberries and Currants, 10,000 Standard and Dwarf Roses, beautifully grown, and including all the finest varieties; 3000 Moss and Provence Roses, 10,000 Seakale, thousands of small Coniferæ for growing on, and other Stock. May now be viewed.

Catalogues obtained at the respective Nurseries, of Messrs. WALKER, BELWARD AND WHITFIELD, Solicitors, 5, Southampton Street, W.C.; and of the Auctioneers, 8, New Broad Street, E.C., and Leytonstone.

N.B.—The Auctioneers have much pleasure in inviting Noblemen and Gentlemen, as well as the Trade, to inspect the above Stock, which is in the finest possible condition.

5000 SINGLE DAHLIAS

WILL BE

SOLD by AUCTION, on TUESDAY, October 31,

BY

MESSRS. PROTHEROE AND MORRIS,

AT THE

HALE FARM NURSERIES, TOTTENHAM,

at 10 for 12 o'Clock precisely.

Hyacinths, Tulips, Crocuses, Narcissus, Iris, Scillas,

Snowdrops, and other Flower Roots from Holland.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY during October, at half-past 12 o'Clock precisely each day, CONSIGNMENTS of DUTCH BULBS, arriving weekly from well known farms in Holland, in large and small lots, to suit all buyers.

On view morning of Sale, and Catalogues had.

Tuesday Next.

6000 LILIUM AURATUM from Japan.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY NEXT, October 31, at half-past 12 o'Clock precisely, an importation of 6000 LILIUM AURATUM from Japan, in fine condition; also choice Home-grown LILIES, including L. Leichtlinii, L. Brownii, L. giganteum, and others in variety; good Bulbs of the charming CHIONODOXA LUCILIÆ, hardy CYPRIPEDIUMS, and a consignment of BULBS from Holland.

On view morning of Sale, and Catalogues had.

Wednesday Next.

BULBS and PLANTS from DUTCH and ENGLISH NURSERIES.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, November 1, at half-past 12 o'Clock precisely, first-class Standard, Half-standard, and Dwarf ROSES, including best named sorts of Hybrid Perpetuals, Tea-scented, Noisette, and others, from well-known Dutch and English Nurseries; also a consignment of first-class BULBS from Holland.

On view morning of Sale, and Catalogues had.

Thursday Next.

CATTLEYA MENDELII.

MR. J. C. STEVENS has received instructions from Mr. F. Sander to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, November 2, at half-past 12 o'Clock precisely, a wonderful importation of CATTLEYA MENDELII, in splendid condition and collected in the same locality from whence the fine lot came we sold a few years since. The Sale will include other fine importations, also one plant of a spotted variety of ODONTOGLOSSUM ALEXANDRÆ from Messrs. W. Thomson & Sons, Clovenfords, with ninety-six flowers open and in bud; and a grand specimen of SACCOLABIUM CURVIFOLIUM, finest variety.

On view morning of Sale, and Catalogues had.

Highly Important Sale of Established Orchids.

MR. J. C. STEVENS has received instructions to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, November 9, at half-past 12 o'Clock precisely, the entire collection of Edward Pilgrim, Esq., Fern Lawn, Cheltenham, being sold owing to ill health, and the sudden death of his Gardener, Mr. Mullis, who grew the entire collection from small plants, including an immense specimen of ANGULOA CLOWESII, with seven breaks, in 24-inch pot; two plants of DENDROBIUM SUAVISSIMUM, with forty to fifty bulbs each; VANDA TRICOLOR DODGSONI, several specimens; VANDA SUAVIS VEITCHII, several specimens; VANDA TERES ANDERSONI, 2 feet across, ten breaks; AERIDES SCHRŒDERI, fine young healthy specimen, with fourteen perfect leaves; DENDROBIUM THYRSIFLORUM, fifty bulbs; a gigantic specimen of CATTLEYA INTERMEDIA, about a hundred bulbs, in fine health; CATTLEYA WARNERI, twenty-four bulbs with leaves, five breaks; a grand plant of the true old autumn-flowering LABIATA, with two breaks, coming into flower; CATTLEYA, TRIANÆ ALBA. LÆLIA PURPURATA WILLIAMSII, CATTLEYA GIGAS, VANDA TRICOLOR, three grand specimens forty leaves; CATTLEYA SKINNERI, grand variety in perfect health, 3 feet across; two specimen plants of SACCOLABIUM GUTTATUM HOLFORDIANUM, thirteen leaves; MASDEVALLIA DENISONIANA, grand plant and variety with thirty healthy leaves; MASDEVALLIA CHELSONI, with thirty grand leaves; several grand specimens of CATTLEYA MENDELII; five splendid plants of CATTLEYA EXONIENSIS; grand specimen of CATTLEYA MOSSIÆ, 2 feet across; a fine plant of the rare CATTLEYA TRIANÆ MORGANII, with four breaks; four plants of LÆLIA ANCEPS DAWSONII; one nice plant of the old Sion House variety of CATTLEYA MOSSIÆ; grand specimens of ONCIDIUM MACRANTHUM and SERRATUM; and the following ODONTOGLOSSUMS:—ANDERSONIANUM, CHESTERTONI, POLYXANTHUM, ALEXANDRÆ, TRIPUDIANS, PESCATOREI, HALLII, XANTHOGLOSSUM and LEUCOGLOSSUM, LUTEO-PURPUREUM, SCEPTRUM, HEBRAICUM, CROCIDIPTERUM, BLANDUM; SOBRALIA MACRANTHA, Wolley's and William's varieties, specimens about 2 feet across; PILUMNA NOBILIS (true), several fine young specimens; DENDROBIUM FARMERI ALBA; several masses of CŒLOGYNE CRISTATA, in which are included LEMONIANA, but owing to the sudden death of the Gardener they are not named.

On view morning of Sale, and Catalogues had.

Great Sale of Nursery Stock.

MESSRS. PETER S. ROBERTSON AND CO., Trinity Nurseries, Edinburgh, beg to announce that their Third Great ANNUAL SALE of Forest and Ornamental Trees, Seedlings, Conifers, Rhododendrons, Hollies, Game Covert Plants, &c., will take place on THURSDAY, November 2, at 11 o'Clock.

Particulars in *Scotsman*. Details in Catalogues, which may be had on application. All purchases lifted and despatced free. Four months given for removal.

Extensive Sale of Nursery Stock at Melrose, N.B.

MR. A. DAVIDSON will SELL by PUBLIC ROUP, at Melrose, on TUESDAY and WEDNESDAY, November 7 and 8 next, the whole of the valuable and extensive NURSERY STOCK growing in the Nurseries of the late firm of Ormiston & Renwick, Nurserymen and Seedsmen there.

The stock consists of several millions of FOREST TREES, of all kinds and sizes, in splendid condition for removal, and suitable for Hill and Lowland Planting, together with a large number of ORNAMENTAL TREES and SHRUBS, suitable for Park and Villa Decoration; also a fine Collection of FRUIT TREES, BUSHES, &c.

As the Melrose Nurseries have been long celebrated for producing Trees and Shrubs unequalled for hardiness and strong fibrous roots, parties will have an opportunity of supplying themselves with Trees and Shrubs of a quality seldom offered at a public sale.

The Roup will commence each day at half-past 11 o'Clock A.M.

Catalogues will be obtained on application to Mr. A. DAVIDSON, Auctioneer, Melrose.

Melrose, September, 1882.

Castle Nursery, Brox, Chertsey, Surrey.

MESSRS. R. AND J. WATERER AND SON are instructed to SELL by AUCTION, upon the Premises, on THURSDAY, November 9, at 11 o'Clock precisely, the whole of the valuable thriving young and well grown NURSERY STOCK, comprising 20,000 Trees and Shrubs, including 1500 Rhododendrons, from 1 to 1½ ft.; 4000 Green and Variegated Hollies, 1 to 6 ft.; Portugal and caucasican Laurels; 1200 Green and Golden Yews, American Arbor-vitæ from 3 to 5 ft., Cupressus Lawsoniana, Thuia Lobbii, Variegated and Green Box, 130 Yuccas, 1½ ft.; 750 Standard and Dwarf Roses, named and best sorts; Planes, Horse Chestnut, Elms, Poplars, from 6 to 14 ft.; Privet, Syringas, Gueldres Roses and Thorns of sorts, and other plants. The whole are well grown, and in excellent condition for removal.

May be viewed three days priortothe Sale. Catalogues obtained upon the premises, and of Messrs. R. AND J. WATERER AND SON, Auctioneers and Valuers, Chertsey.

FOR SALE, an old-established NURSERY and FLORIST'S BUSINESS, 4 miles from Covent Garden, S.W. district.—Eight Glasshouses, all heated and stocked. Will sell cheap to immediate purchaser. Satisfactory reasons for disposal. For full particulars apply, by letter only, to—W. G., 32, Great Portland Street, London, W.

To Gardeners and others.

TO BE SOLD, the Lease, Stock, and Goodwill of a NURSERY about 15 miles from London on the main road from Oxford to London. There is a good Dwelling House, with Stables and Outbuildings, 4 Greenhouses and about 4½ acres of good land, most of which is well stocked.

For further particulars address,—W. J. WILSHIRE The Nursery, Denham Road, near Uxbridge.

PROTHEROE AND MORRIS, HORTICULTURAL, MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 8, New Broad Street, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

Special Offer to Nurserymen and Planters.

P. J. PERRY, NURSERYMAN, Banbury, offers:—

ALDER, 4 to 6 feet. | BEECH, 3 to 10 feet.
ASH, 4 to 10 feet. | BROOM, 2 to 6 feet.
CHESTNUTS, double Scarlet, 10 to 16 feet; stems, 2 feet in circumference.
HOLLIES, Gold and Silver Variegated, 2 to 4 feet.
,, standards, 5 to 12 feet.
LARCH, 1½ to 5 feet. | ELM, English, 6 to 12 feet.
LIME, 6 to 9 feet, 10 to 12 feet, 12 to 15 feet.
PICEA NORDMANNIANA, 2 to 7 feet.
PINUS AUSTRIACA, 3 to 9 feet.
FIR, Scotch, 2 to 3 feet
,, Spruce, 18 inches to 2 feet 6 inches.
THUIA GIGANTEA, 5 to 6 feet.
YEW, common, bushy stuff, 2 to 5 feet.
,, Golden, 1 to 2 feet 6 inches
,, Irish, 10 to 15 feet: 4 to 5 feet in diameter at 3 feet from the ground.
LAUREL, Portugal, 2½ to 3½ feet.
ROSES, standard, dwarf and pot; including most of the leading sorts.
200 GENISTA FRAGRANS, in 48-pots, 9s. per dozen.
500 CHRYSANTHEMUMS, in 32 and 24-pots, chiefly large flowered variety, 18s. per dozen.
200 GREVILLEA ROBUSTA, in 48-pots, 9s. per dozen.
400 FERNS, in variety, chiefly Adiantum cuneatum, Pteris cretica, Asplenıums in variety, in 48-pots, 15s. per dozen.
200 PELARGONIUMS, young plants, to pot, 5s. per doz.
100 GERANIUMS, Zonal, well-grown, full of bud, in 24-pots, 20s per dozen.
500 ARALIA SIEBOLDII, in 60-pots, 4s. per dozen.
200 AZALEA INDICA, full of bud, in various sizes, from 30s. to 36s per dozen.
800 BOUVARDIAS, 12s. per dozen.
Prices and samples on application.

CHEAP and GOOD PLANTS for the Garden, Greenhouse, &c. CATALOGUE for Autumn, 1882, post free.

Indoor Plants.	Per dozen.—s. d.
HERBACEOUS CALCEOLARIAS, out of pots ..	1 6
,, ,, in pots..	2 6
CINERARIAS, in 5-inch pots	6 0
SOLANUMS, full of berries, in 5-inch pots 6s. and	9 0
CYCLAMEN, very fine, in 5-inch pots .. 6s., 9s, and	12 0
BOUVARDIAS, for early blooming, in 5-inch pots, 6s., 9s. and	12 0
AZALEA INDICA, Ghent or Mollis, with buds, 21s., 24s., and	30 0
HYACINTHS to name .. .. .. 5s. and	6 0
,, Roman .. .. per 100, 22s.	3 0
TULIPS, to name .. per 100, 6s. and 8s.; 1s. and	1 6
HARDY HEATHS, to name	4 0
LEDUMS, KALMIAS, GAULTHERIAS	6 0
CONIFERS for Pots, Window-boxes, and Winter Bedding .. .. per 100, 40s.	6 0
CLIMBING PLANTS in great variety .. 6s., 9s., and	12 0
CARNATIONS, PICOTEES, to name	7 0
PINKS, PANSIES, PENTSTEMONS, to name ..	3 6
POTENTILLAS, PYRETHRUMS, to name ..	5 0
PHLOXES, to name .. .. per 100, 20s.	3 0

All the above Florists' Flowers of the finest varieties, many new. Herbaceous Plants, many thousands of the most showy kinds—12 sorts, 3s.; 50 sorts, 11s.; 100 sorts, 20s

Spring-blooming Plants, such as POLYANTHUS, Seedling PRIMROSES (all colours), WALLFLOWERS, CANTERBURY BELLS, ARABIS, AUBRIETIAS, DAISIES (Red, White, or Rose), MYOSOTIS, SILENE COMPACTA, 4s. per 100, 35s. per 1000.

TULIPS, for Bedding, to name, 5s. per 100.
CROCUS, 2s. per 100.
SNOWDROPS, 2s. 6d. per 100.
PRIMROSES, Double White, Sulphur, and Lilac, 24s. per 100, 3s. 6d. per dozen.
HEPATICAS, Double Red and Single Blue, 24s. per 100, 3s. 6d. per dozen.
SWEET VIOLETS, in good Clumps, for Forcing, 30s. per 100, 4s. per dozen; ditto, ditto, in small plants, 15s. per 100, 2s. per dozen.

New CATALOGUE post-free.

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

THE NURSERIES, DUMFRIES (Established 1787).

Our Stock, which is one of the largest in Scotland, comprises FOREST, FRUIT, and ORNAMENTAL TREES, DECIDUOUS and EVERGREEN SHRUBS, ROSES, GREENHOUSE PLANTS, &c.; also a very large and splendid Stock of THORN QUICKS, for Hedging and for Filling up Gaps.

The Trees and Shrubs are of all ages and sizes, and are well adapted for extensive planting or giving immediate effect in the formation and improving of Ornamental Parks, Pleasure Grounds, &c. Prices on application.

THOMAS KENNEDY AND CO., Seed and Nursery Establishment, Dumfries.

ANEMONE JAPONICA ALBA and ROSEA, 10,000 extra strong plants, splendid stuff, flowered this season, 2s. 6d. per dozen, 16s. per 100.

VIOLETS, Double Russian, full of flower-buds, very strong compact plants, fine for potting. Single ditto, The Czar, also full of flower-buds, 2s. 6d. per dozen, 16s. per 100, package included.

HENRY GODFREY, Nurseryman and Seedsman, Stourbridge.

To the Trade.

FERNS at 12s. per 100.—ADIANTUM PUBESCENS, LOMARIA GIBBA, PTERIS CRETICA ALBO LINEATA, PTERIS ARGYREA, PTERIS SERRULATA CRISTATA, and GYMNOGRAMMAS. 100, including other varieties, 12s., 15s. and 20s. per 100. Strong plants in 4-inch pots, 35s. per 100. Samples forwarded on receipt of 1s. or 12 stamps, excepting pot plants.

G. MILTON, Frankfort Nursery, Union Road, Exeter.

NEW GOLDEN BEDDING PANSY, KING OF YELLOWS — the largest, freest, and brightest of all golden-yellow Pansies; strong plants, 1s. each, 9s. per dozen.

PANSY THOS. GRANGER, rich glowing Crimson, 5s. per dozen.

PANSY SUNBURST, fine Red, 16s. per 100, 3s. per dozen. Fine collection of all leading sorts.

RODGER, McCLELLAND AND CO., Nurserymen, &c. Newry.

ROSES—ROSES—ROSES.

50,000
STANDARD, HALF STANDARD,
AND
DWARF ROSES,

Of the very best sorts, to choose from, at the lowest prices.

Those who have witnessed my Roses at the Exhibitions could judge of their quality.

Catalogues forwarded free on application to

FRANK CANT,
THE MILE END NURSERIES,
COLCHESTER.

TRADE SUPPLIED.

DANIELS' CHOICE FLOWER ROOTS.



Our GUINEA BOX of choice Hardy Flower Roots for Outdoor Planting

Contains the following liberal assortment, all in sound picked Bulbs, with full instructions for cultivation (case, packing, and carriage free to any railway station in England or Wales):—

25 HYACINTHS, choice, mixed
200 CROCUS, in fine variety
12 TULIPS, Rex rubrorum
12 TULIPS, La Reine
12 TULIPS, double, mixed
12 TULIPS, single, mixed
12 TULIPS, Parrot, mixed
25 ANEMONES, double, mixed
12 ANEMONES, double, Scarlet
25 ANEMONES, single, mixed
12 POLYANTHUS NARCISSUS, mixed
12 Double White NARCISSUS
12 Pheasant's-eye NARCISSUS
6 CAMPERNELLE JONQUILS
25 RANUNCULI, scarlet Turban
25 RANUNCULI, mixed Turban
50 SNOWDROPS
50 WINTER ACONITES
12 SPANISH IRIS
6 TRITELEIA UNIFLORA
2 LILIES

559 *Roots in all. Double quantity, 40s.; half do., 12s. 6d.*

Other Collections for Greenhouse and Conservatory, Window-boxes, &c., 12s. 6d., 21s., 42s., 63s., and 84s.

Beautifully Illustrated CATALOGUE, post-free on application.

DANIELS BROS.,
Royal Norfolk Seed Establishment, Norwich.

CRANSTON'S NURSERIES
(Established 1785).

NOW READY,

Descriptive and Priced Catalogue of ROSES

For Autumn 1882 and Spring 1883.

CRANSTON'S NURSERY and SEED CO.
(LIMITED),
KING'S ACRE, HEREFORD.

Ferns a Speciality.

The largest stock in the greatest number of varieties of

EXOTIC AND BRITISH FERNS

In the Trade, suitable for STOVE and GREENHOUSE cultivation, for Outdoor Ferneries, and other purposes. Special LIST free on application. Illustrated CATALOGUE 6d.

W. AND J. BIRKENHEAD, Fern Nursery, Sale near Manchester.

SEAKALE—SEAKALE.

VERY LARGE.

ANY QUANTITY.

Apply to the Grower for Particulars.

W. BAGLEY,
MILLSHOT FARM, FULHAM, S.W.

NOTICE.
SELLING OFF OF NURSERY STOCK.

EWING & CO.,
EATON, near NORWICH.

Great Reduction in Price for Cash Payments, viz.,
15 per Cent. for Cash before delivery.
10 per Cent. for Cash within One Month of date of invoice.
5 per Cent. for Cash within Three Months of date of invoice.
After Three Months no discount can be allowed.

We shall be pleased to quote prices for the following in small or large quantities:—

Standard and Half-Standard H.P. Roses.
STANDARD, HALF-STANDARD, and DWARF MARÉCHAL NIEL ROSES.
TEA and NOISETTE ROSES in Pots.
PURPLE BEECH, best selected dark, broad-leaved variety, of all heights up to 8 feet.
BEECH, Cut-leaved, Fern-leaved, Crested-leaved, and Weeping.
KENTISH COB and other best kinds of NUTS and FILBERTS.
POPLARS, Black Italian, small or large.
POPLARS and WILLOWS of many choice kinds, in variety.
Scarlet-flowered and Common HORSE CHESTNUTS, large or small.

Planting Season.

JOHN PERKINS AND SON beg to draw attention to their large stock of the following, the whole of which have excellent roots:—

AUCUBA JAPONICA, 1 to 3 feet.
CUPRESSUS LAWSONIANA, 1½ to 10 feet.
HOLLY, Variegated, 1 to 4 feet.
LAURELS, Common, 1 to 3 feet.
,, Portugal, 1 to 4 feet.
,, ROTUNDIFOLIA and CAUCASICA, 1 to 3 feet.
LAURUSTINUS, 1 to 2 feet.
PICEA NORDMANNIANA, 2 to 6 feet.
THUIA AUREA, 1 to 3 feet.
,, GIGANTEA, 1 to 6 feet.
,, LOBBII, 3 to 4 feet.

YEWS, English, 2 to 3 feet, 3 to 4 feet, and 4 to 5 feet; also large stocks of transplanted FOREST TREES, ASH, ALDER, BIRCH, ELMS, HAZEL, HORNBEAM, Evergreen PRIVET, PINUS AUSTRIACA, LARCH, Scotch and Spruce FIRS, various sizes, 1 to 4 feet; WHITETHORN QUICKS.

An inspection particularly solicited.

WHOLESALE and RETAIL CATALOGUES on application.

52, Market Square, Northampton: Nurseries—Billing Road.

Game Covert.

THOMAS METHVEN AND SONS have a fine Stock of MAHONIA AQUIFOLIA, 1½ to 2 feet, RHODODENDRON PONTICUM, and COTONEASTER SIMONSII, suitable for above, and will be happy to quote prices. Leith Walk Nurseries, Edinburgh.

Gardenias.

MESSRS. JOHN STANDISH AND CO.'S Stock of GARDENIAS was never so extensive or good as it is this season. They have thousands of plants to select from, in all sizes, from fine specimens in 18-inch pots to small plants in 60's. All clean and healthy, and to a large extent well set with buds for winter-flowering. VERY REASONABLE Prices will be quoted on application.

Royal Nurseries, Ascot, Berks.

Special Offer.

CEDRUS DEODARA, fine plants.
3 to 4 feet, 15s. for 12, 60s. for 50, 110s. for 100.
4 to 5 feet, 18s. for 12, 70s. for 50, 130s. for 100.
THOMAS PERKINS AND SONS, 34, Drapery, Northampton.

ROSES—Carriage Paid—ROSES.
(To any Railway Station in England.)
Twelve distinct varieties, Perpetuals, 1st Prize flowers, 10s. 6d.
100 in fifty varieties, 1st Prize flowers, 65s.
The plants are very fine, stout, and well-rooted. Terms cash. Usual Trade Discount.
The EXORS. of the late H. BLANDFORD, The Dorset Nurseries, Blandford.

SHALLOTS, extra fine, 3d. per pound, 18s. per cwt.
W. HOPWOOD AND SON, Seedsmen, Hewlett Road, Cheltenham.

Grape Vines.—Grape Vines.

E. ANDREWS AND SON, NURSERYMEN, Temple Mill Lane, Stratford, E., offers a large stock of fine strong fruit-bearing Grape Vines, short jointed, three years old, Black Alicante and Lady Downe's. Price on application.

To Gentlemen, Seedsmen, and Gardeners.

SEAKALE.—For Sale, a large quantity of best forcing Seakale Roots, as grown by the late Mr George Steel, Market Gardener, Fulham. For terms apply to WM. MILLAR DAVIES, Manager, Grove House Fulham, London, S.W.

NYMPHÆA ODORATA MINOR.—A miniature Water Lily of the most charming description. Flowers about one-third the size of our native species. Colour white to deep rose. Strong roots, 5s. each.
HOOPER AND CO., Covent Garden, London, W.C.

Vines.—Vines.—Vines.

B. S. WILLIAMS has much pleasure in intimating that his stock of VINES is unusually fine this year, the Canes being very strong and well ripened. For List of Prices see B. S. W.'s BULB CATALOGUE for 1882. Victoria and Paradise Nurseries, Upper Holloway, London, N.

Planting Season.

ANTHONY WATERER begs to invite attention to the following well-grown and properly rooted NURSERY STOCK :—

AUCUBA JAPONICA, 1½, 2, and 3 feet. Thousands.
BOX, Green and Variegated, 2, 3, 4, 5, 6, and 7 feet. Thousands.
YEWS, English, 2, 3, 4, 5, 6, 8 to 10 feet. Thousands.
,, Golden, all heights up to 10 feet, and various shapes—Globes, Pyramids, &c. Thousands.
,, Irish, 5, 6, 7, to 10 feet.
JUNIPERS, Chinese, 5, 6, 7, to 10 feet.
PICEA PINSAPO, 5, 6, 7, to 10 feet.
,, NORDMANNIANA, 5, 6, 7, to 10 feet.
SPRUCE FIRS, well furnished, 3, 4, 5, 6, and 7 feet. Many thousands.
,, Black, 3, 4, and 5 feet.
SPRUCE, Hemlock, 4, 5, and 6 feet.
WEARE'S ARBOR-VITÆ, 4, 5, 6, and 7 feet.
HOLLIES, common Green, of all heights, up to 10 feet. Thousands.
,, Green, of sorts, such as LAURIFOLIA, MYRTIFOLIA, HODGINS', ALTACLARENSE, Yellow-berried, &c. An enormous Stock.
,, Variegated, from 3 to 5, 6, 7, 8, and 10 feet.
,, Waterer's, beautiful Specimens.
,, Golden Queen, up to 10 feet. Hundreds.
,, Silver Queen, up to 10 feet. Hundreds.
,, Perry's Weeping Standards and Pyramids.
,, Golden Weeping Standards and Pyramids.
The Stock of Hollies of various kinds comprises many thousands, and affords a choice quite unequalled.
CUPRESSUS LAWSONIANA ERECTA VIRIDIS, 3, 4, 5, 6, 7, and 8 feet. Thousands.
,, ,, GRACILIS, 3 and 5 feet.
,, ,, ARGENTEA, 3 and 5 feet.
,, ,, LUTEA, hundreds of fine plants, 3, 4, and 5 feet high.
RETINOSPORA PLUMOSA AUREA, 3, 4, and 5 feet.
,, OBTUSA AUREA, 4, 5, 6, and 7 feet.
,, PISIFERA AUREA, 3 and 4 feet.
THUIOPSIS DOLABRATA, 3, 4, 5, and 6 feet. Hundreds.
BEECH, Purple, 6 to 10 and 12 feet. Thousands.
LIMES, 10, 12, 14, 15, and 16 feet. Thousands.
PLANES, 10 to 20 feet.
MAPLE, Norway, 10 to 15 feet.
CHESTNUT, Horse, 10 to 16 feet.
,, Scarlet, 10 to 16 feet.
POPLAR, CANADENSIS NOVA, 10 to 16 feet. Thousands.
OAKS, Scarlet American, 10 to 12 feet.
ACER DASYCARPUM, 10 to 16 feet.
,, SCHWEDLERII, 10 to 12 feet.
And a vast and Miscellaneous Stock of Flowering DECIDUOUS SHRUBS and EVERGREENS, which intending purchasers are respectfully invited to come and see.
Knap Hill Nursery, Woking, Surrey.

PLANTS FOR POTTING AND FORCING:—

AZALEA MOLLIS, with from 10 to 30 buds.
,, a selection of the best hardy kinds, including PONTICA, NARCISSIFLORA, and GRAF VON MERAN, well budded.
KALMIA LATIFOLIA, nicely grown plants with flower-buds on wellnigh every shoot.
RHODODENDRONS, well budded and the best varieties for the purpose.
DEUTZIA CANDIDISSIMA, fl.-pl., established in pots.
HYDRANGEA PANICULATA GRANDIFLORA, very strong.
ANDROMEDA PULVERULENTA or SPECIOSA.
These can be obtained in satisfactory plants and at fair prices from
ANTHONY WATERER, Knap Hill Nursery, Woking, Surrey.

Special Cheap Offer.

ISAAC MATTHEWS AND SON are prepared to make a special offer to the Trade and Large Buyers. Samples and Price List on application :—

ASH, Common, 3 to 4 feet, 4 to 5 feet, 5 to 6 feet.
,, Mountain, 3 to 4 feet, 4 to 5 feet, 5 to 6 feet, 7 to 8 feet, 8 to 9 feet.
OAK, English, 1½ to 2 feet.
POPLAR, Black Italian, 3 to 4 feet, 4 to 5 feet, 5 to 6 feet.
SYCAMORES, 2 to 3 feet, 3 to 4 feet.
CHESTNUTS, Horse, 9 to 10 feet, 10 to 12 feet.
ELDER, Golden, 2 to 3 feet, 3 to 4 feet.
THORN QUICK, strong, 2-yr., 3-yr., 4-yr. strong.
HOLLIES, Hodgins', maderensis, Bay-leaf, Golden Queen, Silver Queen, Old Silver, myrtifolia, ovata, Shephardii, common Green, in all sizes.
LAURELS, Common, 12 to 18 inches, 1¼ to 2 feet, 2 to 2½ feet, fine.
CUPRESSUS, in variety, from 1½ to 7 feet.
RETINOSPORA PLUMOSA, 1 foot, 1¼, and 2 feet, bushy.
YEWS, English, 18 to 24 inches, 2 feet, 2½ feet, 2½ to 3 feet.
AZALEA Pontica, 1½ to 2 feet, 4 to 6 inches.
RHODODENDRONS, Hybrid and Pontica, 3 to 4 inches, 4 to 6 inches, 6 to 9 inches, 9 to 12 inches, 12 to 15 inches, 15 to 18 inches, 1½ to 2 feet, 2 feet; ditto, choice named sorts, bushy, in 100 varieties.
,, CUNNINGHAM'S WHITE, 9 to 12 inches, 12 to 15 inches, 15 to 18 inches.
,, CAUCASICUM PICTUM, 9 to 12 inches, 12 to 15 inches, 15 to 18 inches.
RHODODENDRON STOCKS, strong.
PANSIES, in 100 varieties.
IVY, Irish, 2-yr., 3-yr., 4-yr., strong.
The Nurseries, Milton, Stoke-on-Trent.

STRAWBERRIES.—Strong roots for present planting and for fruiting next year, 4s. per 100. Descriptive LIST and price for plants in pots for forcing on application. — RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Cabbage Plants.

CABBAGE PLANTS!—Extra strong Autumn-sown plants, in any quantities, well rooted and free from club, of Early Enfield Market, Battersea, Nonpareil, and Robinson's Champion Drumhead Cabbage, at 3s. per 1000, delivered on Rail; cash or reference from unknown correspondents.
W. VIRGO, Wonersh Nurseries, Guildford, Surrey.

FOR SALE, a large quantity of HARLINGTON WINDSOR BEANS, grown from the original Harlington Stock.—Apply to
J. SMITH AND SON, Growers, Sipson, near Slough; and North Side, Covent Garden Market, W.C.

HAMPTON COURT BLACK HAMBURGH VINES.—Extra strong Fruiting Canes of the above from 10s. 6d.; also fine Planting Canes from 3s. 6d. each.
T. JACKSON AND SON, Royal Kitchen Gardens, Hampton Court, and The Nurseries, Kingston, Surrey.

GEO. JACKMAN & SON
(ESTABLISHED 1810,)



Cultivators of
FRUIT and FOREST TREES,
Evergreen and Flowering
TREES and SHRUBS,
ROSES, RHODODENDRONS,
Conifers and Hardy Climbers.

THE CLEMATIS
A SPECIALITY.

Descriptive Priced Catalogues free.
WOKING NURSERY, SURREY.

SPECIAL OFFER OF FERNS.

Having a splendid stock, we offer 100 Stove and Greenhouse Ferns and Selaginellas, nice healthy plants, in 50 species and varieties, for 42s.; 50 in 50 varieties, 25s.; 50 in 25 varieties, 21s.; 25 for 10s. 6d.; 12 for 4s. or 6s.

Special TRADE LIST on application.

W. AND J. BIRKENHEAD, Fern Nursery, Sale, near Manchester.

FLOWER ROOTS, &c.

BEST QUALITY. CARRIAGE FREE.

DICKSON & ROBINSON,

SEED MERCHANTS and BULB IMPORTERS,

12, OLD MILLGATE, MANCHESTER,

D. & R.'s COLLECTIONS of SELECT FLOWERING BULBS for the Decoration of the Conservatory or Greenhouse, and for Outdoor Flowering in Spring:

10s. 6d., £1 1s., £2 2s, and £3 3s. each.

For Contents of these Collections see our
AUTUMN CATALOGUE.

FOR EARLY FORCING.

AZALEA MOLLIS, strong bushes, well set with flower-buds.
DEUTZIA GRACILIS, extra strong plants.
DIELYTRA SPECTABILIS, extra strong roots.
HELLEBORUS NIGER (Christmas Rose), extra strong roots.
LILY OF THE VALLEY, imported extra strong clumps.
LILY OF THE VALLEY, imported extra strong single crowns.
SPIRÆA (Hoteia) JAPONICA, imported extra strong clumps.
SPIRÆA PALMATA, bright crimson flowers, strong clumps.

For Descriptions and Prices of the above see our Illustrated AUTUMN CATALOGUE, sent gratis and post-free.

12, OLD MILLGATE,
MANCHESTER.

FOREST TREE SEEDLINGS.

One of the largest and finest stocks to choose from, including over three millions of two Seedling LARCH, with sound leaders—a splendid lot. Samples and prices post-free on application to

PETER S. ROBERTSON & CO.,
NURSERYMEN, EDINBURGH.

A

CATALOGUE of ROSES,

BY THE

CHAMPION ROSE GROWER,

BENJAMIN R. CANT,

COLCHESTER,

POST-FREE ON APPLICATION.

***** Be careful to Write Christian Name in Full.**

To Planters.

JAMES BIRD offers the undermentioned Forest stuff, price on application :—

LARCH FIR, 3 to 4 feet, and 4 to 5 feet.
SCOTCH FIR, 1½ to 2 feet, and 2 to 3 ft. [to 5 ft.
SPRUCE FIR, 1½ to 2 feet, 2 to 3 feet, 3 to 4 feet, and 4
PINUS AUSTRIACA, 1½ to 2 feet.
HAZEL, 2 to 3 feet, and 3 to 4 feet.
The Nurseries, Downham.

SPIRÆA PALMATA:
The largest stock for forcing in the world.
LAURUS CAUCASICA :
The finest Laurel ever introduced.
RHODODENDRONS:
All kinds and all sizes.
STANDARD RHODODENDRONS:
You may select from thousands.
HARDY TREES, SHRUBS, ROSES, &c.:
For general planting, acre after acre.
Intending planters are invited to come down and see the stock. The Nursery is ten minutes from Sunningdale Station, S.-W. Railway.
CHARLES NOBLE, Bagshot.

Immense Sale of

VIOLAS, PANSIES, PERENNIALS, ROCK and ALPINE PLANTS, at one uniform price, 1s. per dozen — separately transplanted, not weakly rooted offshoots—our land being sold to the L. & N.-W. Railway Co. Hampers and packing gratis. CATALOGUES free. Our collection is admitted to be the largest and choicest collection ever brought together.
JOHN PIRIE AND CO., Stetchford, Birmingham.

SPECIAL OFFER.
GLOBE ARTICHOKES, strong, 3s. per dozen.
CURRANTS, White, strong, 8s. per 100.
SPRUCE FIR, 2-yr. 2-yr., 7s. per 1000.
CHESTNUTS, Scarlet, fine Standards, 6 feet stems, 8s. per dozen, 55s. per 100
THOMAS PERKINS AND SONS, 34, Drapery, Northampton.

To the Trade.

WHITE CAMELLIA BLOOMS.—Arrangements can now be made for a regular supply of perfect blooms—extending over Christmas next; also MAIDENHAIR FERN. Apply for prices, &c., to
JAMES PAGE, Camellia Grower, The Hornsey Nurseries, Hornsey, Middlesex, N.

To the Trade.

STANDARD and HALF STANDARD ROSES, of good quality, at reasonable prices.
L. WOODTHORPE, Glazenwood Nurseries, Braintree.

GRAPE VINES.—Best sorts, at moderate prices, specially prepared for Fruiting in Pots and for Border Planting.
E. TURVEY, Brixton Hill, S.W.

JAMES DICKSON & SONS.
GRAPE VINES of the usual excellent quality can now be supplied, price 5s., 7s. 6d., and 10s. 6d. each; the stronger will fruit next year either in pots or planted out.
CHRYSANTHEMUMS. — Well-grown plants of leading kinds, for immediate blooming, can be supplied at 12s. per dozen and upwards.
STRAWBERRIES.—By now planting transplanted runners a crop may be depended upon next year. Strong plants in large and small pots for forcing and planting can also be supplied.
AZALEAS, CAMELLIAS, WINTER FLOWERING and other PLANTS.
CATALOGUES with full particulars on application to
"NEWTON" NURSERIES, CHESTER.

To the Trade.

H. AND F. SHARPE will be pleased to give special quotations for all the leading varieties of VEGETABLE and AGRICULTURAL SEEDS they have grown this season. The quality will be very fine, the Seeds having been harvested in fine condition. They have been grown from the finest selected stocks. The prices will be found very low.
Seed Growing Establishment, Wisbech.

EIGHTY THOUSAND CLEMATIS, in Pots, of all the finest double and single varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants.
Descriptive LIST on application.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

NEW ROSES of 1882, in pots.—Vendors' Selection, 30s. per dozen; Purchaser's, 36s. per dozen. The above comprise all the best English and French raised Hybrid Perpetuals, Perpetual Polyantha, Teas, Hybrid Teas, and Perpetual Moss.

ROSES of 1881, of above-named classes, 18s. to 24s. per dozen, in pots.

CHOICE ROSES. — Tea-scented, Hybrid Tea, Noisette, China, and Bourbon, 18s. to 24s. per dozen, strong plants in pots.
Descriptive LIST on application.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

To the Trade.

SEAKALE, extra strong, selected for forcing; also POTATO ONIONS, SHALLOTS, and GARLIC. Prices on application.
W. TAIT AND CO., Seed Merchants, Dublin.

Escalonias

MACRANTHA and RUBRA 1 to 1½ foot, fine, 16s. per 100.
HUGH DICKSON, Belmont Nursery, Belfast.

ASPARAGUS PLANTS, large quantity, must be sold. Conover's Colossal, 1, 2, 3 years; also extra strong forcing.
FREEMAN, Seed Grower, Norwich.

GRAPE VINES and ORCHARD HOUSE TREES in POTS. — GRAPE VINES, extra strong, short-jointed and well ripened; Planting Canes, 3s. 6d. to 5s. each; extra strong Fruiting Canes, 7s. 6d. to 10s. ORCHARD-HOUSE TREES, fruiting in pots, consisting of Peaches, Nectarines, Apricots, Plums, Cherries, Pears, Apples, and Figs. Descriptive Price LIST for 1d. stamp.—RICHARD SMITH AND CO., Nurserymen and Seedsmen, Worcester.

To Florists and Gardeners.

THE WHITE CLOVE, MRS. SINKINS, is the best, without exception, to produce a supply of choice, sweet-scented white flowers. Blooms 3 inches across, very full and rosette-like. Plants 4*s*., 5*s*., and 6*s*. per dozen.
W. WEALE, Taplow, Bucks.

SPIRÆA JAPONICA, strong clumps, for forcing, will bloom well, 12*s*. per 100, 100*s*. per 1000.
CATALOGUE of Ornamental Trees and Shrubs, Roses, and Fruit Trees, &c., on application.
W. C. SLOCOCK, Goldsworth Nursery, Woking.

FOR SALE, Pair of LATANIA BORBONICA, 7 feet high by 10 feet over; One large PANDANUS UTILIS, 10 feet by 10 feet. The above are perfect pecimens, clean, and furnished to rim of tubs. One SEAFORTHIA, 4 feet stem, six leaves, in pot: good Give offer to
D. CROMBIE, Gr., Sunderland Hall, Selkirk, N.B.

SEED POTATOS.—I am now offering my Winter Stock of true, selected, hand-picked Samples of all the leading kinds of Seed Potatos, at exceedingly low prices for Cash. Send for Price LISTS, post-free on application to
C. FIDLER, Potato Grower, Reading.

AZALEA MOLLIS, Seedlings, twice transplanted, 4 to 6 inches high, 6 to 9 shoots, from the three following varieties, each kept distinct, viz., Comte de Gomer, Consul Pécher, and Isabelle van Houtte, in equal quantities of each, 25*s*. per 100, £10 per 1000.
RHODODENDRON PONTICUM, green, and very bushy, 12 to 15 inches high, 5*s*. per doz., 35*s*. per 100.
ISAAC DAVIES AND SON, Nurserymen, Ormskirk.

RHUBARB, large Forcing Roots, Early Albert, Early Linnæus, Defiance, RUBY (the brightest and best for table).
FREEMAN, Seed Grower, Norwich.

LILIUM AURATUM (home-grown). — A large stock of home-grown Bulbs, in fine condition, and almost every other sort in cultivation. Samples and prices on application.
THOMAS S. WARE, Hale Farm Nurseries, Tottenham, London.

Special Notice.

FRED. SMITH, JUN., begs to inform Seed Merchants and the Trade generally that he has secured the entire stock of CHOICE FLOWER SEEDS of the Mortgagee who has been in possession of the West Dulwich Nurseries since October 11, 1881, in which are included the unsurpassed strains of BALSAM, CINERARIA, PRIMULA, CALCEOLARIA, &c., for which the late firm has been noted for upwards of forty years.
CATALOGUES (with reduced prices) post-free on application.
West Dulwich, London, S.E.

New Strawberry "Bothwell Bank Prolific."

DICKSONS AND CO., NURSERYMEN and SEEDSMEN, Waterloo Place, Edinburgh, are now sending out well-rooted Plants of the above, which has been awarded a First-class Certificate by the Royal Caledonian Horticultural Society, and as a forcing Strawberry has secured the First Prize wherever exhibited. It is hardy, vigorous, a most abundant cropper, and the fruit is large and handsome. Its firmness will make it an invaluable market variety. 10*s*. per 100, or 3*s*. per dozen. Liberal terms to the Trade.

VIOLETS continue BLOOMING until next March. We have an acre of all the best in cultivation, in splendid vigour, and full of buds. For full particulars send for a CATALOGUE.
NEAPOLITAN, large clumps for cold frame, 20*s*. per 100; fine plants in 5-in. pots, in flower, 8*s*. per doz., £2 10*s*. per 100.
MARIE LOUISE, large clumps ditto, 25*s*. per 100; splendid plants in 5-in. pots, full of flower, 9*s*. per doz., £3 per 100.
BLOOMS of SWANLEY WHITE (Double) sent to any address for 8 stamps.
H. CANNELL AND SONS, Home for Flowers, Swanley, Kent.

Catalogues for the Season.

CHARLES TURNER'S Descriptive LISTS of the following can be had free on application:—
DUTCH and OTHER BULBS,
CARNATIONS, PICOTEES, and PINKS,
STRAWBERRIES, &c.
The Royal Nurseries, Slough.

FERNS, &c, in SMALL POTS.

	Per dozen — *s*. *d*.
ADIANTUM CUNEATUM .. .. 21*s*. per 100	3 0
„ CONCINNUM	3 6
„ „ LATUM	3 6
„ EXCISUM	3 6
HEMIONITIS PALMATA	4 0
GYMNOGRAMMA LAUCHEANA vars. 21*s*. per 100	3 0
„ DECOMPOSITA	3 0
PTERIS MAGNIFICA .. .. .. 18*s*. per 100	2 0
„ CRETICA .. .. 20*s*. per 100	3 0
„ PALMATA	4 0
BRAINEA INSIGNIS	6 0
LYGODIUM SCANDENS .. .. .. 21*s*. per 100	3 6
DRACÆNA VEITCHII and AUSTRALIS, PANDANUS UTILIS, LATANIA BORBONICA, CHAMÆROPS HUMILIS, C. EXCELSA ..	3 0
ARALIA SIEBOLDII, GREVILLEA ROBUSTA ..	2 6
ALLAMANDA GRANDIFLORA	15 0
CLEMATIS INDIVISA LOBATA	15 0
CHOISYA TERNATA	6 0
DIPLADENIA BREARLEYANA	15 0
„ of sorts .. .. 6*s*., 9*s*., and	12 0
ALLAMANDAS, CLERODENDRONS, and BOUGAINVILLEAS of sorts .. .. 6*s*., 9*s*., and	12 0
STOVE PLANTS in great variety .. .. per 100	50 0
GREENHOUSE PLANTS .. .. .. „	50 0

As good varieties and plants as generally sold at treble the prices. Catalogues free.
WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

SWEET VIOLETS for Winter Blooming.
DOUBLES—New York, an improved Marie Louise, a large stock 2*s*. 6*d*. per dozen, 18*s*. per 100, extra large clumps 7*d*. each, 6*s*. per dozen; also De Parme, Double Red Russian, Tree, Belle de Chatenay, Margaret de Savoie, 4*d*. each, 3*s*. 6*d*. per dozen; Blandyana, Patriæ, 6*d*. each, 5*s*. per dozen; Chatenay cærulea, Duchess of Edinburgh, 1*s*. each; New Mazarine Blue, 2*s*. each; Swanley White, the grand new double white, small plants 5*s*. each
SINGLE VARIETIES. — Argentæflora, Odoratissima, White Czar, 4*d*. each, 3*s*. 6*d*. per dozen; Victoria Regina, and Large White, 2*s*. per dozen.
CATALOGUE, with directions for Culture, 1½*d*.
Mr. R. W. BEACHEY, Fluder, Kingskerswell, Devonshire.

W. POTTEN has pleasure in offering his Friends and the Public the following strong healthy trees:—
Many thousand Standard, Pyramid, and Dwarf APPLES, PEARS, and PLUMS.
50,000 BLACK CURRANTS, Lee's Prolific, Baldwin, and Old Black.
10,000 RED and WHITE CURRANTS.
GOOSEBERRIES, Whitesmith, Crown Bob, Bank of England, and Golden Drop
ROSES, extra strong Standard, Half Standard, and Dwarf, of the best varieties, by the dozen, 100, or 1000.
Many thousands of Flowering and Evergreen SHRUBS.
100,000 SPANISH CHESTNUTS, 2 to 4 feet; ASH, 3 to 6 feet; BEECH, 6 to 8 feet; ALDER, 4 to 7 feet; BIRCH, 4 to 6 feet; LARCH, 2 to 4 feet; all stout well-rooted plants.
50,000 QUICK, strong, 1½ to 4 feet.
Prices of the above on application. Names and samples sent if required.
Camden Nursery, Sissinghurst, Staplehurst, Kent.

To the Trade.

FERNS—FERNS—FERNS.—The following are all good stuff, in 60-pots:—Lomaria gibba, Pteris serrulata, P. serrulata cristata, P. cretica alba lineata, Polystichum plumosum, Doodia media, 20*s*. per 100, £9 per 1000; A. cuneatum, 25*s*. per 100; Lastrea aristata variegata (new), 30*s* per 100; Cheilanthes elegans (the Lace Fern), 35*s*. per 100. Prices of 48's stuff on application.
W. M. CROWE, Boleyn Nursery, Upton, Essex.

SPECIAL OFFER.—LARCH, 2 to 3½ feet, twice transplanted; SCOTCH, SPRUCE, ASH, &c.; LAURUSTINUS, 6 to 9 inches; PRIVET, &c.
J. COYSH, Nurseryman, Carmarthen and Llanelly.

STOVE and GREENHOUSE PLANTS for SALE cheap, or EXCHANGE for ORCHIDS. ACANTHOPHŒNIX CRINITA, 6 feet high; ALOCASIA METALLICA, 3 feet through; ALOCASIA GIGANTEA, 4 feet high; PANDANUS VEITCHII, 4 feet through; AZALEAS, FERNS, &c.
K., Dudley House, Nightingale Lane, Balham, London, S.W.

SPECIAL OFFER TO THE TRADE.
The following First-class PEAS, grown expressly for Seed, warranted pure:—

AMERICAN WONDER ..	50*s*. per bushel.
DAY'S SUNRISE	15*s*. „
SHARPE'S INVINCIBLE ..	15*s*. „
YORKSHIRE HERO	16*s*. „
VEITCH'S PERFECTION ..	16*s*. „
NE PLUS ULTRA	15*s*. „
G. F. WILSON	15*s*. „
DR. McLEAN	15*s*. „
FORTYFOLD	15*s*. „
MINIER'S FIRST EARLY ..	15*s*. „
KENTISH INVICTA	15*s*. „

In quantities of not less than 4 bushels and upwards. Cash on delivery
BRINKWORTH AND SON, Pewsey, Berks.

AUTUMN PLANTING.

THE LAWSON SEED AND NURSERY COMPANY (LIMITED),

EDINBURGH,

Respectfully invite the attention of intending Planters to their large Stocks of

SEEDLING and TRANSPLANTED FOREST TREES,

ORNAMENTAL TREES and SHRUBS, FRUIT TREES, ROSES, &c.;

And will be glad to submit Special Offers upon application.



TO THE TRADE.

Certificate of Merit, Royal Horticultural Society. Nov. 3, 1881.

NEW POTATO,

DANIELS' WHITE ELEPHANT,

The best Second Early and most wonderful productive Potato in the World; cooks beautifully white and floury, and of splendid flavour.

From J. TUCK, *Burnham, Wells, Norfolk, September* 18, 1882.—"From three-and-a-half stones of Daniels' White Elephant Potato I grew, on poor soil, thirty-five hundredweight (35 cwt.) of fine marketable tubers, of splendid cooking quality."

LOWEST PRICE PER TON ON APPLICATION.

DANIELS BROTHERS (Seedsmen to Her Majesty the Queen, and His Royal Highness the Prince of Wales), NORWICH.

TO THE TRADE ONLY.

TEA ROSES—TEA ROSES.

40,000 splendidly grown, extra strong and healthy TEA ROSES, of all the leading kinds, still left, in 4½-inch pots.

Purchasers' Selection .. £3 3s. per 100 | Purchasers' Selection .. .. £30 per 1000
My own Selection .. £2 16s. per 100.

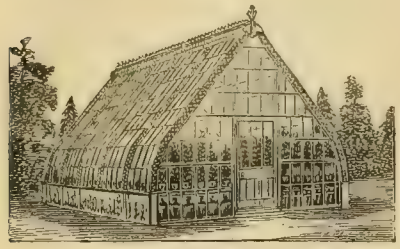
DOUBLE WHITE PRIMULAS.

Strong Plants, in 4½-inch pots, to bloom this Winter, 10*s*. per dozen, 70*s*. per 100.

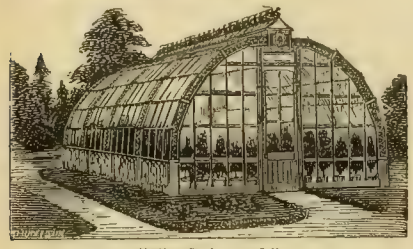
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THE
Gardeners' Chronicle.

SATURDAY, OCTOBER 28, 1882.

BRADENHAM.

THIRTEEN thousand persons in High Wycombe, near Hughenden, Bucks, are more or less subject to three depressing evils of modern civilisation. It was a remark of Edmund Burke's, that all great towns—but he does not mention little ones—from Babylon and Rome to the present time, have been sinks of iniquity and graves of genius. In spite of what we read about the hanging gardens of the former city, I have always thought that a vitiated atmosphere, which depresses life and leads poor human nature directly on to drunkenness and vice, furnished the explanation of Burke's remark, and that the acknowledged evils attending an overcrowded population might be removed by means of gardens and pure air. Long before the discovery of oxygen people had learned by experience the bad effects on plant-life, as well as on animals, of a carbonised atmosphere ; and in Sir Thomas More's fiction of *Utopia* he most carefully provided for the health of the inhabitants. It does not redound to the credit of small towns like High Wycombe that, after the lapse of three centuries, their "teeming" little populations, as the term is, —though "huddled" would be a better word— should suffer from the effects of smoke, sewage, and want of space for gardens. But I saw with my own eyes dense volumes of smoke poured into the valley of the Wick from tall chimneys. I suffered in the nose from sewage, and might have suffered otherwise if I had stayed in the town longer ; and although there are, without doubt, flowers here and there—as indeed there are in the most crowded streets of Westminster, where prizes are given for window gardening every year at a flower show—still the gardens are comparatively few and small.

I do not hesitate to say that the "better man" is not so much encouraged in High Wycombe as it might be, for without pure air and gardens how may we hope for those accompaniments of taste and refinement which demand the contemplation of beauty and of some perfect thing in Nature, such as a flower—say, if you like, a Primrose.

In Buckinghamshire generally several great Englishmen, tempted by its gardens, its healthfulness and beauty, have found their homes, among them Edmund Burke, Milton, Pope, Cowper, Waller, Gray, Herschel, Hampden, and Lord Warton, Kenelm Digby, and a host of politicians, the Grenvilles, and others, such as several of "Lord Cobham's cubs," as they were called at Stowe ; Lord Shelburne, who lived on the banks of the Wick before its sad pollution ; and, last in point of time, but not so in genius and virtue, the two Disraelis, who both sleep after long toil in the immediate precincts of this typhoid tempting town, and whose tombs have already drawn pilgrims from the most distant lands.

The situation of High Wycombe is very pleasing, and the ornament of woods and parks has been conferred upon it by the owners of Wycombe Abbey, by the Dashwoods and others.

When the drawbacks I have noticed have been removed, when the town has borrowed a little of the taste and beauty of the Abbey, when oxygen and healthful blood have replaced carbonic acid gas and a vitiated circulation, and when the water that flows through Wycombe shall be pure, then there can be no reason why a town of this size should not boast a few great men as well as the country immediately around it.

Isaac Disraeli of Bradenham, one of the most amiable and attractive characters of his time, and one of the most delightful and instructive authors, resided in the Manor House at Bradenham, in the midst of a garden unsurpassed for its terraces of close shaven grass and its groves of Yew. The last twenty-five years of Isaac Disraeli's life were spent in this delightful spot, but his connection with Bucks was of older date, having originated in his intimacy with Mr. Pye. This gentleman was the great-grandson of Sir Robert Pye, of Bradenham, who married the eldest daughter of John Hampden, and he was the attached friend of Isaac Disraeli's youth. He was a poet as well as a Member of Parliament, was made Poet Laureate, and lived at last in a cottage on the estate of Mr. Penn, of Stoke Park, where his friend Disraeli became familiar with "Those distant spires and antique towers," amidst the haunts of Gray, little dreaming that he would spend the last quarter of a century of his life in the Manor House of the Pyes at Bradenham, and that his coffin would be placed with theirs in a vault of the parish church. One can imagine the venerable figure of Isaac Disraeli as he moved among his terraced groves musing abstractedly over his chapters and coining his sentences. All must have heard of his early life, of the stern, ambitious grandmother, and of the errors of his youth, especially the poem which he produced after some months of brooding and abstraction. It was a terrible degradation to a youth destined for a banker. All these troubles are over; he has found his vocation, and become famous. His long white hair touches his shoulders in curls almost as flowing as in youth; the scholar's velvet cap is on his head; his handsome face is of fair complexion, with Bourbon nose, and brown eyes of extraordinary lustre and beauty. His leg—if we may descend so low—was at eighty-two as shapely as in his youth, and his extremities were, by Nature's favour, delicate. It should be added to these details that Isaac Disraeli was a constant labourer; and let not the young gardener—for him I would address—imagine that excellence in any art can be attained without great persistency. His constancy of purpose was equal to his son's. He had the same predisposition for literature that his son had both for letters and for politics, and he had as carefully trained himself. 'Tis a serene old man we see upon the terrace—a most delightful, garrulous old man, simple as Goldsmith, but without a trace of his vanity; interested in everything, susceptible as a child, sending, among his last acts, some verses of "gay gratitude" to his London correspondent, his daughter-in-law, whose lively pen amused him; in joy or sorrow he is always amiable. But this handsome, gay old man has been no literary idler, but one of the hardest of workers, and one of the most popular of authors. And what is an author? "An author," we read in his *Life*, by his son, "may influence the world to as great an extent as a statesman or warrior." I trust that young gardeners will remember that, and not keep their knowledge to themselves, since a letter to the *Gardeners' Chronicle* may explain some fact, or teach something in regard to culture, which very many persons may like to know. "A book may be as great a thing as a battle." Lord Beaconsfield has said of his father that his native temper and character, combined with his elevating pursuits, enabled him to pass through life almost without an evil thought. Over this fair picture of a faultless and most useful scholar more than one odious critic has drawn the trail of his envy, wriggling like a serpent. Others have understood him. Lord Byron delighted in his works, and spoke of him as "that most entertaining and searching writer."

Among many charming essays by Isaac Disraeli, that on *Horticulture and the Progress of Gardening* deserves special mention here. It has served as a model probably for other and later inquiries of the same kind. It may be justly said that for sixty years this simple-minded scholar largely contributed to form the taste, direct the studies, and charm the leisure of the public; and thus, says his son, "I hope, nay, I believe, he repaid England for the protection and the hospitality which this country accorded to his father a century ago."

The house at Bradenham was Jacobean, and is a capacious, square, two-storeyed brick edifice, part old, part comparatively new, with stacks of chimneys behind, and lofty rooms. The ground rises gradually across the village green to the heavy gates of the Manor House, where a straight road, with specimen plants of Cupressus macrocarpa on either hand, reaches to the front door. The ground continues to rise. It rises as far as the flight of steps leading up to the door, and it begins to rise again behind the house, where three terraces, each a furlong long, each carpeted with turf, form vistas and delightful hidden walks through groves of Yew and Box. The Rev. John H. Graves, owner and occupier of the Manor House, showed me his grounds and shrubs, planted many years ago; and we passed by a door in his garden wall into the churchyard and visited the little church with the tablet in memory of Isaac Disraeli, author of the *Curiosities of Literature*. The reader of the simple inscription is not informed as to its authorship, but it was by one who was accustomed in his old age to drive over from Hughenden early on Sunday mornings, when, with brief indulgence of a healthy sentiment, he would enter the church, pause on this hallowed ground, and once more, for a brief space, bury himself among the groves where some of his earliest books were written.

The fair which, for centuries, was held here during the week following Whit Sunday, has at length been discontinued. In the time of the Disraelis the revels used to afford them much amusement. The greased pole was erected in the middle of the Green, and the winner of the prize was borne in triumph up to the lawn of the Manor House, when, no doubt, the handsome youth with the curls—Disraeli the younger—spiced the occasion with his wit. One of the houses on the Green, an ornamental small dwelling, was occupied by James Disraeli, who farmed a little land, and did not, I daresay, benefit his pocket much in doing so.

Maria, wife of Isaac Disraeli, died in 1847, aged seventy-two, and was followed by her illustrious husband in 1848.

The Bradenham estate came into the possession of the present owner, as an inheritance from his grandfather, in 1854. *H. E.*

New Garden Plants.

MASDEVALLIA PLATYGLOSSA, *n. sp.**

THIS is a curious, rather small-flowered species of the Coriaceæ group, having a light yellowish flower with short tails and a very broad singular lip, full of acute warts at the top. It flowered with Sir Trevor Lawrence, Bart., M.P., Burford Lodge, Dorking. *H. G. Rchb. f.*

* *Masdevallia platyglossa*, n sp.—(Coriaceæ). Cæspitosa; folio longe petiolato cuneato ligulato trinervi; pedunculo breviori; perigonio abbreviato; sepalo impari triangulo attenuato breviter caudato; sepalis lateralibus alte connatis, in apices triangulos subsetaceos breves extensis, nervis principalibus extus obtuse costatis; tepalis ligulatis acutis in laciniam triangulam media linea inferiori extensis; labello lato oblongo, antice subtrilobo, carinis ternis incrassatis, papulis acutis plurimis antice; androclinio marginato denticulato. *H. G. Rchb. f.*

CYPRIPEDIUM MACROPTERUM, *n. hyb.* (CYPRIPEDIUM LOWEI × SUPERBIENS.)

This is a fine new hybrid, raised at the Royal Exotic Nursery of Messrs. James Veitch & Sons, by Mr. Seden. Every one will feel puzzled to see the combination of the inflorescence of Cypripedium Lowei with the short leaves of C. superbiens (Veitchianum. We must, however, admit that the leaves appear darker, and that the impression of the tesselated variegations is very fugacious. The odd sepal is like that of superbiens, but more oblong, with no tendency to become triangular. It is of the lightest green colour, and the nerves are coloured sepia-brown inside at the base. The other sepal is shorter than the lip, light green, narrow, triangular. In the specimens at hand it is bent, leaning on the ovary, thus forming a wide angle with the lip. The petals are very long, much dilated, oblong from the cuneate base, which is semisagittate. Their basilar part is pale ochre coloured, covered with blackish-purple spots, the anterior part mauve-purple. There are a few larger and a greater number of smaller hairs on the superior margins. The lip is that of Cypripedium Lowei. It has even the small carinate calli in the isthmus between the shoe and the involved margins. The colour is light brown-ochre underneath, and an ochre midline extends over the frontal part. The sac itself is much longer than in Cypripedium Lowei. The staminode is three-toothed in front. The lateral teeth are inflexed, the middle one is straight. The superior side is whitish-green, with numerous dark green reticulations. It is a conspicuous plant. The peduncle before me had three flowers. *H. G. Rchb. f.*

ODONTOGLOSSUM BRACHYPTERUM, *n. hyb. nat.?*

This is near Odontoglossum Kalbreyeri, but much shorter in all its floral organs. It is quite like Odontoglossum Horsmanni, but it has not the lamellæ on the lip which are found in Odontoglossum Pescatorei. The sepals and petals are broad ligulate, blunt, rather short, light yellow, with very few cinnamon blotches. The stalk of the lip is canaliculate, appressed on the column; lamina pandurate, emarginate, light yellow, with a large cinnamon blotch on the disc before the callus, and with a few cinnamon lines on the bases. The callus consists of five parallel keels, the lateral median ones being the longest, and produced in upright serrate lamellæ. Column very pallid, with some cinnamon streaks and blotches. It has an angle at each side in the middle, and toothletted short wings. Leaf very narrow, rather grassy, as is the case in Odontoglossum Lindleyanum, which is most probably one of the parents. It was sent from New Grenada by Mr. Kalbreyer to Messrs. J. Veitch & Sons. *H. G. Rchb. f.*

DENDROBIUM (STACHYOBIUM) LINGUELLA, *n. sp.**

An elegant small-flowered Dendrobe in the way of Dendrobium aduncum, Wall. The blooms are probably rosy, and the anterior part of the lip is yellow. As long as you look at the flowers outside, you feel quite persuaded it is the well known Dendrobium aduncum; but if you investigate the lip you find that it is totally distinct in its double lamellar appendages at the base. It was imported from the Malayan Archipelago by Messrs. James Veitch & Sons. *H. G. Rchb. f.*

DENDROBIUM (STACHYOBIUM) LEUCOLOPHOTUM, *n. sp.*†

Very near Dendrobium barbatulum, Lindl., but with a much stronger pseudobulb, a lax inflorescence exceeding a foot in length and much larger flowers of a fine white colour, apparently with yellowish buds. The acute chin is small, and the sepals ligulate acute. The petals are oblong acute, and far larger than the sepals. Lip trifid, as in Dendrobium cuspidatum, Wall., with triangular side laciniæ rounded outside, and a linear ligulate acute long anterior lacinia. All the nerves of the superior half are covered with minute lobed lamellæ just as in Dendrobium barbatulum, whose conspicuous middle callus is absolutely unrepresented. It was introduced from the Malayan archipelago by Messrs. James Veitch & Sons, and, more recently, by Mr. Sander. *H. G. Rchb. f.*

* *Dendrobium* (*Stachyobium*) *linguella*, n. sp.—Affine Dendrobio aduncо, Wall.; racemo tenui brevissimo fractiflexo; sepalis tepalisque melius acutis; labello oblongo apiculato antrorse serrulato, lamina in basi oblongo ligulata retusa plana, supraposita ligula teretiuscula sursum verruculosa; columnæ brachiis ascendentibus retusis curvulis hinc angulatis. Ex Arch Malay., imp cl. Veitch *H. G. Rchb. f.*

† *Dendrobium leucolophotum*, nov. sp.—Aff. D. barbatulo, Lind.: caule valido cylindrato attenuato polyphyllo; foliis (ex spec. Sander) oblongo-ligulatis acuminatis membranaceis; racemo elongato laxiflоro, mento acutangulo parvo;

Bomarea Williamsiæ, *Mast., sp. n.**

This is another, as we believe, hitherto undescribed species, and one which, from its large compound trusses of rose-coloured flowers, is of great beauty. It was first seen in cultivation near Bogotá, and was afterwards collected in a wild state in New Grenada, near Mount Quindio, by Mrs. Rosa Williams, whose name it bears. It comes near to B. formosissima, but is quite different in colour. Our material has consisted of a dried rhizome, with radical tubers like those of B. Shuttleworthii, figured at p. 77, vol. xvii.; of a shoot with leaves from the living plant, of a dried flower, and a native grown fruiting inflorescence. These materials have been supplemented by a coloured drawing of the flower by Mr. Williams. We have not been able to match the specimens with any in Herbert's *Treatise*, with any in the herbarium at Kew, or with any of those described recently by Mr. Baker from the collection of M. André. The stem and leaves are glabrous, the stem slender, furrowed, angular, the leaves 3 by 1 inch, but probably ultimately larger, lanceolate, very acute, and tapering to a very short twisted petiole. The inflorescence is a compound umbellate cyme, the peduncles numerous, about 6 inches long, and with small or deciduous bracts. The rose-coloured flowers are about 2 inches long, elongate funnel-shaped, the ovary obpyramidal, puberulous; the outer segments of the perianth are oblong acute, slightly tapering to the base, with a few purplish spots inside, but not green at the tips, the inner segments thickly sprinkled with purplish dots, spatulate, rounded, tapering from about the middle into a very slender stalk. Stamens half the length of the perianth. The leathery capsules measure about 2½ inches in length by 1¼ in width, and are oblong truncate above, tapering at the base, prominently ribbed at the angles. The seeds are the size of those of a small Pea, subglobose, flattened, blackish, and pitted.

The stock is in the possession of Messrs. Shuttleworth, Carder & Co., who may be congratulated on this evidently beautiful acquisition to a genus already rich in beautiful forms. *M. T. M.*

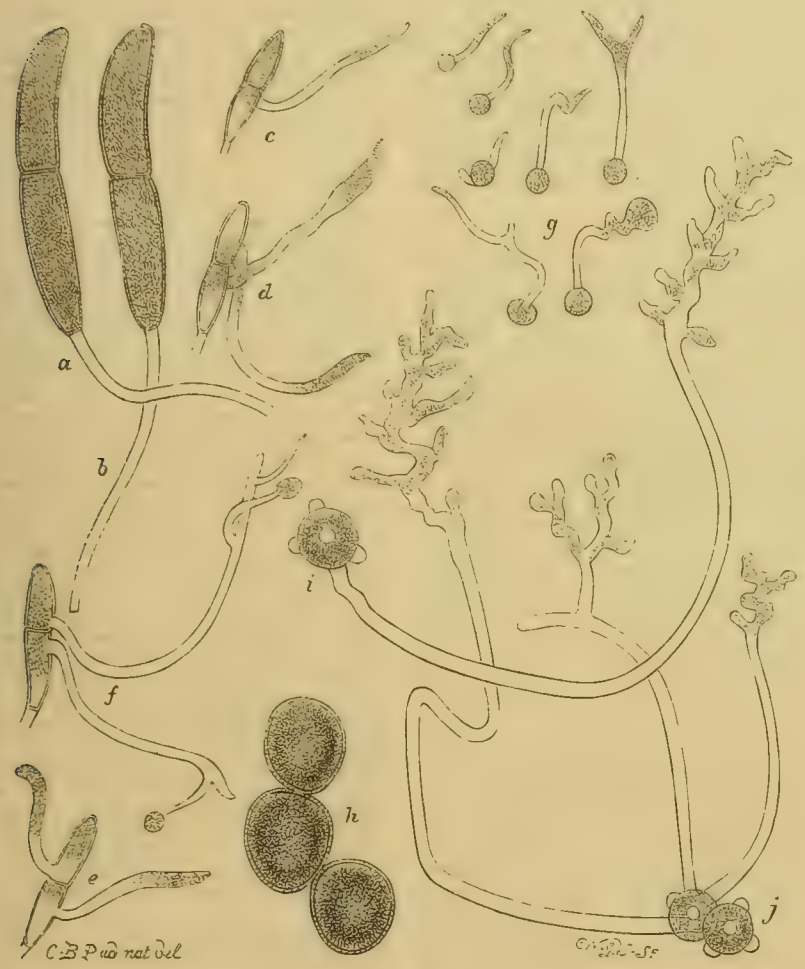


Fig. 94.—Rœstelia.

References:—*a*, *b*, Teleutospores of Podisoma juniperi; *c*, *d*, *e*, *f*, In successive stages of germination; *g*, Promycelium spores germinating; *h*, Spores of Rœstelia lacerata; *i*, *j*, The same germinating. *a*, *b*, and *h*, are drawn to scale by the camera lucida.

PODISOMA JUNIPERI AND RŒSTELIA LACERATA.

At a recent meeting of the Scientific Committee of the Royal Horticultural Society, Dr. Masters exhibited some specimens of Rœstelia lacerata on Hawthorn, and remarked that the fungus was interesting because it was "said" to be connected with the very different looking yellow jelly-like fungus known as Podisoma juniperi. The time, however, has come when we may cease to speak with bated breath about the heterœcism [a term expressive of the fact that the same fungus in different stages of its growth inhabits different plants] of this Podisoma, and speak as freely of Rœstelia being its early state as we do of Uredo being the early state of Puccinia. In April and May this year I determined to repeat Œrsted's experiments with Podisoma juniperi upon Thorn. Four experiments were performed in April, and one in May, with the result of producing Rœstelia lacerata in every instance. In these cultures ten Thorn seedlings were employed, and the result was so marked that no doubt has ever since crossed my mind as to the truth of heterœcism. At the time the first experiment was made (on April 6) I was by no means an ardent believer, and resolved to give the Podisoma every chance of infecting the plants. Two seedlings, about 4 inches high, were employed; upon the above day many fragments of Podisoma, which had been soaked in water in a watch-glass the night before, and which was seen to be producing abundance of promycelium spores, were placed upon the leaves and covered with a bell-glass; four days later abundance of promycelium spores were seen by the naked eye to surround each piece of Podisoma on the leaves. On the 15th the plants were uncovered, and planted out on the 21st. Yellow spots appeared on all the leaves, which looked as if they were going to be spermogonia. On the 24th spermogonia were developed, and on May 6 every plant was covered with peridia or cups of the perfect Rœstelia. My other cultures were conducted in a similar manner, and with the same result. So abundantly were the Rœstelia produced that many of the Thorns were killed by it. It was on the leaves, petioles, and also spread to the stem—not a few stray peridia, but in profusion. It may not be out of place to point out that Podisoma is closely allied to Puccinia. Its spores have the same shape, and germinate in the same way, by throwing out promycelial tubes, and producing promycelian spores.

The teleutospores of Podisoma are, however, held together by a mass of gelatinous substance, and the mycelium which produces them is perennial, giving rise every spring to a fresh crop of teleutospores. The locality of the mycelium on the Juniper can at any time of the year be seen by the fusiform swelling it causes on the stem. The promycelium spores do not, as in Puccinia, germinate from the free end or apex of the spore, but the germ-tubes are both protruded laterally near the septum. The promycelium spores readily germinate in a damp atmosphere. They have the yellow colour derived from the teleutospores, which can be seen passing along the germ tube into them until the segment of the teleutospore from which each arose becomes empty and colourless. The spores of the Rœstelia also germinate very easily, and this process in them is carried on in the same way as it is with the spores of the allied genus Æcidium.

The accompanying sketches (fig. 94) were made at the time these experiments were going on, and will show the mode in which these processes take place.

It is worth while to remark that Rœstelia lacerata is by no means a common fungus in this neighbourhood, for I have searched unsuccessfully for it for many years past. I once met with the variety (R. caryophylla) that occurs upon the fruit of the Hawthorn. In August, 1874, a large Thorn tree had a great many of its fruit thus affected, but not a single peridium could I discover on the leaves. It is probable that the promycelium spores were implanted upon the ovary by insects which had previously visited the Podisoma under the delusion that it was a flower, and carried the minute spores with them to the Hawthorn. *Charles B. Plowright, Kings Lynn.*

A NEW CLASSIFICATION OF THE COLUMBINES.

Dr. Vincent de Borbas, Professor of the Real Schule at Buda-pest, one of the best critical botanists of Eastern Europe, has just published an elaborate paper on the genus Aquilegia. Although we are many of us in England much interested in Columbines, as the paper is mainly written in Hungarian it will not, I am afraid, tend much to our instruction. The kernel of it is, however, contained in the clavis, of which the following is a full abstract. As compared with mine, printed in your columns in 1878 (p. 203), it employs characters so as to give a different grouping and sequence of species, and includes several critical European forms, of which we have no knowledge in this country.

*

sepalis ligulatis acutis; tepalis oblongis acutis; labelli trifidi lacinius lateralibus triangulis extrorsum obtusatis; lacinia mediana porrecta ligulata acuta, parte superiore supra nervos lamellis minutis ramulosis asperula; columna minuta dorso apiculata. Ex ins. Sondaic, col. Veitch et Sander. *H. G. Rchb. f.*

* *Bomarea Williamsiæ*, Mast., sp. n.—Rhizomate crasso horizontali; fibris radicalibus verticalibus crassiusculis dimorphis aliis fibrilliferis aliis simplicibus in tuberem oblongo-ovoideum desinentibus; caule sulcato angulato foliisque lanceolatis acuminatis glaberrimis; cyms aphyllis umbellatis, compositis plurifloris; pedunculis longissimis; perianthio roseo, 2-pollicari infundibulari; ovario parvo 3—4 lin. long., obpyramidato cum pedicello puberulo; segmentis externis oblongis acutiusculis basi augustatis vix maculatis, segmentis interioribus vix brevioribus oblongo spatulatis infra medium in unguem angustatis, punctis purpurascentibus dense maculatis; staminibus glabris perianthio vix dimidio brevioribus; capsulis 2¼ poll. long., 1¼ poll. lat. oblongis costato-angulatis basi augustatis superne truncatis; seminibus pisi parvi magnitudine orbicularibus compressis, testa cornea nigrescente scrobiculatâ.—In Nov. Granata ad Sasaima prope montem Quindio ubi coll. domina Rosa Williams. Hort. Shuttleworth.

Section I. SUBSCAPOSÆ.—Stems dwarf. Cauline leaves none or very small.

Subsection 1. ORTHOCENTRÆ.—Spurs of the petals straight.

Group 1. *Brachycentræ.*—Spur of the petal shorter than the lamina.

1. A. Kitaibelii, Schott.
2. A. stenopetala, Borbas.
3. A. confusa, Rotta; A. Bauhini, Schott.
4. A. parviflora, Ledeb.

Group 2. *Mesocentræ.*—Spur of the petal equalling or rather larger than the limb.

Small-flowered Species.

5. A. aragonensis, Willk.
6. A. thanetrotjes, Schlecht.
7. A. thalictrifolia, Schott and Kotschy.
8. A. discolor, Levier and Leresche.

Middle-sized Flowered Species.

9. A nivalis, Falc.
10. A. Einseliana, F. Schultz.
11. A. grata, Maly.
12. A. pyrenaica, DC.

Subsection 2. CAMPYLOCENTRÆ.—Spurs of the petals curved.

13. A. viscosa, Gouan.
14. A. Reuteri, Boiss.
15. A Sternbergii, Reich.
16. A. aggericola, Jord.
17. A. subscaposa, Borb.
18. A. Bertolonii, Schott.
19. A. grandiflora, Schang, with A. transilvanica, Schur.
20. A. glaucophylla, Steud.

Section II. ELATIORES.—Tall species with copiously leafy stems.

Subsection 1. BREVICORNES, spur of the petals shorter than the limbs.

Small-flowered Species.

21. A. davurica, Patr.
22. A. brevistyla, Hook.
23. A. pubiflora, Wall.

Large and Middle-sized Flowered Species.

Flowers Blue or Lilac.

24. A. Bernardi, G. and G. (A. glandulosa, Fisch.; with A. transilvanica, Schur.)
25. A. grandiflora, Schang.

Flowers Variegated.

26. A. jucunda, F. and L.
27. A. olympica, Boiss.

Flowers Yellowish.

28. A. glauca, Lindl.
29. A. fragrans, Benth.
30. A. sulphurea, Zimm. (A. aurea, Janka).

Subsection 2. VULGARES.—Spur as long as the lamina, or a little longer.

Group 1. *Campylocentræ.*—Spurs curved.

Small-flowered Species.

31. A. dichroa, Feyn.
32. A. Haynaldi, Borbas.

Middle-sized Flowered Species.

33. A. sibirica, Lam.
34. A. Huteri, Borbas.
35. A. Karelini, Baker.
36. A. atrata, Koch.
37. A. vulgaris, L.

Large-flowered Species.

37. A. oxysepala, Traut. and Mey.
38. A. caucasica, Ledeb.
39. A. flabellata, S. and Z.
40. A. olympica, Boiss. (*Fl. Orient.*)
41. A. Haenkeana, Koch.
42. A. paraplesia, Schur.
43. A. arbasensis, Timbal Lagrave.
44. A. longisepala, Zimm.
45. A. subalpina, Boreau.

Subsection 3 AMBIGUÆ.—Spur straight, nearly straight, rather longer than limb. (An intermediate subsection between 2 and 4.)

Large-flowered Kinds.

46. A. Haenkeana orthoceras, Borbas.
47. A. alpina, L.

Smaller-flowered Kinds.

Flowers Dark Purple.

48. A. Braunii, Borbas.

Flowers Yellowish.

49. A. flavescens, S. Watson.

Flowers Blue, Violet, or White.

50. A. Moorcroftiana, Wall.
51. A. hispanica, Borbas.
52. A. Amalliæ, Held.
53. A. othonis, Orphan.
54. A. nevadensis, Boiss. and Reut.

Subsection 4. LONGICORNES.—Petals with very long spurs.

Group 1. *Campylocentræ.*—Spur curved.

55. A. campylocentra, Borbas.

Group 2. *Orthocentræ.*—Spur of petals straight: limb of petal none, or very short.

56. A. truncata, F. and M.
57. A. eximia, Borbas.

Sepals as long as petal-limb; spur of petal not twice as long as limb.

58. A. atropurpurea, Willd.
59. A. viriciflora, Pall.
60. A. hybrida, Sims (elata, Ledeb.)

Sepals longer than petal limb; spur of petal not twice limb.

61. A. pycnotricha, Borbas.

Spur nearly or quite twice as long as the limb of the petal.

62. A. heteroceras, F. and M.
63. A. Buergeriana, L. and Z.
64. A. ingricans, Baumg. (A. Schottii Borbas.)
65. A. dioica, Borbas.
66. A. Szaboi, Borbas.
67. A. Gaertneri, Borbas.
68. A. macrocentra, Borbas.
69. A. orthantha, Borbas.
70. A. lutescens, Borbas.
71. A. aurea, Roezl.
72. A. lactiflora, Karel. et Kiril.

Spur of the petal three or four times as long as the lamina.

73. A. canadensis, L.
74. A. formosa, Fisch.
75. A. Skinneri, Hook.
76. A. chrysantha, Hook.
77. A. cærulea, James.

J. G. B.

The Herbaceous Border.

PAPAVER UMBROSUM.—I have had several letters from gardening friends asking for seedlings of this fine biennial, as all their seed saved this year failed. My gardener sowed seed as soon as ripe, and that failed, too, or rather the insect pests for which last summer seemed favourable destroyed it as soon as it germinated; but it is better to sow it about August, or still better not to weed or hoe the ground where the plants have grown, and to let it come up at its own time, which will be some time in August or September, when the ground is wet enough to nourish it. In this way it will neither be spoilt by trying to flower before winter, as it does if sown too early, or be in the least danger of being hurt by frost, but like most Poppies will grow all winter. Success with this Poppy depends on giving it plenty of room, in rich soil, and a sunny situation. Every plant should have a diameter of 2 feet for its own growth, and be in its flowering place by November 1, being then 4 or 5 inches across. Treated so it flowers in a way which those who have only seen it as an annual in a crowded patch have no idea of. *C. Wolley Dod, Edge Hall, Oct.* 21.

SILPHIUM TEREBINTHACEUM is a stately herbaceous plant, remarkable for the large size of its radical leaves. It grows from 6 to 10 feet high, and bears a number of yellow flower-heads on rather strong leafless branches. Grown in a mass, with a background of tall shrubs, it forms a striking object. It is now one of the most conspicuous plants in the herbaceous collection at Kew. According to an old work, its specific name was given owing to the gum which exudes from the plant during the hot summer in its native climate. This species is but comparatively seldom met with, although it has been in English gardens for upwards of a century. A broad leaved Silphium (probably S. terebinthaceum) was one of the plants stolen from Collinson's garden in 1768. How garden robbers would have been treated by some of the famous old gardeners is shown by the following extract from a letter written by Miller to Collinson, and dated October 22, 1765. He says that the person he suspected "has been twice last week at Williamson's garden, at Chelsea; one of his men was so near as to know him, but his gun missed fire."

BOLTONIA LATISQUAMA.—In some notes on Asters sent by me and lately published in the *Gardeners' Chronicle*, I mentioned this as a tall plant with white Daisy-like flowers; and also that I had twice been prevailed upon to change the name of the plant, the last adopted being the name which heads this note. I have to-day received from Cambridge Botanic Garden three Boltonias, two of them Mr. Lynch received from Mr. Falconer. The one I described as latisquama he sends me as glastifolia, whilst his latisquama has larger flowers of a pale pink colour, with longer rays, somewhat crimped and reflexed, like those of Stenactis speciosa. The third species is B. indica with pale purple flowers and similar habit. *C. Wolley Dod, Edge Hall, Oct.* 17.

ASTER BICOLOR.—I have just discovered a little gem of a Michaelmas Daisy in a corner of my garden which I had not noticed before. It is marked "A. bicolor, V. H.," denoting, I believe, that it came from Van Houtte. The flowers exactly resemble those of A. versicolor, turning from white to purple, and it is very floriferous, but the whole plant is not more than 8 inches high. It appears of delicate growth, and has been in its place a year and shows no sign of spreading. *C. Wolley Dod, Edge Hall, Oct.* 23.

HYPERICUMS on the rockwork at Kew—Hypericum patulum, H. uralum, and H. oblongifolium—are all natives of Nepal, or as some authorities say, the latter is an East Indian species. They are all subhardy species, of the same type and shrubby habit. H. patulum is perhaps the best known and intermediate in form between the other two. It has a spreading habit with twiggy somewhat two-edged branches, and ovate lanceolate leaves, of a glaucous colour beneath. The flowers are borne in terminal cymes, having nearly orbicular petals, and the oval, apiculate sepals, with two of them much exceeding the others in size. H. uralum has elliptic leaves, nearly equal oval sepals, and a greater profusion of smaller yet neatly formed flowers. The habit of the plant is spreading, like the last, but all the main shoots branch freely in the upper half, and every lateral branchlet is terminated by one or more flowers, giving to the whole a panicled appearance. Although the individual flowers are smaller than those of H. patulum, yet the free branching habit and profuse flowering make it a desirable species. H. oblongifolium is distinguishable at sight from the other two by its stout, erect, unbranched shoots. The leaves are oblong-ovate, blunt, of a glaucous colour when young, and always so underneath. The flowers are arranged in terminal corymbose cymes, and have oval, blunt, nearly equal sepals. The petals are large, orbicular, and of great substance, with a pellucid or membranous margin. All three have been in flower for a considerable part of the summer, and may continue so for some time yet if the weather is favourable. In a severe winter they are apt to be cut down, but will break again from the root and flower that same season. For the front of a choice shrubbery such subjects are invaluable, because they are always neat and interesting. *X.*

THE "BOLEYN" NURSERY.

FOR several years we have heard more or less of depression in all branches of trade, and people who take a pessimist view of everything, and can see no bright side to a picture, were wont to make significant observations regarding stagnation in horticultural enterprise; but the development of new enterprises often creates new demands—a fact of which we are from time to time furnished with the best possible proof. In the field of practical horticulture there is room for unlimited extension, and before we can bring home—and this to a great extent has to be done—to the great bulk of our medley population the charms of a garden, or of gardening in any form, whether it be the dressing of the humblest plot with hardy flowers, or the decoration of a window with suitable plants, it is essential that the plants and flowers be brought prominently under their notice.

One of the healthiest signs of the times is the fact that new nurseries are being established, and with them a consequent interest in and extension of matters horticultural. Mr. W. M. Crowe's "Boleyn" Nursery, Upton, Essex, may be mentioned as a recent addition to the enterprising spirit of the nursery business. Having a definite object in view, Mr. Crowe begins upon strictly business lines, and reckons time at its full value. The first step was taken in the direction of a market nursery, and accordingly eight span-roofed houses were erected in one block or line, each house being 60 feet long by 25 feet wide. The houses are, however, not so well suited to the growth of plants that are in greatest demand for purposes of private trade as could be wished, and Mr. Crowe is now engaged in erecting five new houses on a more approved principle of construction. The nursery is within five minutes' walk of the Upton Park Station of the London, Tilbury, and Southend Railway, and about ten minutes' walk from the Forest Gate Station of the Great Eastern Railway.

The stock, as will be gathered from the foregoing remarks, is of a mixed character, consisting mainly of plants suitable for the market trade, while a general nursery stock is also being brought forward. Mr. Crowe believes that a man's habits may be likened unto his capital—if the latter is turned over slowly the others are likely to follow in the same groove; so while a private connection is being formed, and suitable stock is being raised, operations in the kindred branch of trade are being prosecuted briskly. In one house we noticed Lilium longiflorum in flower, and remarkably pretty it looks at this season; and in another a batch of Ferns (Dicksonia antarctica) coming forward for marketing next April. About a thousand plants of Grevillea robusta are in good trim for immediate use; a stock of Ficus repens, which is largely used for dressing baskets at Christmas, and about 4000 Azaleas in pots, and 1000 Azalea mollis, fine bushy plants well set with buds. It is worthy of notice that Azaleas grown in pots imported from Belgium are five weeks earlier than those grown out-of-doors, and these will come in useful for purposes of early forcing.

The stock plants of Pandanus Veitchii are vigorous, and a good stock of Scirpus natalensis struck us as being a formidable rival of Cyperus alternifolius as a furnishing plant. In a house containing a mixed assortment of plants we noticed Ananasa sativa variegata, well coloured; a quantity of Pandanus utilis, Euterpe edulis, a young stock of Seaforthia elegans, Areca lutescens, a stock of Dracæna terminalis, and D. congesta and rubra, Crotons, and late flowering Gloxinias. But Ferns are grown in still larger quantities, as many as 30,000 plants of Pteris cretica albo-lineata are turned out in a year, and Pteris serrulata cristata, Pteris serrulata, Pteris tremula, Pteris argyrea, and Adiantum cuneatum in proportionate quantities. A batch of Eucharis amazonica is coming into flower, as also a charming bush of Pavetta borbonica.

One house is devoted exclusively to the cultivation of Palms of various sizes, consisting of Latania borbonica, Phœnix reclinata, Euterpe edulis, Chamærops humilis, C. Fortunei, Phœnix canariensis, P. rupicola, Areca Verschaffelti, Cocos Weddelliana, and a few other plants of a miscellaneous character. The beds underneath the staging are filled with seedling Palms, and the shelves are occupied with Primulas and other stock coming forward for winter flowering. The next house is filled with Pelargoniums, the decorative section, Ivy-leaved, the finer kinds of tricolors, Ophiopogon jaburan variegata, Begonia metallica, and fine plants of Ficus elastica. We were much struck with a stock of Aralia Sieboldii variegata, very highly coloured, and in excellent condition for immediate purposes of furnishing. Mr. Crowe appears to be much interested in the cultivation of popular flowers, his stock of tree and border Carnations being perhaps his best effort in this direction. There is a good stock of Sarah Bernhardt, General Roberts, Prince Imperial, Crimson King, and many of the older kinds, well advanced in bud, arranged in the same house with young Azaleas, Ericas, Choisya ternata, the best of Pearson's and Lemoine's Pelargoniums, and other stock in smaller quantities.

For a new place the foliage plants and Ferns are very fine, and were they arranged for effect instead of in the most convenient way for business, the show would be by no means an inconsiderable one. The best of the stock is made up of the following:—Dracæna congesta, Dracæna stricta (with fine leaves, and highly coloured), Dracæna gracilis, fine plants of D. amabilis, D. cannæfolia, D. Baptistii, D. Youngii, and others. These are dotted about the houses, chiefly among Ferns, such as Lomaria gibba, Pteris tremula, Adiantums of sorts, Dicksonias in a small state, Cyathea medullaris, Neotopteris nidus, Asplenium viviparum, Lastrea cristata var., Cyrtomium caryotideum, Nephrolepis pectinata, Cheilanthes elegans, and golden and silver Gymnogrammas. Miscellaneous subjects comprise, Epiphyllum truncatum, Centropogon Lucianus, Cape Pelargoniums, double white Primulas, young Bougainvilleas, Jasminum gracillimum, Aralia Veitchiana, Torenia asiatica. The out-of-door stock consists of Roses in pots, Ericas, Epacris, Clematis, double Pyrethrums in pots, Cyclamens, the florist's section of Carnations, Dracæna indivisa, the Himalayan Bramble, a good stock of useful border Carnations, including extra vigorous plants of Gloire de Nancy, and Chrysanthemums, both summer and winter flowering. The new structures in course of erection are to consist of a propagating house, Rose house, plant stove, and two Palm houses, and are to be heated by two terminal end boilers from the Thames Bank Iron Company. Considering that hardly four years have elapsed since Mr. Crowe commenced the nursery business, its growth would certainly appear to have been satisfactory in the time, and in a new and progressing neighbourhood its development is not likely to decrease.

INDIAN GARDENS.

(*Concluded from p. 523.*)

In addition to the gardens mentioned at p. 523, there are the private gardens of Europeans living in India. Now, it might be supposed that in a climate and soil so favourable to horticulture, these would be first-class, but such is not the fact. Anglo-Indians are ever on the move, and they don't care to go to the trouble and expense of laying down gardens for the people who come after them; still, in some places, the gardens—which are commonly called "compounds"—are fair enough. Desperate expedients, however, are necessary to make English vegetables, which are the things most affected, flourish well. Thus, one will see an amateur gardener—a colonel or commissioner perhaps—gravely sticking little pegs of Bamboo into his Cauliflower stems, to prevent them emulating Jack's Beanstalk, and running up too quick; or a lady in her early morning *déshabille* carefully placing a lump of rock-salt at the roots of each Asparagus plant, in the hope that so much kindness will induce the "grass" to grow. But gardening in India is not nice work for those who like to work themselves. Hideous grubs and insects are turned up with each dig of the garden knife with which we work, and sometimes the "mallee," or native gardener, is a worshipper of the cobra, in which case that serpent becomes dangerously familiar, taking up his haunt near the well, and turning up perhaps when least expected. Squirrels devour one's Peas, and white ants eat everything; and, as the rule, English vegetables, except those grown at a great elevation on the hills, are tasteless, and scarcely worth the trouble bestowed upon them.

With regard to fruits, there are few of the indigenous kinds which are worth growing or can be improved. Mangos take too long to grow to be worth cultivation in an Anglo-Indian's garden; whatever is done to improve this fine fruit is done by natives; but the Indian Mango has still a huge and inconvenient stone, whereas the "high caste" Mauritius Mangos are said to have had their stones improved right away. One ingenious English gardener, indeed, attempted to grow very fine Mangos by burying all the dead Pariah dogs that are killed once a year at the roots of his trees, but with what result is unknown. Mulberries, in some places, grow in hedges, but the fruit is poor. Guavas are capable of the "higher cult," but they are altogether in the hands of the natives. Oranges, except in some places, are also poor, and no attempt seems to be ever made to introduce the finer kinds, as those of St. Michael, Malta, or Seville. Melons are very fine, but a Melon garden in India is a very different thing from a Melon frame at home. In the cold weather, when the Indian rivers have run down, and leave great wastes of sand exposed, the Melon gardener plants his seed broadcast. By-and-bye the whole surface becomes a vast Melon bed, and in the hot weather the fruit is sold at the equivalent of 1*d.* or less each. The Melons of Cuddapot, in the Madras Presidency, are famous, but as the rule, Indian Melons, like all Indian fruits, want new "blood" introduced, for the seed is too often worn out. The Persian Melons, green-fleshed, are delicious, and easily grown, but are seldom seen. But it is a rule in India that whatever was good enough for a man's forefathers is good enough for himself, consequently there is little horticultural progress. Pine-apples grow freely on the west coast of India, sometimes under the shade of the immense Cocoa-nut groves of those parts, but are much inferior in size and flavour to the Pines of the Straits of Malacca. The Pine-apples of Singapore are, perhaps, the finest in the world; they are planted on the hillside in much the same way as they plant Tea on the Nilgiris, and are to be purchased at a merely nominal price—one weighing several pounds can be had for a cent, or the hundredth part of a dollar; and the Straits Pines enjoy the reputation of being so wholesome that they may be eaten to almost any extent with impunity.

There is a remarkable absence of fruits corresponding to our Gooseberries, Currants, Strawberries, &c., in India. There are wild Strawberries and Raspberries, indeed, on the hills, but nothing resembling them on the plains. The fruits of India, like the flowers, seem to grow on large trees, and many of the commoner kinds, although eaten by the natives, are positively nauseous. In the jungles one sometimes comes upon trees loaded with fruit which looks good to eat, but which it is prudent to avoid. There is the Jumbulum with its Damson-like but disagreeable fruit; the Nux vomica, which seems to bear Oranges; the Mowa, and many others. In the Malayan forests, however, Mangosteen trees are very abundant, and it is a common thing to see the wild monkeys throwing this exquisite fruit down from the tree tops just like so many schoolboys up an Apple tree. Once, when shooting on the Malayan Peninsula, my Malay "shikaree" gave me a peculiar and delicious fruit, of which I do not know the botanical name, and which I have never seen at any other time. It resembled a piece of honeycomb, but the cells were much larger. Each cell contained a sub-acid globe of a flavour resembling the Grape. Talking of Grapes the Vines and the wines of Hindostan were once famous. Tavernier, Hamilton, and other travellers of ancient times speak of the red Indian wine on which the Emperor Akbar used to get royally drunk. But wine is never seen now, at least wine of local manufacture. The Indian wine seems to have shared the fate of the Persian wine of Shiraz, which in the earlier days of our occupation of India was thought so good that it was drunk at the tables of the English merchants at Calcutta, though wine is still made in Afghanistan, and the Emperor Baber thought there was no better. His memoirs contain many interesting allusions to it. But there is a prospect of India producing wine before long. The Maharajah of Cashmere has imported champagne and Burgundy Vines, as also French Vine dressers, and his experiment is said to give promise of success. Remembering the ravages made by the Phylloxera in the vineyards of France the Maharajah ought to realise immense profits should his champagne equal that of Epernay. Grapes will grow well in many parts of India, even in the hottest places, but they are mostly white—of the Sweetwater kind. Purple Grapes, dwarfed in the Japanese fashion, and grown in pots, are to be seen in some places, and are exceedingly quaint and pretty, the huge bunches of purple fruit appearing so very much out of proportion with the stunted Vine that bears them.

Something may be said here of Indian gardeners, or "mallees," as they are called. Their cheapness is perhaps their greatest recommendation. Remembering that an ordinary gardener's wage in England is something like £1 a week it is refreshing at first to have to pay a "mallee" only 10*s.* a month, but then the difference! The latter is a most unteachable person, and he is full of crotchets and crudities. Worse than all, he is, as a rule, a humbug and a thief. If there is any choice fruit or vegetables about he will sell it in the bazaar, and say the squirrels or bandycoots ate it. One thing only he excels in, and that is the making of bouquets. Natives generally have a wonderful taste in arranging flowers—or shall I say, colours?—and their bouquets are masterpieces of floral art. Every native "mallee" has a garden within a garden—a garden of his own. In this he cultivates at the least possible trouble Chillies, Cucumbers, Vegetable Marrow, Egg-plant, and such-like curry stuff, for himself and family. His melancholy song or wail as he draws the garden water by buckets from the garden *bowrie*, or well, is familiar to all Anglo-Indians, and can be recalled, however far from India they may be, by the slightest effort of the memory.

But, gorgeous as are the Indian flowers in their flaring scarlet, crimson, and yellow colours, there are no flowers in India after all to be compared, for simple loveliness, with the wild flowers of the English spring. The pink and white Hawthorn, the Violets and Daffodils of our hedgerows, are worth them all put together when the lark is singing in the sky, and Nature's beauties bring the recollections of our happy childhood vividly before us. Nor is there anything in India to surpass a Pear or a Cherry tree in full blossom. The "Gold Mohur" and the Bougainvillea may be more dazzling, but they are certainly not so lovely or so sweet. And let this fact act as consolation to those stay-at-home people who are discontented with their own modest English gardens because they imagine tropical plants are so much finer than anything they can grow there. It would be unfair indeed to say that Indian gardens have not a beauty of their own, but it is what the French call the *beauté du diable*—gaudy, meretricious, fantastic. One can love English flowers, however humble they may be; but admiration at the best is all one can give to an Indian garden. *F. E. W.*

THE PHYLLOXERA LAWS.

The Board of Trade have received from the Secretary of State for Foreign Affairs a copy of a decree of the Belgian Government, dated the 10th inst., enforcing the provisions adopted by the International Convention of Berne, with a view of checking the ravages of Phylloxera. The importation into and transit through Belgium of Vines and dried cuttings, and also of slips and suckers of Vines from phylloxerated districts, is prohibited, but the latter articles may be imported from non-infected districts subject to special authorisation from the Minister of the Interior. Market garden produce, cereals, fruit, and cut flowers, may be imported without special formalities, but all other plants, shrubs, and vegetables (not being Vines or parts thereof), can only be admitted by the custom-houses of Antwerp, Brussels,

Ghent, Liège, and Ostend, or, if coming by the land frontier, by any custom-house situated on a railway.

The following conditions must also be observed :—

1. The articles must be so packed as to allow inspection.

2. They must be accompanied by :—

A. A declaration signed by the sender stating that the articles are the exclusive product of his establishment, that no portion of a Vine is sent with them, whether or not any earth is contained in the package, and also designating the ultimate destination and name and address of the consignee.

B. A declaration by a competent authority based on the certificate of an official expert, stating :—

(*a.*) That the articles come from a plot of ground separated from the nearest Vine plant by the space of at least 20 mètres [say 22 yards], or by such obstacle as the competent authority may judge sufficient to isolate the roots.

(*b.*) That the plot itself contains no Vine plant.

(*c.*) That no Vine plant or portion thereof has recently been deposited on such plot.

(*d.*) That if phylloxerated Vines have been thereon, the roots have been torn up, the proper poisons have been applied, and that during three years investigations have been made which assure the complete destruction of the insect and the roots.

A HOLIDAY IN SWITZERLAND.

(*Concluded from p.* 522.)

THE approach to the lower Grindelwald glacier is over huge moraines which somewhat obstruct the view, until closely approached, of the great mass of ice that fills the valley. The moraines are like great flower beds, the glacier being the formation agent, and its subordinates, wind and water, have scattered seeds of alpine and other plants from far and near over their surface, and the result is an assemblage from many altitudes and positions, as interesting as welcome. Amongst many others we gathered Dryas octopetala, Rhododendron ferrugineum, Daphne Mezereon, Aconitum paniculatum, Gentiana campestris, Gypsophila repens, Hutchinsia alpina, Arabis alpina, Silene alpestris, Saxifraga oppositifolia, Linum alpinum, Parnassia palustris, and Epilobium rosmarinifolium : this last was so dwarf and floriferous, and so rich in colour, that we failed to identify it with the examples we have long cultivated which reach a height of 18 inches—the specimen on the moraine was scarcely 6 inches.

This glacier has diminished in absolute height upwards of 100 feet in ten years. It affords unlimited supplies of ice to the neighbouring hotels. A tunnel has been carried some distance within its icy fold, which gives the explorer the idea of what it would be to be "pent up in thick ribbed ice ; " the transparent irridescent ice within the tunnel is lovely, but the chill deadly. Leaving the glacier we made our way to a rough châlet which overlooks the ice, and descended by a loose stony tract that traverses a Fir wood. Here amongst deep moss we found Pyrola uniflora and P. minor, and Ferns seemed especially happy in the damp wood, Asplenium viride being particularly abundant, Aspidium Lonchitis occurring with equal frequency.

On our return journey we encountered many children, who offered for sale tiny baskets of Cherries and wild Strawberries and Raspberries. Edelweiss was also often offered for sale. Home-grown fruit was scarce, dear, and inferior in Switzerland, this season at any rate [and generally]. There is so great a craving for fruit by travellers that it is surprising that the better sorts of Cherries, Gooseberries, Currants, and Plums are not cultivated, and certainly better alpine Strawberries and Raspberries could be grown in gardens than in the damp shady woods, where they are sought for by dirty children, and are mean and often flavourless. We were amused by a number of boys who had stationed themselves near one of the covered bridges each armed with a Walnut bough, with which they diligently brushed off the gad-flies from the horses that passed the bridge. Certainly the gad-flies are the largest and most pertinacious we have ever encountered, and their objection to Walnuts was a happy discovery.

We were perhaps too much engrossed by the splendid mountain scenery and captivated by the lovely wild flowers of the alpine heights to give much attention to Swiss gardening, but nevertheless we lost no opportunity of observing aught that was attractive in horticultural matters. The decoration of some of the gardens of the large hotels and private residences was often well carried out, even to the extent of subtropical gardening, but no striking or novel features presented themselves. Horticulture does not seem to commend itself to the general taste ; with such advantages of soil and summer climate much more could be done. The severe winter of 1879-80 inflicted irreparable damage on many ornamental trees, amongst many others Pawlownias and Catalpas were at Berne cut to the ground ; but the most severe loss was inflicted on fruit trees, which still in many places look unhealthy. Tens of thousands of fruit trees might profitably be planted in Switzerland. Some Conifers might be introduced with great advantage, especially the Douglas Fir and Abies Nordmanniana. The Spruce, of which there are three kinds, form the bulk of the forests, and their vigour and economical recommendations are undoubted ; we only saw the Pine [Cembra], and these thinly distributed at great elevations, but our explorations were circumscribed, and your readers may think that circumstance was fortunate. It was time our rambles and these notes should be brought to an end. *W. Ingram.*

The Arboretum.

THUIA (§ THUIOPSIS) DOLABRATA.—The beauty of this Japanese Conifer is certainly enhanced by its



FIG. 95.—CONES OF THUIA DOLABRATA.

hardihood and abllity to withstand our climate. Whether it will ever be of any service as a timber tree here is doubtful. Its relatively slow growth makes us very doubtful on this point, but as an ornamental tree of distinct character it has few equals. The plant has been frequently described and figured in these columns, but we avail ourselves of the opportunity afforded by the frequency with which cones have been produced this season to add a figure of some cones gathered in Messrs. Paul's nursery at High Beech (fig. 95). Parlatore in his *Monograph* says the seeds are five in number : we find them vary from three to five in the same cone. Mr. Bentham in his latest revision of the genera includes Thuiopsis as a section of Thuia, characterised by its globose cones, with four to six, rarely eight, hard woody scales, and four to five narrow two-winged seeds. *M. T. M.*

POPULUS ALBA VAR. BOLLEANA.—In 1878 we had occasion to notice the introduction of this pyramidal Poplar into Germany (see *Gardeners' Chronicle*, October 10, 1878). It was introduced, as we learn from the *Deutsche Garten*, from Taschkendt in Turkestan, in 1875. Its pyramidal habit (if that be constant) and its foliage will render it a most desirable tree for the purposes of the landcape gardener. Our figure (fig. 96, p. 557) was taken from young plants growing in the nursery of Messrs. Paul & Sons, of Cheshunt. The upper surface of the leaf was of a richer deeper green than in the ordinary P. alba, and the white under-surface clearer and purer. In addition to these points of distinction the leaves of P. Bolleana are more deeply lobed than in the true alba. The leaf, drawn in dark outline in our illustration, represents a leaf of P. Bolleana, that in the lighter outline shows a leaf of P. alba taken from a tree growing in the nursery lines side by side with those of Bolleana, so that the contrast was easily observable. For effect P. Bolleana will be preferred to the ordinary P. alba. No doubt P. Bolleana is only a variety of P. alba, but it is a very distinct one. *M. T. M.*

THE CLUSTER PINE (PINUS PINASTER).—This is a large tree, reaching 80 feet in height, usually pyramidal, and with a conical top. It was introduced into England by Gerrard in 1596. It is of little value as a timber tree, but is one of the few Conifers which thrives in sand and under exposure to the sea breeze, and for these reasons it has been found invaluable in reclaiming and preserving from desolation large tracts of sandy dunes, especially on the sea coast of France. This Pine has a deep tap-root, more so than perhaps any other European species, which will account for its being seldom uprooted during a storm, the horizontal roots, on the other hand, are few ; so much so, that from having few fibrous roots, it is usually a matter of great difficulty to transplant this tree with safety. It prefers an open and airy situation, and in the vicinity of the sea, where the temperature is to some extent equalised, it attains large dimensions.

Planted amongst other trees it has a tendency to grow crooked, produce large side branches, and, if at all crowded, lose the foliage to near the top. The leaves are arranged in twos, of a bright pleasant green, and from 6 or 8 inches to even a foot in length. The buds are large, thick, and vigorous, with strong, woolly, recurved scales, which furnish a ready and easy character for distinguishing this species from any other. The cones are arranged in a succession of whorls, producing star-like clusters, this being the feature which has given the name pin-aster to this section of the Pines.

The tree flowers in May or June, but the fruit does not attain maturity until the autumn of the following year. The timber is generally soft and of little value, and used only for firewood or temporary purposes. Occasionally, however, the wood, when grown under exceptional circumstances, is used for boarding. In France the timber is frequently employed for the outer cases of the packages used on board vessels, and also for the piles and props which are used for sustaining the frames of vessels while building. The timber of the Pinaster grown at St. Helena is said to be of very superior quality to that produced in most other places, being close grained, beautifully veined, and resembling in some degree a pale Mahogany.

The variety Hamiltonii (Lord Aberdeen's Pine) is a very handsome tree, and readily distinguished from the species by the leaves and cones, the former being broader and shorter, and the latter smaller and more ovate. The general appearance of the tree is also of a paler green than Pinaster. The small-coned Cluster Pine (P. Pinaster minor) is abundant on the West Coast of France, especially in the neighbourhood of Mans. It is taller than the species, with shorter leaves and smaller cones.

Culture.—A sandy soil and maritime situation are the most essential requisites to the successful cultivation of the Pinaster. In a chalky or any kind of calcareous soil, peat, or stiff wet loam, it is absolutely hopeless to attempt to grow it. As the Pinaster makes few fibrous roots, the growth of these should be encouraged by repeated transplantings, neglect of this generally proving fatal to the tree when planted out permanently.

It is perfectly hardy in Britain, as out of twenty-five places reported upon in 1860-61 at only two were the plants killed and one much injured.

Here the Pinaster succeeds remarkably well, one of the largest specimens standing over 60 feet in height, and with a circumference of stem at 3 feet from the ground of 11 feet 8 inches, and at 6 feet of 8 feet 5 inches.

This tree produces annually a large quantity of cones, from the seeds of which several lots of fine

healthy plants have been raised, much hardier, I have no doubt, than those raised from imported seeds. *A. D. Webster, Penrhyn Castle, North Wales.*

The Bald Cypress in Illinois and Indiana.—According to Robert Ridgway, in Coulter's *Botanical Gazette*, the Bald Cypress (Taxodium distichum) grows as far north in the States as Southern Indiana. It grows in the lower part of Knox County, or that portion embraced between the Wabash and White Rivers. It is very abundant, the area covered by the Cypress swamps, and largely timbered with Cypress, being estimated at 20,000 acres. He says:—"Although known as the 'Cypress Swamp,' it consists of a series of beautiful secluded ponds, hidden in the dense forest, and difficult of access by any one not familiar with the locality. The Cypress trees grow chiefly around the borders of these ponds, and along the sloughs connecting them, as well as on the one which empties in the river. Being so near the river into which the logs are floated at high water, the finest trees have long since disappeared, and there are very few left whose symmetry is not marred by low-growing branches or knots upon the trunks. The largest standing tree observed by me was a very old and exceedingly rough specimen, entirely unfit for lumber or shingles. Its swollen base measured 45 feet in circumference at the ground, the girth immediately above the conical portion being 21 feet.

The trunk consisted of several upright stems grown together for the greater part of their length, but in places distinct, with one very conspicuous transverse growth joining the two main stems at a height of about 50 feet from the ground. The top expanded 94 feet, the greater part of it elevated over 100 feet from the ground. A solid stump, measuring 38 feet around at the ground, was 22 feet in girth at 8 feet from the ground. At about 15 feet it divided into two main trunks of equal size, which were cut off immediately above the fork, a scaffold being necessary for the purpose.

The tallest tree did not much exceed 140 feet, their average height being little, if any, over 100 feet, and even the finest of them would not compare for symmetry and length with Sweet Gums (Liquidambar) and Ashes with which they were associated."



Fig. 96.—Leaf of Populus Bolleana overlying a leaf of P. alba. (see p. 556).

The Inner Temple Gardens.—Mr. Newton informs us that the annual display of Chrysanthemums in the Inner Temple Gardens was thrown open to the public on Thursday last. The show-house is in the same place as last year, and the entrance is from the Thames Embankment.

Orchid Notes and Gleanings.

VANDA HOOKERI.—This fine species was shown in flower at the last September meeting of the Royal Horticultural Society by Mr. Hill, gr. to Sir N. M. de Rothschild, when it deservedly received a First-class Certificate, and was fully described at p. 375. It has also just bloomed with Mr. Bockett at Stamford Hill. Not unlikely with this, as with most other Orchids, there will be considerable difference in the character of the flowers produced by individual plants. The flowers will vary more or less in size and colour, and both of which will no doubt be influenced by different treatment in their cultivation. I had not an opportunity of seeing the plant shown at South Kensington, but judging from the description of it which appeared in the *Gardeners' Chronicle* at the time above-mentioned, and also that of Professor Reichenbach, at p. 488, the markings of the flowers produced by Mr. Bockett's plant would seem to be much deeper; one-half the lip, from its base outwards, is almost wholly covered with broad lines of the deepest crimson-purple, approaching to black, giving a marked contrast to the outer half, which is white, slightly suffused with delicate rose, deeply and distinctly spotted with dark rosy-purple, its flat three-lobed lip is 1¼ inch wide, and large in proportion to the petaline and sepaline segments, which are smaller than in its nearest ally, V. teres. It is a beautiful species, and when the plants have had time to gain strength so as to produce their full complement of flowers, it will no doubt be seen to still greater advantage. In Mr. Bockett's plant the peduncle bore two flowers. In appearance the species would be taken for a weak example of V. teres; the leaves, which like the stem are thinner and shorter than in V. teres, are sharply pointed, not blunt as in that species, and the whole plant is paler in colour under like cultural conditions. Mr. Ebbage seems to have just hit upon the treatment which it requires. He received it early in the present year, and put it along with a plant of V. teres in a low span-roofed house, standing ends north and south with a path running down the centre, the beds right and left filled with Gardenias planted out, and which produce flowers in such profusion as I have rarely seen them. The Vandas have stood at the extreme southern end, close to, and getting the full benefit of the upright glass, and with their heads almost touching the roof. Not a bit of shade of any description has been used, and not much fire-heat except when the weather was cool. The plants were syringed overhead every morning, and again early in the afternoon, when the house was closed—the floors being damped in the middle of the day; in fact, the plants had just such treatment as any one who knows how to grow Gardenias well would give them, including a moderate amount of air daily when the weather is warm. With an absence of all shading the temperature would naturally run high when there was any sun, and be extremely so for some time after being shut up in the afternoon. Mr. Ebbage had an idea that whilst growing the plant would be benefited by having its base continually moist, and with this view filled the pots completely with a mixture of loam and peat; but this would have no further influence on them than so far as moisture was absorbed by the stem, as I could not see that there were any live roots down in it—higher up they were produced freely, as in V. teres, from which the new species differs so far that it evidently flowers towards the close of the growing season, without the long, dry, parching rest which V. teres needs to induce it to bloom, in addition to suitable treatment whilst the growth is being made, without which all the dry punishing possible will not do more than squeeze out a few solitary flowers. *T. B.*

MASDEVALLIA TOVARENSIS.—In the cool division of the Orchid-house at Kew a well-flowered healthy specimen of this Orchid is quite conspicuous amongst several other species now in bloom. The stout stems support twin flowers of snowy whiteness, well raised above the spatulate, lanceolate, pale green leaves. The flowers are of the ordinary type of construction, consisting of the sepals (the chief ornament in this genus) cohering at the base and forming a campanulate tube, with long narrow tails to the divisions. It is at once an attractive and fascinating plant, and blooming as it does in our winter, the value is enhanced. It was introduced to this country seventeen years ago from Peru, or, as some authorities say, from Columbia.

VANDA CŒRULEA.—At Mr. Sidney Courtauld's, Bocking Place, Braintree, a very finely coloured form of Vanda cœrulea is now in bloom, which appeared to me all the more attractive after the quantity of pale ones I have seen lately. The flowers are bright sky-blue, traversed all over with a raised network of a much darker tint, and bearing a bright Oxford blue labellum. Such a form of Vanda cœrulea is quite one of the finest of Orchids. *James O'Brien.*

VANDA CŒRULEA AT MR. BOCKETT'S.—The pleasure derivable from seeing a beautiful plant really well managed is not unfrequently associated with a regret for the numbers of may-be the same species that have been, and continue to be, destroyed through mismanagement. Such was the feeling which a sight of some six or eight plants of Vanda cœrulea, which Mr. Ebbage has under his charge here gave rise to; they are not by any means large specimens, not being more than from 10 to 12 inches high, and carrying something like from ten to fifteen leaves each, without a bit of bare stem, and not a trace of a speck on them. Half a dozen of them are in bloom and the spikes they bear look as if, put in the scale, they would outweigh the plants that have produced them; one was carrying fifteen big flowers, another eleven of extraordinary size and substance considering the small growth from which the spike proceeds, and the comparatively short time in which the growth has been made from a dry imported stick that required looking closely at to see that there was any life at all in it. The petals are just upon 1¼ inch wide, the whole flower possessing a beautiful shade of colour. It was one of Freeman's importations, bought by Mr. Howard, of Southgate, at one of Stevens' sales something over two years ago. The plants of this Vanda are kept continually in the Cattleya-house, hung up close to the roof at the end near the door. The roof ventilators are open every day except when unusually cold, so that the plants may be often seen moving with the wind, and so long as so treated there is little doubt they will continue to thrive and increase in strength and size of both the plants and the glorious spikes they produce. *T. B.*

ODONTOGLOSSUM DOMINIANUM.—This lovely and distinct Orchid is now in bloom at Messrs. F. Sander & Co.'s, St. Albans. It proves to be one of the finest of recent introductions, and the only one I have seen worthy to be considered a fit companion for the favourite O. nævium, which in general appearance it somewhat resembles—the colour of the marking, and the wiry yet upright habit of the flower-spike being the same as in that variety; the flowers of O. Dominianum are, however, larger, the markings more dense, the lip more broadly hastate, and the whole plant apparently more vigorous. On the other hand, it approaches O. blandum, but differs materially from that variety in the shape of the labellum, the bright colour, and other material matters. Let us hope that we may get an importation of it up to the standard of the few which have as yet flowered and free from the weeds we unhappily so often get with importations of good things. Phalænopsis Sanderiana, a very distinct-looking plant, is coming into bloom at the same establishment, and several other new Phalænopsis in stock, which, if the descriptions of the collector who fastened them on when in bloom are to be believed, cause us to wonder what collectors in those districts have hitherto been up to. *James O'Brien.*

THE ODOUR OF PLEIONES.—Pleiones maculata, lagenaria, and Wallichiana have sweet-scented flowers, quite distinct in themselves, thus maculata has the odour of a summer Apple, lagenaria that of a Primrose, and the last-named that of Privet—all delicate odours and agreeable to one's olfactory nerves. Not having any more varieties of Pleiones, I am unable to say how far this variation of odour may run in this very beautiful genus of Indian Crocus. I have never observed such variations in any genus of Orchids before. Stanhopeas, for instance, have all the same smell, and so have Vandas, such as have an odour. *H. K.*

MORMODES LENTIGINOSA, Hook.—This curious species appeared in 1845, in the rich collection of Mrs. Lawrence. Sir William Hooker called it "very remarkable," and so it is indeed. It has strong relatively short bulbs, a long raceme of large flowers of a light ochre, with numerous dark purple-brown spots. The spatulate apiculate revolute lip is quite peculiar. The species appeared later but once with its full features in Mr. W. Saunders' collection; but the flowers were far larger than those represented in the *Bot. Mag.*, t. 4455. It is satisfactory to hear of a fresh introduction in the hands of Mr. F. Sander. *H. G. Rchb. f.*

ORCHIDS AT MESSRS. VEITCH'S.—At present some fine forms of Vanda cœrulea are conspicuously beautiful in Messrs. Veitch's grand collection. A very fine variety had a spike with twenty-one flowers open. There were four forms of V. tricolor in flower, and a number more with spikes partly developed. V. suavis does not seem to flower in the autumn, but it makes up for this by producing longer spikes and more beautiful flowers than V. tricolor in the spring and early summer months. The Messrs. Veitch have been fortunate in introducing an immense number of plants of the true V. insignis; this must not be confounded with a form of tricolor of that name; it is a true species, and superior to all the forms of tricolor we have seen. V. teres and V. Hookeri have grown freely, but if they are to flower next year they must be placed near the glass fully exposed to the sun, and get little or no water until March. Pachystoma Thomsonianum (see p. 500), in flower, is much finer than it has ever before been seen; the flowers are larger, the pure white sepals and petals relieved by the singular lip, which is of a rich violet-purple colour, and is curved backwards. Cattleya Leopoldii or guttata Leopoldii, is so distinct that it cannot fail to attract; a fine form of it was in flower. C. Brabantiæ, one of the hybrids, was in flower, and we were much struck with its distinctly spotted sepals and petals, in which may be traced the characteristics of both parents, C. Aclandiæ and C. Loddigesii. Two forms of C. fausta × are in flower: this is a fine Cattleya, as well it might be from its parents, C. exoniensis × and C. Loddigesii. No less than seven distinct varieties have flowered from one seed-pod. The original has pale purple sepals and petals, with a purplish-crimson lip relieved with a dash of yellow on the throat.

The Kitchen Garden.

ALL the subjects in this department are in fine condition, but owing to the spell of wet weather which we have had, and are still having, the leafage is somewhat watery, and it is therefore to be hoped that a period of dry cold weather may intervene before Jack Frost puts in an appearance, so that all green crops, especially those of the Brassica tribe, may have sufficient time to evaporate the superabundance of water which the plants have necessarily imbibed during the last few weeks, thereby rendering them less liable to sustain injury from the effects of sharp frosts, which we may reasonably expect to have at this time of the year. In anticipation of early frost the advisability of "heeling over" our Broccoli plants as a means of checking exuberant growth where it exists, and also saving the crop from the fate which befell the plants during the winter of 1880-81, once more forces itself upon us; and to those not in the confidence of the clerk of the weather it is rather a perplexing point to advise upon, seeing that, unless the winter be a severe one, the "heeling-over" process is not only so much labour wasted, but the produce is also considerably diminished thereby. However, where the plants have made an over-luxuriant growth, and upon the principle that "half a loaf is better than no bread," it may be desirable to "heel over," if not all, at least a portion, of the plants, with their heads inclining towards the north. This may be easily done by removing a couple of spadefuls of soil from the end of the row on the north side of the plants, and putting it into a kind of ridge sloping towards the plant, say at an angle of 30° or thereabouts, so that the base of the head may rest against the top edge of the ridge. The spade should then be thrust to its full depth about a foot in front of the plant, and the latter with the assistance of the spade inclined forward; and the stem, which, when fully exposed to severe frost suffers from its effects, should then be covered with a couple of spade-

fuls of soil taken from the front of the next plant, thus forming a sort of bolster for the latter. Where the plants have made a short consolidated growth, with sturdy leaves close to the ground, they are less likely to be injured by the effects of frost. In fact, dwarf, sturdily grown Broccoli plants which have been finally transplanted in firm soil are almost, if not quite, proof against the effects of frost. Where the lifting and storing of roots, as recommended to be done in my last Calendar, has not yet been attended to, no time should be lost in proceeding with the work forthwith; and when it is finished remove the Carrot tops, useless Cauliflower and Lettuce stumps, &c., to the rubbish-heap, and keep weeds down by hand-weeding, the nature of the weather not admitting of the Dutch hoe being used for that purpose. The present is also a good time for the making and renovating of walks.

Frame Ground.—Look well after slugs, which are very partial to the subjects in this department. They may be easily caught with the assistance of a bull's-eye lantern at night, feasting upon the leaves of young Lettuce and Cauliflower plants, and which, if not diligently looked after, they will skeletonise in a few nights. A mixture of new soot and lime dusted over the plants occasionally when damp, and also along the sides and ends of the interior of the frame, will have the effect of keeping these troublesome and destructive pests at bay. Any decayed leaves of Lettuce or Cauliflower should be removed from the plants as soon as they appear, and when the nature of the weather necessitates the drawing up of the sashes at night ventilate freely except in the event of sharp frosts, when the sashes should be covered at night with mats.

Forcing Department.—Where proper accommodation for the forcing of French Beans is not provided in establishments where they are in demand—which is the rule rather than the exception—it will be difficult to keep up a good supply. However, much may be done, and is done, by contriving positions for and fixing shelves in Pine-stoves, Cucumber-houses, early vineries, &c. Another sowing should now be made in 8-inch pots, a little more than half filled with rich soil. Eight or nine seeds in each pot will be ample, and the pots may be placed anywhere in heat (failing a better, a Mushroom-house would do) until the plants come through the soil, when they should be placed near the light, and, when sufficiently grown, be earthed-up. The points of the shoots must be pinched out to make them branch. Syringe frequently where the permanent occupants of the house will not be injured by so doing, to prevent the attacks of red-spider, bearing in mind, however, that the syringing of the plants is more or less frequent, according to the high or low temperature of the house, of which 55° to 60° will be high enough at night. Where Asparagus is sought after early in the season, a batch of roots (which should be taken up carefully with a four-pronged fork) should be put in to force without further delay. Where properly heated pits are not provided for the forcing of this much-esteemed vegetable, the next best way of forcing it is by means of the old-fashioned pigeon-holed pits, which have an outer space for linings 3 feet wide and 4 or 5 feet deep, enclosed by a 9-inch wall, and covered with shutters, made of Oak, having a little incline outwards to throw off the rain-water. These pits, as a rule, have two or more divisions in them, one of which should be filled with leaves (Chestnut and Oak are the best) to within 12 or 15 inches of the top and well trodden down. Over these place 2 inches of short dung and then 1 or 2 inches of soil, upon which the roots should be placed closely together, and covered with 2 inches of soil, and then 3 or 4 inches of sifted leaf-mould (where plentiful) should be put over all; and when the stems have grown 2 inches through the mould, the nicely blanched "grass" with green tops—should be cut. The leaves supply and maintain a gentle and steady bottom-heat, which causes every crown to push forth its "grass." A bottom and top heat of from 60° to 70° should be aimed at. Where pigeon-holed pits do not exist the ordinary hot-bed must be had recourse to; this should be made up of one part leaves and one of long stable-dung (including the horse-droppings), which should be made into a conical heap for ten or twelve days, and be turned over a couple of times during the interval before being used. A sufficient quantity of this material should be kept in reserve for making up the linings of the hot-beds, when the heat in the latter has declined to a lower temperature than that necessary for the proper development of the "grass." As soon as Rhubarb and Seakale plants have shed their leaves no time should be lost in getting a few of each into the Mushroom-house. When preparing the roots of the latter for forcing, save the thongs or extremities by cutting them into lengths of about 4 inches, and placing them in a box intermixed with sand till the time for planting arrives. Last winter, for the first time, we planted our Seakale in what may be described as a "large shallow box" in a part of one of the two beds reserved under the lower shelf in the Mushroom-house for the forcing of Rhubarb and Seakale. So satisfactory have been the results, in quantity as well as quality, of this mode of procedure, that I strongly recommend its adoption to the readers of the *Gardeners' Chronicle* with every confidence of its giving satisfaction. Sow Mustard and Cress in boxes or pans at short intervals, in order to keep up a good succession of them for salading. *H. W. Ward, Longford Castle Gardens, Wilts, Oct.* 24.

Peaches and Nectarines.

The time is now drawing near when the early house will require its annual cleansing previous to being started about the middle or at the end of next month. Sashes that have been removed may now be put on when convenient, and the trellis or any inside painting required may be done, and the walls be thoroughly well whitewashed. The trees, if infested with that greatest and most prevalent enemy to the Peach tree, brown-scale, should be well cleaned, and then washed with a solution of Gishurst Compound, 10 oz. to a gallon of soft water, or with the mixture prescribed in former Calendars; if the trees are free from scale, the Gishurst may be used considerably weaker—say 6 oz. to the gallon. When the trees are trained, remove all exhausted mulching and soil from the surface where there are any roots, and give a dressing of fresh turf, old mortar, and wood ashes. The wood in succession-houses should now be getting pretty well ripened, if a little fire-heat has been used according to directions previously given. Any root-pruning or lifting required in succession or late houses may now be done at once. The foliage and wood on trees in late houses is still very green, and will, this sunless autumn, require a considerable amount of fire-heat to get the wood well ripened. *J. Wallis, Keele Gardens, Oct.* 24.

Plants and their Culture.

Stove Flowering Plants.—The stock of various kinds of these that are grown in quantity for late autumn and winter decoration will now be coming in useful. Between this and Christmas a judiciously assorted collection of this class will be of great help in the cut flower supply, and for furnishing purposes in a small state. The earliest plants of Epiphyllum truncatum in several varieties will soon be in flower. When about to open their blossoms a drier atmosphere will suit them best. By introducing a few in heat and retarding others, a succession can be kept up till the new year, reserving E. truncatum Russelianum for the latest. Begonia insignis, B. Knowsleyana, and B. Saundersii will likewise soon be doing good service. Any of these that have been grown in a more airy house than an ordinary stove affords must, when introduced therein, have a somewhat dry position accorded them; too much moisture will at times cause them to go off at the collar of the plant, and that just as they are coming into bloom. B. semperflorens as a white variety is always useful, but an intermediate house will suit it best, in which also Centropogon Lucianus will succeed well, developing flowers of greater durability. Our stock of Eucharis are rather backward in pushing up any quantity of spikes this autumn; they could scarcely be in a more healthy state than at present, and we are looking forward, however, to a goodly number showing their spikes soon. These have stood in a vinery where the Grapes are still hanging, not having had any water for several weeks past; their foliage, however, keeps fresh and vigorous. We expect these to give us a good supply during the next three months. Some that have been kept in the stove for a considerable period have continued to put up two or three spikes at a time, in which way we have always had a few flowers for months past. Perhaps after all this is the most serviceable; we have at least found these very useful. The earliest plants of Eranthemum pulchellum will be advancing now; their beautiful blue flowers are valuable at this season, when this shade of colour is scarce. Give all the stock of this plant an abundance of water, especially at the flowering period; and also a place as near the glass as possible. A similar position should also be given to the Poinsettias and Euphorbia jacquiniflora; the flowers of this latter plant will thereby be found more lasting. The winter-blooming Plumbagos must likewise receive liberal treatment when putting up their spikes. For use in a cut state see that none are cut when the plants are on the dry side, or they will quickly fade. Gardenia intermedia still supplies us with good flowers for buttonholes. Ours are in pots, but had we the room we should prefer some at least turned out where a high temperature could be maintained. Occasional flowers of Franciscea calycina major come in very useful; the cultivation of this variety for its handsome flowers, of and F. Hopeana for the delicious perfume of its rather small blossoms, which open blue and gradually fade off to a French-white, should receive a greater amount of attention. No doubt the mealy-bug is a great deterrent to many who have attempted their cultivation. Do not let the stock of Aphelandra nitens and A. aurantiaca Roezlii become too crowded, or their handsome foliage will thereby be damaged before their brilliant spikes of flowers are open. A light position will suit them best. Look well after any young growing stock of Ixoras; though not strictly to be classed as winter blooming plants, occasional trusses are always welcome. Give them the warmest corner, and endeavour to keep them as vigorous as Willows. Those that have well filled their pots with roots must be freely watered. At no time should any of them be allowed to suffer in this respect, or the inroad of black thrips and other evils may be expected. Ipomœa Horsfalliæ has with us made a luxuriant growth, and is now putting forth several trusses. These are always valued for the sake of their beautiful colour, although they do not last but one day in full beauty. Jasminum gracillimum is also showing flower; this, when we can get it more vigorous, so that a goodly amount of lateral shoots can be relied on to push forth—nearly all of which will flower—will cause this variety to be much appreciated. Dipladenias, Allamandas, Clerodendrons, and Bougainvilleas that have done good service will now be all the better for a rest of a few months, taking an early opportunity to thin out any weakly growth. If these can be accommodated in a warm pit with a minimum temperature of 55°, more room in the stove proper will be at liberty for immediate effect. Any of these that may have been put aside in a cool house must be looked after at once; a sudden fall in temperature, which may now be reasonably expected, will soon ruin them, the Clerodendrons in particular.

Pits, Frames, &c.—The earliest potted Roman Hyacinths can now be easily got into flower as desired, if they have been treated as recommended in a previous Calendar. In the case of ours, we are retarding them a bit, having sufficient flower from other sources. The Paper-white Narciss have pushed up their spikes in a cold frame, and will very soon expand their blossoms. All the stock of Primulas (sinensis vars.) will now be the safer with house accommodation, or a warm pit free from damp. Cinerarias should be well aired on all favourable occasions, and see that none touch the glass now that frosts may be expected. Mignonette and Stocks in pots should be kept as hardy as possible. If any of the forcing Pinks are still in the open borders, potting of the same should be completed forthwith, and accommodation found for them in a cold frame. The present is an excellent time to sow seed of Cyclamen persicum. When this is done a warm house will be the best place wherein to germinate the seed more quickly. *James Hudson, Gunnersbury House Gardens, Oct.* 24.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Oct 30	Sale of Dutch Bulbs, at Stevens' Rooms. Sale of Dutch Bulbs, at the Auction Mart, by Protheroe & Morris
TUESDAY,	Oct 31	Sale of Lilium auratum Bulbs, at Stevens' Rooms. Sale of Bulbs, Roses, &c., at the City Auction Rooms, by Protheroe & Morris Sale of Nursery Stock, at Ware's Nursery, Tottenham, by Protheroe & Morris
WEDNESDAY,	Nov 1	Sale of Plants and Bulbs, at Stevens Rooms. Sale of Nursery Stock, at Bryant's Nursery, Rugby, by Protheroe & Morris. Sale of Nursery Stock, at Young's Nursery, Godalming, by Protheroe & Morris (three days). Meeting of the Linnean Society, at 8 P.M.
THURSDAY,	Nov 2	Royal Horticultural Society of Ireland's Winter Show. Sale of Imported Orchids, at Stevens' Rooms Sale of Nursery Stock and Greenhouse Plants, at Goubert's Nursery, Kilburn, by Protheroe & Morris.
SATURDAY,	Nov. 4	Sale of Plants and Bulbs, at Stevens' Rooms.

ALTHOUGH hitherto no great practical advantage has been derived from the process of POTATO GRAFTING, unless we accept Yorkshire Hero and Yorkshire Hybrid as veritable graft-hybrids, yet in the face of the experiments made by Mr. FENN, and the specimens shown by him some years since, we cannot doubt the possibility of the occurrence. The fact so elicited is one of very considerable scientific interest, and may turn out to be of practical value also. In 1867 Mr. TRAILL also published his numerous experiments in this direction, which were repeated by Mr. DARWIN "on a large scale, but with no success." Our own experiments, few in number, were also not successful so far as regards the production of intermediate forms, and are hardly worth alluding to but for the circumstance that we secured adhesion, and the graft grew and fed on the stock, as the latter withered in proportion. German experimenters have been more successful, and among the earliest cases was that an account of which was published by Dr. MAGNUS, of Berlin, in the *Transactions of the Botanical Society of Brandenburg in* 1875. To form this hybrid Herr Hofgärtner REUTER removed from a tuber of the long white "Mexican"—a variety introduced from America by the *Novara* Expedition—a flat, wedge-shaped slice bearing an eye, and grafted it into a similar shaped notch of Black Kidney. From eight tubers so treated he obtained two hybrid specimens, which he sent in 1874 to the Exhibition of the Acclimatisation Society. Since then this variety has been constant, so that the tubers figured in a recent number of the *Garten Zeitung* by Herr B. HACHE exactly agree with those originally shown at the Exhibition in 1874.

The following observation of Herr RIMPAU is quoted from Herr H. LINDEMUTH'S *Treatise on Vegetable Hybrids formed by Grafting* (*Landwirthschaftliche Jahrbuch*, 1878, part 6):—"I myself have taken a stock of a white colour and grafted on it an eye of a red variety, and amongst the produce of the two Potatos I found several pure representatives of the variety from which the scion was taken, a few of the stock variety, and, in addition, I found five tubers which I consider as intermediate between the stock and the hybrid with regard to colour. These five tubers I planted in 1875, and they all yielded descendants not to be distinguished from the hybrid variety of 1874. Since then I have not pursued my investigations further."

Thus various experiments have proved that this hybrid has been constant since 1874*. The variety, which Herr REUTER has named (*pro tem.*) "Child of the Isles," is, both in colour and form, intermediate between the parents. The normal form of the hybrid and a variation from it are shown in the coloured plate with which we have been favoured by Dr. MAGNUS. These two forms are the extreme limits of the variations which have been observed in the past seven years. The hybrid tuber is thicker and broader than the long, thin Mexican; and longer than the thick oblong obtuse Black Kidney. The eyes are much depressed, as in Black Kidney.

With regard to the colour of the hybrid, it is almost invariably copper coloured, here and there flecked with reddish blotches. The blue-grey colour originates — Dr. MAGNUS thinks arises—from the outermost cellular layers becoming filled with bright red cell-sap. The red-copper colour of the skin of the hybrid seems to combine the darker colour of the Black Kidney with the yellower tint of the Mexican.

As for the size of the hybrid tuber, it is intermediate between the parents, but is occasionally larger. The sizes of the tubers shown at the meeting of the Society, December 30, 1881, were:—Black Kidney, 4.5 cm. broad, 6.5 cm. long; Mexican, 3.5 cm. broad, 9 cm. long; Child of the Isles (hybrid), 5.2 cm. broad, 11.6 cm. long.

Of even greater interest are the results of the analysis made by Professor WITTMACK with the aid of his assistant, Herr BALCHE, thus:—Black Kidney: spec. gravity, 1092; dry substance, 24.3 per cent.; starch, 16.86 per cent. Mexican: sp. gr., 1087; dry substance, 23.1 per cent.; starch, 15.7 per cent. Child of the Isles, sp. gr., 1078; dry substance, 21 per cent.; starch, 13.5 per cent.

Thus the hybrid has a lower specific gravity, a somewhat higher relative (not absolute) proportion of dry matter, and a larger proportion of water. The absolute bulk of dry substance in the hybrid is nearly intermediate between that of the two parents. The "Child of the Isles" is further stated not to be good for table purposes, but excellent as cattle food—a good cropper, and the tubers of considerable size. We have only to add that, according to the coloured figures in the *Garten Zeitung*, the Mexican is a long kidney, with prominent eyes, and of a yellowish-olive colour. The Black Kidney is a round or pebble-shaped variety, with prominent eyes and dark smoky-brown colour, with indications of reddish flecks. The alleged hybrid is intermediate in shape, kidney-shaped, coppery-brown, flaked with dull red. Neither variety would win a prize at an exhibition; but, after all, that is by no means the only criterion of excellence.

* See report by the lately deceased Professor Hanstein in 1878, *Proceedings of Lower Rhine Society*, May 6, 1878.

—— THE FAMOUS WISTARIA AT SALT HILL.—We are indebted to the kindness of Mr. ARTHUR TURNER, of Slough, for a photograph of the ruins of the famous old Wistaria which so many years adorned the front of the historically interesting Windmill Hotel (BOTHAM'S), at Salt Hill, and which was destroyed by fire on the morning of April 21 last (fig. 97). A local authority states that "the house is well known to have been a very old one, but perhaps there are few who are aware that it existed as the Windmill Inn so far back as the reign of CHARLES II." The grand Wistaria has been a subject of great admiration for many years, but how and when it got to BOTHAM'S is somewhat involved in obscurity. One authority mentions that "it is believed to have been planted in 1816," but this can hardly have been the case, as the plant was only brought to England from China in May, 1816, by Captain ROBERT WELBANKE, and Mr. TURNER informs us that the plant at Salt Hill was "one of three sent to Chiswick when first introduced, and was brought to this neighbourhood (Slough) by Mr. BROWN when proprietor of this nursery;" but Mr. TURNER does not know in what year, nor are there any records at Chiswick to show when the three plants mentioned arrived there, but it was certainly not in 1816, as the gardens were not then in existence, having been formed about the year 1822. Wistaria sinensis is figured in vol. viii. of the *Botanical Register* (1822), the plate being there stated to have been "drawn at the Hammersmith Nursery, where the plant is cultivated by Mr. LEE in the conservatory, and flowers about March. Native of China, from whence it is said to have been imported about five or six years ago by Captain WELBANK." LOUDON in the *Arboretum Botanicum* (vol. ii., p. 648) states that "it was first brought to England by Captain ROBERT WELBANKE in May, 1816; and in the same month, but a few days later, another plant was introduced by Captain RICHARD RAINES. Both were obtained from the garden of CONSEQUA, a generous but unfortunate merchant of Canton." LOUDON also alluded to the fine plant which up to within a few years ago was such a conspicuous feature on the boundary wall of the then arboretum at Chiswick. He also states that "one of the imported plants is in a pit in the garden of Rook's Nest, near Godstone, Surrey," and that this was the parent of the Chiswick plant. It is possible that three plants may have been raised from the one at Rook's Nest, and sent to Chiswick, and that the plant at "BOTHAM'S" may have been one of them, but if so it would be interesting to know—(1), What became of the third plant?—(2), In what year did they reach Chiswick?—and (3), Though the plant at Salt Hill has perished, when and by whom was it planted? We should also be glad to know if the original plant still exists at Rook's Nest?

—— EDGE HALL GARDEN.—We are mortified at the necessity for publishing the subjoined note, which tells its own tale. Mr. WOLLEY DOD writes:—"May I be allowed to say through the *Gardeners' Chronicle* that the garden at Edge Hall is not open to the public? I am always glad to allow any one to see it, who is introduced through a friend or who writes a day or two before for permission: but as my gardening staff consists of myself and a gardener, assisted by two or three labourers who know nothing of plants, our hands at this time of the year are pretty full of work. A carriage full of strangers arrived this afternoon, and having turned their horse loose into my stable, came into the garden and announced that they wished to be shown round. I had just unpacked a box from Zurich and was preparing to plant Phyteuma comosum, Eritrichium nanum, and other rare alpines which required careful and immediate attention from me and my gardener. This is an instance of what has lately happened several times. Invasions of this sort, if encouraged to become common, would render gardening with such an establishment impossible. *Oct.* 16."

—— ROSE QUEEN OF BEDDERS.—This charming Rose, which was raised and sent out by Mr. CHARLES NOBLE, of the Sunningdale Nursery, is one of the best of autumn bloomers, if indeed it may not be called a perpetual bloomer. As seen in the Sunningdale Nursery a few days ago, it was covered with flowers and flower-buds, the latter in clusters of from four to six upon the terminal points of the shoots. Beds of this variety would make a distinct feature in the Rose garden in autumn, and would furnish plenty of flowers and buds for cutting. It is a Bourbon Rose, and is of a rich dark crimson colour.

—— ODONTOGLOSSUM VEXILLARIUM ROSEUM.—A spirited competition took place on Thursday, at STEVENS' Rooms, over a little plant of a very fine variety of Odontoglossum vexillarium, Sir TREVOR LAWRENCE ultimately acquiring it at seventy-two guineas. The plant is of the autumn-flowering kind commonly known as roseum, but the dark blood-red marking at the base of the labellum gives it an appearance of exceptional beauty. Mr. R. P. PERCIVAL, of Birkdale, has, we understand, one like it of the large-flowered form.

—— EDINBURGH INTERNATIONAL SHOW.—A meeting of the Royal Caledonian Horticultural Society was held on Friday, November 20, in the Music Hall, Edinburgh—Mr. SYME, of the Lawson Nursery & Seed Co., presiding—at which the Treasurer, Mr. P. NEILL FRASER, read a report of the income and expenditure connected with the International Fruit and Flower Show held last month. The accounts showed that there had been drawn at the gates during the two days of the show a sum of £1106 11*s.*, representing admission money for 26,250 persons. It was estimated that, including members' tickets, the number of persons who passed the gates during the two days was 30,760. The total receipts in connection with the show amounted to £1500 7*s.*, including a sum of £393 16*s.* received as subscriptions. The total expenses incurred, including rent of the Waverley Market, advertising, judges' expenses, &c., was £551 7*s.* 10*d.*, and prizes amounting to £800 1*s.* 6*d.* had been paid, making the total payments £1351 9*s.* 4*d.* A comparative statement was also read, showing that the total receipts of the International Show of 1875 amounted to £1029, and that there was a loss to the Society on that occasion of £89, whereas on this occasion there would be a probable surplus, after meeting all contingencies, of about £100. This would make a surplus on the Society's transactions for the

present year of about £400, which would make the total amount at the credit of the Society about £1000. The report was approved of, and a cordial vote of thanks was awarded to Mr. Neill Fraser for his valuable services in making the show such a great success. Various sums of money were then voted to exhibitors at the show. A sum of thirty guineas was voted to Mr. William Young, the Assistant-Secretary, as an honorarium for his labours in connection with the show. Votes of thanks were also accorded to the Lord Provost and magistrates for patronising the show, and to the judges, committees, and Secretary, for the admirable manner in which they had done their work. From the success which has attended the International Show the Society has resolved to largely increase the number and value of the prizes at its ordinary shows next season, with a view to attract exhibitors from all parts af the United Kingdom; as with the facilities at their command in such a spacious and convenient exhibition hall as the Waverley Market, they will be able to accommodate and do justice to an almost unlimited number of exhibits.

—— The "Herefordshire Pomona."—Another part (the fifth) of this superbly illustrated periodical has reached us. It is published under the auspices of the Woolhope Club, which, as will be seen, aspires to more than local utility. The coloured plates are excellent, but we regret to see that the woodcuts are still not worthy of the coloured illustrations or of the text. In future it would be desirable to give cross sections of the fruits as well as vertical ones, as the character of the fruit-cells—a point upon which the Editor, Dr. Hogg, lays great stress—is not sufficiently shown by the section lengthwise. We should be glad, too, if the artists and editors would give in all cases, as they do in some, figures and descriptions of the foliage, flowers, shoots and buds, which afford points of disinction all but entirely neglected by pomologists. The analysis of the juice published by Mr. With must be of value to makers of cyder and perry, but no information is given of the number and source of the samples from which the analyses are made. It is obvious that the analyses of samples taken from one tree or from one orchard must be untrustworthy guides to the composition of the juice in fruit of the same kind grown elsewhere, and under different conditions. The present part is not, as its predecessors were, prefaced by articles of literary merit on subjects connected with pomology; but, be this as it may, the subscribers may congratulate themselves on the possession of a very beautiful and very useful publication.

—— Spiræa palmata.—Were it not for the prevalent opinion that this charming variety of Spiræa is difficult to obtain in large quantities, one might wonder why the white variety, S. japonica, is so much grown for forcing, while the pink variety is seldom seen in the country in greater force than from one to two plants. As a forcing plant, either for supplying cut flowers or for arranging in plant structures, in contrast to the well-known white variety, or as an ornament for the sitting-room, few plants can at all compare with it. We lately saw over an acre of fine plants in Mr. Charles Noble's nursery, near Bagshot, where in the mellow, peaty soil of that nursery the crowns attain an extraordinary size, larger individully than a man's thumb. We were informed the stock originally consisted of only one plant.

—— Mr. Henry Stevens' Flower Pictures.—At last flowers have found in Mr. Henry Stevens, of Addleston Lodge, Addleston, a much needed champion among artists. All who have had the privilege of seeing his fine collection of life-size photographs of Orchids at the rooms at King Street, Covent Garden, know that Mr. Stevens has worked hard at his "hobby" for years. Orchidists were always loud in their praise of his pictures, many of which are not only works of art but are invaluable as a reference; that clever picture, for instance, which has all the varieties of Cypripedium insigne on it, would at any time settle a questioned name of any of the varieties. It is gratifying to know that Mr. Stevens' pictures are of the first merit from an artist's as well as a florist's point of view, and that they have been awarded medals at several of the large exhibitions of photographic societies this year. The *British Journal of Photography*, speaking of Mr. Stevens' pictures now at the exhibition at 5, Pall Mall East, says:—"The remark was made to us a few days back that it is difficult in the present stage of photography to hit upon a speciality. The feat has, however, been performed by Mr. Henry Stevens, who has made the photographing of flowers his special study and 'hobby,' with what success the award of a medal sufficiently testifies. In the present exhibition we have a large number of new specimens of finely-grouped and exquisitely-rendered floral subjects, including nearly every variety of flower familiar, and many unfamiliar, to the general public. In the frame to which the medal label is attached there are Dahlias, double and single, the delicate gradations of which are admirably rendered; also some specimens of Odontoglossums. A group of hardy Azaleas (No. 334) is wonderfully perfect, and Lilium auratum (No. 348) shows a surprising degree of skill in reproducing the tender textural details of that beautiful flower. It is almost impossible to individualise where all are so excellent, but we would call attention to Orchids and Pansies (No. 324) and Japanese Spiræa and Marguerite (No. 325), as also the Roses (No. 349) and Cherry Blossoms (No. 351). Mr. Stevens' figure subjects are also remarkably good, and possess the valuable feature of 'naturalness.' Taken as they are, without any of the 'pomp and ceremony' of a visit to the photographer's, the little 'sitters' (his chil-



Fig. 97.—The ruins of the old wistaria at Salt Hill, Slough. (see p. 560.)

dren) have felt perfectly at home, and Mr. Stevens has thus been enabled to exhibit some of the best amateur portrait work we have yet seen. We may add that all his pictures are entirely untouched." Few who have not seen such pictures as Mr. Stevens' have any idea of the size and beauty of the pictures to be obtained by the aid of photography, nor of the study required to attain proficiency in the higher branches of the art. In Mr. Stevens' Orchid pictures the different and delicate shades suggest each different colour, so that even a novice can readily say what colour or shade of colour the flowers were; the large pictures of Odontoglossum crispum guttatum (No. 301), Cattleya Mendelii (No. 333), and the Study of Orchids (No. 332), composed of Odontoglossum crispum guttatum, O. vexillarium, O. nebulosum and three Cattleyas, admirably show this. There is a studied simplicity in the arrangement of the flowers and their base of Maidenhair or other suitable foliage which proves Mr. Stevens to be a true artist, and makes some of his simplest pictures the most attractive.

—— Linnean Society.—The papers to be read at the meeting on Thursday, November 2, at 8 p.m., are:—1, "Ants, Bees, and Wasps," part 10, Sir J. Lubbock, Bart.; 2, "Medicinal Plants of Queensland," W. A. Armit; 3, "Malformation Leaves, Beyeria opaca," G. Otto Tepper; 4, "Hybridisation of Salmo fontinalis," Dr. F. Day; 5, "Teratological Notes on Plants," H. N. Ridley; 6, "Remarks on Marine Fauna of Norway," Prof. Lankester.

—— Abutilon Reine d'Or.—This will make a valuable addition to our stock of plants for clothing greenhouse walls in autumn. It is a free grower, and flowers profusely, producing its pale lemon-coloured blossoms from the base to the summit of a wall over 12 feet in height. Plants that bear such fine leaves and useful and attractive flowers are likely to be largely grown by amateurs when once their qualities as climbing plants are thoroughly established.

—— Onions.—Whatsoever may be the kind of Onion which the Spanish grower sends us in such large quantities, it is evident that it is one which easily reaches a great size, and must be immensely productive. All over the kingdom grocers and other retailers of edibles are now selling Spanish Onions at the profitable price of 1½*d.* per pound, as the first cost to them is but 5*s.* per cwt.; and if there be any considerable sale, none are left in the hands of the retailer to spoil. Spanish Onions, however, before they reach the retailer, have to pass through the hands of two or three dealers, and bear a costly journey, so that we may well imagine that the price per hundredweight paid to the Spanish grower is small indeed. It is evident that with our heavy rent, rates, taxes, cost of manure, labour, &c., we could not grow Onions profitably at the very low price the Spaniard gets, and doubtless lives on; but he doubtless has cheaper land, ample ripening sunshine, and is not hampered with those heavy burthens which are such inevitable concomitants to civilisation. Still, and perhaps largely as a necessary corollary to the low price paid for imported bulbs, Onions are cheap here, and, no doubt, fairly plentiful. From 2*s.* 6*d.* to 3*s.* per bushel of 56 lb. seems to be thought a fair price for good spring sown bulbs, whilst autumn sown ones will not be had, for the simple reason that the imported ones are better and so plentiful. It is, however, unwise to push the sale of summer grown bulbs yet, except where necessity knows no delay. We have no big bulbs this year, but this is no great loss to the grower, for not only do the hard medium sized samples keep best, but they are more favoured by the dealers. Where the soil is not quite so potent and the plants are less thinned the produce relatively is as heavy, perhaps heavier than where such big bulbs follow upon extreme thinning. It is unfortunate that so excellent and wholesome a vegetable as is the Onion should possess such pungent flavour and strong odour, but doubtless there are many little-known ways of cooking it that might render these qualities less obnoxious.

—— A New Genus of Lobeliaceæ. — Dr. Asa Gray describes a curious new genus of this order recently discovered in the Mohave desert, California. It is of no horticultural interest, being in striking contrast to the majority of its gay allies, but it is worth noticing, although a humble plant, as another instance of the very local character of some types. We know the broad physiognomy of the vegetation of nearly all countries and regions, yet we have much to learn of the details of the less conspicuous features. The new genus is called Parishella, after the brothers Parish, of San Bernardino, who have done much towards investigating the vegetation of their neighbourhood.

—— Violets in Autumn.—The mild weather we have had lately has given us plenty of green leaves and abundance of flowers, which it is to be feared will receive a severe check should the temperature fall suddenly. Violets are flowering early and profusely; the finest display of leaves and flowers that we have seen for many a long day is in Mr. Charles Noble's nursery at Sunningdale. The plot of Violets is but a short distance from the dwelling-house, and the air is fragrant with their perfume. There are buds enough formed to supply Violets for many weeks, and the luxuriance of the leaves gives the bunches of flowers quite a pleasing appearance, so different from what we usually see. A favourable soil and climate is clearly half the battle in Violet growing. The sorts grown are the Czar and Marie Louise.

—— French Marigolds as Autumn Flowers. —There is no plant perhaps of a half-hardy character that stands the dull, cold weather of autumn so well as the French Marigold does. We saw a quantity a few days ago, which after having undergone a few days' drenching of heavy rain were as fresh almost as before the visitation. It is astonishing what a number of blossoms well established plants of Marigolds will produce if the autumn be only fine. One great point is to get the plants well forward in spring, so that they can be got out in the open ground fairly early, and become established before the summer drought sets in. Then it is that they flower with marvellous freedom, and this quality is recognised by most gardeners, as they sow patches for cut blooms. It is sometimes said that the flowers of Marigolds are objectionable, on account of their peculiar perfume, but this is more of a sentimental than a practical objection. There are many to whom the smell of the Marigold is not so objectionable as it is to others, and there are many gardeners who find the French Marigold most useful for cutting from, and amid a multitude of cut specimens any objectionable quality in the Marigold becomes lost. The striped rather than the maroon self-coloured form is decidedly the best type to grow for cutting from, especially so as during the moist wet days of autumn the blooms become more correctly striped and more handsomely marked than they do in drier weather. Mr. Roberts, of Gunnersbury, who is this season growing large quantities of Scabious, annual Chrysanthemums, &c., in pots to flower under glass in early spring, intends next year to try the Marigold as a pot plant. There will perhaps be a little difficulty in keeping the plants through the winter, owing to the tendency of the Marigold to damp off, but with heat and glass at command, and with a knack of managing plants of this character during winter, which Mr. Roberts undoubtedly possesses; the best results may be anticipated.

—— Convolvulus arvensis in California. —A writer in Coulter's *Botanical Gazette* says this, a foreigner, is already more abundant throughout the region of San Francisco than any other species, and is a very troublesome weed in the Wheat-fields. At the time of writing the stubble fields were white every morning with its flowers, for it persists in growing and blooming however closely cut down by scythe and sickle. Chrysanthemum segetum is another European plant that is rapidly spreading in the same country.

—— Seedling Hybrid Abutilons. —There is no class of plants more useful to the gardener or decorator in winter than the brighter forms of the Abutilon family, and we are glad to see that some interest is being manifested in them by raisers of new flowers. Mr. George, of Putney Heath, sends us several specimens, some of which are of the highest merit. Silver Bell is a medium-sized well-formed flower of a creamy-yellow hue, with clear maroon markings, but is quite eclipsed by Sir Garnet, a beautifully formed flower of a striking red colour veined with rich dark lines which give it quite a distinct appearance from all the others. This variety will prove invaluable for cutting, and dwarf plants of it will make very pretty objects for sitting-rooms. A variety named Crimson King is also very good as regards colour and substance of petal, but the flowers are not so bold and large as Sir Garnet. An orange-coloured variety (unnamed) strikes us as being remarkably pretty; the colour of the flowers resemble those of the well-known Imantophyllum miniatum. This variety will make a striking pot-plant for all decorative purposes. Enchantress is a larger flower of a handsome pink shade marked with deep purple veins, and very pretty; and there are other varieties of more or less merit, but not sufficiently developed to call for any special comment. Mr. George informs us that his seedlings are a cross between his free-flowering section and A. Sellowianum marmoratum, which he considers an improvement on the other section. The habit of the plants sent for inspection is all that can be desired in a decorative plant.

—— Lawns in Autumn.—It has been remarked with much truth, that "the beauty and high keeping of lawns in England are the admiration of all foreigners." This is comprehensively true, and there is no greater adornment to a fine domain than a well-conditioned and well-preserved lawn round an ancestral mansion. It is at this season of the year, when there is some danger of the lawn not receiving that amount o attention it absolutely requires—when the dull, moist, cool days come, followed by long, cold, foggy nights, that the grass grows rough, lank, and the scythe or mowing machine removes it with much less difficulty than when the blades of grass are fresher and more crisp. The leaves, too, are falling, and lying thickly in woodland ways, and the labour of daily sweeping cannot be provided owing to there being more pressing work on hand. It is then that the gardener's vigilance is apt to relax, and the worms draw into the grass the fallen leaves and stalks, and throw up casts innumerable. A well kept sward soon degenerates into one of a coarse order, and this is, to a certain extent indispensable to the season of the year. But, as far as possible, when the weather is drying, the lawn should be carefully swept, and well rolled so as to preserve as far as possible a firm bottom, and a dense herbage. If the lawn is not kept well rolled, the roots of the grass become loosened by means of worm casts, and when roughly swept large, bare patches result, and then the work of renovation has to be gone through. The re-turfing of lawns can be done at any time during October, and up to the end of March. It is best performed early enough in autumn to admit of the turf becoming somewhat set before frost comes, or as soon as possible after the break-up of frost in early spring. The best piece of turf we ever saw was laid on a bottom formed as follows:—3 inches of chalk beaten a little small and over this—filling up the interstices also—a layer of 2 inches of road sand from a gravelled road. This was rolled down firmly before the turf was laid. The turf employed was selected from some chalk downs, and it was as free from weeds as possible. This made a charming lawn, and in two years or so every weed was extracted from it, leaving only grasses and Clovers. When well kept this lawn was superior to any for miles round. An excellent sward can be made by sowing selected grass seeds in a well prepared bottom in April and May. Grass seeds for this purpose are now selected with such care that a prime sward can be had in two months or so from the time of sowing. We have seen lawns made from mixtures so well selected that not a single coarse grass and scarcely a weed can be found in them. The cost of sowing is very much cheaper than that of laying down turf, and provided carefully prepared mixtures be used the result is equal. The grasses that are best adapted for this purpose seem to be those whose roots make a firm matted bottom; and though it may be necessary to make the first mowing or two with some judgment, it can soon be mowed and rolled as often as a permanent lawn—indeed, the more frequently this is done the thicker and finer will the turf become. It is, perhaps, not to be wondered at that the laying down of lawns by means of sowing is being so much resorted to. Round London, for instance, it is becoming more and more difficult to obtain suitable turf, even at high prices. The expense of turf almost makes the use of it prohibitory, and as lawn mixtures are improved and used with success so much the more will they be employed.

—— Jasminum nudiflorum semper aureum. — As a wall creeper this plant is very effective during the present month. It combines the two characteristics of spring and autumn, the leaves upon some of the shoots being of a bright golden colour, as

the name implies, which are prettily intermixed with the green drooping ones, that are more abundant. Little training seems to be necessary; indeed, if the main growths are fastened to the wall no further trouble need be taken to obtain the best effect that the plant will give.

—— Artocarpus metallica.—We never have the same appreciation of foliage plants in summer that we have in winter, for the very good reason that there are numbers of attractive things to look at out-of-doors. But when the leaves begin to fall, and plants out-of-doors look cheerless, then we expect to find something worth looking at under glass. The green bold leaves of many kinds of Palms are among the most effective things that can be used for grouping, but they want lighting up with a little colour, and few plants are better adapted for the purpose than the dark rich crimson leaves of the above plant, which is peculiarly beautiful under a ray of sunshine through a glass roof.

—— Gardenias at Gunnersbury.—Mr. Roberts is now cutting superb blooms of Gardenia florida at Gunnersbury Park, from plants planted-out in a heated pit more than two years ago. A compost was made up of half peat and half loam, with some of Clay's Fertiliser added, and in this the plants established themselves and made a good growth; they have bloomed with wondrous freedom, Mr. Roberts stating that he has cut thousands of blooms from the plants. Soakings of manure-water are given occasionally, and there is a healthy growth of foliage; but every point of it produces large, full, and fragrant blossoms. From the third week in September up to the middle of October cool treatment was given to the plants; but now, with the advent of colder weather, heat is being applied, and an increased bloom is resulting. Mr. Roberts states, with much truth, that the great thing in the culture of Gardenias is to commence with thoroughly clean and healthy plants, and the remainder is only a matter of proper attention.

—— Crocus speciosus.—Very fine and richly marked flowers of this fine and showy autumn-flowering species have been seen of late. What an exquisite object it is in the garden; and yet, somehow, lovers of flowers do not take kindly to C. speciosus, or it would be oftener met with in gardens. It requires to be planted in appropriate spots, in suitable soil, and there let alone to flower in its own good time. There is no spring Crocus of the C. vernus type that has such lines of beauty traced on its petals as are seen on those of C. speciosus.

—— Messrs. Garaway & Co.'s New Nursery, Keynsham.— After thus being gradually hemmed in Messrs. Garaway, like not a few others similarly circumstanced, have been compelled to look out for fresh ground, and to get this was no easy task, except at a figure beyond that which nursery work would admit of; this has necessitated their going farther out. They have recently secured the Long Reach estate of 50 acres at Keynsham, a village on the main road from Bristol to Bath, midway between the two cities. The land is bounded on the south by this road, and north by the main Great Western Railway, the part which is already planted with nursery stock being on the level of the line; and filled, as a portion of it has been this spring and summer, with Tulips, other spring flowers, and annuals, it has been a conspicuous object for the passengers by the numerous Great Western trains arriving at and leaving Bristol. The last spring 10 acres were planted principally with fruit tree stocks (the budding of which has been completed), Rose stocks, Laurels, ornamental trees and shrubs, and 5 or 6 acres more will be stocked this season. The whole of the land has been drained 3 feet deep, and the improvement in that still down in pasture is manifest. The soil is a fine loam, resting on the stiff clay of the Lias, and the standard Briers planted in the spring of 1881 are now Roses with as good heads as the most devoted lover of the queen of flowers could wish for. The fruit tree stocks also show their appreciation of the soil by their free and vigorous growth, and we have no doubt that the Long Reach ground will enable Messrs. Garaway to maintain their reputation for good stock of all descriptions. The main road through the ground already filled with nursery stock runs at right angles with the railway, and will be planted right and left with alternate specimens of evergreens and ornamental deciduous trees. We noticed amongst those already in their places fine weeping Oaks, golden Horse Chestnuts, Weeping Thorns, and others. On the portion of land adjoining the dwelling-house (which faces the Bath Road) Messrs. Garaway have filled a considerable space with the various trees and shrubs that require laying, and have also planted specimens of all the varieties of Apples, Pears, and Plums they include in their list of fruits, and are likewise forming a trial ground for the purpose of verifying vegetable seeds and of testing the quality of the novelties which now yearly abound in the various seed lists. There are capital buildings attached to the house, which will form good packing and other offices when the time comes for the whole of the business being removed from Durdham Downs.

—— The Planting Season.—It is gratifying to us to learn from different sources lately that the planting season has begun unusually early, and that the weather so far promises to be of the most favourable character for planting operations. Perhaps one reason —we hope not the only one—of this early movement is that the severity of recent winters has made sad gaps among many choice trees and shrubs, and people are at last roused to a true sense of their position. There were those who hoped against hope, that half dead stumps would come to life again and be as vigorous as ever. The same thing was hoped for after the winters of 1860-61, 1866-67, 1870, and, still later, after the three severe winters that preceded the unusually mild winter of last year. But plants that would have survived one hard winter have been killed outright by the severity of three following each other in rapid succession. We remember distinctly how people hesitated to fill up the gaps in the shrubbery beds and borders after the winters referred to, but after a little shrugging of shoulders, and a little not unnatural grumbling, the blanks were filled up again. A country gentleman would just as soon think of following the foxhounds with a red coat out at elbows as think of leaving his pleasure grounds in a half-naked condition for want of a few scores or hundreds of shrubs. We do not share the views of those who hesitate as to the wisdom of planting so-called tender shrubs, and for this reason, that we may live another half century before we experience three such winters as we have recently passed through. Moreover, there is no branch of gardening upon which a few pounds may be more cheerfully expended than upon shrub planting. The plants furnish, indeed give character to a place, besides supplying as many cut flowers in a year or two as would pay the original cost of the plants.

—— Lupins in October.—Anything out of season, be it common or rare in flowers, is sure to attract attention, and not only this, but the new idea is sure to find imitators. "Lupins in flower in the middle of October—what a strange thing! They usually flower with us in summer." Such was the remark we overheard a day or two ago from some one who evidently loved flowers but who did not know much about them. The plants referred to were planted promiscuously on a shrubbery bank, and after flowering the stems had only been partially cut back, say to within 9 or 12 inches of the ground. The abundant showery and mild weather that we have had lately caused vigorous root action, resulting in young growths starting from the stems that had been cut back, and the plants are now flowering beautifully—of course not regularly, but enough to light up the shrubbery bank and to excite the admiration of those who love flowers. The plants being dwarfed look even better upon the bank than if they had been taller. They are also making second growth direct from the roots, but these are late, and although showing flower they are sure to be cut down by the first severe frost. Apart from the novelty of having Lupins in October, the colour of the flowers, the deep blue spikes, tipped with white at the terminal ends where the florets are not fully developed, have a peculiar effect in the landscape now that the trees, and a great many, too, are fast losing their leaves.

—— A New Endive.—Messrs. J. Carter & Co. have forwarded to us specimens of a new strain of curled Endive which they are introducing this season, and which promises to be of a very useful character, not only for the salad bowl, but also for purposes of garnishing. The heads are handsomely formed, circular, in dense, compact tufts, and the leaves are beautifully cut, rendering the sample a very ornamental one. The centre is fuller than in any existing variety that we know of, and, therefore, less liable to go off with damp in wet weather.

—— Stokesia cyanea.—This beautiful autumn-flowering Composite is now in fine form in a cool house in the nursery of Messrs. J. Cheal & Son, Crawley, Sussex. In appearance it is a kind of Cornflower, and its large blue flowers are very striking at this season of the year, when blue flowers of any kind are a rarity. It is a half-hardy perennial, which, if planted out in spring, and lifted in the autumn, will continue to flower from October to Christmas.

—— We learn that Professor Lawson is about to vacate the Professorship of Botany at Oxford, to assume the post of Superintendent of the Government Cinchona plantations, Madras.

—— The Weather.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending Oct. 23, issued by the Meteorological Office, London:—The weather has been very unsettled and wet in all districts. Lightning was observed in many parts of England on the 22d, and at some of our south-western stations thunderstorms and heavy hail showers were experienced. The temperature has been slightly above or equal to the mean generally, but in "England, S.W.," it has been slightly below. The thermometer was highest either on the 20th or 21st, when readings varying from 57° in "Scotland, W.," to 62° in "England, S.," and "Ireland, S.," were recorded. The minima, except over central Ireland, were registered on the last day of the period, and were as low as 33° in "Scotland, E.," and "Ireland, S.," and from 35° to 39° elsewhere. Rainfall has been about equal to the mean in the east of Scotland; but more in all other districts. In the south of England and Ireland the amount was under the mean by more than an inch, and in the south-west of England by as much as two inches. Bright unshine shows a general increase on that reporteds last week; but in most districts it was again very deficient. The percentages ranged from 15 in "England, N.W." to 32 in "Scotland, E." 33 in "Ireland, N.," and 30 in "Ireland, S." Depressions observed:—At the commencement of the period a depression was travelling slowly over the eastern part of the Channel towards the Netherlands, while the winds were north-easterly or northerly in Ireland, and south-easterly elsewhere. As this disturbance passed away the wind returned to the southward on all our coasts, and a series of depressions (none of which, however, proved very deep or important) advanced in rapid succession on our western and northern coasts, and, moving north-eastwards or eastwards, gave us fresh or strong winds from between south and west. On the 18th the southerly wind increased to the force of a gale in Ireland and Scotland, and on the 22d a fresh westerly gale was experienced in the western part of the Channel.

—— Gardening Appointments.—Mr. Thomas Jeffery, Gardener at Broomhall, Menstrie-by-Stirling, as Gardener to Colonel Hamilton, Fairholm, Larkhall-by-Hamilton, N.B.—Mr. George Oliver, Baberton, Juniper Green, Midlothian, as Gardener to Thomas Johnson, Esq., Sea House, Scremerston, Berwick-upon-Tweed.—Mr. David Haston, Foreman at Kelly House, Wemyss Bay, as Gardener to George W. Richardson, Esq., Ardgryffe, Linwood, Renfrewshire.—Mr. Archibald Argo, Gardener at Torsonce, Stow, Midlothian, as Gardener to James Tait, Esq., Edenside, Kelso, N.B. (the above four through Messrs. Downie & Laird).—Mr. Robert Dunlop, late Foreman to Sir Thomas Gladstone, Fasque, Aberdeenshire, as Gardener to John Addie, Esq., View Park, Lanarkshire.—Mr. David Gibson, late Gardener at North West Castle, Stanraer, as Gardener to A. Kufeke, Esq., Cathkin House, Lanarkshire (the above two through Messrs. J. & R. Thyne).—Mr. George Gibb, from Dalkeith Gardens, as Gardener to Hugh Davidson, Esq., Cantray House, Inverness-shire. [The Editor will be much obliged to nurserymen and gardeners for properly authenticated notices of gardening changes and appointments.]

THE SPUR SYSTEM OF PEACH GROWING.

WHEN, some years ago, the spur system of Peach growing was being freely discussed by eminent practical gardeners, it appeared for a time as if the old method of extension was destined to be buried in oblivion. There were many warm advocates of the system who avowed their faith in the principle of restriction, and averred—as far as evidence could be supported on paper—that certain beneficial results were likely to accrue. The opposing element was never in strong force; at any rate there was but a feeble, if any, resistance offered, and cultivators generally accepted the new dogma, and acted upon it for a time. It is not a difficult matter at any time to introduce a new theory in horticulture, provided it looks at all plausible. Many useful theories that might be turned to good account in practice have been short-lived for want of being carefully qualified, and their provisions fully explained; and this is what has happened in the case of Peach growing upon the spur system.

As a broad matter of fact, but few people ever gave the system a fair trial. Gardeners are perforce a cautious, if not a sceptical race, and while new theories are being analysed, and experiments are being tried, any odds might be laid that the practical man keeps a keen eye to his own position, and weighs well in his mind the consequences which follow close upon the heels of unsuccessful results. To get nearer to the point, it may be asserted that the bulk of people who were taken for a time with the idea never quite gave up the old method. The so-called spur system was in reality a mixture of the spur and extension systems combined; that is to say, a young shoot was encouraged from the base of every shoot of the previous year's growth, and another from the point of the same shoot, so that if the exigency arose the new idea could be "quietly disposed of at any time."

We do not write either in praise or in condemnation of this practice even now, but simply state what to cultivators are well-known facts. The point has, however, a bearing upon our subject as showing that the spur system was never very generally adopted in the case of Peach growing. In the cultural management of late houses the system found most favour. We revert to the principle, or system—whichever term sounds best—at this season because the subject seems an important one, affecting as it does a very large class of cultivators. In many cases the spur system of Peach growing may be highly recommended, and in a still greater number of cases it would be little short of foolishness to attempt it. Those who have wide Peach-houses, and correspondingly wide borders, could hardly expect to be successful in Peach growing by adopting the spur system; but, given a case in which the circumstances are reversed, in which the houses are narrower—say from 9 to 12 feet wide—then, under the altered circumstances, the principle of cultivation should be altered also.

Let us for a moment examine the condition of things as suggested by the narrow houses. Trees are planted in prepared borders—large bodies of rich maiden earth—in which masses of roots are formed during the first growing season, and the young shoots reach the top of the trellis at the end of the first or second year. Gross shoots, we assume, are pinched in time, and the tree is proportionately balanced in all its parts, but the tendency of the sap to flow in a perpendicular direction, and the increasing quantities of roots that are being formed, causes the tree to become refractory in the hands of the cultivator. The first symptoms of irregularity are that the horizontal trained shoots grow weaker and weaker, while those that are trained vertically assume proportions that threaten to disarrange the proper equilibrium of the tree. Whilst in a growing state the Peach may be pinched, or even thinned out severely, but there is a limit to these operations, and that limit is reached when we vainly attempt to curb the growth of a vigorous growing tree by training it on a narrow trellis. In point of fact, the best part of the growth has to be cut away annually for want of space for the tree to extend itself. We pinch or prune at intervals, but Nature will assert herself, and after a time we observe crowds of watery growths that ought to be fertile spurs, and exudations of sap from the stem, and suckers springing up from the bole of the tree.

Now why is this? We know the tendency of certain soils to produce roots, and we know the efficacy of the latter in supplying food. Moisture is absorbed by the roots, which in due time becomes sap, and passes through the main stem to the branches and leaves. If this supply is in greater force than is required by the tree to nourish and sustain it, and there is no outlet for extension of the branches, we find it forcing itself in various ways, as already suggested, and in a manner that is least calculated to lead to fertility in the tree. The obvious way to correct this exuberance of growth would be to curtail the root-run—to plant the trees in narrow, and, if need be, shallow borders from 18 inches to 2 feet in depth.

We have been familiar with a house of Peach trees for several years which were as numerously spurred as any Plum trees we ever saw, and were often taken for Plums after they had received their winter dressing. The trees were planted in shallow borders, enclosed by 4½ inch brick walls, and never failed to produce heavy crops of fruit. Even Noblesse, which is a shy bearer under ordinary circumstances, fruited freely. Those who praise one system of fruit culture and condemn another, should remember that the man who succeeds best in fruit growing, or anything else, is he who observes closely cause and effect, who is wedded to no particular system, and who varies his practice according to circumstances. *W. H.*

POTATO DISEASE.

As the important paper on this subject from the pen of Mr. A. Stephen Wilson is stated to be incomplete, any extended remarks upon it had better perhaps be reserved till the completion of the printed observations. I wish only to say that the small bodies described by Mr. Wilson as sclerotia have been familiar to me for many years, and that they have been observed by other botanists in this country. In a subsequent note to you I shall send you old drawings by different hands, and refer you



FIG. 98.—PROTOMYCES, OR TUBERCINIA, AS ILLUSTRATED BY MR. BERKELEY.

to a published engraving of my own illustrative of these bodies. Every one who makes independent observations knows well that he keeps certain subjects in abeyance for further examination; many such observations never get published at all, owing to the uncertainty which forbids publication. Such has been my uncertain position in regard to these bodies. When Mr. Berkeley referred a certain disease of Potatos to Protomyces, I found these bodies now described by Mr. Wilson as the representatives of his (Mr. Berkeley's) Protomyces when I examined the same specimens. I therefore am inclined to think that Mr. Berkeley illustrates these bodies now termed sclerotia in his original essay on the Potato disease in the *Journal of the Royal Horticultural Society*, vol. i., pl. 4, figs. 30 and 31. Mr Berkeley does not give the dimensions of these organisms in his essay, but the Protomyces afterwards found in the Chiswick Potatos by Mr. Berkeley were measured by me, and the measurements accord with Mr. Wilson's drawings. Mr. Berkeley's original illustration is here reproduced (fig. 98). It shows the Protomyces (termed at that time Tubercinia scabies, Berk.) at A, A, and cells from the surface at B. Fries, in his *Systema Mycologicum*, vol. iii., p. 439, describes three species of Tubercinia in the roots and stems of Monotropa and Orobanche, and the bulbs of Lilies. Mr. Berkeley has elsewhere expressed his opinion that all Protomyces are resting conditions of other fungi. Mr. Wilson states his sclerotia to be the "two-thousandth" of an inch in diameter; but in my notes I find them to be larger. Now, if any one will measure the bodies illustrated to scale in Mr. Wilson's figures he will find that they really measure more than the two-thousandth of an inch in diameter; the letterpress dimensions, therefore, may be considered a misprint or a slip of the pen. A statement in regard to perennial mycelium in the leading article on p. 464 needs some modification. The writer of that article says that De Bary tells us of portions of spawn hybernating in the tuber. Mr. Berkeley adverted to this thirty years before De Bary wrote; for Mr. Berkeley says at p. 26 of his admirable essay:—"It should seem certain, then, that the mycelium or elements of the fungus must have pre-existed in the tuber;" and a few lines further on, "it is possible enough that it" [the mycelium] "may be present in the tubers, which are leafless branches, and if so, it may exercise its influence on the tuber before it bursts forth from the leaf." In the *Outlines of Fungology*, p. 42, Mr. Berkeley also writes, "Spawn" [*i.e.*, mycelium] "may exist for years without producing fruit, and it is probable that this is equally the case whether it runs through soil or decaying substances, or *amongst living tissues, whether without or within their walls.*" Prof. De Bary was no doubt unacquainted with Mr. Berkeley's work, for when in his paper, written for the Royal Agricultural Society, he printed a list of "the existing literature of the subject," no reference was given to any of Mr. Berkeley's writings. *W. G. Smith.*

FLOWERS IN SEASON.

ECCREMOCARPUS SCABER.—This beautiful climbing Bignonia is a native of Peru (some authorities say Chili) and is sufficiently hardy in favoured localities in this country to encourage its more extended cultivation. It is a handsome climber for a large conservatory, but it can be grown to perfection in a warm sheltered place, where it can be trained against a wall or trelliswork. It is perennial, and the large fleshy roots will outstand the winter if the soil is dry and sandy. In cold exposed localities it can be preserved by striking cuttings and wintering them in a cold frame. A readier mode perhaps of propagating the plant would be to sow seeds, which it ripens in abundance. These ought to be sown in heat and planted out after attaining some size. Those obtained from cuttings, however, will flower soonest. There is an old established plant at Kew, growing against a wall with an eastern aspect, on the herbaceous ground, where it has bloomed more or less profusely all the summer, and which was lately still in vigorous growth and well flowered.

OPHIOPOGON SPICATUS is a native of China and Japan. This plant is generally considered insufficiently hardy for open border cultivation, and is therefore oftenest seen in pots. That mode of culture is well worth attention, as it can be transferred to a greenhouse or conservatory, when other flowers are getting scarce in the autumn. But hardy plant lovers may also enjoy it in a sheltered open border or to better purpose on the rockwork. In one of the Liliaceous beds at Kew, a plant is throwing up three or four dozen dense spikes of its violet flowers. It does not, however, fruit in the open border in this country. If it could be induced to do so under greenhouse treatment, as some of the species (notably O. intermedius) do, its value would be greatly enhanced. The fruit is baccate, and very much resembles that of Solomon's Seal. The stem of this plant, however, is leafless, and the leaves of this as well as the other species are linear, leathery, and have a tufted grass-like appearance. It is used as an edging to borders and beds in Florence and other Italian towns.

MERENDERA BULBOCODIOIDES, a native of Portugal, is now in season. The flowers are only 2 inches high, pale purple, with oblong segments, bearing considerable resemblance to a Colchicum, and too nearly related to Bulbocodium vernum to be worth while separating as a different genus. The latter plant flowers in spring, and is the exact counterpart of this Merendera. The leaves in both cases immediately succeed the flowers.

ASTER ALTAICUS, although not one of the best, may be considered a neat Aster, about 18 inches high, with close umbellate panicles of pale blue flowers. The leaves are ovate, acuminate, obsoletely serrated, with winged ciliated petioles. It is now finely in flower on the rockwork at Kew.

BREDIA HIRSUTA.—The genus Bredia, of which only one other species is known, is one of the very few genera of the large tropical order Melastomaceæ which inhabit temperate climates. The present species is probably a native of Japan—according to Franchet and Savatier it is only met with in gardens in that country, where it forms a small shrub. It lends itself readily to cultivation and flowers freely in a small state, some plants in one of the cooler com-

partments of the T range at Kew being now covered with rather large pale rose-coloured blossoms. A figure of this pretty species appeared in last month's *Botanical Magazine*.

Salvia angustifolia was introduced from the mountains of Mexico by Graham, and a figure of it appeared in the *Botanical Register* many years ago. It is there described as a very pretty perennial, growing about 2 feet high, and producing its deep pure blue flowers in July, August, and September. A good plant is now flowering on the rockwork at Kew, but it is more than double the height just mentioned. Probably, to make sure of the species during our cold, wet winters, cuttings should be struck and provided with the shelter of a cold frame during the winter months.

Cornus canadensis.—The dwarf Cornel or Bunchberry of the North United States makes an excellent subject for moist spots in the rock garden, not only on account of its large flower-like bracts, but also of the bright red fruits which adorn the tiny stems in autumn. According to an early volume of the *Botanical Magazine* it was introduced to this country in 1774 by Dr. Fothergill. In the *Hortus Collinsonianus*, the following note appears:—"There is a memorandum which shows that Mr. Collinson, in 1758, had failed in his endeavours to procure this species; and that he afterwards succeeded appears from a rough drawing of it made by himself, with the following note:—"Runs in the ground, grows about 6 or 9 inches high; the fruit is of a bright colour; grows all about Halifax and Newfoundland; called Baked Apples and Pears." By the way this name is not given in Gray's *Manual*, but only the two mentioned at the beginning of this note.

Primula poculiformis.—This pretty Primrose, of recent introduction, comes from Japan. It has the habit of P. cortusoides, a Siberian species. The same type is represented in China by P. Sieboldii, a perfectly distinct species, but often considered as a variety of P. cortusoides. P. mollis, a species from the Bhotan Mountains, also shows its affinity to a considerable degree in the leaves, but the inflorescence is very different. From P. cortusoides, its nearest relation perhaps with which we are acquainted, P. poculiformis is at once distinguished by the obconic, wide-mouthed calyx, and shortly stalked spreading leaves, which are roundly cordate, sharply but sparsely toothed, pale green, and of much greater substance than any of the allied species above mentioned. The flowers are pinkish-white, borne well above the foliage on a many-flowered erect umbel. Under certain conditions perhaps the flowers would be white, or could be made so by sowing seed and always selecting the whitest. If it prove hardy in this country it will undoubtedly be a valuable addition to the hardy flower garden, and ought to become as popular as P. Sieboldii, of which we have now a great many distinct and extremely beautiful varieties. Coming as it does from Japan it is remarkably distinct from P. japonica, and adds one more to the many fine plants from that country. It may now be seen in the Cape-house at Kew.

LIST OF GARDEN ORCHIDS.

(*Continued from p. 532*)

Subtribe vi.—*Bletieæ*.*

Stems one to many-leaved, usually pseudobulbous at the base; pseudobulbs depressed and tuber-like, or elongated and slender. Leaves usually large and folded, with prominent longitudinal nerves. Racemes terminating leafy stems or oftener leafless scapes. Column produced below in a foot or footless. Pollinia (except in Anthogonium) 8, laterally compressed, in two series, connected by a large granular appendage, those of the upper series usually smaller, but all of them adnate upwards to the appendage.

42. Acanthephippium, *Blume*.—Sepals combined in a broad oblique pitcher, including the petals, which are adnate to the base of the column. Column short, produced in a long foot. Flowers rather large, few in the raceme. Terrestrial herbs with oblong pseudobulbs bearing a few large leaves; scapes shorter than the leaves. [About five or six species, inhabiting India and the Malayan Archipelago. Blume originally published the name Acanthophippium, but he afterwards corrected this spelling.

1. A. bicolor, Lindl., *Bot. Reg.*, t. 1730; Maund., *Botanist*, iv., t. 200.—Ceylon. Introduced by Mr. Watson, of the Botanic Garden, Peradeniya, for the Horticultural Society, about 1835. A singular Orchid, with yellow and purple flowers. Hort. Kew.
2. A. javanicum, Bl., *Bijdr. Fl. Nederl. Ind.*, p. 353, t. 47; *Orch. Arch. Ind.*, p. 156, t. 49; *Bot. Reg.*, 1846, t. 47; *Bot. Mag.*, t. 4492; Lem., *Jard. Fleur.*, t. 35 (copied from *Bot. Mag.*).—Java. Cultivated by Loddiges in 1844. In this species the yellow and red flowers are distinctly striped longitudinally.
3. A. parviflorum, Hassk., *Hort. Bogor.*, p. 43; Miquel, *Fl. Nederl. Ind.*, iii., p. 707.—Java. Cultivated at Buitenzorg in 1844.
4. A. striatum, Lindl., *Bot. Reg.* 1838; Misc., n. 68.—Nepal. Cultivated at Kew and by Mr. Bateman. Flowers dull-coloured.
5. A. sylhetense, Lindl., *Gen. and Sp. Orch.*, p. 177; *Journ. Lin. Soc.*, iii., p. 21. *A. ringiflorum*, Griff., *Notul.*, iii., p. 317; *Ic. Pl. Asiat.*, t. 325.—North India, at 2000—3000 feet. Flowers straw-coloured, freckled with red inside. Hort. Kew.

43. Phaius, *Loureiro*.—Sepals free. Labellum gibbous or spurred at the base, and having broad lateral lobes enfolding the column. Tall, terrestrial, epiphytical herbs, with clustered stems, ample foliage, and showy flowers. There are about fifteen species of this genus, the greater part inhabiting tropical Asia, but the genus is represented in tropical Africa, the Mascarene Islands, Australia, the Pacific Islands, China and Japan.

1. P. albus, Lindl., *Gen. and Sp. Orch.*, p. 128; Wall., *Pl. Asiat. Rar.*, t. ii., t. 198; *Bot. Reg.* 1838, t. 33; *Bot. Mag.*, t. 3091; Knowles and West, *Fl. Cab.*, iii., t. 125; Paxt., *Mag. Bot.*, v., t. 125; *Gard. Chron.* 1843, p. 103. *Thunia alba*, Rchb. f., *Bot. Zeit.* 1852, p. 764.—North India. Cultivated by Messrs. Loddiges in 1837. A fine species, having drooping racemes of large white flowers, with the labellum streaked or veined with reddish-purple. Hort. Kew.
2. P. amboinensis, Bl., *Mus. Bot.*, ii., p. 180; Miquel, *Fl. Nederl. Ind.*, iii., p. 672. *Angræcum terrestre*, Rumph., *Herb. Amb.*, vi., p. 113, t. 50, fig. 3.—Amboina. Cultivated at Buitenzorg in 1866.
3. P. Bensonæ. *Thunia Bensonæ*, Hook. f., *Bot. Mag.*, t. 5694; *Gard. Chron.* 1869, p. 738.—Rangoon. Introduced by Colonel Benson, and flowered at Kew and in Messrs. Veitch's nursery in 1868. Like P. alba in habit, but it has very showy purple-red flowers, the labellum of a much deeper hue, and yellow within. Hort. Kew.
4. P. Bernaysii, Rowl., *Gard. Chron.* 1873, p. 361; Benth., *Fl. Austr.*, vi., p. 305. *P. Blumei var. Bernaysii*, *Bot. Mag.*, t. 6032.—Queensland, Australia. Cultivated by Messrs. Veitch in 1873. A beautiful variety, having the flowers white outside and pale yellow inside.
5. P. bicolor, Lindl., *Gen. and Sp. Orch.*, p. 128; *Sertum*, t. 23; *Bot. Reg.* 1839, Misc., n. 91; *Bot. Mag.*, t. 4078; Wight, *Ic. Pl. Ind. Or.*, t. 1659 and 1660.—Ceylon, in the Central Province, at an elevation of 2000—4000 feet. Messrs. Loddiges first flowered it. Flower-scape about 2 feet high; flowers 4 to 5 inches across; sepals red-brown; labellum rose, yellow, and white.
6. P. Blumei, Lindl., *Gen. and Sp. Orch.*, p. 127; Bl., *Orch. Ind. Archip.*, t. 1; De Vriese, *Ill. Orch.*, t. 8 and t. 11, fig. 8; Regel, *Gartenfl.*, t. 464. *Limodorum Incarvillei*, Bl., *Bijdr. Fl. Nederl. Ind.*, p. 374, not of Persoon.—Java. Cultivated. A handsome species near P. grandifolius, but having a deep red labellum.
7. P. callosus, Lindl., *Gard. Chron.* 1848, p. 287, with a figure of a single flower; Rchb. f., *Xenia*, ii., t. 122. *Limodorum callosum*, Bl., *Bijdr. Fl. Nederl. Ind.*, p. 374, fig. 61. *Phaius Rumphii*, Bl., *Mus. Bot.*, *Lugd. Bat.*, ii., p. 179.—Java and Amboina. Cultivated by Veitch of Exeter, in 1848. Comparatively dull coloured.
8. P. crispus, Bl., *Mus. Bot.*, ii., p. 180; Miquel, *Fl. Nederl. Ind.*, iii., p. 671; Bl., *Orch. Ind. Archip.*, t. 4, fig. 2.—Java. Cultivated at Buitenzorg in 1856.
9. P. cupreus, Rchb. f., *Bonplandia*, 1855. p. 226; *Walp. Ann.*, vi., p. 459; Otto and Dietr., *Allg. Gart. Zeit.*, xxv., p. 409, t. 12. *P. Augustinianus*, Kl., in the same journal, xxiv., p. 9.—Java. Introduced by Messrs. Low.
10. P. Dodgsoni, *Fl. Mag.*, n.s., t. 329; *Gard. Chron.*, n.s., x., p. 720.—India. Cultivated by Mr. B. S. Williams in 1871. Probably only a fine variety of P. alba.
11. P. flavus, Lindl., *Gen. and Sp. Orch.*, p. 128. *Limodorum flavum*, Bl., *Bijdr. Fl. Nederl. Ind.*, p. 375.—Java. Introduced into this country in 1837, according to Johnson's *Gardeners' Dictionary*.
12. P. flexuosus, Bl., *Mus. Bot.*, ii., p. 179; Miquel, *Fl. Nederl. Ind.*, iii., p. 671.—Java. Cultivated at Buitenzorg in 1866.
13. P. formosus is a name borne by a plant now growing at Kew.
13*a*. P. giganteus, Hort., is a variety of P. grandifolius, according to Dr. Reichenbach.
14. P. grandifolius, Loureiro; Rchb. f., *Walp. Ann.*, vi., p. 459; *Bot. Reg.* 1839, Misc., n. 40; Benth., *Fl. Austr.*, vi., p. 304; *Fl. des Serres*, vii., t. 738 (var. superbus). *Bletia Tankervilliæ*, R. Br., *Bot Mag.*, t. 1924; Lodd., *Bot. Cab.*, t. 20. *Limodorum Tankervilliæ*, Ait., *Hort. Kew.*,



Fig. 99.—Phaius grandifolius.



Fig. 100.—Phaius irroratus.



Fig. 101.—Phaius tuberculosus.

* From this point the definitions of the tribes and the diagnoses of the genera are translated direct from the printed sheets of the forthcoming part of the *Genera Plantarum*, which the authors have kindly allowed me to use for this purpose. *W. B. H.*

ed. 1, iii., p. 302, t. 12; L'Herit., *Sert. Angl.*, t. 28; Andrews, *Bot. Rep.*, t. 426; Schneev., *Ic.*, t. 5; Redouté, *Liliac.*, t. 43. *Pachyne spectabilis*, Salisb., *Trans. Hort. Soc. Lond.*, i., p. 299. *P. australis*, *P. leucophæus*, and *P. Carroni*, F. Muell.; *Gard. Chron.* 1872, 732, fig. — China to Australia. This grand Orchid was introduced from China in 1778 by Dr. John Fothergill. Flowers white without and chocolate within, with some rose and yellow in the labellum. Hort. Kew. (Fig. 99, p. 565.)

15. P. HUMBLOTII, Rchb. f., *Gard. Chron.*, n.s., xiv., p. 812.—Madagascar. Introduced by Mr. Humblot, and cultivated by Mr. W. Bull in 1880. A handsome species, with large rosy flowers, spotted with white and red.

16. P. INDIGOFERUS, Hassk., *Hort. Bogor.*, p. 42; Miq., *Fl. Nederl. Ind.*, iii., p. 671; Bl., *Orch. Ind. Archip.*, t. 2, fig. 2; Rchb. f., *Xenia*, t. 76.—Java. Cultivated at Buitenzorg in 1844. Small dull flowers.

17. P. INQUILINUS ×, Rchb. f., *Gard. Chron.* 1867, p. 544.—A hybrid of unknown parentage, raised by Mr. Dominy for Messrs. Veitch. Flowers creamy-white, with some yellow on the labellum.

18. P. INTERMEDIUS—India, introduced in 1839—is a name I find in Johnson's *Gardeners' Dictionary*. A variety of P. grandifolius according to Dr. Reichenbach.

19. P. IRRORATUS ×, Rchb. f., *Gard. Chron.* 1867, p. 264; *Fl. Mag.*, t. 426.—A hybrid, it is recorded, between Phaius Tankervilliæ and Calanthe vestita, raised by Mr. Dominy in the nursery of Messrs. Veitch. Flowers creamy-white tinged with rose; labellum, which is circular, flat, like that of the Calanthe, tinged with yellow. (Fig. 100, p. 565.)

20. P. KUHLII, Rchb. f., *Xenia*, ii., p. 81, t. 122. *P. callosus*, Bl. *Orch. Ind. Archip.*, t. 2, fig. 1.—Java. Cultivated at Buitenzorg.

21. P. LURIDUS is a name borne by a plant now growing at Kew.

22. P. MACULATUS, Lindl., *Gen. and Sp. Orch.*, p. 127; *Bot. Mag.*, t. 3960; Bl., *Orch. Ind. Archip.*, t. 5; Lodd., *Bot. Cab.*, t. 1803. *Bletia Woodfordii*, Hook., *Bot. Mag.*, t. 2719, where it is erroneously stated to be a native of Trinidad.—India. Cultivated at Kew in 1827. A very handsome species, with spotted leaves and wholly yellow flowers, except the reddish-brown margin of the labellum. Hort. Kew.

23. P. MARSHALLIÆ, Veitch & Sons' catalogue for 1880. Hort. Kew.

P. NIVEUS, Hort. = P. albus.

24. P. PAUCIFLORUS, Bl., *Mus. Bot.*, p. 375; *Orch. Ind. Archip.*, t. 4, fig. 1. *Limatodis pauciflora*, Bl., *Bijdr. Fl. Nederl.*, p. 375. t. 62.—Java. Cultivated at Buitenzorg.

25. P. TETRAGONUS, Rchb. f., *Bonplandia*, 1855, p. 221; *Walp. Ann.*, vi., p. 458. *Pesomeria tetragona*, Lindl., *Bot. Reg.* 1838, Misc., n. 6; *Bot. Mag.*, t. 4442. *Epidendrum tetragonum*, Thouars, *Orchid. Afr.*, t. 33 and 34.—Bourbon. Introduced and cultivated by Loddiges. A very pretty species, having orange and red flowers, remarkable on account of the sepals and petals falling early and leaving the labellum attached.

26. P. TUBERCULOSUS, Bl., *Mus. Bot.*, ii., p. 181; *Orch. Ind. Archip.*, p. 13, t. ii. B.; *Gard. Chron.*, n.s., xv., p. 341, fig. 67 and p. 428. *Limodorum tuberculosum*, Thouars, *Orch. Isles d'Afr.*, t. 31. *Bletia tuberculosa*, Spreng., *Syst. Pl.*, iii., p. 744; Lindl., *Gen. and Sp. Orch.*, p. 123.—Madagascar. Introduced by Mr. Humblot, and flowered by Sir Trevor Lawrence in 1881. Described as a handsome species, having white flowers with some yellow and brown on the labellum. (Fig. 101, p. 565.)

27. P. WALLICHII, Lindl., *Wall. Pl. Asiat. Rar.*, t. 158; Paxt., *Mag. Bot.*, vi., p. 193, with a coloured figure of a portion of the flower-spike, and woodcut of whole plant; *Bot. Reg.* 1839, Misc., n. 58.—North India, under densely shady trees on rocks partly covered with vegetable soil. Introduced by Mr. Gibson for the Duke of Devonshire in 1837. A vigorous species, 4 or 5 feet high, differing from P. grandifolius in its pointed labellum. Hort. Kew.

(*To be continued.*)

FRUIT NOTES.

NOTES ON APPLES.—I am a little interested in the long list of Apples given by Mr. Clayton and grown by Mr. Macintosh, at p. 491, but I cannot think either gentleman can be very serious in their recommendations. The description given of their usefulness and their growth does not tally with my experience; some of the sorts set down as of no account are really good here, a few I will name; many of the sorts named in the list should never have been planted north of the Trent, and would not have caused disappointment. Clifton, near York, must have a very bad subsoil, or we should not have so many vigorous growing sorts described as cankered; unsuitable stocks would no doubt cause canker, but the Crab stock should not do so. Alexander is described as badly cankered, I take this to be the Emperor Alexander—here it is a very vigorous grower, good bearer, fruit large and showy, handsome for a large dish on the dessert-table. Bedfordshire Foundling here is a strong grower, a good bearer, and keeps until spring plump and good; there are two local Apples in Yorkshire which bear the name of Cockpit, both good bearers and good users, the same might be applied to the two sorts of Green Balsams, excepting that the latter is a late keeper and requires plenty of sugar to make it palatable. Margil is named as an uncertain cropper, this Apple here and wherever I have seen it is a sure cropper whenever the season is at all favourable to the Apple crop, so much so that in many places it is known by the name of Neverfail: this is one of the good dessert Apples that might be planted north of the Trent with impunity. Mère de Ménage is marked as a weak grower and not worth growing: the tree here is a strong grower, fruit large and handsome, with plenty of colour, keeps well until April, and anything but a bad bearer. Norfolk Beefing is the next castaway; it is named as a moderate grower and an uncertain cropper. I feel indignant at this description, for here it is a vigorous grower and a great cropper, the branches hanging like ropes of Onions. It is not easy to procure the true Norfolk Beefing. I have had it from four different places under that name, but never got it true until I got it from Messrs. James Dickson & Sons, of Chester. I ordered a dozen trees, and now, this year, I am pretty much like Pat was with his Quinces in the Apple-pie. I am nearly all Norfolk Beefings; however, every garden ought to contain it. This year, when the Apple crop is almost a failure, the Beefings are loaded with fruit; they have been used here for baking and drying for several years, and are liked much better home-prepared than those bought at the shops. When I came here I found a large showy Apple growing in the gardens, and known as the King Apple. It never fails to bear, and is one of the best cooking sorts that I know in use for October and November. I sent the Apples to the late Dr. Lindley and the late Mr. Robert Thompson, and neither would undertake to say what it was. The late Mr. May, of the Hope Nurseries, Bedale, always maintained that it was raised by Mr. Abbot, of Knaresborough, and was locally known as Abbot's King. No doubt our friend Mr. Saul, who lives in that neighbourhood, can enlighten us a little on this subject. It is a really good Apple. *William Culverwell.*

—— The only Apples we have had in what we may term abundance are two varieties — Lord Derby and Mère de Ménage. These are from young trees planted in a small orchard established four years ago. Owing to the natural soil being of a flinty, porous nature, my predecessor, Mr. Good, took great care in putting in a foundation of clay, and in mixing it at the same time with the natural soil, and the result is a sturdy, fruitful growth, which in time must prove fruitful and remunerative. In many places growers have to contend with too much clay, but here we are glad to add it to our fruit tree roots, as also to soils on which we rely so much for first-class late vegetables. I question very much if sufficient attention is paid to this matter in regard to soils suitable for various crops. Any inexperienced person may see at a glance the great difference between the trees that have been planted in prepared, *i.e.*, mixed soils, and those of Nature's making. Though the two kinds above-named are the only ones fruiting freely this year, we are in hopes that the other kinds will in other seasons. At the same time I cannot help thinking that, had the orchard been planted with these two sorts only, the produce would have about paid for the orchard's outlay in formation. *H. K., Greenlands.*

A CORELESS APPLE.—We send you a fruit of a new American variety of Apple which we have fruited for the first time this season. We imported it some years ago under the name of seedless, or Menocher's No Core. We think it an interesting variety. The fruit is of good quality. *P. & E. Transon, Orleans.*

[The Apple in question is of middle size, globose, flattened at both ends, the stalk short and slender, and set in a deep regular basin; the eye is broad, open, with small recurved segments; the skin is green, with well marked russet round the base, and smaller specks diffused throughout the whole surface; flesh greenish-white, with only a trace of core, and no seeds; flesh hard, firm, brisk, sweet, and agreeable in flavour. It would cook well, and would also, we should think, be a good keeper. ED.]

PITMASTON DUCHESS PEAR.—I send you a specimen of our Pear growth of the year. It is the Duchesse d'Angoulême, Pitmaston variety. I consider it a grand market Pear, being a good grower and free bearer, but not of first quality as regards flavour. *W. Brown, Elmdon Hall, near Birmingham.*

[A very fine specimen, weighing 19½ oz. Mr. Brown informs us that he has since gathered a specimen weighing 22 oz. ED.]

DR. HOGG PEACH.—Will some of your readers who have tried this variety speak to its merits for outdoor cultivation as regards quality and time of ripening? I am thinking of planting it to follow Hale's Early, which ripened with me on July 30, but can obtain no information respecting it in this neighbourhood, where it appears to be little known. *A. S., Bristol.*

MARIE LOUISE D'UCCLE PEAR.—This valuable Pear should find a place in every collection, possessing, as it does, the merit of being a prolific bearer, of forming a handsome pyramid, and in point of flavour it is equal to its progenitor, the well-known Marie Louise. I have recently gathered from two young pyramids excellent crops of well-formed fruit, and this from a part of the garden by no means favourable for the sun's rays. With a climate so uncertain for fruit culture as ours has proved of late years, it is well to note and (to prevent continual disappointment) to grow those varieties only which possess the requisite flavour, and from which a crop may be expected. *J. J. B.*

THE INGATHERING AND STORING OF FRUIT.—This to many appears a very simple matter, and so it is as far as regards the plucking from trees, but that is not all, as it requires much discrimination and knowledge of sorts to know when to gather, as they vary days and weeks in their ripening; and not only this, but the handling has much to do with their keeping, for if the skins are the least bruised or injured decay sets in and spreads at a rate that is truly astonishing. To prevent this bruising and inevitable rot after, baskets should be lined or padded with soft hay, and the Apples or Pears taken off and laid in one by one as tenderly and carefully as if they were eggs, instead of being tossed or dropped on each other; and the same again at the fruit-room, where they should be laid singly on shelves, that they may be easily looked over and have their sweat out without touching or interfering the one with the other. The sweating they undergo gives them a sort of greasy coating, which effectually stops the pores of the skins and shuts out the air that would otherwise cause them to rot. Although this is so, air is necessary to prevent fungus-mould, which in close, damp, ill-ventilated fruit-rooms soon forms on Apples or Pears, and runs over them with the greatest rapidity. One of the causes of this fungus is the storing of the fruit on straw, which not only helps to engender mould, but often impregnates the fruit with an unpleasant flavour. Boards never do this, if they are sweet and clean and free from paint, as shelves for storing Apples and Pears should be, and if the fruit is laid on these there is nothing to contaminate it or give off any odour it can take in. The best kind of fruit-rooms are those having a northern aspect, and thatched or so roofed as to keep the internal temperature low and regular, as the less it fluctuates the longer and better will the fruit keep. As regards the gathering the latest sorts of both Apples and Pears should be the last picked, and if frosts do not occur it is best to let them hang on the trees as long as they will. Gathered before their time they are sure to shrivel, and especially is this the case with such Pears as Glou Morceau, Easter Beurré, Josephine de Malines, and others of that class that require a good deal of finishing. When Pears and Apples are fit for picking, they become detached at the joint in the stalk by just turning them up, and leave the tree readily, besides which they begin to fall when the pips are quite brown. *J. S.*

THE AMARYLLIS.

THOSE who admire and are interested in plants when in flower only, would not care much to visit a collection of the above in October, when the bulbs are approaching the resting period or have arrived at that stage; but it is a very superficial interest indeed that cares only for a plant during two or three weeks of its floral existence, and neglects it during the rest of the year. Such persons can have no idea of the pleasure to be derived in watching over and attending to the wants of such gorgeous flowers as the Amaryllis during the whole period of its growth and its season of rest. Next to the pleasure of attending to one's

own plants, must be placed that of visiting the collection of one like-minded with yourself; and I must confess to spending a very pleasant hour with Mr. Heale in the nurseries of Messrs. Veitch, of Chelsea, some little time ago, examining the famous collection there, and chatting over the merits of the best varieties, comparing notes about their cultural requirements, and consulting together as to the best treatment for the plants the following season. A period of rest is absolutely necessary for the well-being of the plants; they enjoy their rest, but the mind of the cultivator of a large collection is never quite at ease; he is anxious lest this, that, or the other choice variety may start into growth before its time, or that some other variety may not be sufficiently ripened, and that it may be doubtful whether it will flower next season.

One may very safely say that Messrs. Veitch's collection of Amaryllis is quite unique and unsurpassed in Europe, and some idea of its value may be gleaned from the fact that the firm have received forty First-class Certificates for new varieties since the year 1876. The very numerous and distinct varieties raised here from seed during the last few years may be distinctly traced to the following types, viz., Hippeastrum pardinum, Amaryllis Ackermanni, A. Leopoldi, A. aulica, and A. Graviana. It was Mr. John Seden who first raised hybrid Amaryllis in this nursery by crossing A. Ackermanni pulcherrima with the pollen of Hippeastrum pardinum, the result being A. Chelsoni, A. Brilliant, and A. maculata; the first-named variety is the best of the three, and is not yet plentiful owing to its rather slow habit of growth. Since that period the raising of seedling Amaryllis in this nursery has become quite a speciality; two or three thousand are raised annually; and it is noteworthy that the largest proportion of those that have received certificates have been crossed and intercrossed with A. Leopoldi. The following were raised by Mr. Heale, and obtained First-class Certificates either from the Royal Horticultural Society or Royal Botanic, while many others of great merit have been named, but did not have the chance to be exhibited:—Media is a cross between Leopoldi and Ackermanni pulcherrima, Virgil between Agatha and Electra, King Arthur between Thalia and Leopoldi, Princess Augusta Victoria between Leopoldi and a Continental variety named Adriana, Emilia between Model (raised by the Rev. T. Staniforth) and Leopoldi, Iris between Kara and Junius, Prince George between Thalia and Rev. T. Staniforth, Miss Alice Gair between Kara and Junius, John Heale between Thalia and Leopoldi, Royal Standard between Circe and Leopoldi, Henry Little between Thalia and Rev. T. Staniforth, Cecilia between Agatha and Prince of Wales, Madame Albani between Beauty of Cornwall and Agatha, Autumn Beauty between an unnamed seedling of the Leopoldi type and reticulata, Charles Dickens (a superb variety) between Kara and Junius, Duke of Connaught between Circe and Graviana. There are some splendid varieties of Continental origin, such as Empress of India, The Giant, &c.

The cultural notes may be summed up in a few words. From now until the end of the year they may be kept dry, and in a cool house, but the temperature should not fall to anything like the freezing points—say 40° as a minimum. From the middle to the end of January is the best time to repot them, taking care not to overdo it. The very large bulbs should be potted in 8-inch pots, but this will be for a few of exceptional size; the largest proportion of them may be potted in 6-inch pots, while offsets may be potted two or three in a pot, or singly, as may be thought best. The pots may be at once plunged in a gentle bottom-heat, and in a temperature of from 50° to 55°, but they must not receive too much water until fresh roots are formed. The treatment they require during the flowering and growing period is that of ordinary stove plants; and it is best not to maintain a very high temperature—at any rate, not at night; it does no harm to allow the temperature to run up by sun-heat in the day. A good potting soil is two parts good turfy yellow loam, one part peat, with a little sand, leaf-mould, and rotten manure. *J. Douglas.*

Peat Litter.—Mr. Sowerby, writing to the *Times* upon the subject of peat litter, remarks that its use in stables is much on the increase. Several of the tram companies, and the Zoological Gardens, Regent's Park, employ it to a large extent, and speak very highly of its efficiency and small cost. After it has served the purpose of "litter," it is found in the Botanic Gardens very valuable as a rich and handy compost and manure, being easy of carriage and manipulation.

Home Correspondence.

Single Dahlias.—These should, in my opinion, be neat plants, 2 feet or little over in height, bushy and free-blooming, the flowers small, neat, and abundant, about the average size of those sent herewith. Colours distinct and varied. Some of those sent are cut merely to show colour, as now the flowers are getting run out, and I cannot find a perfect one of all. You will see I am trying to develope the yellow basal ring, which sets them off very much. As a matter of taste I do not like big floppy flowers. I have two varieties of gracilis this season scarcely over a foot high, which have been flowering freely all the summer—one red, the other yellow. *T. Moore.* [The opinion of our correspondent has judicial weight, which every one conversant with the subject will duly recognise. The remarks which follow are intended simply to raise discussion, for it is evident that these plants are assuming such a position that some general principles—modifiable according to circumstances—should be laid down for the guidance of judges. The flowers sent are of small size, perhaps too small, and the size of the disc in proportion to the ray perhaps a little too small. The ray-florets show a happy medium between "windmills" and that excessive geometrical formality so displeasing to flower-lovers and artists. In some of the specimens sent the colours are pure, in others too much run and washy. We quite agree that the plants should be dwarf, of good habit, the flowers not too far removed from the leaves, and freely produced. It is hard to see what the yellow basal ring will come to—the prophetic eye of the experienced florist may be able to forecast great beauty in this, but as a matter of personal opinion we do not think this has yet been reached. Of course much depends on the purpose for which the flowers are required, but in any case we welcome any relief from the hideous form of the show Dahlia. Let us have the variety and intensity of colour, but let more graceful forms prevail. The single Dahlias furnish this at present. We only trust the too rigid application of florists' rules will not be suffered to spoil the single Dahlia, as at the risk of being considered heretical we aver our opinion that they have spoiled some flowers. But in these matters, *chacun à son gout*, only let us strive to prevent the rise and progress of *mauvais gout*. Ed.]

The Stinging Tree.—Mention having been made on p. 465 of this volume of the effects which ensue after being stung by this tree, it may not be out of place to record my own experience of the results of a sting from it in England—that is, if Mr. F. Gunning is correct in assuming the Stinging Tree to be Laportea gigas (see p. 502), and I have little doubt that he is. About five years ago I attempted to pick a fruit for microscopical examination from a small plant of Laportea gigas that stood near the middle of the side stage in the Palm-house at Kew. I was quite aware that a sting from this plant would be very painful, and so was particularly careful, but for all my care I got stung on the middle joint of the second finger of the right hand, but only by a single stinging hair! For about half a minute I was scarcely conscious of being stung at all, but by the time I had walked to the end of the Palm-house the place stung began to itch and burn, and this burning sensation increased in intensity for some time; in about two minutes I felt pains at the joints of the finger below the sting, and shortly after at the wrist, and in about five minutes the pain extended all up my arm, and then gradually spread all down the right side of my body to the toes, and up the right side of the head, the pain becoming more and more severe for about half-an-hour, being exceedingly acute under the armpit and at the elbow. The pain in the head was not so severe as in other parts, but gave me the dreadful sensation of losing the senses, or rather of becoming insane—a sensation I never wish to experience again. After the pain had somewhat abated, a numbness or slight form of paralysis affected the whole of the right side of the body for a short time, so that I could scarcely walk, and could not lift anything with my right hand, nor even hold a pencil with it. After about two hours the pain and numbness gradually left my body and head, and afterwards my arm, except at the elbow and armpit, where I felt pain for two or three days afterwards. The place where the sting entered remained constantly painful for nearly a month after being stung, and for eighteen months after a slight pain was felt at the place stung in damp weather, or after washing the hands. What seemed to me the most remarkable result from the sting, and which I particularly noticed at the time, was that the venom only took effect on the right half of my body, even to the right side of the brain, which is curious, as I believe it is generally received that the right side of the brain governs the left half of the body, and conversely the left side of the brain; the left side was utterly unaffected so far as I could tell. If the poison contained in one stinging hair could cause so much pain, the effects from several stings together must be dreadful, though probably different individuals would be differently affected. The ordinary stinging Nettle (Urtica dioica) has little effect upon me, since a dozen or more stings from it only produce an itching about half-an-hour, and then all is well again. I mention this to show how much more virulent is the poison of Laportea gigas, and when the minute quantity of poison that enters the wound is taken into account the result is surprising. I afterwards examined some of the stings of L. gigas, and so far as I was able to estimate, each stinging hair contained about as much poison as would form a drop sufficient to cover a dot over one of the letters *i* of the type in which this is printed, and in all probability the whole of that would not be injected into the wound. *N. E. Brown.*

Globe Artichokes.—At p. 527 appears a note on Globe Artichokes in which "X." advises sowing in March and transplanting. An accident taught me a better way. I sow in autumn, and I do not transplant. The seeds have never been counted, therefore I cannot aver that the winter kills none; but my belief is that if sown about 2 inches deep not a seed will perish even if the thermometer drops to zero. Autumn sown seeds produce a better plant than spring sown seeds, and the plants do not appear too early; then you have but to thin in a reasonable manner and you secure a fine growth and plenty of chokes in the later days of summer. We do not want them while the vegetable tide is high; but those who want them as early as possible must trust to selected plants of the previous year. It must have been observed by many that where Artichoke seeds have been sown, a few young plants will appear the next year from seeds that were sown too deep to germinate the first year. *Shirley Hibberd.*

Mushrooms.—I send you a sample of Mushrooms gathered from a bed, to one portion of which I applied a little of Standen's Manure. They are from part of a bed made up in August last in the ordinary way under the stage of an early vinery. The whole of the bed is in full bearing, and quite a picture, but the part to which I applied the "Standen" is producing the finest and most fleshy Mushrooms. *D. C.* [This statement should be considered in reference to the analysis of Standen's Manure published at p. 206, vol. xv., and to the observations of Dr. Gilbert, at Rothamsted, from which it appears that, although fungi contain so much nitrogen, they are by no means specially benefited by artificial nitrogenous manures. Ed.]

The Tuberous Begonia as a Bedding Plant.—During last July I saw tuberous Begonias bedded out by thousands in some of the Continental nurseries celebrated for their growth. In England their coming to make the homely Pelargonium hide its diminished head has ofttime been heralded with the blare of trumpets, ofttime written of as a success, and sometimes remarked upon in a lukewarm manner. In all things there will be some failures, and I thoroughly endorse the remarks thereon made by your correspondent, Mr. Culverwell, of Thorpe Perrow, on p. 502. At no place either in England or abroad have I seen Begonias so well grown outdoors as at Campsea Ashe Gardens, Wickham Market, Suffolk, the residence of Mrs. J. G. Sheppard, where Mr. Robert Keen presides over matters horticultural. Mr. Keen made himself a reputation years ago as the raiser of the Tree Carnation Mrs. Jolliffe, the genuine qualities of which are testified to by the fact that it has never found a rival in colour and general usefulness as a market variety. It is, however, as a grower of the tuberous Begonia that Mr. Keen has fairly eclipsed himself. At Campsea Ashe there will be found an enormous quantity bedded-out in their separate colours. On the Continent one can see scarlets of all shades, almost impossible to be improved upon, the section called crassifolia being especially fine, but here are shades of scarlet, carmine, rose, magenta, yellow, and white, all equally fine in size of flower, substance of petal, and robust habit of growth. If Mr. Keen has been successful in any one colour more than another, it is with whites. About two years since he raised Mrs. Shepherd, which received a first-class Certificate, and was sent out by Messrs. James Veitch & Sons. Since then he has had many varieties with white flowers, far in advance of this both in size of flower, substance of petal, and habit. When I had the pleasure of looking at the beds early in September, they were a splendid sight. Mr. Keen writes me on October 19, that the Begonias were in better condition than at any previous time this year, whereas the Pelargoniums were completely spoilt by the heavy and continuous rains. Under Mr. Keen's skilful cultivation the Begonias make a beautiful show the same season from seed sown in January, but the plants do

not always show their true value, and the best results are usually obtained from second year tubers. Mr. Keen has to deal with a rather stiff, retentive soil, but the only means he employs for improving the natural condition of the ground, are deep digging and the addition of half rotten leaf-mould and stable manure. Under glass Mr. Keen has also a magnificent display of these flowers, as it is necessary, not only for decorative purposes, but also for the convenience of hybridising, so as to ensure any definite results he may aim at. Mr. Keen is uniformly courteous, and I feel sure lovers of Begonias would receive a hearty permission to look round. *W. M. Crowe, Upton, E.* [With this note came a box of flowers, which had been sent to our correspondent from Campsea Ashe, and which, for excellence of form, diversity of colour, and purity of tint, it would be difficult to conceive anything more beautiful at this time of year. Ed.]

Eupatorium riparium.— This, although an old inhabitant of our greenhouses, is but seldom met with in a really creditable and flourishing condition. And yet there are but few plants that would, with the minimum of attention required in their proper cultivation, yield such an abundant supply of useful white flowers from the present time until far into the spring months, as the subject of this note — not forgetting also its far more useful, handsome, and sweet scented congener, odoratum, or as some name it, Weinmannianum. (Whichever of the two names is the correct one?) I attribute the chief cause of failure in their successful cultivation to attempting to grow them in pots only, instead of planting out-of-doors in a rich warm border. If cuttings are propagated in March, and as soon as rooted potted, and placed in a cool frame to harden off until the beginning of May, then planted out in a rich sunny border, receiving occasional doses of liquid manure, and frequent pinching of the shoots as they advance in growth—these instructions being carried out until the end of September—the plants will be ready for carefully lifting and placing in pots. In order to avoid excessive drooping of the foliage after lifting and potting, it is advisable to take a spade and cut around the plants at a distance of 6 or 12 inches from the stem, according to the size of the plant, at least three weeks before it is intended to lift them. After potting, place them in a cool, close frame, and shade from bright sunshine until the plants have become established, when admit plenty of air, and as soon as signs of flowering are exhibited remove into either greenhouse or conservatory as may be desired. During this flowering period, liberal applications of stimulants are highly essential to the production of a good and liberal supply of bloom. The foregoing remarks apply to the treatment of young plants. Only old plants —that is, those which have ceased flowering—should afterwards be pruned-in closely, and placed in a gentle heat for a few weeks until they commence to grow, when harden off, and treat as directed in my remarks on young plants. Some practitioners re-pot in the usual way, and plunge in ashes or borders during the summer months: this we have tried, and find it to be an excellent and commendable practice. *T. W. S.*

Hardiness of Lapageria rosea. — In the gardens here we have a very fair specimen of this plant, which was planted about 1876 in a small prepared border 1 foot wide and 5 feet long, in a little recess, and trained to horizontal wires fixed to the wall having a S.S.E. aspect. The plant grew away well, and in the autumn of 1878 bore fourteen fully developed flowers of ordinary size and substance. The severe winter of 1878-79 destroyed all growths previously made, but in the following summer the plants made other growth from the roots, but only to meet the same fate as in the previous winter. However, during the summer of 1880 it came up strong again from the bottom, and on these growths are now five fully expanded flowers, with other buds to follow. I may add that the only protection the plant had during those severe winters of 1878-79-80 was a little bracken on its roots and two ordinary garden mats hung in front. This proves, I think, that the plant in question is within an ace of being quite hardy. *Thos. Shingles, Tortworth Court.*

Cauliflowers.—The season has been exceptionally favourable for these, and they have consequently been in good supply the whole summer—the wet, cool weather having just suited them; but, as usual, by far the best has been Veitch's Autumn Giant, which has been grand, as the heads have not only been large, but compact and solid, and as white as the cleanest of snow. This variety has also the merit of being very mild and delicately flavoured, in which respects it is quite equal to Walcheren or any of the others, and gives much more weight from the ground. To show the estimation in which it is held I may mention that it is the only kind, with one exception, that I have seen this season on the exhibition table where many of the heads, with only a small portion of leaves and stalk, turned the scale at from 7 to 10 lb. each. To have them fine like this it is necessary to sow early, so as to give them a long season's growth, and to plant in deeply cultivated, heavily manured soil, and during a dry, hot time, to give them an occasional soaking with sewage or water, which prevents them from taking the "blues." This they are sure to get if they receive a stint, and it is a malady they do not throw off readily; besides which, it causes them to "bolt" or turn-in prematurely. We generally sow our first on gentle hot-beds or in boxes in March, and prick the plants out under glass in frames, and to succeed these another sowing is made on a warm open border in April, the plants from which give us our latest supply. To succeed these we depend on Veitch's Autumn Broccoli, which may be described as a later Cauliflower, as it has all the good qualities of the Giant, and carries on the supply up to near Christmas. To protect these and the last of the Cauliflowers we lay them in by the heels tolerably close together in any cold frame or pit out of use, or in the open, in a convenient spot for covering with clean straw, which can be easily put on and taken off as occasion requires. In this way they keep better than in sheds, where they get too dry and shrivel, and often become yellow and strong through being away from the air. *J. Sheppard.*

Berteroa incana.—I found this plant growing at Saffron Walden, Essex, last September. I am not aware it has ever been found growing in any other part of the kingdom. *J. Clarke, F.L.S., Fairycroft, Saffron Walden.* [We have seen this plant on rubbish-heaps and on newly metalled roads in the neighbourhood of Ealing for several years past, and gathered specimens only a few days since Ed.]

Croton Prince of Wales.—In the collection of plants here belonging to J. Lawless, Esq., we have a fine specimen of Croton Prince of Wales, which is carrying a seed stem 13 inches long, with four young plants growing on the stem. These young plants have four and five leaves each, with leaves measuring from 8 to 9 inches long. Perhaps some of your readers would inform me whether this is unusual or not. The old plant has leaves measuring 23 inches long, and 2½ inches wide at the base. *G. H. Cole, Gr., The Cottage, Topsham Road, Exeter.*

Eucharis amazonica at Fern Dene, Gateshead.—At Fern Dene, Gateshead, the residence of R. S. Newall, Esq., Mr. Milner, the gardener, grows Eucharis to perfection. On one plant in a 16-inch pot there are now thirty-nine spikes of flowers, and another bears thirty-four; while two smaller plants have twenty-seven and twenty-one spikes respectively —a total of 121 spikes on four plants. Several smaller plants promise well to keep the place gay for some weeks to come. *W. Whiting, Shot Tower, Newcastle-on-Tyne.*

Vallota purpurea.—When one sees a plant in a 10½-inch pot carrying thirty-one splendid spikes of flowers it makes one wonder why this useful autumn-flowering plant is not more cultivated than it is. Such a plant as I refer to has been under my charge for over four years, and has been a sight worth looking at every season. It has never been disturbed since I have had it, and for how long before that I cannot say. I make it a rule, as soon as it has finished blooming, to put it into an intermediate-house for a month or two just to start it into growth again; after that it is put into the greenhouse along with my Heaths in a light position. I have always fed the plant well during the summer months. There are twelve large bulbs in the pot carrying two spikes each, some of the spikes at the base measuring 2 and 3 inches in circumference, and each spike has carried from six to seven blooms each. I have also smaller plants in 7-inch pots that were repotted last autumn after they had finished blooming, and which are carrying six and seven spikes each, with six and seven blooms on a spike. I always pot them in equal parts of rough peat, loam, and well decayed leaf-mould, with plenty of sand, and I never allow the plants to get dry. Many gardeners who have seen this plant say they never saw such a sight before. *G. H. Cole, Gr. to J. Lawless, Esq., The Cottage, Topsham Road, Exeter.*

The Potato Disease. — The somewhat novel facts made known by Mr. A. S. Wilson with respect to the Potato disease are such that only scientists may venture to dispute the correctness of. Accepting them as exact I think it gives some clue to that difficult point,' which has always bothered those who have closely observed the action of the disease in the Potato plant to understand. How often has it not been mentioned that the fungus manifests activity almost invariably first in kinds of Potatos that are approaching maturity, and this it has puzzled us exceedingly to explain. We have naturally thought that, with a sporadic attack simultaneously all over a breadth of early and late kinds, the tenderer leafage should first show evidences of the disease, but almost always the more mature kinds, those having the firmer leafage, have suffered first. We must now conclude, as Mr. Wilson has shown us the fungus really generates itself [Frequently, whether universally has yet to be proven. Ed.] in the leafage, that it as well as the plant requires a certain time equally to mature ere the one ripens and the other can exhibit external development. In his reference to the resisting powers of the Champion Potato—powers, by-the-bye, always more strongly seen in Magnum Bonum—Mr. Wilson gives support to the opinion I long since put forth, that the disease-resisting power of certain kinds of Potatos was mainly due to the very hard woody nature of the stems, the which checked the fungus in its operations. None the less we must not overlook the fact that whilst for several years past the disease has eventually totally destroyed the leaves and stems on many hundred acres of Magnum Bonum, yet the tubers have apparently remained sound, so that it is evident some other causes as well as the one thus suggested have been in operation to save the tubers. Mr. Hibberd not long since made the suggestion that all kinds having erect growing tops were less liable to the disease than were those which have spreading sprawling tops. That is no doubt correct, but it does not clear up the case except on the before-mentioned hypothesis, that the stems as well as being erect were hard and woody. This hypothesis is again based upon the curiously received notion that the fungus, let it attack the plant at the first how it may, travels down the internal structure of the stems into the tubers and causes decay and rot. It is therefore very remarkable that whilst Mr. Wilson should be putting forth his new discoveries as to the life-history of the Potato fungus, Mr. Jensen should be putting in a claim as to an important discovery that seems to run quite counter to Mr. Wilson's views. Mr. Jensen sets no store by the internal operating theory but holds that the real work of the fungus in producing disease in the tubers is the product of external action. There need not, however, be any considerable diversity between views that may seem so opposite. Mr. Jensen has assumed that the fungoid spores were borne on the air, deposited on the leaves of the plants and on the soil, and thence washed by rains into the tubers if not protected by a thick covering of soil. But if, as Mr. Wilson, as I understand him—for fungoid jargon is somewhat barbaric—shows that instead of the spores falling upon the surface of the leaves from the air they are really begat in the leaf itself and presently burst through the leaf cuticle into its external surface, then exactly the same result occurs as if the other thing happened, for the spores are there to be washed into the soil. It, therefore, does not conflict with or detract from the value of the system of protective earthing which Mr. Jensen puts forth. No one has ventured to dispute the theory as to the operation of the Peronospora spores on the young tender-skinned tubers, and it would be difficult to disprove; whilst the past season has furnished myriads of examples where the fungus had entered the skin of the tubers, making a pock-like dark blotch, and that was all. Evidences of this sort have been far more abundant than have those favouring the entry of the fungus into the tuber through the stem. The very interesting mention of the quick operation of the fungus upon cut or bruised tubers has, too, had myriads of examples. The common idea in connection with the dry rot or decay that would follow upon a cut or bruise made with the fork in lifting was that the blow had destroyed a portion of the cellular tissue, hence the decay. The theory propounded by Mr. Jensen is far more probable, and its truth can hardly be doubted. But when we again turn to the so-called disease-resisting kinds, we find that the tubers of these as a rule are not more deeply buried than are those of kinds that do readily take the disease, and therefore we can but assume either, as previously propounded, that the stiff, erect growers—probably because the foliage protects the soil beneath from rain—are thus disease-resisting, or else their tubers have stouter skins, which renders them the more impregnable. I do not understand Mr. Wilson to suggest how the fungus spores first get into the foliage, whether they hybernate in the soil during the winter and are taken up by the plant in the spring, or whether they are in the seed tubers and developed from them. No doubt much is to be learnt yet respecting this singular and destructive disease. *A. D.* [It will probably be found, judging by the analogy of other fungi, that all these observers are right from their own point of view—the discrepancies being accounted for by the varying habit of the fungus. Ed.]

A Good Late Melon.—For a late Melon I have hitherto found none to come up to Hero of Lockinge, which is at once prolific, good-looking, and fine-flavoured—three qualities at this season of the year not to be thought lightly of. It has also another good quality—it keeps well, after being cut, if laid in a fruit-room that has a healthy, dry air in it. Its size also is moderate, and its bright, golden, netted appearance on the table is very pleasing, either in singles or threes. *H. K., Greenlands.*

Passiflora quadrangularis.—In the gardens at Birr Castle, the country seat of the Earl of Ross, there is a specimen of this plant which merits a word of praise. It is grown in the south-east corner of a large span-roofed stove, trained up the roof about 6 inches from the glass. Owing to its vigorous growth it has to be confined to a limited space of about 12 feet square. Its highly perfumed flowers, produced from the young shoots to the length of about 5 feet, are remarkably attractive. In some cases the individual flowers measured 8 inches across. It commenced flowering about the first week in July, when it filled the house with its pleasant Hyacinth-like odour, and from that time till now (the last week in October) it has produced nearly 2000 flowers. If there is anything in this plant to be regretted more than another, it is the fact of its not holding its blooms open for more than about twenty-four hours. Mr. Hart, the gardener here, considers its healthy state and free-flowering mainly due to its roots being confined to about 4 cubic feet of rich loam, fibrous peat in equal part, with some lime rubbish and charcoal to loosen it. *J. H.*

Lord Beaconsfield.—*Apropos* to the account given by your pleasant correspondent, "H. E.", of the terms on which Lord and Lady Beaconsfield stood, I may mention a circumstance told by a friend. Walking one day with Mr. Disraeli in the wood at Hughenden he heard a whistle. Mr. Disraeli immediately took a whistle out of his pocket and whistled in return, and very soon Lady Beaconsfield joined them. Mr. Disraeli explained to the friend that as he frequently went out later than Lady Beaconsfield, and might not find her, this was the way in which they called to one another—perhaps taking a hint from the birds of the wood. *Anon.*

An Arboreal Ivy.—In Mr. Sydney Courtauld's garden at Bocking Place, Braintree, there is an interesting tree. What is it? Viewed from a short distance it is a fine tree with a perfectly globular head about 20 feet across, bright shining green, reminding one of spring even in autumn. It proves to be the common Ivy (Hedera Helix) which had taken possession of an Apple tree and in the course of time completely covered it. When it had no further to run it assumed the arborescent form, and thickening laterally has formed a dense and perfect head, each point of which is set with buds. All that is visible of the poor Apple-tree is about half-a-dozen twigs about 1 foot in length, two of which are still observing Nature's laws even under such difficult circumstances and bearing a couple of sickly looking fruits. *James O'Brien, Harrow-on-the-Hill.*

Florists' Flowers.

Mr. Smith's Cyclamens.—There is no description of plants subject to pot culture in which, within comparatively recent years, there has been so much improvement as in the beautiful forms of Cyclamen persicum, as it exists at the present day, and it may be added, that for conservatory, greenhouse, and even room decoration, as well as for cutting, there are few plants equal to it in general usefulness, blooming continuously for a lengthened period. There is no difficulty in keeping up a continuous supply of these beautiful flowers from the beginning of autumn up to far on in the spring, yet, generally admired as are these plants, they are by no means generally well managed. Not a few who attempt their cultivation complain that they are disappointed with their success, when compared with the profusely flowered examples cultivated in thousands by some of the leading market growers who have made these plants their especial study. The cause of this only partial success is not far to seek. Cyclamens, like a few others of the best flowering plants we possess, do not thrive well in mixed company, wanting, if required up to the mark, a house or suitable light pit or two to themselves, and this is just what very many gardeners have not the means of giving them, and beyond this there are several matters in connection with the requirements of the plants that require to be kept well in sight if a high standard of cultivation is aimed at. Mr. H. B. Smith, of the Ealing Dean Nursery, has, for a considerable time, stood in the front rank amongst those who have made the culture of these plants a speciality, as well known to those who have seen the splendidly grown groups he from time to time has exhibited. The origin of the grand strain which he here cultivates in such quantities first made its appearance some seven years back in the shape of a single plant of C. persicum, tinted white, which in form and size, combined with the profusion of its flowers, added to broad massive foliage and its general habit, was a marked advance upon those from which it had sprung; it was exhibited before the Floral Committee under the name of picturatum, and received a First-class Certificate. The best seedlings that have sprung from this plant have yearly been selected to raise stock from, which has resulted in the splendid strain Mr. Smith now possesses. The seed is sown about the end of July or beginning of August, the seedlings kept gently moving through the ensuing autumn and winter in a genial temperature, potted singly in spring, and kept through the summer in long low pits near the glass, but carefully shaded from the sun, using a little fire-heat when the weather is cool. Light loam, leaf-mould, and a litttle sand, are the materials in which they are grown; they are potted moderately firm, syringed overhead daily in summer, with air night and day during this season, and also in the day in winter, when the weather is fit, with an inch or so on in the night. The size of pots used to bloom them in the first season are mostly 48's, or 5 inches diameter, a portion of the largest receive a size larger. The earliest begin coming into flower about the beginning of October, succeeded by others all through the winter and spring. Such as are kept for seed are afterwards stood out in a shady place, and kept slightly moist during their season of rest, and when growth has again commenced they are moved into larger pots with fresh soil. Through the winter the flowering stock is kept in long houses that are very light, the plants stood well up to the glass; the houses are span-roofed, 12 feet wide, with a sunk path down the centre, on the sides of which are brick walls, 2 feet high, to support the beds right and left; there is a flow and return pipe on each side of the surface of these beds. Above this is a stage formed of close boards covered with ashes, on which the plants are stood, those next the outer walls only just having their heads clear of the roof-glass: there is no side-glass to the houses. From this brief description Mr. Smith's practice may be gleaned: enough warmth through the first winter to keep the plants moving, with at all times plenty of light to keep the leaf-stalks stout and short, but no exposure to the sun when it is at all powerful; a moderate amount of air, but an avoidance of a dry, parched condition of the atmosphere around them. A winter temperature of about 50° suits the flowering stock. Thirty-five thousand are raised yearly. The stock fills thirteen of these long houses and eight pits. It would be difficult to imagine anything more perfect than the general character of the plants, the uniform ample foliage half covering the pots—the heart-shaped leaves, mostly prettily marbled, are almost as broad as long—and bristling with flower-stems in different stages of development.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
For the Week ending Wednesday, Oct. 25, 1882.

Month and Day.	Barometer. Mean Reading Reduced to 32° Fahr.	Barometer. Departure from Average of 18 years.	Temperature of the Air. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years	Hygrometrical Deductions from Glaisher's Tables 6th Edition. Dew Point.	Degree of Humidity. Sat. = 100.	Wind. Average Direction.	Rainfall
Oct.	In.	In.	°	°	°	°	°	°			In.
19	29.65	—0.06	53.6	44.0	9.0	49.5	— 0.0	47.2	91	E.	0.53
20	29.69	—0.02	62.5	46.0	14.5	52.3	+ 3.0	46.0	78	S.W.	0.04
21	29.31	—0.40	56.0	47.8	8.2	52.5	+ 3.5	51.1	96	S.E. E.S.E. S.W.	0.23
22	29.18	—0.53	55.5	42.0	13.5	48.4	— 0.3	41.5	77	W.S.W. S.W.	0.45
23	29.35	—0.37	55.3	41.5	13.8	47.3	— 1.0	41.8	82	S.W. W.S.W.	0.00
24	29.10	—0.62	52.2	40.5	11.7	45.2	— 2.7	41.5	83	E.: W.	0.68
25	29.40	—0.32	52.2	38.4	13.8	43.7	— 3.8	41.8	92	W.: S.S.W.	0.08
Mean	29.38	—0.33	55.0	42.9	12.1	48.4	— 0.2	44.4	87	Variable	2.11

Oct. 19.—Rain in morning, a dull overcast day; heavy rain during the evening and up to midnight.
— 20.—Foggy morning; fine till 3 P.M., rain at 5 P.M. Cloudy night.
— 21.—A dull, overcast, wet, rainy day and night.
— 22.—Rain in early morning; gale of wind, and squally at times. Heavy rain with bright intervals, windy night, cloudless.
— 23.—Fine bright morning, sun shining brightly; cloudy at 3 P.M., few drops of rain. Fine night, cloudless.
— 24.—A gale of wind of great violence, with very low readings of the barometer; at 150 feet above the sea the following are readings:—At 9 A.M., 28.91; at 10 A.M., 28.80; at 11 A.M., 28.67; just before noon, 28.61. The lowest point, at 7 A.M., was 28.63; at 1 A.M., 28.80; at 2 P.M., 28.95; at 3 P.M., was 29.04; and was 29.31 at midnight. The direction of the wind at 9 A.M. was E.; at 11 A.M. was S.; and at 1.30 P.M. was W.S.W. The strength of the wind had subsided by 3 o'clock. The sky was clouded till evening; a fine clear night.
— 25.—Fine morning, cold, deep blue sky between clouds; rain from 2.15 to 2.30 P.M. Fine bright night, cloudless.

London: *Atmospheric Pressure.*—During the week ending October 21, the reading of the barometer decreased from 30.02 inch at the beginning of the week to 29.60 inches by midnight on the 16th, increased to 30.15 inches by 3 P.M. on the 18th, decreased to 29.77 inches by midnight on the 19th, increased to 29.96 inches by midnight on the 20th, and was 29.38 inches by the end of the week.

The mean reading for the week at the level of the sea was 29.82 inches, being 0.07 inch lower than last week, and 0.06 inch below the average of the week.

Temperature.—The highest temperature in the week was 60°.5, on the 20th; on the 17th the highest temperature was 49°. The mean of the seven high day temperatures was 53°.4.

The lowest temperature in the shade in the week was 42°, on the 18th; on the 21st the lowest temperature was 47°.8. The mean of the seven lowest temperatures was 45°.3.

The greatest range of temperature in one day was 14°.5, on the 20th; the smallest was 4°, on the 16th. The mean of the seven daily ranges was 8°.1.

The mean temperatures were—on the 15th, 50°.3; on the 16th, 47°.3; on the 17th, 46°.8; on the 18th, 45°.9; on the 19th, 49°.5; on the 20th, 52°.3; and on the 21st, 52°.5; the first one and last two days being above their averages by 0°.1, 3°, and 3°.5 respectively; the 16th, 17th, and 18th being below by 2°.7, 3°, and 3°.8 respectively; and the 19th being the same as its average.

The mean temperature was 59°.2, being 4°.9 higher than last week, and 0°.4 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun, was 112° on the 20th. The mean of the seven readings was 70°.6.

The lowest reading of a minimum thermometer with its bulb placed on short grass was 35°, on the 21st. The mean of the seven readings was 40°.

Rain.—Rain fell to the amount of 2.28 inches, of which 1.14 inch fell on the 16th.

England: *Temperature.*—During the week ending October 21 the highest temperatures were 65° at Sunderland, 61° at Brighton, and 60°.6 at Cambridge; the highest temperature at Bolton was 53°.7, at Liverpool 56°.6, and at Wolverhampton, 57°. The general mean was 59°.3.

The lowest temperatures in the week were 37° at Truro, 38°.8 at Wolverhampton, and 39° at Sheffield; the lowest temperature at Sunderland was 44°, at Brighton 43°.5, and at Leeds 43°. The general mean was 41°.1.

The greatest ranges of temperature in the week were 23° at Truro, 21° at Sunderland, and 20° at Sheffield; the least ranges were 13°.6 at Bolton, 14°.1 at Liverpool, and 16°.8 at Bradford. The general mean was 18°.2.

The mean of the seven high day temperatures was highest at Truro, 58°.7, at Sunderland 58°.4, and at Plymouth 56°.8; and was lowest at Bolton, 50°.5, Wolverhampton 51°, and at Liverpool 51°.8. The general mean was 54°.1

The mean of the seven lowest night temperatures was highest at Brighton, 47°.5, at Plymouth 46°.8, and at Truro 46°.1; and was lowest at Wolverhampton, 42°, and at Nottingham and Bolton 42°.9. The general mean was 44°.5.

The mean daily range was greatest at Sunderland, 12°.8, at Truro 12°.6, and at Cambridge 11°.1; and was least at Liverpool, 7°, at Bolton 7°.6, and at Bradford 7°.8. The general mean was 9°.6.

The mean temperature of the week was highest at Truro, 51°.4, and at Brighton and Sunderland 51°; and was lowest at Wolverhampton, 45°.5, at Bolton 45°.7, and at Leicester 46°.9. The general mean was 48°.3.

Rain.—The largest fall was 4.98 inches at Brighton, of which 1.5 fell on the 15th, 1.4 on the 16th, and 1.5 on the 21st; 2.49 inches at Plymouth, and 2.28 inches at Blackheath. The smallest falls were 0.98 inch at Liverpool, 1.03 inch at Wolverhampton, and 1.04 inch at Sunderland. The general mean fall was 1.77 inch; it fell on every day in the week at Bradford, and on five or six at other stations.

SCOTLAND: *Temperature.*—During the week ending October 21 the highest temperature was 58°.2, at Glasgow and Leith. The highest temperature reached at Perth was 35°. The general mean was 57°.

The lowest temperature in the week was 35°.2, at Edinburgh; at Aberdeen the lowest temperature was 43°.7. The general mean was 38°.4.

The mean temperature in the week was highest at Aberdeen, 50°.1; and lowest at Perth, 46°.2. The general mean was 48°.2.

Rain.—The largest fall was 1.75 inch, at Dundee; and the smallest was 0.79 inch at Edinburgh. The general mean fall was 1.39 inch.

JAMES GLAISHER, F.R.S.

Answers to Correspondents.

APPLES DECAYING: *Camjee.* It is not at all an uncommon occurrence for Apples and Potatos to commence the process of natural decay in the same manner as yours.

CUCUMBERS DISEASED: *Nemo.* Neither wireworm nor Phylloxera have anything to do with the mischief at work with your Cucumber roots. They have the well-known Cucumber disease, which has been described and many times figured in these columns, but for which no certain cure other than the destruction of the plants has yet been hit upon.

CONIFERS: *W. S.* 6 and 7 are probably seedling varieties of Cupressus Lawsoniana, as C. erecta viridis certainly is. There is a very wide range of variation in seedlings from this plant; but some of them as they grow old revert to the normal type.

ERRATA.—At p. 533, in the paragraph on Dipladenia amabilis, for "12 feet by 6 inches," read "12 feet by 6 feet;" and instead of "fifty" flowers, read "between seventy and eighty."

FRUIT CULTURE: *Earnest.* Your situation, as you explain it, is not at all adverse to fruit growing, and if not too much exposed to rough winds we rather think the conditions are favourable. All the fruits you mention succeed well in fairly high altitudes, because the wood of the trees gets better ripened, and the blossoms are hardier than those of trees grown in lower situations. *Apples:* Lord Suffield, Stirling Castle, King of the Pippins, New Hawthornden, Cellini, Dutch Mignonne, Small's Admirable, Lady Henniker, Northern Greening, Warner's King, Alfriston, and Dumelow's Seedling, syn. Wellington. *Pears:* Williams' Bon Chrétien, Marie Louise, Beurré Superfin, Beurré Hardy, Hacon's Incomparable, Glou Morçeau, Louise Bonne of Jersey, Napoleon, Pitmaston Duchess, Hessle, Beurré Diel, and Beurré Clairgeau. *Plums:* Victoria, Belle de Septembre, Coe's Golden Drop, Jefferson, Kirke's Seedling, Orleans, Reine Claude de Bavay, Washington, Belgian Purple, Pond's Seedling, Diamond, and Green Gage.

FRUITS FOR SKELETONISING: *T. Shand.* The seed-vessels of Staphylea pinnata. Ptelea trifoliata, the Common Elm; Datura Stramonium, Physalis Alkekengi, Hyoscyamus niger, and many more.

LIGHT: *Lux a non lucendo, Ex luce lucellum, Let there be light, Strike only on the box,* and other correspondents writing on the same subject, are informed that the matters they refer to cannot be appropriately discussed in these columns.

MEALY BUG: *G. S.* You appear to have taken proper steps to eradicate the mealy-bug, but no gardener can be held responsible for its reappearance if it once gets a footing in a house. We have found mealy-bug on Vines, for instance, several inches below the surface of the border, and when heat and moisture were applied in the spring (conditions favourable to their development) a fresh stock was always forthcoming, notwithstanding the most rigid attention to cleanliness in winter.

MEALY BUG ON VINES: *Correspondent.* There is no doubt the mealy-bug secretes itself in the bark of the Vines, and it is very difficult to eradicate it. Your gardener was quite right in proposing to wash the Vines with a solution of paraffin, but he must be very careful not to use it too strong. It is certain death to every insect it touches, used at the rate of one wineglassful to a gallon of water—the difficulty lies in not being able to get at all the insects. If the Vines have been long affected with mealy-bug some of the insects may have lodged in the stems below the surface of the soil, and even if only a few are left they breed so rapidly in the spring, when heat and moisture are applied to the Vines, that it requires constant supervision to keep them down. The paraffin is quite safe used carefully, and is the best antidote we know of for killing the mealy-bug.—*W. S.* You will be quite safe to wash your Vines with a solution of paraffin, but do not use it too strong. See advice given above.

NAMES OF FRUITS: *N. S.* 1, Chaumontelle; 2, Van Mons Léon Leclerc; 3, Fondante d'Automne; 4, probably Duchesse d'Angoulême; 5, Glou Morçeau; 6, Beurré Rance; 7, Vicar of Winkfield; 8, Bishop's Thumb; 9, Doyenné Gobault; 10, Easter Beurré; 11, Beurré Duhaume; 12, Passe Colmar.—*Henry Mason.* 1, Mère de Ménage; 2, Beauty of Kent; 3, unknown; 4, Ravelston Pippin; 5, Hanwell Souring; 6, Golden Noble; 7, Egg, or White Paradise.—*A box received on October 20,* without any letter, but with small numbers pinned on the eye of the fruits, contains—1, Devonshire Quarrenden; 6 and 12, Dumelow's Seedling; 20, Braddick's Nonpareil; 22, Old Pommeroy; 24, Beauty of Kent; 27, Hampshire Nonsuch; 30, Court of Wick; others cannot be recognised.—*Two small Pears,* in a tin box, with no indication as to whence they came, are poor specimens of Verulam.

NAMES OF PLANTS: *C. G.* Physalis Alkekengi.—*Aigburth.* Acampe papillosum, syn. Saccolabium papillosum, *Bot. Reg.*, t. 1552.—*T. W. Sanders.* Lycaste tetragona, syn. Maxillaria tetragona, *Bot. Reg.*, t. 1428, *Bot. Mag.*, t. 3146.—*H. J., Froxfield.* Blitum virgatum = Strawberry Spinach.—*C. E. B.* 1, Francoa ramosa, Don; 2, F. appendiculata, Cav.—*R. P.* Dennstædtia apiifolia var. dissecta, a handsome Fern related to the Dicksonias.—*J. S., Cornwall.* 1, Hydrangea japonica; 2, Eugenia Ugni; 3, Symphoricarpus racemosus variegata; 4, apparently the wild Tansy (Tanacetum vulgare), but you send no flowers; 5, Berberis vulgaris var.; 6, next week.—*J. S., Budleigh Salterton.* 1, Chrysanthemum indicum var.; 2, Linaria cymbalaria; 3, Cotyledon umbilicus; 4, Aspidium spinulosum; 5, Asplenium trichomanes.—*H. J. Ross.* Hippeastrum reginæ.—*B.* Mesembryanthemum curviflorum.—*W. McK.* Your specimens are too scrappy for such a difficult genus as Aster; send full materials and we will do our best.—*W. C. B.* 1, Ipomœa bona-nox; 2, Hibiscus Cooperi variegata; 3, Scolopendrium vulgare bimarginatum; 4, this looks like a leaf of Erythrina Heyheri, but that is a dwarf tuberous species; 5, Monstera deliciosa.—*E. Bullmore,* Echinospermum lappula.—*M. M.* 1, Krigia caroliniana; 2, Artemisia Absinthium. Send the Centaurea again.—*M. R.* 3, Codiæum variegatum var.; 5, Pteris tremula; 6, Asplenium bulbiferum var. Fabianum; 7, Asplenium esculentum; 8, Nephrodium molle; 10, Lastrea dilatata var. We cannot name more than six at a time.

PANCRATIUM FRAGRANS: *S. Trepass.* It is not unusual for well grown vigorous plants to flower as finely as your specimen appears to be doing.

TONGA: *Fiji.* 1, See our number for February 11 last, p. 180; 2, try Mr. William Bull, King's Road, Chelsea.

TREE CARNATIONS: *W. Foster.* See the chapter in Mr. Douglas' *Hardy Florists' Flowers,* published by the author at The Cottage, Loxford. Ilford, Essex.

*** Correspondents are specially requested to address, post-paid, all communications intended for publication to the "*Editor,*" and not to any member of the staff personally. The Editor would also be obliged by such communications being *written on one side only of the paper* and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Letters relating to ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the Publisher, and* not *to the Editor.*

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CATALOGUES RECEIVED.

JOHN WATERER & SONS, Bagshot, Surrey—Rhododendrons and other Hardy Plants.

EUGÈNE VERDIER, 37, Rue Cisson, Paris—Gladiolus Bulbs, Roses, &c.

DICKSON & ROBINSON, 12, Old Millgate, Manchester—Select Fruit Trees.

ANDRÉ LEROY, Angers—Fruit Trees, Forest and Ornamental Trees, &c.

COMMUNICATIONS RECEIVED: Raven.—An Observer.—W. B. H.—T. W., Harrow.—W. C.—W. M. C.—J. Hornby.—J. N.—T. S.—A. D. W.—Henwife.—J. Day.—S. H.—T. M.—M. A. L.—E. S., Jun.—Kangra Valley.—W. T. T. D.—P.—R. J. L. (many thanks; woodcuts still in preparation).—H. G. E.—J. C., Tunbridge Wells.—T. R. J.—D. T. F.—J. B.—W. G. S.—J. Charlton.—H. Mount.

Markets.

COVENT GARDEN, October 26.

AMERICAN Apples are now reaching us, and English fruit has received a check, our Apple market being dull. Prices otherwise remain the same. Kent Cobs well cleared without alteration. *James Webber, Wholesale Apple Market.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Aralia Sieboldii, doz.	12 0	24 0
Arbor-vitæ (golden), per dozen	.. 6	18 0
— (common), dozen	6 0	12 0
Asters, per dozen	.. 4 0	12 0
Begonias, per doz.	.. 6 0	12 0
Chrysanthems., doz.	6 0	18 0
Coleus, per dozen	.. 4 0	6 0
Cyperus, per dozen	6 0	12 0
Dracæna terminalis	30 0	60 0
— viridis, per doz.	.. 12 0	24 0
Epiphyllum, dozen	.. 18 0	30 0
Euonymus, various, per dozen	.. 6 0	18 0
Evergreens, in var., per dozen	.. 6 0	24 0
Ferns, in var., dozen	4 0	18 0
Ficus elastica, each	1 6	7 0
Foliage Plants, various, each	.. 2 0	10 6
Fuchsias, per dozen	4 0	9 0
Genista, per doz.	.. 8 0	12 0
Heliotrope, per doz.	3 0	6 0
Hyacin. (Rom.), pot	1 6	2 0
Hydrangea, doz.	.. 9 0	12 0
Marguerite Daisy, per dozen	.. 6 0	12 0
Myrtles, per doz.	.. 6 0	12 0
Palms in variety, each	.. .. 2 6	21 0
Pelargoniums, scarlet, per doz.	.. 2 6	6 0
Solanums, per doz.	.. 9 0	12 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Abutilon, 12 blooms	0 2	0 4
Arum Lilies, per doz.	6 0	8 0
Asters, 12 bunches	.. 6 0	12 0
Azalea, 12 sprays	.. 1 6	2 0
Bouvardias, per bun.	0 9	1 0
Camellias, per dozen	3 6	6 0
Carnations, 12 blms	1 0	3 0
Chrysanth., 12 bun.	6 0	12 0
Cornflower, 12 bun.	2 0	4 0
Dahlias, 12 bunches	3 6	6 6
Epiphyllum, 12 blms.	0 9	1 0
Eucharis, per doz.	.. 3 0	6 0
Fuchsias, 12 bunches	6 0	8 0
Gardenias, 12 blms.	.. 4 0	6 0
Gladioli, 12 sprays	.. 1 6	3 0
Heliotropes, 12 sp.	.. 0 6	1 0
Hyacinths (Roman), 12 sprays	.. .. 2 6	4 0
Lapageria, white, 12 blooms	.. .. 2 0	4 0
— red, 12 blooms	.. 1 0	3 0
Lilac (French), bun.	9 0	10 0
Lilium various, 12 bl.	3 0	6 0
Marguerites, 12 bun.	6 0	9 0
Mignonette, 12 bun.	1 6	4 0
Narcissus, 12 sprays	3 0	4 0
Pansies, 12 bunches	1 0	3 0
Pelargoniums, 12 spr.	0 9	1 0
— zonal, 12 sprays	0 3	0 6
Primula, double, per bunch	.. .. 1 0	1 6
Roses (indoor), doz.	1 0	3 0
— (outdoor). doz	.. 0 6	1 0
— Coloured, doz.	.. 1 0	2 0
Stephanotis, 12 spr.	.. 5 0	6 0
Sunflower, 12 blooms	0 6	2 0
Tropæolum, 12 bun.	1 0	2 0
Violets, 12 bunches	.. 1 0	1 3
— French Czar, bun.	0 9	1 0
White Jasmine, 12 bunches	.. .. 4 0	9 0

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Apples, ½-sieve	.. 2 6	4 6
Aubergines, per doz.	4 0	..
Cobs, 100 lb.	.. 45 0	50 0
Figs, per dozen	.. 0 6	1 0
Grapes, per lb.	.. 1 0	2 6
Lemons, per 100	.. 6 0	10 0
Melons, each	.. 2 0	4 0
Pears, per dozen	.. 1 0	2 0
Pine-apples, Eng., lb.	4 0	6 0

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.
Artichokes, Globe, per doz.	.. .. 3 0	6 0
— Jerusalem, doz.	4 0	..
Asparagus (Sprue), per bundle	.. 1 6	..
Beans, French, English grown, p. lb.	0 8	..
Beet, per doz.	.. 1 0	..
Bruss. Sprouts, bush.	5 0	..
Cabbages, per doz.	.. 1 0	2 0
Carrots, per bunch	.. 0 4	0 6
Cauliflowers, English, dozen	.. 2 0	4 0
Celery, per head, per bundle	.. 0 4	.. 1 6
Cucumbers, each	.. 0 6	1 0
Endive, per score	.. 1 0	..
Garlic, per lb.	.. 1 0	..
Herbs, per bunch	.. 0 2	0 4
Horse Radish, bund.	4 0	..
Lettuces, Cabbage, per score	.. .. 1 6	..
Mint, green, bunch	.. 0 4	..
Mushrooms, p. baskt.	1 6	2 0
Onions, per bushel	.. 3 0	..
— Spring, per bun.	0 6	..
Parsley, per bunch	.. 0 4	..
Radishes, per doz.	.. 1 6	..
Seakale, per punnet	2 0	..
Small salading, pun.	0 4	..
Spinach, per bushel	2 0	..
Tomatos, per doz.	.. 2 0	..
Vegt. Marrows, doz.	3 0	..

POTATOS:—Magnum Bonums, 90s. to 100s.; Regents, 80s. to 90s.; Myatt's, 100s. to 110s. per ton.

SEEDS.

LONDON: *Oct.* 25.—Owing to the recent stormy weather all field operations are quite suspended, and there is consequently just now no consumptive sowing demand whatever. Clover seeds, however, of all kinds continue in favour at advancing rates. Imported Italian is also meeting with more attention. The sale for bird seeds is slow. Winter Tares and blue Peas find buyers at the moderate rates now current. Feeding Linseed keeps steady. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CATTLE.

At Copenhagen Fields on Monday, the weather being favourable for the trade, rather a firmer tone prevailed in the beast market, and for first qualities prices tended against the buyer; second and inferior classes selling flatly. Sheep realised dearer rates in some cases, but not in all. Calves did not sell so readily, and there was not much demand for pigs. Quotations:—Beasts, 4*s.* 4*d.* to 4*s.* 8*d.*, and 5*s.* 8*d.* to 6*s.* 2*d.*; calves, 5*s.* to 6*s.* 2*d.*; sheep, 5*s.* 6*d.* to 6*s.* 4*d.*, and 6*s.* 8*d.* to 7*s.* 4*d.*, and occasionally 7*s.* 6*d.*; pigs, 4*s.* 4*d.* to 5*s.*—Thursday's trade was quiet with no particular feature. Beasts were steady, but sheep occasionally easier. Calves and pigs were quiet.

HAY.

Tuesday's Whitechapel Market report states that supplies were moderate on account of the wet weather, and trade dull. Straw rather dearer. Quotations:—Prime Clover, 115*s.* to 125*s.*; inferior, 75*s.* to 80*s.*; prime meadow hay, 95*s.* to 105*s.*; inferior, 36*s.* to 60*s.*; and straw, 30*s.* to 45*s.* per load.—Thursday's supply was rather short. The trade was steady, and straw rather dearer.—Cumberland Market quotations:—Superior meadow hay, 90*s.* to 100*s.*; inferior, 65*s.* to 76*s.*; superior Clover, 110*s.* to 120*s.*; inferior, 70*s.* to 92*s.*; and straw, 38*s.* to 45*s.* per load.

POTATOS.

The Borough and Spitalfields Markets reports state that there have been only moderate supplies, but the demand has been good. Quotations:—Regents, 80*s.* to 90*s.*; Champions, 70*s.* to 80*s.*; Magnum Bonums, 90*s.* to 100*s.* per ton; German reds, 4*s.* 6*d.* per bag.—The imports into London last week consisted of 5440 bales from Hamburg, 126 Boulogne, 210 Stettin, 20 Ghent, and 5 sacks from St. Nazaire.

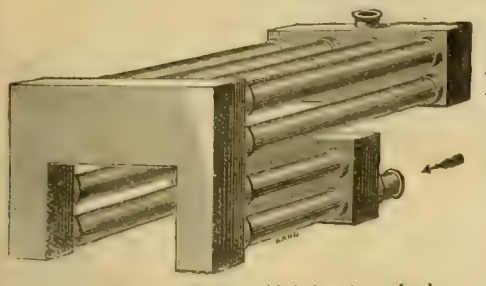
COALS.

The following are the prices current at market during the week:—Ravensworth West Hartley, 15*s.* 6*d.*; Walls End—Hetton, 19*s.* 6*d.* and 20*s.*; Hetton Lyons, 17*s.* and 17*s.* 6*d.*; Hawthorn, 17*s.* 3*d.* and 17*s.* 9*d.*; Lambton, 19*s.* and 19*s.* 6*d.*; Wear, 17*s.* and 17*s.* 6*d.*; South Hetton, 19*s.* 6*d.* and 20*s.*; Tees, 19*s.* 6*d.*

Government Stock.—On Monday Consols closed at 101⅜ to 101⅝ for delivery, and 101⅝ to 101¾ for the account; and the same figures were recorded on Tuesday. Wednesday's final figures were, 101⅜ to 101⅝ for delivery, and 101⅞ to 102 for the account.—Thursday's closing quotations were 102 to 102⅛ for delivery, and 102 1/16 to 102 3/16 for the account.

THE THAMES BANK IRON COMPANY,

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Horizontal Tubular Boiler. Made from 6 to 34 feet long.

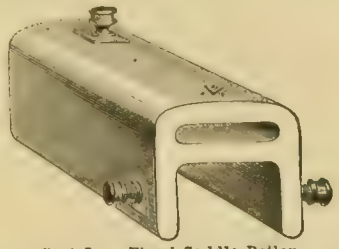
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HOT-WATER BOILERS, PIPES, and CONNECTIONS, and all CASTINGS for Horticultural Purposes.

Illustrated CATALOGUE, 12th edition, price 1s.

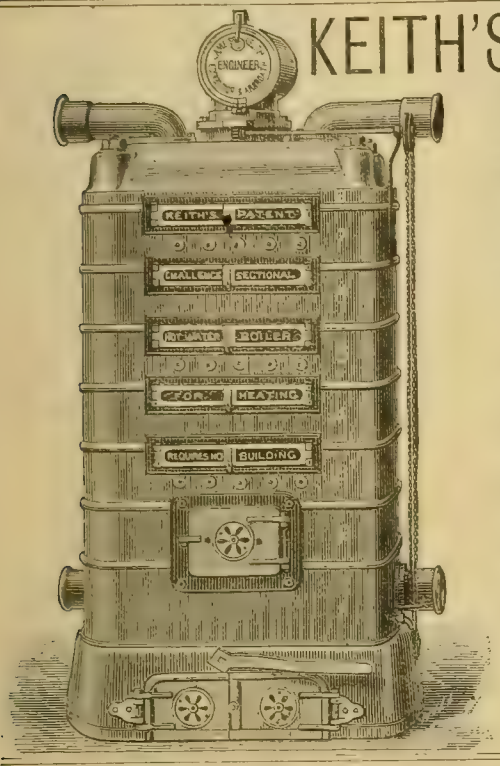
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Hot-water and Hot-air Apparatus erected Complete, or the Materials supplied.



Cast Iron Flued Saddle Boiler.
Made in Cast Iron, 3 feet long. This Boiler will be found to be more durable in Cast Iron than in Wrought Iron.

KEITH'S PATENT HOT-WATER BOILERS



Can be heightened or lowered, or made to suit any requirements. They stand complete in themselves, and require no building work, being wholly water-jacketed and thus entirely free from risk by fire. They can be had all sizes, to heat from, say, a few feet up to 8000 feet of 4-inch pipe each; are now in all parts of the world, and are unrivalled as being the best, most powerful, and most economical Hot-water Boilers in use.

Specimen Extracts from Testimonials:—

From W. Morgan Robbins, Esq., *Architect, Ilfracombe, September 9, 1880.*

"I am delighted with your Boiler; it answers admirably, and the directors are satisfied that it is one of the best £25 worth ever put in the hotel."

From Q. C. Chalmers, *Gardens of* James Mudie, Esq., *Broughty Ferry, September 15, 1880.*

"Your Boiler beats all my expectations; at present one fire serves for twelve hours, and keeps up a good, steady heat."

From Isaac Holden, Esq., *Oakworth House, Keighley, Yorkshire, June 19, 1881.*

"Your Boilers are the best we have tried." (Note: One of these Boilers heats nearly 8000 feet of 4-inch pipe.)

From Wm. Fraser, *Kippen Gardens, Dunning, Perthshire, December 6, 1881.*

"I consider your Boiler most efficient; as for economy, it is the acme of perfection."

From Rev. James Cardwell, *Military Academy, Highlands, Jersey, December 31, 1881.*

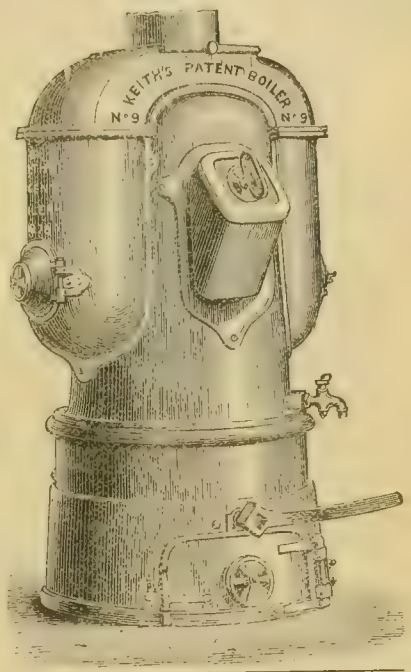
"Nothing could be better than the Boiler you sent me; it burns all sorts of rubbish, and gives an excellent heat."

From Arthur Booty, Esq., *Rose Villa Nurseries, High Harrogate, March 22, 1882.*

"Your Boiler has exceeded all my expectations; it will pay for itself as a fuel saver in a short time. It heats 2000 feet of 4-inch pipe."

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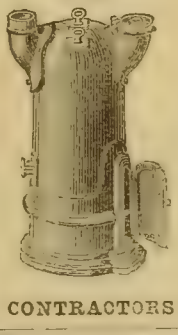
35 and 36, UPPER THAMES ST., LONDON, E.C.

All Goods are of the Very Best Quality, And only One Quality kept.

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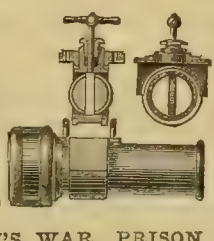


No. 43.—Dome Top Boiler.



NOTE.—*By purchasing of the* Manufacturer *Customers can depend upon always getting the same quality of goods, and same patterns of connections, &c. This is important to Consumers of Hot-Water Goods.*

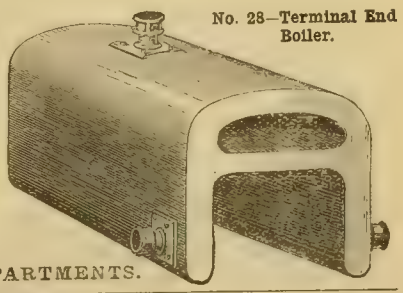
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HOT-WATER VALVE.

NOTE.—*Our Hot-Water Pipes and Connections are made with short sockets, enabling a much better and safer joint to be made, and saving considerably in the cost of the packing material, besides looking much neater.*

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Free on Rails or Steamer.

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FOR SALE, by WM. HANDSCOMB, NURSERYMAN, Aspley Guise:—
4000 LIME Trees, 10 to 20 feet
1000 HORSE CHESTNUTS, 10, 15 to 20 feet.
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2000 FIRS, Spruce, 2 to 3 feet
2000 LAURELS Portugal 3 to 6 feet.
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700 ,, ,, 2 to 3 feet.
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About 40 bushels of Ashleaf Kidney POTATOS for Seed, and a large quantity of FLOWERING SHRUBS and EVERGREENS

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These are the three best vegetables of their kind, either for market, for home consumption, or the exhibition table.
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FIRST-CLASS CERTIFICATE.
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COCOA-NUT FIBRE REFUSE, by Chubb's Patent Process, as supplied to all the Royal Gardens and principal Nurseries of Europe; useful at all seasons. Invaluable for Potting, Plunging, Forcing, Ferneries, Strawberries, Bedding-out Plants, &c.; Destroys all Slugs and Insects.
JULY 1, 1882.—In consequence of the great scarcity of husks and enormous Continental demand for our "Refuse," we are compelled from this date to advance prices as follows, and only orders accompanied by remittance will receive attention (in rotation). We also find it necessary to caution purchasers to beware of spurious imitations and buy the genuine "Refuse" direct. Sacks, 1s. 6d. each; 10 Sacks, 13s.; 15 Sacks, 18s.; 20 Sacks, 23s.; 30 Sacks, 30s. (all Sacks included); Truck-load, free on rail, £2. Limited quantities of P.M. *Special Quality*, granulated, in sacks only, 2s. 6d. each (2 prize medals), valuable for potting and use in conservatory. Terms strictly cash with order.—To obtain the genuine article, buy direct from the Manufacturers, CHUBB, ROUND AND CO., Fibre Works, West Ferry Road, Millwall, London, E.

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Full particulars on application. The Trade supplied.

All Letters to be addressed to THE MANAGER, The Vineyard and Nursery, Garston, near Liverpool.

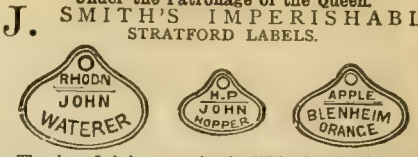
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AMERICAN BLIGHT on APPLE TREES CURED by rubbing a wet hard Painter's brush on Gishurst Compound, and working the lather into the infected part.

GISHURSTINE keeps feet dry, softens hard boots, preserves leather, takes a polish. In boxes, 6d. and 1s. each.—Wholesale by PRICE'S PATENT CANDLE COMPANY (Limited). Retail by Seedsmen and Oilmen. Complaints are made of difficulty in getting Gishurstine. Some leading Nurserymen have put it on their lists, others are requested to do so.

"KILL-RAT" (Registered).—The attention of FARMERS, MERCHANTS, and others interested in the DESTRUCTION OF RATS is invited to this infallible remedy. Its efficacy is surprising. All offensive smells from the effects of this specific are obviated. Price, 2s per 10 oz. tin, by post 6d. extra, of the Proprietors, FRASER AND CO., 272, Strand, London, W.C., and all chemists.

Under the Patronage of the Queen.
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The above Labels are made of a White Metal, with RAISED BLACK-FACED LETTERS.
The *Gardeners' Magazine* says:—"We must give these the palm before all other plant labels, as the very first in merit."
Samples and Price Lists free.
J. SMITH, The Royal Label Factory, Stratford-on-Avon.

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WATERPROOF ROSE TREE LABELS.

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FISHER, CLARK & CO.,
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Oil Paint No Longer Necessary.
HILL AND SMITH'S BLACK VARNISH, for Preserving Ironwork, Wood, or Stone.
(*Registered Trade Mark.*)



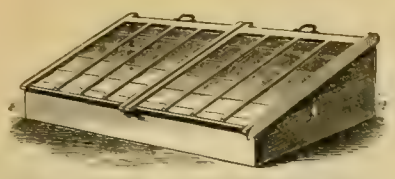
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Sold in Casks of about 30 gallons each, at 1s 6d. per gallon, at the Manufactory, or 1s. 8d. per gallon carriage paid to any Station in the Kingdom.

UNSOLICITED TESTIMONIAL.
"*Piercefield Park, June* 21, 1876.—Sirs,—I have this day forwarded from Chepstow to your address a black varnish cask, to be filled and returned with as good Varnish as the last we had, which I candidly admit was the best we ever had. Address Varnish to Piercefield Park, Chepstow.—I am, Sirs, yours respectfully, WM. COX."
CAUTION.—HILL & SMITH would particularly warn their Customers against the various cheap Varnishes now so much advertised.
H. & S.'s Varnish has been an article of common use on most of the large estates in the kingdom for upwards of thirty years; and their constantly increasing trade in it, and the numerous Testimonials they receive, stamp it as a truly genuine article. Every cask is legibly marked with their name and Registered Trade Mark as above, without which none is genuine.
Large illustrated CATALOGUE of Fencing, Hurdles, Field and Entrance Gates, &c., sent free on application to
HILL AND SMITH, Brierley Hill Ironworks, Stafford-shire; 118, Queen Victoria Street, London, E.C.; and 180, Buchanan Street, Glasgow.

PRUNING MADE SAFE AND EASY.



REDUCTION IN PRICES
With 2 feet pole, 4s. 6d.
,, 4 ,, 5s. 6d.
,, 6 ,, 6s. 6d.
,, 8 ,, 7s. 6d.
,, 10 ,, 8s. 6d.
,, 12 ,, 10s. 6d.
Longer lengths (jointed) supplied to order. This implement is admitted by the leading horticultural authorities to be unrivalled for Pruning and Trimming Trees of all kinds, Shrubs, Fruit Bushes, Vines, &c. Can be sent securely packed to any address by Passenger Train at the new Reduced Rates for small parcels.
Illustrated Circulars post free.
Standard Manufacturing Co., St. Alkmund's Churchyard, Derby.
Sold by the principal Ironmongers and Seedsmen.



No. 75. MELON, or CUCUMBER FRAMES.

CASH PRICES—Carriage Paid.

No. 1	.. ..	8 ft. long	..	6 ft. wide	.. £3 7
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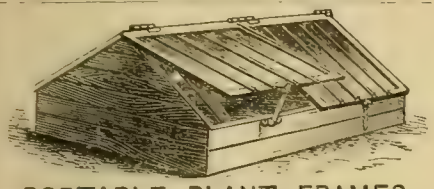
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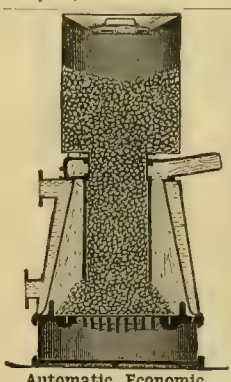


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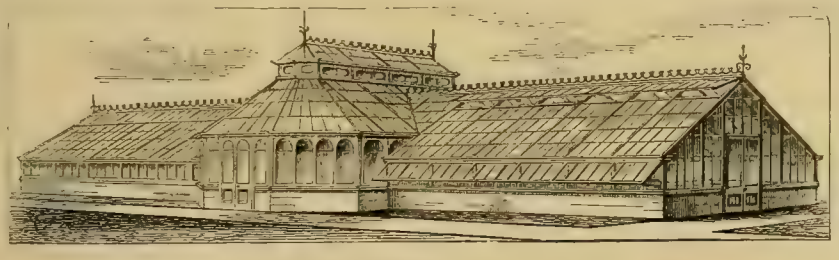
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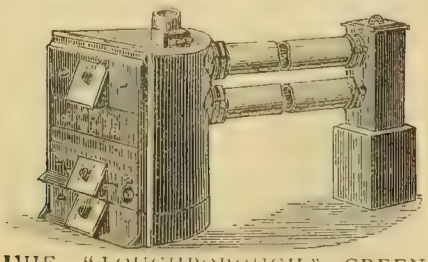
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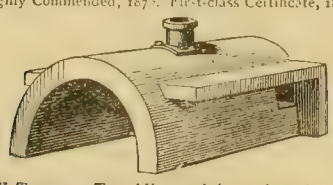
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THURSDAY NEXT.

CATTLEYA MENDELII.

MR. J. C. STEVENS has received instructions from Mr. F. SANDER to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, November 2, at half-past 12 o'Clock precisely, a wonderful importation of CATTLEYA MENDELII, in splendid condition, and collected in the same locality from whence the fine lot came we sold a few years since.

The Sale will include other fine importations, also one plant of a spotted variety of ODONTOGLOSSUM ALEXANDRÆ, from Messrs. W. THOMSON & SONS, Clovenfords, with ninety-six flowers open and in bud; and a grand Specimen of SACCOLABIUM CURVIFOLIUM, finest variety.

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Editorial Communications should be addressed to "The Editors;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
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THE

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The Subscription to America, including Postage, is $6.35 for Twelve Months.

Agent for America :—C. H. MAROT, 814, Chestnut Street, Philadelphia, U.S.A., to whom American Orders may be sent.

ROYAL BOTANIC SOCIETY, Regent's Park, N.W.

ARRANGEMENTS for 1883 :—

SPRING EXHIBITIONS, Wednesdays, March 28, April 25.

SUMMER EXHIBITIONS, Wednesdays, May 16, June 13

EVENING FÊTE, Wednesday, June 27.

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,, Hooper and Co., Covent Garden.

Schedules and all particulars of WILLIAM HOLMES, Frampton Park Nursery, Hackney, E.

BRISTOL CHRYSANTHEMUM and FRUIT SHOW.

The NINETEENTH ANNUAL EXHIBITION will be held in the Victoria Rooms, Clifton, NOVEMBER 15 and 16. Schedules, and all other information may be obtained of

GEO. WEBLEY, Hon. Sec.

Eastfield, Westbury-on-Trym.

KINGSTON and SURBITON CHRYSANTHEMUM SOCIETY.

The SIXTH ANNUAL EXHIBITION of the above Society will be held in the Drill Hall, Kingston, on THURSDAY and FRIDAY, November 16 and 17, when the final ties for the First Champion Challenge Vase will be decided, and a New Challenge Vase, value 25 Guineas (open to subscribers of 21s.), will be offered, in addition to over £100 in Money Prizes. Schedules and further particulars on application to

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MANETTI STOCKS and CUTTINGS.—Fine clean stocks, 30s. per 1000, £6 5s. per 5000. Cuttings 9 in. long, 7s. per 1000, £3 per 10,000.

KIRK ALLEN, The Rosery, Fen Drayton, near St. Ives, Hunts.

RHODODENDRONS—RHODODENDRONS.—G. FARNSWORTH has to offer a large quantity of the above, various sizes. Also LARCH, SCOTCH, SPRUCE, QUICKS, ORNAMENTAL TREES, SHRUBS, &c.—Prices on application at the Nurseries, Matlock.

Single Dahlias.

POT ROOTS, GROUND ROOTS, and SEED.

10 First-class Certificates have been awarded to my novelties of this season. The Trade supplied.

THOMAS S. WARE, Hale Farm Nursery, Tottenham, London.

WEDDING, COURT, BALL or other BOUQUETS arranged to order, and all kinds of WREATHS, CROSSES, or other DESIGNS for Church Decoration or Funerals. Price List on application, post-free.

JOHN RAINS, Centre Row, Covent Garden Market, W.C. Old Established.

MESSRS. LAUX BROTHERS, Seed Merchants, in Haan, Rhenish Prussia, hereby beg to recommend their speciality in GRASS and VEGETABLE SEEDS to Dealers and the Trade. Applications invited.

SALES BY AUCTION.

Hyacinths, Tulips, Crocuses, Narcissus, Iris, Scillas, Snowdrops, and other Flower Roots from Holland.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY during November, at half-past 12 o'Clock precisely each day, CONSIGNMENTS of DUTCH BULBS, arriving weekly from well-known farms in Holland, in large and small lots, to suit all buyers.

On view morning of Sale, and Catalogues had.

Wednesday Next.

2000 BULBS of LILIUM AURATUM, just received from Japan in fine condition.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, on WEDNESDAY next, November 8, at half-past 12 o'Clock precisely, 2000 BULBS of LILIUM AURATUM, just received from Japan in fine condition; also a consignment of FIRST-CLASS BULBS from Holland, including HYACINTHS, TULIPS, CROCUSES, NARCISSUS, SCILLAS, and other bulbs.

On view morning of Sale, and Catalogues had.

Highly Important Sale of Established Orchids.

MR. J. C. STEVENS has received instructions to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, November 9, at half-past 12 o'Clock precisely, the entire collection of Edward Pilgrim, Esq., Fern Lawn, Cheltenham, being sold owing to ill health, and the sudden death of his Gardener, Mr. Mullis, who grew the entire collection from small plants, including an immense specimen of ANGULOA CLOWESII, with seven breaks, in 24-inch pot; two plants of DENDROBIUM SUAVISSIMUM, with forty to fifty bulbs each; VANDA TRICOLOR DODGSONI, several specimens; VANDA SUAVIS VEITCHII, several specimens; VANDA TERES ANDERSONI, 2 feet across, ten breaks; AERIDES SCHRŒDERI, fine young healthy specimen, with fourteen perfect leaves; DENDROBIUM THYRSIFLORUM, fifty bulbs; a gigantic specimen of CATTLEYA INTERMEDIA, about a hundred bulbs, in fine health; CATTLEYA WARNERI, twenty-four bulbs with leaves, five breaks; a grand plant of the true old autumn-flowering LABIATA, with two breaks, coming into flower; CATTLEYA TRIANÆ ALBA, LÆLIA PURPURATA WILLIAMSII, CATTLEYA GIGAS, VANDA TRICOLOR, three grand specimens, forty leaves; CATTLEYA SKINNERI, grand variety in perfect health, 3 feet across; two specimen plants of SACCOLABIUM GUTTATUM HOLFORDIANUM, thirteen leaves; MASDEVALLIA DENISONIANA, grand plant and variety with thirty healthy leaves; MASDEVALLIA CHELSONI, with thirty grand leaves; several grand specimens of CATTLEYA MENDELII; five splendid plants of CATTLEYA EXONIENSIS; grand specimen of CATTLEYA MOSSIÆ, 2 feet across; a fine plant of the rare CATTLEYA TRIANÆ MORGANII, with four breaks; four plants of LÆLIA ANCEPS DAWSONII; one nice plant of the old Sion House variety of CATTLEYA MOSSIÆ; grand specimens of ONCIDIUM MACRANTHUM and SERRATUM; and the following ODONTOGLOSSUMS:—ANDERSONIANUM, CHESTERTONI, POLYXANTHUM, ALEXANDRÆ, TRIPUDIANS, PESCATOREI, HALLII, XANTHOGLOSSUM and LEUCOGLOSSUM, LUTEO-PURPUREUM, SCEPTRUM, HEBRAICUM, CROCIDIPTERUM, BLANDUM; SOBRALIA MACRANTHA, Wolley's and William's varieties, specimens about 2 feet across; PILUMNA NOBILIS (true), several fine young specimens; DENDROBIUM FARMERII ALBA; several masses of CŒLOGYNE CRISTATA, in which are included LEMONIANA, but owing to the sudden death of the Gardener they are not named.

On view morning of Sale, and Catalogues had.

Vanda Sanderiana.

MR. J. C. STEVENS has received instructions from Mr. F. Sander to SELL by AUCTION, at his Grest Rooms, 38, King Street, Covent Garden, on THURSDAY, November 16, at half-past 12 o'Clock precisely, a grand importation of VANDA SANDERIANA. This wonderful Orchid was discovered by Mr. Röbelen last year, and the flowers and drawing will give some idea of the grand beauty of this the "Queeu of Vandas." Professor Dr. Reichenbach in describing it in the *Gardeners' Chronicle*, May 6, says, "The grandest novelty introduced for years." Also an importation of ORCHIDS from Madagascar, in fine health; a grand lot of Odontoglossum Alexandræ, consisting of many fine masses and pieces; splendid importations from the Philippine Islands of Phalænopsis Sanderiana (true), Phalænopsis Stuartiana, violacea, Reichenbachiana, and others; Cypripedium ciliolare, Dendrobium Dearei, &c.; full particulars of which will be found in next week's *Gardeners' Chronicle*.

On view morning of Sale, and Catalogues had.

Dutch Bulbs.—Sales every Monday.

MESSRS. PROTHEROE AND MORRIS will SELL at the Mart, Tokenhouse Yard, City, E.C., every MONDAY, at half-past 11 o'Clock precisely, over 800 lots of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, SNOWDROPS, and other ROOTS, from Holland; in lots to suit all buyers.

Catalogues at the Mart, and 8, New Broad Street, E.C.

Lewisham, S.E.

To PRIVATE GENTLEMEN and the TRADE.

CLEARANCE SALE, by order of Mr. Biggs, without the slightest reserve, the Land and Premises being required by the Local Government Board for the erection of a New Infirmary.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nursery, High Road, Lewisham, S.E., on TUESDAY and WEDNESDAY, November 7 and 8, at 12 o'Clock each day precisely, in consequence of the large number of lots, the whole of the OUTDOOR NURSERY STOCK, including about 200,000 Coniferæ, Evergreen and Deciduous Shrubs, in great variety; 10,000 Golden and Green Euonymus, 10,000 Irish and other Ivies, 15,000 Gooseberries and Currants, 5000 Lilium candidum and longiflorum; also the remaining stock of STOVE and GREENHOUSE PLANTS, comprising 10,000 Lomaria gibba, 25,000 Maidenhair Ferns, and thousands of other Ferns, Palms, and various Plants too numerous to mention; also the Erection of GREENHOUSES, HOT-WATER PIPING, and BRICKWORK, Stack of prime Meadow HAY (about 25 loads), nearly new Village CART, 300 loads of MANURE and MOULD, and other effects.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 8, New Broad Street, E.C., and Leytonstone.

Chesterfield.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, by order of Mr. Beard, on the Premises, Stonegravel's Nursery, Sheffield Road, Chesterfield, on WEDNESDAY NEXT, November 8, at half-past 1 o'Clock, without reserve, the whole of the STOVE and GREENHOUSE PLANTS including several plants for exhibiting, and a few lots of OUTDOOR NURSERY STOCK.

Catalogues had on the Premises, and of the Auctioneers, 8, New Broad Street, London, E.C.

Fulham, S.W.

By order of the Executors of the late Mr. R. A. Osborn.

MESSRS. PROTHEROE AND MORRIS (having sold the Freehold Estate) are instructed to SELL by AUCTION, on the Premises, Osborn's Nursery, Fulham, S.W. (a few minutes' walk from Parson's Green Station District Railway), on THURSDAY, November 9, at 12 o'Clock precisely, in consequence of the large number of lots, 10,000 FRUIT TREES of remarkably fine growth, embracing the choicest and most favourite varieties of Standard, Dwarf-trained and Pyramidal Apples, Pears, Peaches, Nectarines, Plums, &c.; 44,000 SEAKALE, a few GREENHOUSE PLANTS, the whole of the VEGETABLE and FLOWER SEEDS, the stock of GARDEN TOOLS and SUNDRIES; also the SHOP FIXTURES, including two nests of 508 Mahogany Seed Drawers, very superiorly made and quite new; a 12 feet 6 Mahogany Counter, Office Furniture, Iron Safe, and other effects.

May be viewed. Catalogues had on the Premises; of Messrs. WALKER, BELWARD, AND WHITFIELD, Solicitors, 5, Southampton Street, Bloomsbury, W.C.; and of the Auctioneers and Valuers, 8, New Broad Street, E.C., and Leytonstone.

N.B. The SALE of the STOCK at the SUNBURY NURSERY will take place on NOVEMBER 14 and following days.

Westerham, Kent, adjoining the Station.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. Cattell to SELL by AUCTION, on the Premises, The Nursery, Westerham, Kent, on FRIDAY, November 10, at 1 o'Clock precisely, a large quantity of surplus NURSERY STOCK, in good condition for removal, including a large assortment of Coniferæ and Evergreens, 2000 Ornamental Trees, American Plants, Standard and Dwarf Roses, Rhododendrons, &c.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 8, New Broad Street, E.C.

Edgware, N.W.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, in the Gardens, Whitchurch Rectory, on SATURDAY NEXT, November 11, at 2 o'Clock precisely, by order of the Proprietor, a quantity of NURSERY STOCK, comprising a great variety of handsome Lawn Trees and useful Coniferous and Evergreen Shrubs; Rose Trees; Fruit Trees in varieties, of Apples, Pears, and Cherries, about fifteen years of age, frequently transplanted and in full bearing; also hybrid named Rhododendrons in large specimens, and most select and beautiful varieties, suitable for giving immediate effect to Lawns and Garden Grounds. The whole have been carefully prepared for removal, and not grown in peat but ordinary soil.

May be viewed the day prior. Catalogues had on the Premises, and of the Auctioneers, 8, New Broad Street, E.C.

Sunbury and Hampton, Middlesex.

By order of the Executors of the late Mr. R. A. Osborn.

GREAT UNRESERVED SALE of the whole of the unusually well grown NURSERY STOCK, FRUIT TREES, and ROSES.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, Osborn's Nursery, Sunbury (about ten minutes' walk from the station), and Osborn's Nursery, Tangley Park, New Hampton (about ten minutes' walk from Fulwell Station), on TUESDAY, November 14, and following days, at 12 o'Clock punctually each day, the whole of the exceedingly well grown and thriving young NURSERY STOCK, in the best possible condition for removal, comprising large quantities of various Coniferæ and Evergreens in all sizes, 5000 Aucubas, 4000 Privet, 10,000 Limes, also other Ornamental Trees, 2000 Yews, 5000 Euonymus of sorts, 18,000 Green Hollies, 6000 Variegated Hollies, very fine; 84,000 Fruit Trees, consisting of 62,000 Dwarf-trained, Pyramid, Standard, and Maiden Apples, Pears, Plums, Peaches, Nectarines, Apricots, and Damsons of all the best sorts in cultivation, and for the growth of which the firm of Messrs. Osborn has been so long celebrated; also 22,000 Gooseberries and Currants, 10,000 Standard and Dwarf Roses, beautifully grown, and including all the finest varieties; 3000 Moss and Provence Roses, 10,000 Seakale, thousands of small Coniferæ for growing on, and other Stock. May now be viewed.

Catalogues obtained at the respective Nurseries, of Messrs. WALKER, BELWARD AND WHITFIELD, Solicitors, 5, Southampton Street, W.C.; and of the Auctioneers, 8, New Broad Street, E.C., and Leytonstone.

N.B.—The Auctioneers have much pleasure in inviting Noblemen and Gentlemen, as well as the Trade, to inspect the above Stock, which is in the finest possible condition.

Lilium auratum and Plants from Ghent.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Mart, City, E.C., on FRIDAY, November 17, 13,000 LILIUM AURATUM, from Japan; and a consignment of CAMELLIAS, AZALEAS, and other PLANTS, from Belgium; English-grown LILIES, &c.

Catalogues at the Mart, and 8, New Broad Street, E.C., when ready.

Isleworth, Middlesex.

GREAT SALE of NURSERY STOCK and ORNAMENTAL TREES, by order of Messrs. C. Lee & Son, who require the ground for other purposes.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, the Arboretum Nurseries, Isleworth, W., on TUESDAY, November 21, and following days, several Acres of valuable NURSERY STOCK, in the best possible condition for removal; thousands of EUONYMUS, and 15,000 ORNAMENTAL TREES from Messrs. Lee's well-known collection. Further particulars will appear next week.

The Stock may now be viewed, and Catalogues had when ready, at the Auctioneers' Offices, 8, New Broad Street, E.C.

Feltham.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nursery, Feltham, by order of Messrs. Lee & Son, on WEDNESDAY, November 29, a large quantity of remarkably well-grown NURSERY STOCK, including a great number of handsome specimen Coniferæ and Hollies, all carefully prepared for removal.

Further particulars will appear.

Castle Nursery, Brox, Chertsey, Surrey.

MESSRS. R. AND J. WATERER AND SON are instructed to SELL by AUCTION, upon the Premises, on THURSDAY, November 9, at 11 o'Clock precisely, the whole of the valuable thriving young and well grown NURSERY STOCK, comprising 20,000 Trees and Shrubs, including 1500 Rhododendrons, from 1 to 1½ ft.; 4000 Green and Variegated Hollies, 1 to 6 ft.; Portugal and caucasica Laurels; 1200 Green and Golden Yews, American Arbor-vitæ from 3 to 5 ft., Cupressus Lawsoniana, Thuia Lobbii, Variegated and Green Box, 130 Yuccas, 1½ ft.; 750 Standard and Dwarf Roses, named and best sorts; Planes, Horse Chestnut, Elms, Poplars, from 6 to 14 ft.; Privet, Syringas, Gueldres Roses and Thorns of sorts, and other plants. The whole are well grown, and in excellent condition for removal.

May be viewed three days prior to the Sale. Catalogues obtained upon the premises, and of Messrs. R. AND WATERER AND SON, Auctioneers and Valuers, Chertsey.

Bridge Nursery, Castlenau, Barnes.

A few paces from Hammersmith Bridge, Surrey side; a short distance from the Metropolitan, District, and South-Western Railways; Barnes and Hammersmith Broadway.

To NOBLEMEN, GENTLEMEN, OWNERS OF, AND PARTIES FORMING ORNAMENTAL GROUNDS, CONTRACTORS, NURSERYMEN, BUILDERS, AND OTHERS.

COMPLETE and UNRESERVED CLEARANCE SALE—expiration of Lease at Christmas, the LAND let for building purposes—of very choice and well-selected FRUIT TREES, SHRUBS, and PLANTS, TRADE ERECTION of SHEDS, WHEELBARROWS, ROLLER, TOOLS, and DOG PHÆTON.

MR. J. A. SMITH is favoured with instructions from Mr. James Grant to SELL by AUCTION, at the Nursery, near the "Boileau Arms," Castelnau, Surrey, on WEDNESDAY, November 15, and following day if necessary, at 1 o'Clock punctually, the carefully-selected remaining NURSERY STOCK, comprising about 20,000 well-selected, very choice and strongly grown FRUIT TREES, SHRUBS, and PLANTS, consisting of pyramid and standard trained Apples, Pears, Peaches, and Nectarines, Currants, Gooseberries, Poplars, Portugal and rare Laurels, Deciduous Trees, Golden and Green Euonymus, Ivies in pots, Provence and other Roses, special Sweet Brier, Poa stricta, Mahonia, fine plants of Ailantus glandulosa, Evergreens, Herbaceous Plants Pansies, named, and others of choice varieties; 10 Roods of Collards, the TRADE ERECTIONS, BARROWS, ROLLER, GARDEN TOOLS, and miscellaneous effects.

May be viewed day prior and morning of Sale. Catalogues at the Nursery; the "Red Lion" Inn; "Boileau Arms" Hotel; and at Mr. J. A. SMITH'S Auction, Land, and Estate Offices, 58, King Street East, Hammersmith, W.

London, West End.

Occupying a prominent position in an important thoroughfare.

TO BE DISPOSED OF, in consequence of the failing health of the proprietor, an old-established FLORIST'S BUSINESS, with Dwelling House, Double-fronted Shop, and several Greenhouses. Lease twenty-five years unexpired. Ground Rent only £25.

To Contractors and Others.

THE METROPOLITAN BOARD OF WORKS are prepared to RECEIVE TENDERS for CLEANING OUT the "LONG POND" on Clapham Common, and other works in connection therewith.

Persons wishing to tender, may, on applying to the architect at the offices of the Board, Spring Gardens, S.W., between the hours of 9 A.M. and 4 P.M., or on Saturdays between the hours of 9 A.M. and 2 P.M., inspect the Specification.

The Tenders are to be addressed to "The Clerk of the Metropolitan Board of Works, Spring Gardens, S.W.," and be marked on the outside "Tender for Cleaning-out Long Pond, Clapham."

The Tenders must be delivered at the offices of the Board not later than 4 P.M. on Tuesday, November 21, 1882, after which time no Tender will be received.

The Board do not bind themselves to accept the lowest, or any Tender.

J. E. WAKEFIELD, Clerk of the Board.

Spring Gardens, S.W., November 3, 1882.

Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at 8, New Broad Street, E.C.

VIOLETS continue BLOOMING until next March. We have an acre of all the best in cultivation, in splendid vigour, and full of buds. For full particulars send for a CATALOGUE.

NEAPOLITAN, large clumps for cold frames, 20s. per 100; fine plants in 5 in. pots, in flower, 8s. per doz., £2 10s. per 100.

MARIE LOUISE, large clumps ditto, 25s. per 100; splendid plants in 5-in. pots, full of flower, 9s. per doz., £3 per 100.

BLOOMS of SWANLEY WHITE (Double) sent to any address for 8 stamps.

H. CANNELL AND SONS, Home for Flowers, Swanley, Kent.

Gooseberries and Currants.

J. LE CORNU AND SON offer a fine stock of GOOSEBERRIES, Mixed Reds, Mixed Green, &c. CURRANTS.—Red Dutch, Raby Castle, White Dutch, Black Naples, &c. Strong stuff, on stems 1 foot high, clear of suckers, 20s. per 100, packing included.

High View Nurseries, Jersey.

APPLE TREES with MISTLETO growing on them. Price from 7s. 6d. to 21s. each.

RICHARD SMITH AND CO., Nurserymen, Worcester.

PELARGONIUM CUTTINGS. — Well rooted. Wishing to clear out, will sell the remainder at 10s. per 100 for cash with order.

J. PALMER, Spring Grove Lodge, Isleworth.

Special Offer to the Trade.

SINGLE DAHLIA SEED, saved from all the best named varieties, including whites, and our novelties for next year—a finer and better strain we feel sure does not exist—20s. per ounce, or in retail (2s. 6d.) packets, price of which may be had on application to

KEYNES AND CO., Salisbury.

GUARANTEED TRUE HIGHLAND NATIVE SCOTCH FIR SEED.—We are now Booking Orders for the above on very easy terms. Before purchasing send for prices to

WM. WISEMAN AND SON, Nurserymen, Elgin, N.B.

HAMPTON COURT BLACK HAMBURGH VINES.—Extra strong Fruiting Canes of the above from 10s. 6d.: also fine Planting Canes from 3s. 6d. each.
T. JACKSON AND SON, Royal Kitchen Gardens, Hampton Court, and The Nurseries, Kingston, Surrey.

FOR SALE, a large quantity of HARLINGTON WINDSOR BEANS, grown from the original Harlington Stock.—Apply to
J. SMITH AND SON, Growers, Sipson, near Slough; and North Side, Covent Garden Market, W.C.

Gardenia intermedia.

CLEAN HEALTHY PLANTS, in 5-inch pots, to flower this winter, 2s. each, 18s. per dozen; nice plants in 60's, 9d. each, 6s. per dozen. A few large plants, about 4 feet, which will be full of flowers this winter; price on application. CATALOGUE free.
W. M. CROWE, Boleyn Nursery, Upton, Essex.

Cabbage Plants.

CABBAGE PLANTS!—Extra strong Autumn-sown plants, in any quantities, well rooted and free from club, of Early Enfield Market, Battersea, Nonpareil, and Robinson's Champion Drumhead Cabbage, at 3s. per 1000, delivered on Rail; cash or reference from unknown correspondents.
W. VIRGO, Wonersh Nurseries, Guildford, Surrey.

STRAWBERRIES.—Strong roots for present planting and for fruiting next year, 4s. per 100. Descriptive LIST and price for plants in pots for forcing on application. — RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Special Cheap Offer.

ISAAC MATTHEWS AND SON are prepared to make a special offer to the Trade and Large Buyers. Samples and Price List on application:—
ASH, Common, 3 to 4 feet, 4 to 5 feet, 5 to 6 feet.
" Mountain, 3 to 4 feet, 4 to 5 feet, 5 to 6 feet, 7 to 8 feet, 8 to 9 feet.
OAK, English, 1½ to 2 feet.
POPLAR, Black Italian, 3 to 4 feet, 4 to 5 feet, 5 to 6 feet.
SYCAMORES, 2 to 3 feet, 3 to 4 feet.
CHESTNUTS, Horse, 9 to 10 feet, 10 to 12 feet.
ELDER, Golden, 2 to 3 feet, 3 to 4 feet.
THORN QUICK, strong, 2-yr., 3-yr., 4-yr. strong.
HOLLIES, Hodgins', maderensis, Bay-leaf, Golden Queen, Silver Queen, Old Silver, myrtifolia, ovata, Shephardii, common Green, in all sizes.
LAURELS, Common, 12 to 18 inches, 1½ to 2 feet, 2 to 2½ feet, fine.
CUPRESSUS, in variety, from 1½ to 7 feet.
RETINOSPORA PLUMOSA, 1 foot, 1½, and 2 feet, bushy.
YEWS, English, 18 to 24 inches, 2 feet, 2½ feet, 2½ to 3 feet.
AZALEA Pontica, 1½ to 2 feet, 4 to 6 inches.
RHODODENDRONS, Hybrid and Pontica, 3 to 4 inches, 4 to 6 inches, 6 to 9 inches, 9 to 12 inches, 12 to 15 inches, 15 to 18 inches, 1½ to 2 feet, 2 feet; ditto, choice named sorts, bushy, in 100 varieties.
" CUNNINGHAM'S WHITE, 9 to 12 inches, 12 to 15 inches, 15 to 18 inches.
" CAUCASICUM PICTUM, 9 to 12 inches, 12 to 15 inches, 15 to 18 inches.
RHODODENDRON STOCKS, strong.
PANSIES, in 100 varieties.
IVY, Irish, 2-yr., 3-yr., 4-yr., strong.
The Nurseries, Milton, Stoke-on-Trent.

PLANTS FOR POTTING AND FORCING:—
AZALEA MOLLIS, with from 10 to 30 buds
" a selection of the best hardy kinds, including PONTICA, NARCISSIFLORA, and GRAF VON MERAN, well budded.
KALMIA LATIFOLIA, nicely grown plants with flower-buds on wellnigh every shoot
RHODODENDRONS, well budded and the best varieties for the purpose.
DEUTZIA CANDIDISSIMA, fl.-pl, established in pots.
HYDRANGEA PANICULATA GRANDIFLORA, very strong.
ANDROMEDA PULVERULENTA or SPECIOSA.
These can be obtained in satisfactory plants and at fair prices from
ANTHONY WATERER, Knap Hill Nursery, Woking, Surrey.

FERNS, &c., in SMALL POTS.

	Per dozen.—s. d.
ADIANTUM CUNEATUM	21s. per 100 3 0
" CONCINNUM	3 6
" " LATUM	3 6
" EXCISUM	3 6
HEMIONITIS PALMATA	4 0
GYMNOGRAMMA LAUCHEANA vars.	21s. per 100 3 0
" DECOMPOSITA	3 0
PTERIS MAGNIFICA	18s. per 100 2 6
" CRETICA	20s. per 100 3 0
" PALMATA	4 0
BRAINEA INSIGNIS	6 0
LYGODIUM SCANDENS	21s. per 100 3 6
DRACÆNA VEITCHII and AUSTRALIS, PANDANUS UTILIS, LATANIA BORBONICA, CHAMÆROPS HUMILIS, C. EXCELSA ..	3 0
ARALIA SIEBOLDII, GREVILLEA ROBUSTA ..	2 6
ALLAMANDA GRANDIFLORA	15 0
CLEMATIS INDIVISA LOBATA	15 0
CHOISYA TERNATA	6 0
DIPLADENIA BREARLEYANA	15 0
" of sorts	6s., 9s., and 12 0
ALLAMANDAS, CLERODENDRONS, and BOUGAINVILLEAS of sorts	6s., 9s., and 12 0
STOVE PLANTS in great variety	per 100 50 0
GREENHOUSE PLANTS	" 50 0

As good varieties and plants as generally sold at treble the prices. Catalogues free.
WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

4000 Azaleas, Camellias, Ericas, and Epacris. 4000

AZALEA INDICA, in best varieties, for forcing, including Whites, well set with buds, 24s., 30s., and 42s. per dozen, £8 to £15 per 100.
AZALEA MOLLIS, good bushy stuff of these invaluable plants for early forcing, in all shades of colour, 21s., 30s, and 40s. per dozen, £8 to £15 per 100.
HEATHS and EPACRIS, best varieties, well set with flower, 18s. and 24s. per dozen.
CAMELLIAS, in best varieties, including Whites, 25s., 30s., and 42s. per dozen, £9 to £15 per 100.
CATALOGUE free.
W. M. CROWE, Boleyn Nursery, Upton, Essex

GRAPE VINES and ORCHARD HOUSE TREES in POTS.—GRAPE VINES, extra strong, short-jointed and well ripened; Planting Canes, 3s. 6d. to 5s. each; extra strong Fruiting Canes, 7s. 6d. to 10s. ORCHARD-HOUSE TREES, fruiting in pots, consisting of Peaches, Nectarines, Apricots, Plums, Cherries, Pears, Apples, and Figs. Descriptive Price LIST for 1d. stamp.—RICHARD SMITH AND CO., Nurserymen and Seedsmen, Worcester.

To the Trade.

WHITE CAMELLIA BLOOMS.—Arrangements can now be made for a regular supply of perfect blooms—extending over Christmas next; also MAIDENHAIR FERN. Apply for prices, &c., to
JAMES PAGE, Camellia Grower, The Hornsey Nurseries, Hornsey, Middlesex, N.

NEW ROSES of 1882, in pots.—Vendors' Selection, 30s. per dozen; Purchaser's, 36s. per dozen. The above comprise all the best English and French-raised Hybrid Perpetuals, Perpetual Polyantha, Teas, Hybrid Teas, and Perpetual Moss.

ROSES of 1881, of above-named classes, 18s. to 24s. per dozen, in pots.

CHOICE ROSES. — Tea-scented, Hybrid Tea, Noisette, China, and Bourbon, 18s. to 24s. per dozen, strong plants in pots.
Descriptive LIST on application.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

SUTTONS'

CHOICE

FLOWER ROOTS.

ALL

THE BEST KINDS,

AT

VERY MODERATE PRICES.

PARTICULARS ON APPLICATION.

Sutton & Sons

THE QUEEN'S SEEDSMEN,

and by Special Warrant to

H.R.H. THE PRINCE OF WALES,

READING, BERKS.

Immense Sale of

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SPIRÆA PALMATA:
The largest stock for forcing in the world.
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All kinds and all sizes.
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You may select from thousands.
HARDY TREES, SHRUBS, ROSES, &c.
For general planting, acre after acre.
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JAMES BIRD offers the undermentioned Forest stuff, price on application:—
LARCH FIR, 3 to 4 feet, and 4 to 5 feet.
SCOTCH FIR, 1½ to 2 feet, and 2 to 3 ft. [to 5 ft.
SPRUCE FIR, 1½ to 2 feet, 2 to 3 feet, 3 to 4 feet, and 4
PINUS AUSTRIACA, 1½ to 2 feet.
HAZEL, 2 to 3 feet, and 3 to 4 feet.
The Nurseries, Downham

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SELLING OFF OF NURSERY STOCK.

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EATON, near NORWICH.

Great Reduction in Price for Cash Payments, viz.,
15 per Cent. for Cash before delivery.
10 per Cent. for Cash within One Month of date of invoice.
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After Three Months no discount can be allowed.

We shall be pleased to quote prices for the following in small or large quantities:—

Standard and Half-Standard H.P. Roses.

STANDARD, HALF-STANDARD, and DWARF MARÉCHAL NIEL ROSES.
TEA and NOISETTE ROSES in Pots.
PURPLE BEECH, best selected dark, broad-leaved variety, of all heights up to 8 feet.
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POPLARS and WILLOWS of many choice kinds, in variety.
Scarlet-flowered and Common HORSE CHESTNUTS, large or small.

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CHARLES TURNER'S Descriptive LISTS of the following can be had free on application:—
DUTCH and OTHER BULBS,
CARNATIONS, PICOTEES, and PINKS,
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SEAKALE, extra strong, selected for forcing; also POTATO ONIONS, SHALLOTS, and GARLIC. Prices on application.
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THE WHITE CLOVE, MRS. SINKINS, is the best, without exception, to produce a supply of choice, sweet-scented white flowers. Blooms 3 inches across, very full and rosette-like. Plants 4s., 5s., and 6s. per dozen.
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YEWS, English, 2, 3, 4, 5, 6, 8 to 10 feet. Thousands.
" Golden, all heights up to 10 feet, and various shapes—Globes, Pyramids, &c. Thousands.
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PICEA PINSAPO, 5, 6, 7, to 10 feet.
" NORDMANNIANA, 5, 6, 7, to 10 feet.
SPRUCE FIRS, well furnished, 3, 4, 5, 6, and 7 feet. Many thousands.
" Black, 3, 4, and 5 feet.
SPRUCE, Hemlock, 4, 5, and 6 feet.
WEARE'S ARBOR-VITÆ, 4, 5, 6, and 7 feet.
HOLLIES, common Green, of all heights, up to 10 feet. Thousands.
" Green, of sorts, such as LAURIFOLIA, MYRTIFOLIA, HODGINS', ALTACLARENSE, Yellow-berried, &c. An enormous Stock.
" Variegated, from 3 to 5, 6, 7, 8, and 10 feet.
" Waterer's, beautiful Specimens.
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" Perry's Weeping Standards and Pyramids.
" Golden Weeping Standards and Pyramids.
The Stock of Hollies of various kinds comprises many thousands, and affords a choice quite unequalled.
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" " LUTEA, hundreds of fine plants, 3, 4, and 5 feet high.
RETINOSPORA PLUMOSA AUREA, 3, 4, and 5 feet.
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LIMES, 10, 12, 14, 15, and 16 feet. Thousands.
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MAPLE, Norway, 10 to 15 feet.
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And a vast and Miscellaneous Stock of Flowering DECIDUOUS SHRUBS and EVERGREENS, which intending purchasers are respectfully invited to come and see.
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5000 Cyclamen persicum. 5000

ALL from the finest procurable strains, good plants in 60-pots, 3s. 6d. and 5s. per dozen; extra large, 10s. per dozen: for early flowering.
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CHAMPION ROSE GROWER,

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POST-FREE ON APPLICATION.

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FLOWER ROOTS, &c.

BEST QUALITY. CARRIAGE FREE.

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D. & R.'s COLLECTIONS of SELECT FLOWERING BULBS for the Decoration of the Conservatory or Greenhouse, and for Outdoor Flowering in Spring:

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DEUTZIA GRACILIS, extra strong plants.
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LILY OF THE VALLEY, imported extra strong clumps.
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Contains the following liberal assortment, all in sound picked Bulbs, with full instructions for cultivation (case, packing, and carriage free to any railway station in England or Wales):—

25 HYACINTHS, choice, mixed
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12 POLYANTHUS NARCISSUS, mixed
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6 CAMPERNELLE JONQUILS
25 RANUNCULI, scarlet Turban
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50 WINTER ACONITES
12 SPANISH IRIS
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559 *Roots in all. Double quantity, 40s.; half do., 12s. 6d.*

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FIRST-CLASS CERTIFICATE.

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ROSES, well rooted, many-shooted, truly named, of matured growth, and of the best kinds.
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Free on Rails or Steamer.

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A lucrative market crop.

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Evergreens, Hollies, Coniferæ, Forest Stuff
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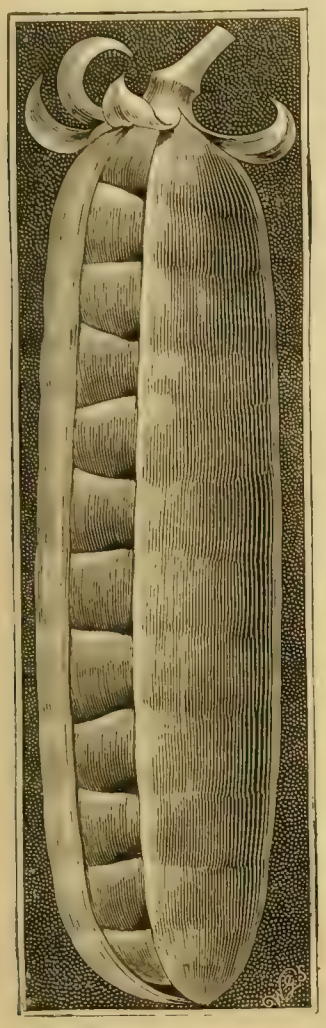
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PARAGON,

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We have every confidence in recommending this Pea. Our Stock being small, we are not able to offer more than a limited number of packets; but we are anxious to give our Customers the very first opportunity of testing the merits of what we consider the greatest acquisition in Peas for an early crop that has ever been offered.

Price, 3s. 6d. per Quarter Pint Packet.

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NEW RASPBERRY, "BAUMFORTH'S SEEDLING."

The Best Raspberry in the Kingdom.

DESCRIPTION.—The Fruit is of an immense size and fine quality, in shape large and round, of a dark crimson colour, and the seed pips largely developed and prominent. It is of vigorous growth, with large dark green foliage, and from its strong and prolific constitution frequently throws out a second crop from the season's young wood.

EDMUND PHILIP DIXON,

Having grown a fine stock of Canes of this splendid Raspberry, begs to offer them this season at the following prices:—

CANES, 5s. per dozen, 35s. per 100; a few extra strong, 7s. 6d. per dozen.

Many hundred Testimonials have been received this autumn, too numerous to publish. Several have been printed—copies of which may be had post-free on application, with a beautifully Coloured Drawing, and a CATALOGUE of Roses, Fruit, Forest and Ornamental Trees, Shrubs, &c.

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CEDRUS DEODARA, fine plants.
3 to 4 feet, 15s. for 12, 60s. for 50, 110s. for 100.
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The following First-class PEAS, grown expressly for Seed, warranted pure:—

AMERICAN WONDER	50s. per bushel.
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In quantities of not less than 4 bushels and upwards. Cash on delivery.
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Our Stock, which is one of the largest in Scotland, comprises FOREST, FRUIT, and ORNAMENTAL TREES, DECIDUOUS and EVERGREEN SHRUBS, ROSES, GREENHOUSE PLANTS, &c.; also a very large and splendid Stock of THORN QUICKS, for Hedging and for Filling up Gaps
The Trees and Shrubs are of all ages and sizes, and are well adapted for extensive planting or giving immediate effect in the formation and improving of Ornamental Parks, Pleasure Grounds, &c. Prices on application.
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HYACINTHS to name 5s. and	6	0
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All the above Florists' Flowers of the finest varieties, many new. Herbaceous Plants, many thousands of the most showy kinds—12 sorts, 3s.; 50 sorts, 11s.; 100 sorts, 20s
Spring-blooming Plants, such as POLYANTHUS, Seedling PRIMROSES (all colours), WALLFLOWERS, CANTERBURY BELLS, ARABIS, AUBRIETIAS, DAISIES (Red, White, or Rose), MYOSOTIS, SILENE COMPACTA, 4s. per 100, 35s. per 1000.
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CROCUS, 2s. per 100.
SNOWDROPS, 2s. 6d. per 100.
PRIMROSES, Double White, Sulphur, and Lilac, 24s. per 100, 3s. 6d. per dozen.
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SWEET VIOLETS, in good Clumps, for Forcing, 30s. per 100, 4s. per dozen; ditto, ditto, in small plants, 15s. per 100, 2s. per dozen.
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SEVENTY-FOUR ACRES of FRUIT TREES.—Apples, Pears, Plums, Cherries, Peaches, Nectarines, Apricots, and other Fruit Trees, as Standards, Dwarfs, Pyramids, Bushes, Cordon and Trained Trees in great variety, all full of vigour, and warranted true to name. Descriptive Price LIST, containing a sketch of the various forms of Trees, with Directions for Cultivation, Soil, Drainage, Manure, Pruning, Lifting, Cropping, Treatment under Glass; also their Synonyms, Quality, Size, Form, Skin, Colour, Flesh, Flavour, Use, Growth, Duration, Season, Price, &c., for 1d. stamp.

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ALL KINDS of GARDEN SEEDS, of first quality. BULBS, MUSHROOM SPAWN, TOBACCO PAPER, ARCHANGEL MATS, and other GARDEN REQUISITES. See LISTS, which may be had on application.

RICHARD SMITH & Co. WORCESTER

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NEW WHITE CODETIA,

DUCHESS OF ALBANY.

We have pleasure in introducing to commerce this superb hardy annual, one of the grandest additions to this class of plants which has ever been brought under notice. The plants are of handsome, pyramidal growth, about 1 foot high, branching from the bottom, and producing large clusters of Œnothera-like flowers, of a beautiful, glossy, satiny white, each about 4 inches across when fully expanded. When in full bloom the plants resemble beautiful miniature Rhododendrons or Azaleas, profusely covered with trusses of flowers, which entirely hide the foliage. This magnificent variety will be found a most valuable addition to our hardy annuals, being perfectly hardy and withstanding our severest winters in the open border without protection.

Awarded a First-class Certificate by the Royal Horticultural Society, July 11, 1882; and from the Royal Botanic Society it received a similar award in July, 1882.



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"GODETIA DUCHESS OF ALBANY (Messrs. DANIELS BROS., NORWICH).—A valuable variety, dwarf and compact in growth, and bearing most profusely flowers of a pure satiny white."—*Gardeners' Magazine*, July 15, 1882.

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THE

Gardeners' Chronicle.

SATURDAY, NOVEMBER 4, 1882.

THE CHRYSANTHEMUM.

THE early blooming of the Chrysanthemum is the current topic of the day among growers. As early as October 10 last the Messrs. Dixon, of Hackney, exhibited a very fair stand of blooms of the Japanese section at the meeting of the Royal Horticultural Society, and the exhibitions opened last week by Mr. Newton at the Inner Temple, and by Mr. Cochrane at Finsbury Park, are but the commencement of the series of exhibitions that are to follow each other in rapid succession until the end of the month. If we may form a judgment upon what we have recently seen, Chrysanthemums have been more erratic in their behaviour than usual this season. At Finsbury Park we noticed blooms of Mrs. George Rundle fully three weeks old, and almost side by side with Ethel, one of the Japanese section that usually flowers much later, unless it is brought forward for purposes of exhibition. This is not a good omen for exhibitors.

But apart from this circumstance, which is not of a serious character where there are plenty of plants and buds to select from, a worse element has made its appearance, namely, the continued wet weather. Notwithstanding the hardihood of the Chrysanthemum in other respects, the flowers are peculiarly susceptible to injury from damp, and complaints are very general that some of the best early flowers have been spoilt from this cause. Should the present state of the weather continue, exhibitors will experience some difficulty in keeping their early flowers in good form for exhibition unless they alter their usual tactics, and under the circumstances perhaps the best remedy would be to collect the early flowering section of plants into one house, or division of a house, and put a thick shading over the glass in case of sunshine. The object of this arrangement would be to preserve the flowers from damp by keeping a buoyant atmosphere, if only for a few hours each day.

Adverting for a moment to Chrysanthemum exhibitions as well as their aims and ends, we are tempted to ask what public good they have achieved, and what has been their effect, culturally speaking, upon the progress and development of this favourite winter flower? And here we must admit that they have done, and are doing, an infinite amount of good. We may instance the contest for the Champion Challenge Vase at Kingston, which is attracting a good deal of attention in Chrysanthemum circles at present. The competition for this, the greatest trophy of the year, is looked forward to with intense eagerness and interest, not only by the competitors themselves, but also by cultivators generally. It is something more than a mere contest for a prize—there is a principle of cultivation involved in the matter as well. This is how such exhibitions, fairly and honourably conducted, confer advantages upon the public. Results speak for themselves.

But we further want to know how results of an unusual character are produced. It has been clearly demonstrated during the past three or four years, from the stands of flowers exhibited by the North-country exhibitors at Kings-

ton, that their system of cultivation differs from that of their rivals in the South. It may therefore be interesting almost upon the eve of the great event to briefly analyse the two systems of cultivation. About ten years ago a new era commenced in Chrysanthemum growing in the North of England. Prior to that time a cultivator who has since made his name famous (Mr. W. Tunnington, of Calderstone, Liverpool), struck out a new line for himself, startling his friends and neighbours by the marvellous vigour of his plants. Mr. Tunnington had been an exhibitor for several years previously at the Liverpool shows, but for three consecutive seasons never succeeded in getting higher in the prize-list than a third place. A less determined cultivator might have retired from the field and acknowledged himself beaten, but Mr. Tunnington had pledged himself to lower the colours of the then champion of the district, and finally succeeded in doing so with a stand of blooms the equal of which we have seldom seen since. A few weeks before the exhibition took place—when the buds were well developed—we saw the plants in company with the acknowledged champion, when they were voted "overgrown." But the result a short time afterwards proved how well and accurately the line had been drawn—the order of things was reversed, and the advocates of the "ripening system" sustained a very severe discomfiture. Really, the pith of the whole business lies in the time of propagating, disbudding, and the non-adherence to the ripening system.

About London cultivators generally are in favour of growing their flowers upon the "terminal bud," meaning thereby the bud actually latest in course of development, but not terminal in the sense intended by the botanist, who uses the word in relation to position, not time; while North-country growers prefer the "crown bud," or "crown terminal" as it is called about Liverpool. Thus, while one set of plants are growing—making wood—the other set are forming and developing flower-buds—a fact which upon the face of it will clearly account for the difference in the size of the flowers.

In the interests of the uninitiated we will endeavour to explain these technicalities, and start with the cutting taken in the spring, say in February or March. Cuttings are rooted, potted off, and grown upon one stem until July, in the early part of which month a bud will appear which is called the "July bud," which if taken is rarely of any worth—at any rate not as an exhibition flower. In a vigorous growing plant this bud (the terminal bud of the botanist), if it is closely observed after its formation, will be seen to gradually decrease in size, and at the same time three young shoots—at first not much larger than pin-heads—will be seen to come away from below its base. As these shoots increase in length the first bud will disappear altogether, and there will now be three shoots to a single stem. In August another set of buds will appear, which, if properly formed, and the vigour of the plant pretty well expended, should be taken, or, in other words, the growth of the plant should be stopped. Immediately upon the appearance of the bud it will be found that three tiny growths are in process of formation at its base, which would develope into shoots as before explained, and these should be removed at once if the buds are to be retained.

The next set of buds appear about the first days of September, and these are what cultivators call the "terminal buds," as undoubtedly, in one sense, they are, being the last effort of Nature after the plant has ceased to make shoots. If for the sake of argument we assume that one cultivator disbuds his plants in August, and another disbuds his at a considerably later period, we have a substantial gain on behalf of the former for the process of bud-development. This we consider the simplest way of elucidating the technicalities of the bud business, but the practice is not now generally followed in growing large flowers.

The system to which we now allude is more intricate in its details, but it offers great advantages to the exhibitor, inasmuch as it gives him a wider selection of buds. It is done in this way. When the plants are about a foot in height they are pinched, viz., the extreme points of the shoots are "rubbed off," not cut back, as an old hand once sarcastically put it to a young beginner. This early pinching gives a stout stem, and three young shoots break away from the point, all below these being removed as fast as they are formed. Upon this system the first buds that appear are taken, if they do not show too early. But suppose there is a doubt about the matter—one bud is taken for a chance flower, and the remaining two are treated upon a different principle. The bud upon the second shoot may also be taken, but as a measure of precaution, instead of rubbing out the three growths at its base one is left temporarily to divert the flow of sap from it until it is clearly seen that the force of the sap is not strong enough to spoil the bud, when of course the growth must be pinched-out. The third shoot would be allowed to grow on, taking care to remove its two weakest companions as soon as the strength of each could be recognised. Thus the cultivator who adopts this system has three chances from the same plant, so that if he misses the mark with one flower he is sure to hit it with another. We have seen three distinct characters of flowers upon the same plant over and over again, the variation being due to nothing else than the time and manner of disbudding. The next point of importance in the production of large blooms is the theory of the ripening of the wood, which in the case of the Chrysanthemum will not hold water. There must be strength of stem and large green leaves down to the rim of the pot to produce good-sized, well-formed flowers.

Turning to another branch of the subject, it cannot be denied that there is still room for much improvement in the matter of exhibiting Chrysanthemums in groups. It is no simple achievement to display artistic skill in the arrangement of such plants upon a few feet of space unless a clause is introduced admitting a variety of other subjects, as is done by some societies with good effect. But even upon the old lines something might be done for the better. Those who exhibit such groups could easily furnish themselves with a few wooden wedges to tilt up their plants at the back, and a groundwork and front lines of dwarf Anemone pompons might be used to cover the pots and naked stems of the plants, none of which could be called ornaments in many of the collections that we saw last year. For conservatory decoration the tall plants with fine heads of flowers have a charming effect among Palms, Australian Dracænas, and Camellias; and the groundwork of dwarfer plants, thinly arranged and intermixed with berried Solanums, gives a show of peculiar brightness in November.

The best of the early section—indeed the best of all as regards effect—are Elaine, Mrs. George Rundle, George Glenny, Golden George Glenny, Aurea multiflora, Mr. Bunn; and to these should be added as many of the red and crimson coloured shades of the Japanese section as possible. These consist of Chang, Cry Kang, Fleur Parfaite, Fulgore, Mons. Crousse, Mons. Delaux, Oracle, Red Gauntlet, The Cossack, Triomphe du Nord, Rosa Bonheur, and many others. We still want a few bright reds in the incurved section after the type of Mr. Gladstone, a medium-sized flower of a dark red colour, and very effective in a collection. It is yet too early to form a correct opinion of the merits of new varieties, but of those that promise to be exceptionally good among the Japanese kinds may be mentioned Rubra striata, Rève de Printemps, Triomphe de Sainte Martin, Flambeau, and George Gordon.

A plant that furnishes so much variety and beauty during the three dullest months of the year is surely worthy of all the care and attention that we can afford to bestow upon it. The exhibitor may grow plants and cut flowers which are as much enjoyed at home as they are by the delighted crowds who flock to exhibitions; plants may be trained to fill vases or grown any size for various decorative purposes. It is alike amenable to be trained as an umbrella standard or pyramid as it is to be grown as an ordinary bush, in which form it still looks its best, notwithstanding all the ingenuity that has been displayed by cultivators in the art of training.

We append a few notes of the leading metropolitan exhibitions:—

The Finsbury Park

show house is now gay with from 1400 to 1500 plants, arranged in two sloping banks upon either side the central path, which we are inclined to think is an improvement upon last year's arrangement. The show house is a new one, a commodious span-roofed structure provided with a heating apparatus which, judiciously used, is of great benefit to the flowers during damp weather. As it is, we noticed several flowers disfigured by damping, showing how bad must be the case of those who have to flower their plants in unheated structures. The nearest point of admission from Stamford Hill is the Manor House entrance, which is well known in the neighbourhood, and visitors intending to view the collection will find them at their best in a few days. The bank upon either side the path is nearly 3 yards wide, and will be a charming mass of flowers of various colours when all the buds are fully open. The buds seem to open somewhat irregularly, but there is plenty of strength in the plants, and the flowers will be very fine when fully up.

The most striking of the open flowers are Golden George Glenny, well formed and highly coloured; St. Patrick, a dark coloured variety, the earliest and finest flowers we have seen for a long time, with as many as six flowers upon a plant. Prince of Wales is rather late, but there is plenty of substance in the opening buds; Mr. Bunn, an improvement upon Golden Beverley, is very fine; and, strangely enough, there are some good early flowers of Princess Beatrice, a variety of a very precocious character to deal with, and generally speaking not to be depended upon. Aurea multiflora is another of the old kinds that Mr. Cochrane manages well, and White Globe, also an old favourite, is in good form and coming into flower about its usual time. The manner in which the different sections are intermixed and the colours varied is a noteworthy matter in the arrangement. There are the Japanese kinds, La Nymphe, La Charmeuse, Triomphe du Nord, Peter the Great, James Salter, Elaine, Oracle, Fulgore, Gloire de Toulouse, Red Dragon, and new kinds like Flambeau intermixed with large flowering sorts such as Empress of India, Prince Alfred, Refulgens, Mrs. Heale, Princess of Wales, Jardin des Plantes and Barbara, the two banks being edged with a row of Anemone pompons.

Of new sorts we were most struck with Flambeau, a round very double flower, with large petals, reflexed, and of a beautiful orange-crimson colour; this variety will make a very useful plant for training into specimens, and the flowers are also striking in a cut state. George Gordon is a large flower of a velvet red shade, much brighter than Garnet. The Japanese section, both old and new kinds, are in strong force in Mr. Cochrane's collection, and the large incurved flowers are, if anything, better done; so that in a few more days, when the display is at its best, it will probably be one of the finest exhibitions of this charming winter flower around the metropolis, and, what is better, visitors can fully enjoy the show under a dry roof with plenty of light from overhead.

Victoria Park.

Mr. McIntyre has his collection arranged under canvas in a tent over 200 feet long by 9 feet wide, in the place where the exhibition has been held in former years. It is close to the main entrance to the Park, and a better choice as regards position could not be made, or a more convenient one for the public. It is, however, little short of a misfortune that the plants are not provided with better shelter. Victoria Park is one of the most popular and best-managed about London, and the bedding arrangements are every season spoken of most favourably, not only by the inhabitants of East London, but by people conversant with horticultural matters from all parts of the country. It seems strange, therefore, that no adequate provision is made for the accommodation of winter flowering plants. A collection of Chrysanthemums—this year the number amounts to 2400—splendidly grown, are huddled together under canvas, only to be blown hither and thither as they were by the late gale of the 24th of last month. This is poor encouragement for the cultivator, whose greatest reward is in seeing a fine display enjoyed by an appreciative public.

But Chrysanthemums, hardy as they are, and although they will live—the stems and leaves we mean—under a temporary shelter, cannot possibly develope their finest forms without a glass protection; nor can the public, for whose enjoyment they are grown, half appreciate the skill and labour bestowed upon them if they can only get a glimpse of the flowers now and then when the weather is favourable. Under existing circumstances the labour is more than half thrown away, for with reasonable accommodation there are plants sufficient to keep up a bright display

of flowers until after Christmas. As it is, the best is made of the means at command, and a finer or healthier collection of plants no one could desire to see. They comprise all the leading show varieties, and many of the early kinds are fully open. These consist of Mrs. Dixon, Mrs. George Rundle, Elaine, James Salter, Hereward (reddish-crimson), Cassandra (whitish-yellow tinged with lilac), White Beverley, and some fair blooms of Novelty, which we were rather surprised to see under the circumstances, knowing how difficult it is to get a good flower of it even when it is grown under the most favourable conditions. There is also the promise of some fine flowers of Prince Alfred, Queen of England, Empress of India, Sir Stafford Cairey, Dr. Brock, Jardin des Plantes, Lady Slade, and a strong muster of the

The Inner Temple

display promises to be one of the best exhibitions of its kind of the present season. The display is certainly an improvement upon that of last year, and large numbers of people have availed themselves of the privilege of inspecting the collection during the past week. The entrance to the exhibition is off the Thames Embankment. Mr. Newton, besides being successful in growing the plants, has also managed to arrange them effectively, the two banks of flowers having a natural appearance, and the various colours are well diversified and blended. It is worthy of remark that the flowers here have suffered less from damp than could have been expected. The situation is low, and the plants, for the sake of effect, are set closer than would be desirable under other circumstances. But the banks of foliage and flowers are of the most satisfactory character, and taken as a whole present a fine effect. There has been so much talk about flowers damping off, and from so many different quarters, that we were tempted to ask Mr. Newton how he could account for the immunity from damp. This was cheerfully done, although we are bound to say that some of the best growers of Chrysanthemums will hardly accept the explanation in its entirety. But Mr. Newton's experience will be valuable to a great many, and the principle may be safely acted upon by those who have but modest means for plant growing. The secret of the plants being so hardy and of such excellent constitution is that they never smell heat from the day the cuttings are taken until the plants are in flower. They are propagated upon the cool system, and in the autumn Mr. Newton finds his plants suffer less from damp and mildew than those that are grown in heat during the early stages of growth. What makes the collection at the Inner Temple especially interesting is the fact that the best of the new varieties are added to the collection as they come out, and those only are retained that promise to be of some particular merit. The best of the late additions are Curiosity, a lemon-coloured flower, tipped with brown, and very fine; Madame C. Andiguier, mauve-pink, and extra large; Rosa Bonheur, rich violet; La Charmeuse, purple, tipped with white; Mary Major, a beautiful white variety; and Dr. Macory, white, tinted with rose. These are but a few of the most forward and striking flowers, and there are many more coming on for succession.



Fig. 102.—The Bog-Garden, Cambridge Botanic Garden. (see p. 588.)

Japanese section, which have been so great an attraction to Chrysanthemum exhibitions during the past few years.

In addition to the above Mr. McIntyre grows a numerous collection of pompons and Anemone pompons, with which he margins the taller-growing varieties. The best of these are white and rose Trevenna, Auguste Mie (yellow), Aigle d'Or (deep yellow), Annie Forsyth, Mustapha, General Canrobert, Andromeda, Bob, one of the oldest but still one of the brightest and best; Brown Cluster, Model, Sportsman, and Brilliant, a pleasing bright red variety and of very good habit. We consider this a good idea of Mr. McIntyre, and the general public would do well to borrow a leaf out of his book, as these dwarf-growing plants are much more suitable for small gardens than the taller-growing kinds, besides making capital window plants and supplying hosts of cut flowers.

It is noteworthy that nearly all the new varieties are of the Japanese section. Among the incurved section we have little that is new to add; the best flowers are some of our oldest acquaintances, such as those of the Mrs. George Rundle type, Elaine, James Salter, Peter the Great, Chevalier Domage, a striking variety for a mixed collection; White Venus, Empress of India, very fine; Lord Derby, a good dark variety like Refulgence; Queen of England, Lady Hardinge, Prince Alfred, Inner Temple: and of very showy kinds we may mention Progne, a medium sized reflexed flower; Dr. Sharpe, and several others. It is a great boon to the public to have the privilege accorded them of visiting so large and varied a collection at a point so near to one of the main throughfares, and it would be well if a great many other public bodies followed the example of the benchers of the Inner Temple.

*

THE MIDDLE TEMPLE

collection consists of over 800 plants, which have been, according to the usual custom, thrown open to public inspection during the past week, and Mr. Snelling may be congratulated upon the condition of his plants and the rich display of colours that they promise to yield. It will be fully ten days yet before the show is at its best, and we hope to refer to the merits of new varieties, as well as to the general effect of the whole collection, later on. Many of the early sorts are opening fast, and the flowers are finely coloured. We notice several old varieties in this collection, such as Chevalier Domage, Golden Hermione, Faust (a quilled variety), Christine, really well grown and of beautiful colour. The incurved section are opening well, and the Japanese kinds, such as Fulgore and Bouquet Fait and many others, are supplying tints of colour that are very striking at this dull season. Dr. Sharpe and Striata are the two brightest varieties yet opened in the collection.

New Garden Plants.

AËRIDES EMERICII, *n. sp.**

A COUSIN of the well-known Aërides virens of Dr. Lindley. The leaves are longer, narrower, and flowers similar, perhaps always a little smaller. The anterior part is much less deeply divided, the middle lacinia is shorter, less toothletted; the side laciniæ are entire, not toothed, the spur shorter; the sepals and tepals are white, with a broad purple-lilac stripe along the middle; lip white with purple-lilac middle lacinia, and numerous small freckles of that colour on the interior part of the spur. Aerides virens, well represented in *Hort. Register*, 1844, 41, has sepals and petals blotched, not striped; and numerous spots on the side lacinia, the middle lacinia lilac-purple with wide borders, and the top of the spur green, or greenish-yellow. Add to this the distinguishing character, that Aërides Emericii has an ascending adhering lamella under the lip, forming a kind of pouch in the spur, whereas there are two descending teeth in he same place in Aërides virens. Thus we have a very good novelty. We have to congratulate Colonel Emeric Berkeley, the gallant son of a celebrated father, for this fine discovery, made during his long and distant trips in British India. *H. G. Rchb. f.*

CATTLEYA WHITEI (Hort. Low), *n. hyb. nat.*†

This is said to be unique, having been found by Mr. White, the collector of Messrs. Hugh Low & Co., growing on a tree in company with C. labiata and C. Schilleriana, so that in all probability it is a natural hybrid. The plant had a First-class Certificate from the Royal Horticultural Society (see *Gardeners' Chronicle*, 1882, July 29, p. 151).

I have before me a flower, dried during my absence, and an artistic representation, kindly forwarded me by Messrs. Hugh Low & Co. I am not quite clear whether the peduncle is 2-flowered or whether two detached flowers are represented, the origin of the flowers not being clearly indicated. I believe, however, it was a 2-flowered peduncle.

Its fine colour and shape made me think at first sight of a grandiose Cattleya Walkeriana, the more so as I am doubtful about the origin of the peduncle, as I look at the Lowian drawing. A look to the great angulate side laciniæ of the lip, however, prevents any further comparison.

To judge from the dried flower, its thin substance reminds one of Cattleya labiata. The sepals are fine light lilac, with greenish tips; the petals are much broader and undulate. The angular side laciniæ of the lip are pallid outside, and the reflexed borders are of fine purple colour. The throat of the lip is of the finest orange colour, with purple lines; and the anterior broad part of the lip is beautifully magenta-coloured, with darker veins and a very narrow white margin.

Messrs. H. Low & Co. have named the plant in compliment to their traveller, Mr. White. It is to be regretted that the collector did not provide his employers with Latin and French descriptions, as in the case of Cattleya dolosa.

I have to thank also the lucky possessor, Mr. Holbrook Gaskell, Woolton Wood, near Liverpool, for several remarks given here, as also for the flower; and I feel very sorry that my absence, as well as many impediments since my return have prevented an earlier publication. *H. G. Rchb. f.*

PHALÆNOPSIS REICHENBACHIANA, *Rchb. f. et Sander.**

Once more a new member of that herd of various things with many varieties as to colours that was nearly unknown in Europe thirty years ago, and of which Phalænopsis Luddemanniana was the first species introduced into the gardens. Mynheer Blume, indeed, knew the group, as he showed me in 1856 a sketch in watercolour. The present plant comes from the far east of tropical Asia. Its leaves are said to have 0.35 m. : 0.07 m., with a strong keel on their back. The roots are said to be strong and grey. Peduncle upwards of 0.45 m. long, with ten to twenty-five flowers, equal to those of a fine Phalænopsis sumatrana. Sepals and petals said to be shining, waxy, whitish-green, with brown blotches and bars. Lip's side laciniæ orange and white, central lacinia mauve-blue; column white with lilac.

Mr. F. Sander insists on my adopting his proposed name, thus rewarding me for the Phalænopsis Sanderiana, noted in the *Flora*. "My" Phalænopsis stands near P. pallens, and may have to be "sunk" in it one day, though that scarcely appears probable. Dr. Lindley's and my observations prove this plant to be one having the anterior part of the lip with many teeth, very different colours, and other few flowered peduncles. We must watch and see. *H. G. Rchb. f.*

ERIA RHODOPTERA, *n. sp.* †

A curious species, with cylindrical strong sulcate or even areolate stems bearing when young two leaves at their top which are ligulate acute. The raceme has flowers much like those of Eria bractescens, of a pallid white ochre colour, with purple petals and purple side lobes of lip. For such an Eria it looks uncommonly gay, as vivid colours are rather scarce in that wide genus. It flowered in the Messrs. Henderson & Son's Pine-apple Nursery, Maida Vale, and was kindly sent by Mr. O'Brien. *H. G. Rchb. f.*

PLEOPELTIS FOSSA, *n. sp.*

Fronds evergreen, coriaceous, arching, crowded laterally, a foot long, varying in outline from linear-lanceolate to ovate according to the development of the lateral lobes, the base cuneate, the apex taper-pointed, the margin sinuately dentate on the narrower fronds, with some of the teeth on the middle portion of the frond growing out into short linear simple or bifid lobes, the lobes becoming elongated on the broader fronds, simple bifid or multifidly-flabellate, 1½—3 inches long; deep green above, paler beneath, with a few small scattered black ovate-acuminate fimbriated scales on both surfaces; costa elevated and ebeneous on the under side, grooved on the upper side when dry; veins obscure, compoundly anastomosing, forming elongated areoles with divaricate included free veinlets; sori large roundish, sunk in a series of deepening cavities or pits confined to the upper half of the frond, and ranged in a single rank on each side the costa at the exterior edge of the undivided portion near to the sinuses of the marginal lobes, one rarely two to each sinus, each soriferous cavity forming a boss on the upper surface; rhizome almost buried amongst the fibrous roots, slowly creeping, stoutish, with dark brown fimbriated scales, and very short phyllopods with which the fronds which growing up quite close together are articulated, both the very short stipes and phyllopods naked.

This interesting new Fern, which was communicated to the Messrs. Veitch & Sons, of Chelsea, from the Leyden Garden, is no doubt a native of the Eastern Archipelago. Its pretty arching habit of growth and comparatively small size make it a very suitable object for suspending from the roof of the stove fernery in any position where plants of moderate size would be appropriate, and its durable leathery evergreen fronds with their elegantly sinuate and lobate margins give to it a peculiar distinctness of character which will be appreciated by those at least who have any taste for the more elegant forms of tropical vegetation.

It belongs to that section of the Polypodieæ in which the venation is compoundly anastomosing, but owing to the leathery texture of the fronds it is not very easily made out. It is, however, compoundly anastomosing, forming narrow elongated meshes, within which are developed the ultimate free divaricate veinlets, which are thickened at the end. The sori, as frequently occurs in this generic group, Pleopeltis—which some of our modern fern-students prefer to value as subgeneric and to name Phymatodes, a matter of fancy more than of principle—are sunk in deep hollows or pits, which cause corresponding elevations or bosses on the upper surface of the frond. They are arranged in a single series on each side the costa, at the outer edge of the entire central part of the frond, near to the sinus of the marginal lobes, one sorus usually being produced nearly opposite each sinus.

The fronds grow in a closely-set lateral series from a slowly-creeping scaly rhizome, which seems to bury itself in its own roots. The fronds take a two-ranked arrangement, and are each seated on a very short phyllopod, which is not scaly like the rhizome, and with which they are evidently articulated. From this rhizome they spread out on all sides in a sort of shuttlecock fashion; they have little or no stipes, the cuneate base of the frond being continued almost to the very base, and their under surface is of a much paler green than the upper—a difference of colour which necessarily adds to their pictural effect, all the more marked from the ebeneous line which marks the course of the costa on the under side.

This elegant little Fern was awarded a Botanical Certificate (equal to one of the first class) at the show of the Royal Botanic Society on July 5; and the Floral Committee of the Royal Horticultural Society gave it one of their First-class Certificates at the meeting held on July 11. Its merit, from the decorative point of view, has consequently been sufficiently attested. *T. Moore.*

CLOVENFORDS.

SOME of the numerous visitors to Clovenfords have from time to time had something to say about what they have seen, so that the readers of the *Gardeners' Chronicle* have been fairly posted up in what was being done, yet a few words at the present time may be acceptable, as very considerable alterations as to what is cultivated have recently taken place. For some time after commencing operations Mr. Thomson was, like many others, tempted to combine with the Grapes the cultivation of numerous plants suitable for market, and for the production of cut flowers. It is needless to say that, even where the Grapes are made the first consideration, and with the greatest care and attention, this plan must necessarily end in somewhat of a compromise, the reverse of beneficial to the Grapes. All such plants are now given up and done away with, and the place devoted purely and simply to the cultivation of Grapes and Orchids. The establishment has gradually extended, until the houses—most of which are of unusual dimensions—number just on a score, five being devoted to Orchids, the rest to Vines. Of the latter there are nine or ten, each some 200 feet long by from 18 to 25 feet wide; the largest are span-roofed, the Vines planted on both sides of the house, and occupying both outside and inside borders. The kinds cultivated now are almost wholly confined to the late black varieties, Gros Colmar and Lady Downe's, with Muscats and some Duke of Buccleuch. The reason Mr. Thomson is thus in a great measure turning his attention to late kinds is that which has influenced other market growers in the same direction, namely, the competition of foreign Grapes which has so adversely affected the price of the early kinds but has not had a corresponding influence upon the late keeping sorts. Gros Colmar holds the first position as to quantity at Clovenfords; Lady Downe's has all but, and will ultimately quite,

* *Aërides Emericii*, n. sp.—Affin Aeridi virenti, Lindl! Foliis angustioribus longe loratis apice bilobis; labelli lacinus lateralibus integris; lacinia mediana producta obscure bidentata, omnibus minutis ad e fissis quam in Aeride virenti, lamella ascendente utrinque adnata, superne retusa et emarginata in calcar.—In India Britan; filio intrepido patris celeberrimi dicatum. *H. G. Rchb f.*

† *Cattleya Whitei*, Hort. Low — Pseudobulbo ac folio Cattleyæ labiatæ; (inflorescentia biflora?): sepalis ligulato-oblongis acutis, lateralibus curvulis; tepalis oblongis obtuse acutis crispulis; labelli lacinus lateralibus triangulis, columnam involventibus, lacinia antica ab isthmo brevissimo reniformi ad lata lobulata denticula a crispula. *H. G Rchb f.*

* *Phalaenopsis Reichenbachiana.*—Aff. P. pallenti: pedunculo valido (nec ramoso) pluriflore; sepalis tepalisque oblongis acutis, labelli lacinia antica antice triangulo-dilatata, angulis apiculatis, lacinus lateralibus, a basi lata angustatis apice bidentatis, linea mediana ornata basi papulis filiformibus, dein lamina depressa, ovata bidentata dein lacinia bicuspidata, antice carina abrupta, disco anteriori pulvinari piloso; columna basi utrinque angulata. *H. G. Rchb f.*

† *Eria rhodoptera*, n. sp.—Caulibus cylindratis sulcatis vel areolato-sulcatis, juventute diphyllis; foliis lineari ligulatis acutis; racemo elongato; rhachi pilis sparsis obscuris appressis hinc illinc asperula; bracteis ligulatis obtusis ovaria pedicellata omnino seu dimidia æquantibus; ovariis pedicellatis appresse pilosis, pilis atropurpureis, mento obtuso valde evoluto; sepalo impari ligulato obtuso sepalis lateralibus triangulis; tepalis ligulatis, subfalcatis, latis, labello triñdo, laciniis lateralibus semioblongis, productis, lacinia mediana ligulata retusa emarginata longiori, carinis per discum ternis; lateralibus brevioribus, disco laciniæ anticæ et regione inter carinas puberulo. Flores cum pedicellis et ovariis et bracteis ochracei; tepala ac labelli laciniæ laterales atropurpureæ. *H. G. Rchb. f.*

supplant Black Alicante: the main reason for the latter being done away with is that its natural free-setting disposition entails very great additional labour in thinning—a matter of the first consideration where, as in Mr. Thomson's case, it is utterly impossible to find hands that can do the work: for it may be observed that, with the exception of Galashiels, some 3 miles away, and where the population collectively are engaged in woollen manufacture, the inhabitants are few and far beween.

In selecting a place for his operations, it might have been supposed that the first consideration with Mr. Thomson would have been to have pitched his tent where good soil suitable for Vine culture was easily obtainable, and most of those who have been in the habit of seeing the quality of his Grapes would have come to the conclusion that he had done so, yet such is by no means the case, as the facts are completely the reverse of this. Good holding loam suitable for Vines is not plentiful in the neighbourhood, and where it does exist has been all but impossible to buy. Mr. Thomson was in consequence, in the first instance, under the necessity of using such as he could get from the roadsides, which here, as in most localities, largely consists of the gritty washings from the roadway—a material that answers fairly for a time, but in a few years, when the roots of the grasses with which it was covered are decomposed, there is little left beyond an accumulation of sandy matter—material that even the most skilful treatment, combined with liberal annual manuring, cannot be made to keep Vines in such condition as to produce heavy crops of full-sized fruit. This, of course, has necessitated the gradual re-making of the borders, which, it may be observed, in most cases occupy the full space inside the houses, and a good portion outside. Recently Mr. Thomson has been able to obtain some better material from an adjacent hill-side, but at an exorbitant figure, having to pay £25 an acre for 3 inches thick of the surface turf; with this the old borders are gradually being replaced, the inside being renewed one season, and the outside roots thus taken up and the soil renewed the year following; this has already to a considerable extent been completed with the Vines in each of the 200-feet houses leading from the corridor, and in which its effects are markedly apparent, even with such as were only renewed last winter. It would be difficult to convey in writing anything like an adequate idea of the immense crop of magnificent bunches which the Vines in these houses are bearing—Gros Colmar and Lady Downe's—the bunches appearing literally to touch each other. Large sensational examples it is needless to say are of no use for market, but the crop consists of thick lumpy clusters, composed of such berries as are seldom seen, both in the case of the Gros Colmar and Lady Downe's, the former of course the heaviest. Mr. Thomson calculates that the crop of this variety in these houses will run to 2000 lb. in each, basing his calculations on former years.

In the matter of manure for Vines, as for other things, there are many crude ideas and differences of opinion. The established notion with many people is that manure is manure, and that that which is good for one plant should be equally good for another; yet this is a conclusion, needless to say, which has too much of the rule of thumb about it to pass current at the present day with those who have got the faculty to observe and the power to think. Mr. Thomson has for a number of years been experimenting with different manures for Vines and other things, and has hit upon a combination which he holds in high estimation. How much the extraordinary crops of Grapes at Clovenfords are the result of the cultivator's skill, and how much they owe to the manure, it would not be an easy matter to assess; but there is one thing certain, that if Mr. Thomson's ability in this particular field were not so well known, the credit of the manure would have gained more with most people. All I can say is that the crops of Grapes at Clovenfords have, this year especially, surprised not a few of the best growers in the country who have seen them, and that Mr. Thomson's experience with his Vine manure over a series of years leads him to give it unqualified praise; and there can be no question that special manures, such as resulting from the watchful experiments of those who have made the wants and requirements of particular plants their study, are better adapted for and more potent in their influence on the plants in question than ordinary applications. It is not a material to be used in infinitesimal doses, like that chemical compound which the squire predicted to his bailiff would be discovered, and of which enough for an acre of Turnips could be carried in one of his waistcoat pockets—the individual addressed hinting that the other pocket might possibly hold the produce—for Mr. Thomson uses his manure at the rate of 1½ ton at the winter's dressing to the inside of each of his wide 200-feet houses, forking it in 6 or 8 inches deep, and, as I can testify from actual observation, the way the young roots come up into it is an evidence of their liking it.

Another matter relating to the Vines at Clovenfords, but especially in the big houses under notice, each running from the corridor—which itself is a large wide house, 150 feet by 25, and 16 feet high—is the evident influence which the more than usual amount of fire-heat that Mr. Thomson uses has upon the bearing of the Vines. In these houses the pipes are in three rows, fixed horizontally just above the border round the house next the wall; instead of the Vines being planted in the usual way between the wall and the pipe, they are planted in the inner portion of the border close to the pipes, over which they are bent close down to the eave, and then turned sharp up the rafters. So near are the stems to the pipes that in each case a bit of wood about an inch thick is put to keep the bent stem from absolutely touching the inner row. From the time the Vines are started in spring to the fruit being ripe, the fires are never out night or day, except in the hottest summer weather. After the Vines have got fairly started, [the temperature aimed at is to have the houses up to 70° at 8 o'clock in the evening, and 60° in the morning, the day heat proportionate, but, as a matter of course, varying with the weather. The result is here, as in every place that has come under my notice where high culture is carried out and a sufficient amount of fire-heat is used, that far the greatest weight of fruit, consisting of the biggest bunches and biggest berries, is on the lower half of the roof nearest the pipes. The roasting which the stems here get, immediately above the pipes, with nothing to shield them from the heat in any way, has the effect of hardening and maturing the wood, and inducing fertility to an extent unattainable by the chilly starvation treatment a few individuals advocate but fewer believe in. The heat that the stems of these Vines thus bent over the pipes are necessarily subject to is such that it might have been supposed would injure them had it not so often been proved to the contrary.

Three-fourths of one side of the corridor already mentioned is filled with Duke of Buccleuch, the best abused Grape that has ever appeared; but that many can grow it well is indisputable, and amongst these its raiser, Mr. Thomson, as evidenced by the grand fruit he every year sends regularly through the summer season to Covent Garden, and by the remains of the crop still hanging at the time I saw them (the beginning of September), a single rod of which bore twenty-four good-sized bunches, with berries like Green Gage Plums. Independently of its noble appearance it never fails to please those who like a thin-skinned Grape, as when well done and ripe it appears in the mouth virtually to have no skin at all. To this in a great measure no doubt is traceable its disposition to crack—a fault that can be avoided by checking the flow of sap at the time that cracking commences: this, as is now generally well known, Mr. Thomson does by cutting through the bark on one side of the shoot just below the bunch, or, what he has found even more effectual, by boring a small gimlet through the shoot below the bunch as soon as the least symptom of cracking appears, and which is so far efficacious that not a split berry was existent. For private use, where a fine-looking white Grape of excellent quality is wanted to accompany early Hamburghs, it deserves a place everywhere, for the difficulties which some growers have experienced in getting the Vine first established can be overcome, and the means mentioned, which effectually prevent its cracking, are so simple, and involve so little labour as not to be worth taking into account; but when to be packed and conveyed any considerable distance, there is one matter that seriously militates against it — its extremely thin skin is not sufficient to preserve it from injury where there is any rough usage in transit. As a matter of course with a Grape of this description that is at all liable to crack, the roots, which are in outside borders, require to be covered so as to throw off the wet as the critical time approaches.

Two lean-to houses, each 200 feet long, contained a good crop of Muscat of Alexandria nearly ripe, and promising to colour up fully; two other big houses of this fine kind were a little later.

Other houses were filled with more Gros Colmar, Lady Downe's, and Black Alicante, bearing an immense weight of magnificent fruit. There are two or three more long houses planted this year with Gros Colmar.

At the opposite side of the road to this, where are situated Mr. Thomson's dwelling, and the main block of vineries and Orchid-houses thus far described, more glass erections have now extended; one house, 200 feet long, and another 90 feet, are occupied by Lady Downe's, carrying an enormous weight of fruit, alike remarkable for the size of the bunches and the big berries of which they are composed.

The houses have mostly been built with a view to the natural requirements of the Vine, with no stint in the length of roof, so as to allow the rods space to run; they are plain, but built of good material, well put together, and the place altogether is an example of a programme well thought out and equally well carried into effect. *T. B.*

THE CAMBRIDGE BOTANIC GARDEN.

The Cambridge Botanic Garden, like that at Oxford, is essentially a University garden, kept up for educational purposes. The public have access to it by courtesy only. Strictly speaking, then, such University gardens need not trouble themselves about decorative gardening, but as a matter of fact, they do so. It would be as difficult to find a gardener worth his salt who did not contrive to have his garden attractive as well as useful as it would be to find a lady indifferent to personal adornment. Attractiveness in this case is, at any rate indirectly, propitious to the advancement of botanic science. It becomes a question, however, under such circumstances, whether in some way or another the public should not bear their share of the expense, bu this again is a point we need not now dilate upon. The existing botanic garden at Cambridge does not date further back than the year 1846. Its predecessor, founded by Dr. R. Walker in 1761, was of very small dimensions, and occupied a site in the centre of the town, now devoted in great measure to the new museums, laboratories, and lecture rooms. The herbarium, library, botanical lecture-room, and laboratories for microscopical and chemical research, find a place in these buildings, which are at a distance from the new garden—a defect, we suppose, which was inevitable. Some survivals of the old garden still remain in the shape of a fine Sophora and one or two other trees. Beyond serving as a source of supply for the specimens required by the Professor and the students, we do not call to mind any work with which the old garden was specially identified except Donn's most useful *Hortus Cantabrigiensis*, one of the best and most carefully compiled catalogues of garden plants. In 1845, and probably some years before, strenuous efforts were made to change the site of the garden, and to procure a larger space and a more complete collection of representative plants. A new Curator was appointed in the year in the place of Mr. Biggs, who retired on a pension. Among the qualifications required in the new Curator was "a capacity to form a new garden." Mr. Murray, previously of the Liverpool Botanic Garden, was found to answer these requirements. Commenting upon the matter at the time, a writer in this journal, presumably Dr. Lindley, wrote as follows:—"English gardeners upon the whole are not more conspicuous for their skill in cultivation than for their unacquaintance with botany, that is to say, with the names and distinctions of plants." Such knowledge is, of course, specially desirable in one who has the charge of a botanic garden. In November, 1846, the Vice-Chancellor planted the first tree, and although the progress was hampered by lack of means, the work went slowly but steadily on; donations from various sources, and especially from English nurserymen, contributing rapidly to the growing collections, so that the death, in 1850, of the Curator, Andrew Murray, elicited from Professor Babington a warm tribute to his merits as a gardener, and his character as a man. Amid many expressions of regret and esteem we are told in the obituary note that Murray converted a cornfield into a botanic garden with one of the best collections of hardy trees and shrubs in the kingdom.

We may be sure that such men as Henslow and Babington took care to secure the best substitute they could find, and their choice fell on Mr. J. Stratton from the Edinburgh Botanic Garden. To him succeeded Mr. Mudd, who made a name for himself by his studies in Lichens, and who, we believe, gave practical instructions in botany to undergraduates and others. Mr. Mudd's earlier career, as sketched in these columns by Mr. Baker (1879, vol. xi., p. 588), was marked by extraordinary perseverance against obstacles; indeed his work on Lichens is a remarkable production for such a man. On his death, in 1879, Mr. Lynch, from the Royal Gardens, Kew, was appointed. His zeal and practical knowledge—his appreciation of the wants of botanists and sympathy with their labours, give promise that under his care the garden will rise to a higher level of repute than it has ever before enjoyed; but it is obvious that the prevailing disease of botanic gardens—impecuniosity—is likely to hamper Mr. Lynch, unless more help can be afforded him, or unless the scope and area of the garden be restricted. We cannot undertake to give a detailed account of the present condition of the garden. A few incidental notes on some note-

worthy features is all we can find room for. The garden is at no great distance from the railway station, once on the outskirts of the town, but now rapidly becoming hemmed in. It is flat in surface, about 22 acres in extent, with a loamy soil overlying sand and gravel. Surrounding it is a belt of deciduous and other trees, arranged according to their botanical sequence. The collection is rich, and the specimens have made rapid growth, but stand in need of thinning—a process which, as is customary, has been too long delayed, so that now, when attempts are being made in this direction, it is found that many specimens are irreparably injured. The smaller shrubs are arranged in beds on turf. Among them are some specimens remarkable for their size, as Dirca palustris and the singular Ephedra distachya.

study of them on evolutionary lines would be a more valuable exercise than the mere research after points of difference, simply because they are different.

The garden from its flat surface does not lend itself to any very striking picturesque effects, but there are nevertheless many surprises in store for the visitor. Given a flat oblong area without any apparent complexity of arrangement and it would seem no difficult matter to grasp the general disposition and to "find one's way about." The landscape gardener's art, however, has so contrived it that this is not so easy a process as might be anticipated. The chief advantage of this is that the area is made to seem larger than it really is, and that, as before said, agreeable surprises are in store for the visitor. This is the case with a little bog-bed and pond which Mr. Lynch has recently constructed near the Salicetum (see fig. 102). The visitor has no idea of its existence till close upon it, and then he is delighted to find sloping banks leading gradually down to a veritable Welsh bog with a central lakelet, the outline of which is perhaps rather too suddenly undulating. Bog and pond are stocked with the rarest and choicest of aquatic plants, a very haunt of delight to the botanist. The more common aquatics are, of course, well represented, but they demand no notice here. It is interesting, however, to notice that Aponogeton distachyon is hardy as at Edinburgh. Among the Nymphæas is one, N. candidissima—a variety of N. alba probably—which from the size of the flower and the length of time it remains in bloom is greatly superior to the common form. Typha minima, Lathyrus palustris and other representatives of the Fen flora are here to be found, overshadowed by the hardy Bamboos of Japan and China, and with the Orchids of the chalk downs of England to keep them company at no great distance. This outdoor aquarium, though small, is well stocked, and forms one of the most remarkable features of the garden. Not far off is another lake, with raised banks and islands, but the interest of which is more pictural than botanical.

Purely decorative gardening is only to be expected, as it were, of courtesy in a botanic garden proper; but, as we have elsewhere said, he is no gardener who does not contrive to give his garden more or less of a dressy appearance, and accordingly we find Mr. Lynch working at the improvement of the single Dahlias, and using them to great advantage both in the beds and in the borders. This is one of those bridges between horticulture and botany that we have elsewhere alluded to, for it requires but little reflec-

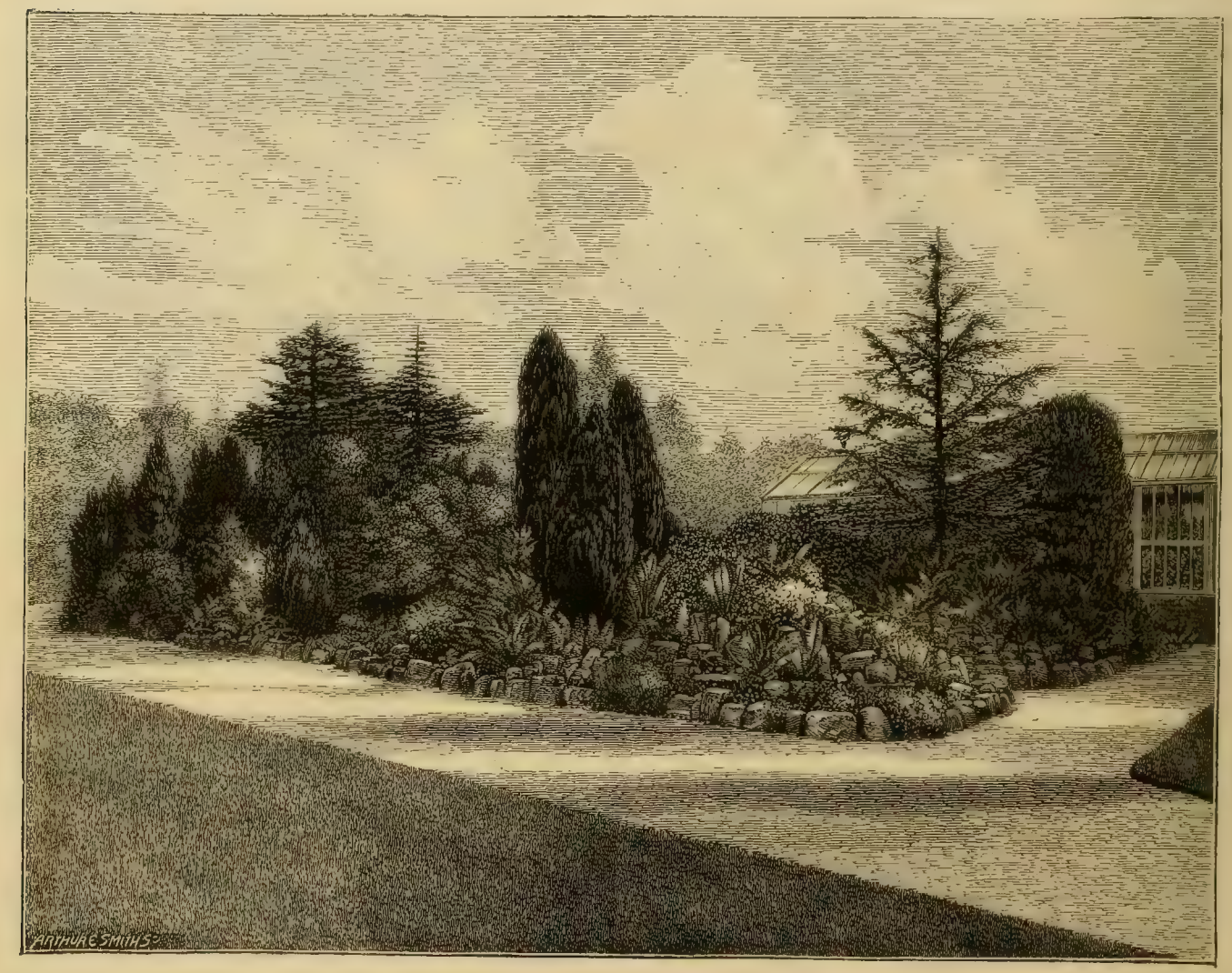


FIG. 103.—THE ROCKERY, BOTANIC GARDEN, CAMBRIDGE. (SEE P. 587.)

The herbaceous and medicinal plants, in place of being arranged in hideous gridiron-like beds, are disposed in beds of more graceful form, adapted in shape and graduated in size according to the nature and number of their contents. British plants are not forgotten, as those who saw the fine specimens of S. spatulifolius exhibited at one of the meetings of the Royal Horticultural Society will readily understand.

Here, too, is a collection that should be invaluable for botanical purposes—a collection of Brambles authentically named by Professor Babington himself. Now-a-days, when the significance of apparently trifling variations is—thanks to Darwin—so much better appreciated than it was in the old days of "lumpers" and "splitters," it is most interesting to have gathered together so as to be seen at a glance such a collection of these puzzling plants. A thorough

tion to see that the more closely the hybridiser or raiser of new varieties follows natural indications the more successful he is likely to be; and to be able to follow those indications botanical knowledge and insight are requisite. Another instance where the botanist may greatly aid the gardener is shown in the use Mr. Lynch makes of Arctotis aspera var. arborescens for bedding-out purposes. Ordinary gardeners do not know, and have not the opportunity of knowing, what plants are available for decorative bedding, and so they go on eternally with "Pellies" and "Calcies" till we are sick of the very sight of them.

The botanic gardener knows how great are the available resources, and it is to our thinking part of his business to make trial and experiment of them. At any rate, Mr. Lynch thinks so, and we trust he may extend his experiments in this direction, and so

make a botanic garden fulfil one of its duties to horticulture.

The rockery—or rather the succession of little rockeries—furnish more surprises to the visitor. He sees one, and imagines there are none other—another turn and another rockery is brought into view, and after that another. It was too late in the year when our visit was paid to appreciate these little rockeries as they should be, but they are evidently stocked with a vast number of "good things." Our passing impression, to which—because it was a passing one—we attach little importance, was that the pockets were in some cases too small and not sufficiently separated from their neighbours, so that there will be more than the usual difficulty in preventing the strong plants overgrowing the weak ones. It is impossible to mention the occupants of these rockeries; one only can we now mention, and we do so because while it is an excellent plant for covering either on the rockery or in borders it does not seem to be generally known—we mean Hippocrepis comosa var. helvetica; the neat creeping habit, dense dark green foliage, and profusion of orange-yellow flowers, are all points in its favour.

Passing now into the houses, we find them arranged in a parallelogram, consisting of long narrow corridors, with four polygonal pavilions at the corners, and two larger ones in the middle of each side. The enclosed space is occupied by a frame-yard, with pits and other structures. The constructions are of wood and glass, some showing signs of wear and tear. The heating apparatus employed is one of Weeks' tubular boiler, which is said not to be economic in the working. The arrangements for securing a different temperature in the several compartments are said not to be satisfactory and require re-arrangement. The various classes of plants are well represented in these houses, so that it may be said there is something of everything. It is a question whether in establishments of limited means it is worth while to occupy space with huge specimens of Sabals and Date Palms, and such-like. They attract the general public, but they teach little that could not be as well taught with other means. At any rate, they take up more room than their value as means of instruction justifies. Lest we should be convicted of heresy, let it be understood that we are alluding to small gardens manned by a small staff with scanty means. In one of the greenhouses we were pleased to see a new use for the single Dahlias. They are here grown in pots, and pinched so as to orm a standard with a bushy head, and in this form are available for conservatory decoration. Mr. Lynch also makes considerable use of annuals grown in the open ground and taken up and potted just before they come into flower. Loasa vulcanica was a very striking greenhouse plant so treated, and so were Guizotia abyssinica—a plant the seeds of which yield oil—and varieties of Scabiosa atropurpurea.

The length of this notice forbids us to linger over the Orchids, the Ferns, the succulents, all of which are fairly represented; but we must not overlook the singularly striking stove climber, Vitis gongylodes, some peculiarities in the structure of which Mr. Lynch has described in the *Journal of the Linnean Society*. This noble climber, with its four-sided stems with deep undulating wings, and its bold 3-foliolate foliage, was in bloom at the time of our visit, but as at some future time we may probably give an illustration of it, we forbear from further mention of it now.

One feature in the houses is strongly to be commended, viz., the getting together of as complete collections as possible of certain genera. Mr. Lynch is doing this with Salvias, Fuchsias, and Pelargoniums. Botanic gardens may do excellent service in this way, particularly if the Professor or Curator will supply a complete list with synonyms of the genera selected for illustration. This mode of illustrating particular genera is well adapted for a small botanic garden, as more strict oversight and scrutiny can be afforded in larger establishments, where there are so many more and such diversified demands made on the attention of the superintendent. As we have said, it would be impossible to go into lengthened detail about the contents of the houses, but one striking representative of the Aloe genus demands a detailed note—or would do so—were it not that the illustration shows better than words can do what sort of specimen is here. (See fig. 105, p. 593.) It is 7 feet 4 inches in height above the surface soil, at which point it measures 4 feet 8 inches in girth. The thick rugged stem divides into three main branches, and these again into others, till a round head 9 feet across is formed, the leaves packed in two rows on the ends of the branches like so many fans. The old tree flowers profusely, over eighty stalked clusters of its pretty coral-red pendulous flowers being visible at one time. To this fine specimen we make our farewell bow, and as we leave the garden and recall its many interesting features we are impressed with two things—surprise, that with such a totally inadequate staff the Curator manages to effect so much, and doubt whether, with



Fig. 104.—The conservatory, botanic garden, cambridge. (see p. 587.)

so limited a staff, it is wise to attempt either so much, or so many things. The decoration of the Vice-Chancellor's table, for instance, is surely properly no part of the functions of a botanic garden, and the Curator's time might be much better employed in other directions. Such is the practice, however, handed down from generation to generation, and the Curator—sensible man that he is—makes no complaint, but takes care that the credit of the establishment shall be maintained, even in the dining-room of the resident University chief.

Orchid Notes and Gleanings.

Work in the Houses.—During the next two or three months the work in this department will be principally of a routine character—watering, cleaning, and ventilating. We have seen it recommended to keep Orchid-houses almost hermetically sealed up during the winter season; but this is a great mistake, as free ventilation, though in less volume, is as necessary through the winter as during the summer season. No difficulty will be experienced in this respect with the cool-house, except during very severe or foggy weather, when it may be necessary to keep the house closed, but on all open days, when the outside temperature is above 45°, pretty free ventilation may be safely indulged in. With the warmer houses it will be preferable to raise a little extra heat in the pipes during the early part of the day, so as to be able to give the plants the benefit of a change of air, which should be done without creating draughts or lowering the temperature below the figures necessary to maintain the plants in health. Where careful ventilation is not attended to at this season the plants soon begin to throw off exudations which, if allowed to remain on them, soon lead to disease. Another point to guard against, which the close treatment leads to, is the growth of confervæ. Where there is much of this growth in the houses at this season it shows pretty conclusively that the atmosphere has been kept too moist and stagnant. All damp surfaces covered with confervæ should be cleaned at once, as it is impossible to keep choice plants, such as Cattleyas, at rest when surrounded with a growth of this nature, as the moisture constantly rising from it would start them into growth prematurely. The thin-leaved section of Odontoglossums will require careful watching and dry positions during the dull weather we may now expect, as a very little damp soon makes havoc when it settles in the foliage of these plants; and when once decay sets in it is difficult to arrest it before the plants get disfigured. The kinds most likely to suffer in this way are O. Roezlii, O. Warscewiczii, the different forms of O. vexillarium and O. Phalænopsis; the latter kind often suffers in the bulbs as well as the foliage. One of the finest Orchids at this season is Dendrobium formosum giganteum, and a few dozen well grown plants would yield a long supply of choice flowers. Any of the Dendrobes now starting into growth, such as D. Cambridgeanum and D. chrysanthum, must be accommodated with a nice growing atmosphere. Miltonias and Brassias making growth must be encouraged, and may be grouped together; and after flowering, Zygopetalum Mackayi would thrive under the same conditions as the Brassias. Odontoglossum grande should now be kept drier than the generality of Odontoglossums. This and O. citrosmum would winter well together in a cool part of the Cattleya-house. O. bictonense, O. cordatum, O. Rossii, and many others that flower at this season should be placed in rather dryer quarters than the cool-house when in flower. Cattleya exoniensis, C. marginata, and C. Dominiana should be kept dry for a few weeks after flowering. This will give them a rest, and the plants will be able to start as the days begin to lengthen. Where there is a good stock of Lycaste Skinneri, some of the earliest may be pushed forward with a little extra warmth, which will extend the season of bloom. *J. Roberts, Gunnersbury Park Gardens.*

Heating Large Orchid Houses.—All who were familiar with the limited Orchid accommodation at Mr. Bull's old nursery in years gone by, wondered how he attained such perfection and did such a large trade in them in such cramped quarters. Since starting his new place, however, on which he was enabled to build properly constructed houses with all the best appliances for heating and ventilation, a marked improvement took place, and at present few better houses are to be found. It would be saying much to state that the plants looked better than they formerly did, but I am sure that their culture must be greatly simplified by the better accommodation. Whenever a new idea for the benefit of his Orchids strikes him Mr. Bull is not long in carrying it out. In his recently constructed large specimen house he has an arrangement of piping for keeping up and equalising the temperature of the house which will, I think, prove singularly happy. All who have had to do with lofty Orchid-houses know how next to impossible it is to keep the heat in in winter, and particularly in windy weather. The theory is, that the heat coming from the one low level and rising immediately to the ridge is there so reduced as not to heat the house sufficiently. In order to counteract this, and to have the heat radiate from two levels, Mr. Bull has, in addition to the ordinary low-level hot-water pipes, run a pipe round the upper part of the house at a height of 7 to 8 feet from the ground. The temperature of the house seems to be greatly improved by this arrangement, and intending builders of Orchid-houses would do well to give an eye to it from time to time during the winter, for at that season only can the matter be properly tested. The long Odontoglossum-house here never surprises me now with its beauty as it once did. It has been in full bloom for years, and I should be surprised to see it looking scanty of flowers. Some of the masses of O. Alexandræ are among the best in London, and seen with from twelve to twenty of their lovely flowers on a spike, as many of them are now, they are grand. At present also some fine plants of Odontoglossum vexillarium rubellum, O. Chestertoni, O. Andersonianum, O. Pescatorei, O. Hallii, O. tripudians, O. Roezlii, Trichosma suavis, and numbers of pretty Masdevallias, and other interesting things are in bloom. The healthy condition of some immense tufts of Odontoglossum Phalænopsis grown in a cool airy house is also noteworthy. *James O'Brien, Harrow-on-the-Hill.*

Orchids in Flower in the garden of Dr. Boddaert, near Ghent:—

Aërides suavissimum
Burlingtonia sp.
Cattleya bicolor
,, Harrisoniæ
Coiax jugosus
Cymbidium Mastersii
,, pendulum
Cypripedium Ashburtoniæ
,, barbatum
,, caricinum
,, concolor
,, Fairrieanum
,, Harrisianum
,, Haynaldianum
,, Hinksianum
,, Hookeræ
,, insigne
,, ,, Chantini
,, ,, Maulei
,, longifolium
,, niveum
,, Pearcei
,, purpuratum
,, Roezlii
,, Schlimii
,, Sedeni
,, Spicerianum
,, stenophyllum
Dendrobium heterocarpum
,, superbiens
Disa grandiflora
Epidendrum prismatocarpum
,, cochleatum
Fernandezia sp.
Gongora quinquenervis
Houlletia Brocklehurstiana
Lælia Perrini, sixty-seven flowers
,, Pineli (marginata)
Lycaste Skinneri
Masdevallia amabilis lineata
,, bella
,, chimæra
,, corniculata
,, ignea (Van Houtte's var.)
,, infracta
,, Lindeni
,, octhodes
,, Peristeria
,, myriostigma
,, tovarensis
,, Trochilus
,, Wagneri
Maxillaria atro-purpurea
Miltonia spectabilis
,, Clowesii, thirty-four spikes, 214 flowers
,, ,, Moreni
,, Moreliana
Odontoglossum Alexandræ and var. Chestertoni
,, Andersonianum
,, bictonense superbum sixteen stems, 260 flowers
,, constrictum
,, grande
,, hastilabium
,, Insleayi splendens
,, Lindleyanum
,, madrense
,, nebulosum
,, Pescatorei
,, Rossi
,, ,, majus
,, Uro-Skinneri
,, vexillarium
Oncidium carthaginense fuscatum
,, cochleriferum
,, crispum
,, dasytyle
,, Forbesii
,, incurvum
,, Krameri
,, prætextum
,, ramosissimum
,, Rogersii
,, tigrinum
Phalænopsis amabilis
,, grandiflora aurea
,, rosea
Physosiphon Loddigesi
Pilumna fragrans
Pleione lagenaria
,, Wallichiana
Restrepia antennifera
Trichopilia tortilis
Saccolabium Blumei
,, ,, Dayanum
,, radicans
Vanda tricolor
,, ,, formosa [flowers
,, cærulea, thirty-four
,, lamellata Boxalli, thirty-one flowers
,, suavis Veitchi

C. Wilcke, Chef des Cultures.

Odontoglossum mulus var. pallens, Rchb. f.—I have received a very fine, well developed flower of this from Mr. William Lee, Downside, Leatherhead, Surrey, whose collection must be unusually rich and fine. I am informed by this gentleman it is the same plant that was mentioned by "F. W. B." as Odontoglossum histrio var. Leeanum in your last number, p. 526. If the author means as "Odontoglossum histrio" my Odontoglossum histrionicum (see *Gardeners' Chronicle*, No. 424, February 11, p. 178) then I cannot agree at all with his naming. The trifid lip, the calli, and the whole *tournure* of the flower being good distinctions for the very rare Odontoglossum histrionicum. Its type was till recently a monopoly of Mr. W. Bull's, but a glorious variety appeared as another monopoly with Messrs. Heath & Sons. *H. G. Rchb. f.*

The Flower Garden.

Lawns and Pleasure Grounds.—The late equinoctial gales have completely upset our calculations with regard to leaving the necessary clearing up of fallen leaves and rubbish in order to prosecute alterations and planting, as it has rendered it imperatively necessary to have a good clearance of the vast amount of rubbish which the exceptionally violent gales have scattered in all directions. Not but what such violent gales have their use: in the first place they clear off from the larger trees a vast amount of rotten wood and other rubbish once for all, instead of its being left to come down a little at a time, and thus necessitating a constant labour in cleaning up. In the next place the shaking and opening up of the ground through the swaying motion of the larger trees has the effect of rendering the ground capable of taking in a due amount of the invigorating rain by which such storms are generally accompanied, and thus opening the ground to receive a sufficient amount to maintain that moisture in the earth so necessary to the life of vegetation generally, and also that the superabundance may be drained off for the supply of springs. The state of the weather since I last wrote has been such that the operations of levelling, turfing, and planting have been very much retarded by the necessity for clearing up as well as the great amount of rainy weather which has prevailed, but should be resumed at once when the weather is favourable.

Flower Garden.—Very little will now remain in the beds and borders worth retaining, and the principal care should be to maintain an appearance of neatness. To this end let all stakes, old flower-stems, and other extraneous matter be removed at once, The bulbs of Tigridia Pavonia and conchiflora should be lifted at once, and stored away in sand in a cool place secure from frost, and covered so as to be secure from mice, which I have known to get into a large box where they were stored in the winter and devour the whole stock. With regard to the refurnishing of the flower-beds as before recommended, the weather has not been at all favourable, but, as time presses, such work should be finished off as early as possible.

Mixed Herbaceous Borders.—These require a complete renovation every few years, and the present is a very good time to set about the work, first, by spreading mats near the borders, and then carefully lifting the whole of the plants from a portion of the border and placing them on the mats. Then proceed to trench up the portion cleared at least 2 feet deep, and thoroughly incorporate with the soil some new compost in which well decayed manure greatly predominates, but into which a good amount of soot may also enter. Thoroughly mix the whole up with the soil in the border and replant at once, taking care to reduce the size of the larger plants, and, indeed, entirely discarding many of the coarse and weedy things to make room for choicer varieties. Proceeding thus with a portion at a time until all is finished or stopped by unfavourable weather, by working the borders piecemeal as it were, we avoid the risk of having too many plants out of the ground at once, at the same time any vacancies may yet be filled up with plants from the reserve garden, and the coarser plants not required in the dressed grounds may be transferred to the shrubbery borders.

Bedding Plants.—Everything likely to suffer from frosts should now be stored away in their winter quarters. The weather has lately been very bad indeed for the cuttings of Pelargoniums, which are very apt to damp off. All decayed matter should be constantly

removed, and air be given at every opportunity; they will not require water, and everything which is calculated to create a dampness of the atmosphere should be carefully avoided. A temperature sufficient to exclude frost and dry up damp must be supplied, but care should be taken not to overdo it and always if possible apply ventilation with it, but at the same time carefully exclude cold cutting draughts. The general stock of store cuttings, not being so succulent as the Pelargoniums, will require water, which should be applied on fine mornings. *John Cox, Redleaf.*

Grapes and Vineries.

Where Grapes are required as early as possible next year the Vines should now be started. If cleaned and tied down as recommended in my last Calendar the house can be closed at once, but if fermenting materials are used on the inside border no fire-heat will be required for the first fortnight. Turn the heap over every morning to liberate the ammonia, and add fresh manure and leaves as the heat declines. Before starting give the border a good soaking of clear tepid water at a temperature of 85°; keep the evaporating pans filled with water; and syringe the rods when dry in the early part of the day, but not after 3 P.M. If fermenting materials are used, so much syringing will not be required. Keep the night temperature for the first fortnight from 45° to 50°, with a rise of 10° by day (a little air may be admitted on the back ventilators to prevent the temperature rising above 65°), and close early in the afternoon, to get all the benefit possible from sun-heat; raise the temperature in the early part of the day to the highest maximum, and do the forcing in the day-time when there is plenty of sun and light. Succession houses of Hamburghs must be pruned and cleaned as they require it, and where the Vines are in a good state prune them back to one eye, as they invariably break well when the wood is thoroughly well ripened. If the Vines are old and nearly exhausted prune them back to a good eye and replace them with young Vines as soon as an opportunity offers. Newly planted vineries should be pruned as soon as the leaves fall off, so that they can have as long a season of rest as possible.

In pruning cut the rods to about 8 feet long if it is the first year and the growth is strong, but if weak, cut them back shorter to a prominent eye. If they have fruited one year, let the main rod go about the same distance, so that in a small house they might fruit to the top the second year; but if the house is large it will be better to let them do it in three years. If the growth is very short-jointed there will be more eyes on the main stem than will be required, but these are best taken out when the Vines break in the spring. After pruning dress the cuts with styptic to prevent bleeding. Late Hamburghs must be looked over every few days for decayed berries, and the internal atmosphere must be kept as dry as possible. If they are wanted to be kept until the new year the outside borders would be better covered with shutters to throw off the rain. Give air freely on front and back ventilators only when the external atmosphere is light and dry.

Muscats can be kept at a night temperature of 50° to 55° according to the state of the weather. Use only sufficient fire-heat to keep the atmosphere light and dry without shrivelling the berries. Do not let the inside border become dust-dry, but only use sufficient water to keep the berries plump and in good condition. Give air on the back ventilators on all favourable occasions, but only a little front air for a few hours on the brightest days. Late varieties of Grapes can be kept at a night temperature of 50°, raising it a few degrees more by day. On wet or foggy days keep the house nearly closed, to exclude damp air, which would prove injurious to the Grapes. The earliest pot Vines can now be started in a night temperature of 50°, with a rise of 10° by day; if they are plunged in fermenting materials, see that the bottom-heat does not exceed 75°, and as it declines add fresh material to keep the heat regular. Tie the Vines in a horizontal position, and syringe them with tepid water whenever they are dry; give them a good soaking of clear tepid water at the roots at a temperature of 85° when they are started. *Joshua Atkins, Lockinge Gardens, Wantage.*

The Hardy Fruit Garden.

The excessively wet state of the ground has so far prevented planting operations from being proceeded with, and it will be as well to await a better condition of the soil before commencing, as although early planting is strongly to be recommended for several reasons, yet all its advantages are lost, or at least minimised, by planting irrespective of the state of the weather and soil. The severe loss to the community in general by the almost total failure of the Apple and Pear crops of this season, and the uncertainty that has attended for many years the prospects of remunerative crops to market fruit growers in particular have, it is to be feared, given somewhat of a check to the happily increasing fashion that was springing up of planting orchards where none existed, of extending the planting of small ones, and of taking greater care in the selection of suitable sorts for particular sites and districts, But some useful hints may, perhaps, be gathered from our reverses and practical help afforded to those about to plant, either on a large or small scale, in the form and distribution of the trees to be planted. For the last two years the orchard under my charge scarcely yielded enough to pay for the trouble of gathering, but in the garden it was far otherwise, many varieties bearing full crops and others a useful sprinkling. It is well, therefore, to bear in remembrance the old maxim, "not to put all your eggs in one basket," and so by selection of stock and position to give a chance to some at least of escaping the general wreck during the blooming season. I would strongly recommend the continuance of the old plan of planting all borders around the vegetable quarters with bush, pyramidal, and espalier trees, but see that they are on dwarfing stocks, and where those on borders are only supplementary to the general stock on quarters devoted to their cultivation so much the better. Sometimes such plantations are met with where unsuitable stocks, worn-out soil, and inattention to the direction taken by the roots have caused utter barrenness, and where no good result need ever be expected. But plant suitable trees on prepared ground in the garden, in the shrubbery border, in the pleasure grounds, and in the angles of small paddocks; and why not also in sheltered nooks and by the margins of clumps of trees in the park? Let this be done more largely, and it would be rare indeed that some portion would not escape. Wherever practicable plant in fresh top-spit loam without any addition of manure, more than a sufficiency of which will be derived for the first season from the washings from the mulching of stable litter subsequently applied. Stake firmly as soon as planted, but do not tie too tightly until the soil has had time to subside. Medlars and Quinces may now be gathered and stored, and wet days may be taken advantage of to look over the stock of Pears and Apples in the fruit-room, taking care to remove any decaying ones without disturbing the sound ones by handling where unnecessary. The latest keeping Plums must now be removed from the walls, and if any are required to be kept longer they may be suspended in open baskets in a late vinery or other suitable structure. Nets and their supporting framework will be in most cases no longer wanted over autumnal-bearing Raspberries, and can be housed as opportunity and dry weather offer. See that the walks and borders are kept free from weeds, and the more frequently the falling leaves can be removed the drier condition the walks will be in, besides being in the most tidy state possible at this season. *R. Crossling, Penarth.*

The Pine Stove.

Continue the storing of leaves, also the turning over of the fermenting materials. Surface-over beds that have shrunk with new tan, and make them up to their proper level. Any pots that are not level should also be adjusted, so that they can take water evenly. Good loam should now be stored for spring potting, to allow it sufficient time to partly decompose the fibre by the end of February or the month of March, when the general spring potting is done. It is a great error to allow the loam to be stored too long, as by so doing when potting takes place it breaks into small pieces, and, by the time the potting is completed it is nothing more nor less than powdered soil. This is the very opposite to what suits the Pine. Get the loam as before advised, and let it be stored in a dry shed if possible; if no such accommodation is available store it in a square heap and build the sides perpendicular, to throw off the rain; then make a temporary roof over it, which ought to be waterproof. A few old lights that are not in use answer the purpose well, or a few overlapping boards nailed together will be suitable. If there are many wireworms in the loam throw in a good dusting of fresh soot between each layer. Take off the tops of the old linings that are spent, and renew them with fresh fermenting materials. Care must be taken that too much is not used at one time, or it is apt to make the bed too hot where the plants are standing, or are partially plunged. Any beds that get over-heated from any cause, such as newly made-up ones, should be examined, and the plants lifted if plunged; but if the plants are standing on the beds they are less liable to injury. Stop the use of the syringe altogether for the winter, and let all atmospheric moisture be supplied by damping. Have sufficient steaming troughs in the house or pits, and where flues are used for heating, more troughs and moisture are required. Damp paths, walls, and all vacant places, and if this is insufficient damp the surface of the beds. When watering the plants in any stage use it at a temperature of 85°, and for damping down use tepid water also. For the next four months all plants plunged in fermenting materials, or in beds of tan will require careful handling, and no water should be given unless the plants are in a proper condition to receive it. Quite as great evils result from plants being kept in the opposite condition, that is, too dry; the fleshy and most vigorous roots shrivel, the tissues of the stems shrink, the leaves become soft, and the end is a condition of things alike unsuitable and unnatural. *D. Wilson, Castle Hill.*

Notices of Books.

Town Gardening; *a Handbook of Trees, Shrubs, and Plants Suitable for Town Culture, &c.* By B. C. Ravenscroft. Routledge.

A capital little book, well planned, and well carried out. We may say this much without endorsing all the statements therein made. We should not care, for instance, to place our rockery in the shadiest, dampest corner to be found, and we should decline to accept the author's botanical statements as universally accurate. The Aucuba is spoken of as the "Cuba, or Variegated Laurel," a piece of botanical information worthy of a jobbing gardener, but hardly pardonable in one who professes to write for the instruction of others, even though he expressly disclaims the imputation of being a learned botanist. The Lime is hardly to be recommended as a town tree, and the Mississippi variety is, we imagine, too scarce to be used for that purpose. Among the trees suitable the author omits two of the best—the Acer eriocarpum and the Alnus cordata.

We have little doubt that a second edition will be called for, when little blemishes of this kind can be removed, especially if the author will submit his proof-sheets to some professed gardener with a competent knowledge of plants.

"Illustrations of British Fungi."—The unwearied Dr. Cooke continues to lay lovers of fungi under obligation by the publication of his *Illustrations of British Fungi*, of which we have the eleventh and twelfth numbers before us, containing numerous plates devoted to the illustration of various species of Agaricus.

Cob Nuts. — While other fruits have been very scarce in such a fine fruit-growing county as Kent, there has been a good crop of Cob Nuts on the whole, and they are realising good prices. This is, perhaps, owing to fruit being generally so scarce. Higher prices will be realised later in the season by those who hold their fruit over; but there is a waste in the weight of the fruit, and many perish during the late autumn and winter months. Cob Nuts are now much more generally grown than Filberts, as they are a more reliable crop. The chances of a crop depend, however, very much on a correct system of culture and pruning; and an un-skilled operator at the latter process can greatly imperil, if he does not destroy, the chances of a good crop.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Nov. 6	Sale of Dutch Bulbs, at Stevens' Rooms. Sale of Dutch Bulbs, at the Auction Mart, by Protheroe & Morris.
TUESDAY,	Nov. 7	Sale of Nursery Stock, Plants, &c., at Biggs' Nursery, Lewisham, by Protheroe & Morris (two days). Sale of Greenhouse Plants and other Nursery Stock, at Beard's Nursery, Chesterfield, by Protheroe & Morris.
WEDNESDAY,	Nov 8	Sale of Lilium auratum Bulbs, at Stevens' Rooms.
THURSDAY,	Nov 9	Sale of Mr Pilgrim's Orchids, at Stevens' Rooms. Sale of Fruit Trees, &c., at Osborn's Nursery, Feltham, by Protheroe & Morris.
FRIDAY,	Nov 10	Sale of Nursery Stock, at Cattell's Nursery, Westerham, by Protheroe & Morris. Sale of Roses, Hardy Plants, and Dutch Bulbs, at Stevens' Rooms.
SATURDAY,	Nov. 11	Sale of Nursery Stock, at the Whitchurch Rectory, Edgware, by Protheroe & Morris.

A BOTANIC GARDEN has, ever since the revival of the practical study of natural history, as contrasted with the writing of commentaries on the works of predecessors in past ages, been rightly looked on as an essential appanage to a University or other educational institute, where the natural history of plants forms a part of the curriculum of study. Originally the principal object of these establishments was to supply a means whereby the students could identify and study the characteristics of medicinal plants, hence the name "Physic Garden" applied to many of them in olden times. Daily experience shows that sufficient use even now is not made of these gardens for this purpose. So high an authority as Professor HUXLEY has, however, thrown the weight of his influence against burdening the certainly crowded scheme of existing medical education with botanical details, fit for the pharmacist, in his opinion, but mere surplusage in the case of the medical practitioner.

We can by no means entirely concur in this opinion, believing that, apart from that general biological knowledge which is, of course, quite indispensable to the future medical practitioner, a general knowledge of the principal natural orders, and the power of identifying the commoner poisonous and medicinal plants are essential in a properly devised scheme of medical education. One great object, moreover, in the training of medical men is to develope and to stimulate the faculty of observation, and we do not know a better means of doing this, in the first instance, than by the study of botany. This, however, is hardly a point that can be discussed in these pages. But apart from these questions of direct practical utility, no one will deny that a botanic garden, strictly so called, together with its indispensable adjuncts in the shape of well equipped laboratory, herbarium, and library, are essentials to any institution where biology is studied.

At the present time, in this country, after a period of relative inactivity, much attention is now being paid to minute anatomy and vegetable physiology, including the comparative structure and life-history of plants of all degrees and kinds. This is as it should be, though it is to be regretted that other branches of the science of botany of equal importance should be neglected. This is a matter very much of personal predilection and personal capability on the part of the Professor or Director. His influence very naturally is exerted chiefly or wholly in those departments with which he is personally familiar. The Germans, far ahead of us in these matters, provide for this by the appointment in some cases of two Professors, one whose business it is to make researches and afford instruction in physiological, the other in systematic botany, and we notice that in the Cambridge curriculum similar provision is to some extent made. It is evident that the subdivision might, with advantage, be carried further, for it is not reasonable to suppose that an expert microscopist, for instance, should be a physicist or a chemist, and at the same time have more than a superficial acquaintance with morphology and systematic botany. Be this as it may, a botanic garden, with its accessories, is necessary for each and all departments of botanical science, and its development should march, *pari passu*, with the requirements of the case.

For strictly educational or scientific purposes, decorative gardening, and the culture of plants for their beauty only are not absolutely necessary. But the general public has now-a-days to be considered. Apart from direct instruction a botanic garden may indirectly contribute very materially to the development of a taste for botanical pursuits and to the diffusion of correct knowledge concerning plants and plant life. Looked at from the point of view of mere recreation, or the indulgence of a mere sensuous æstheticism, a botanic garden has importantant functions to fulfil.

In all cases, then, where, either by courtesy, and still more where by right, the general public has access to such gardens, their interests should be considered as well as those of the student proper. To combine in one institution the means of supplying the legitimate requirements of both classes involves no doubt a great tax upon the resources of the garden and the time and capabilities of those who have to manage them. Where pure science alone is considered, the means, the space, and the requirements generally are relatively very small, but where other considerations are involved the outlay of means and the details of management must be proportionately enhanced. So far as finance is concerned that is a matter with which we in this connection have no concern, as that must necessarily be determined by circumstances and by those specially interested. The question of management, however, under such circumstances is a public question. To our thinking horticulture may well form the bridge between pure science on the one hand, and mere recreation on the other. The successful promotion of horticulture makes demands upon the resources furnished by pure science while, at the same time, it repays the debt by supplying suitable objects for study and serves to popularise and diffuse the labours of the student. From this point of view every botanic garden should be an experimental garden; and by this we mean not only a place wherein students of botany and physiology may be sure of finding what they want, but experimental also in the way of introducing new or otherwise desirable plants to the notice not only of the botanist, but of the agriculturist, the gardener, and the amateur.

Where means suffice, and where it can be carried out without detriment to the purely scientific departments (but only in such case), decorative gardening should be carried out more especially from an experimental point of view. An ideal botanic garden would thus be at once a museum, an exhibition, and a trial-ground, wherein all classes interested in botany in its widest sense (including horticulture) might be sure of finding material for investigation and study. Our national garden at Kew well fulfils this ideal in most departments, and is far in advance of other establishments of the kind at home or abroad. Glasnevin and Edinburgh are alike worthy of high commendation for the manner in which, with comparatively limited means, they fulfil their objects. These three are not only scientific gardens, but they are maintained also for the benefit of the general public. Of a University garden, that at Cambridge is a good illustration. A further notice of this will be found on another page.

—— PELARGONIUM SOCIETY.—We are desired to announce that the annual general meeting of this Society will be held at South Kensington on Tuesday, November 14, at 1 P.M. precisely.

—— THE PROPOSED PINK SHOW FOR 1883 appears to meet with general favour, and the friends of the movement will probably agree to preliminaries at South Kensington on the 14th inst.

—— ROYAL BOTANIC SOCIETY.—As at present arranged, the fixtures for this Society's shows and meetings in 1883 are:—Spring Exhibitions, Wednesdays March 28 and April 25; Summer Exhibitions, Wednesdays May 16 and June 13; Evening Fête, Wednesday June 27, 8 to 12 P.M.; Promenades every Wednesday, from May 2 to August 1, excepting May 16, June 13, and 27; Lectures at 4 P.M. Fridays May 4 to June 22. General Meetings for election of new Fellows, &c., Saturdays at 3.45 P.M.—January 13 and 27; February 10 and 24; March 10 and 24; April 14 and 28; May 12 and 26; June 9 and 23; July 14 and 28; November 10 and 24; December 8. Anniversary, Friday, August 10, at 1 P.M.

—— SMOKE ABATEMENT.—Writing to the *Times*, October 28, Mr. ERNEST HART, Chairman of the Council of the Smoke Abatement Institute, states that the Honorary Secretary of the Smoke Abatement Committee, Mr. W. R. E. COLES, C.E., has been appointed by the Home Secretary Smoke Inspector for London, and that the work of smoke abatement within the limits of the present law as relating to factories, workshops, bakehouses, &c., is being vigorously carried on in London. In many of the great manufacturing centres—Manchester, Stoke, Oldham, and elsewhere—the impetus given to smoke abatement by the results of the Smoke Abatement Exhibition at South Kensington is showing itself in greatly increased activity, and in the expressed desire for further legislation, as well as a much more vigorous use of the provisions of the existing law. When the volume of reports, tests, and tabulations showing the work done at South Kensington is issued, it will be found that certified means exist for carrying on the greater proportion of those industries which are now the cause of the greatest nuisance in the production of smoke, without any such unhealthy and unpleasant concomitant, and this without any pecuniary sacrifice.

—— THE COMING WINTER.—It was the other day remarked in a daily paper that, curiously enough, two successive winters had been inaugurated by terrific wind-storms. Leaving, however, the region of fact, it may be worth while to carry the analogy a little farther, and ask whether, as in the first instance the storm led to a very mild winter, the second one is also to do so? It is not possible for us in any shape to prognosticate the temperature or general nature of the season that is coming. To gardeners, to whom more or less of cold is for the things under their charge of the utmost importance, it would be information of the greatest value could they obtain early some average estimate of what the coming winter would be. Unhappily we know not what a day may bring forth, for past experience has shown often that a sudden shifting of the wind from the balmy south-west to north-east has brought with it a continued spell of intensely severe frost, and a change in climatic conditions, that, none the less that it is so sudden, is exceedingly destructive to vegetable life. Against such conditions we can make little preparation, for the protective efforts which would be valuable against hard weather would be productive of harm were the winter to prove, as last year, one of singular mildness. Already we have to note a protracted autumn, for seldom has the month of October passed with so little frost. It is true there has been enough to warn gardeners that the season of tender things is over, and the winter, whatever form it may assume, is at hand. More destructive even than the light frosts, however, have been the fierce winds and heavy continuous rains. Against these no tender things could stand; until a general clearance of all summer decorative plants has been effected gardens will present a somewhat deplorable aspect. The fall of the leaf, too—always a season of worry and labour—has so far been intensified by sweeping winds. A few sharp white frosts would bring down the laggard foliage, and check the too luxuriant growth in plant life. That is a visitation probable enough, but whether we are to be greeted with hard weather later on or not is unpleasantly problematical. If analogies go for anything, we may look for a mild winter, but analogies in meteorology are of little value. To be forewarned is to be forearmed, and we have need to be prepared for either weather condition. If we can manage so admirably in preparing for the one to be defended against the other, then indeed shall we have cause to rejoice.

—— GOLDEN QUEEN ONION. — Messrs. JAMES CARTER & Co. have kindly sent us samples of a beautiful little Onion called Golden Queen, introduced by them last year. Messrs. CARTER think it a very excellent variety, and amongst other qualities it is said to possess first-rate keeping properties, some bulbs having been kept over a period of six months. It was, indeed, hardly necessary to mention this, as

any one can see from the transparent appearance of the Onion that it is a real keeper; and those who cannot trust to their vision may satisfy themselves by feeling the bulbs, which are as hard as Hazel nuts. The bulbs are roundish, flat, and gardeners and cooks all over the country will find a new friend, and a serviceable one, in Messrs. CARTER'S Golden Queen Onion.

—— A DOUBLE FORM OF ACROCLINIUM ROSEUM.—This is among the novelties promised us from Mr. J. C. SCHMIDT, and Mr. BENARY, of Erfurt, for next season. How it originated is not stated; and it is somewhat uncertain whether it can be distributed until next year, still, it finds a place among the novelties so far announced. Whether it will be the acquisition it is reported it is certain to prove, remains to be seen. In this case it cannot be commended on the ground that it will render the flowers more durable, for the Acroclinium is one of our best known and most useful everlastings, and it will last for a considerable time in a cut state. In point of artistic expression, double flowers are not always improvements on single ones; and the pretty pink florets surrounding the bright yellow disc found in the Acroclinium can scarcely be improved upon by its taking on a double character. Novelties are by no means always acquisitions; indeed, many of them, and especially those received from the Continent, are short-lived, or at any rate not often greatly appreciated in this country. We shall have another opportunity of alluding to the plant, as Mr. SCHMIDT announces his intention of forwarding a specimen for our inspection.

—— THE METEOROLOGY OF GREAT BRITAIN.—A very valuable paper on the mean atmospheric pressure, and another equally important on the mean temperature of the British Islands find a place in the recently published part of the *Journal of the Scottish Meteorological Society*. They have both been compiled by Mr. BUCHAN, and will be of great value for reference. They are illustrated with outline maps showing the distribution of pressure and of temperature respectively for each quarter of the year. The temperature tables are based on twenty-four years' observation in various parts of the kingdom. North Unst is the most northerly station, with a mean annual temperature of 45°.7, and Scilly, the most southerly station, with a mean annual temperature of 53°, so that the rate at which the temperature falls northward is one degree Fahrenheit for every 1° 30′ of latitude, or 90 geographical miles. The mean annual temperature of the southernmost inland station, Southampton (which, by the way, is scarcely an inland station), is 50°.9, and that of the northernmost station in Sutherlandshire 46°.2, a difference of 4°.7, the rate at which the temperature rises southward being 1° for 91 miles. The mildest winter climes are found in the south-west of England and Ireland, but the warmth is associated with an excess of moisture. In January the temperature of the east coast varies little from Wick to the Thames, but from Dover westward to Bournemouth, the temperature of the month gradually increases. Beyond Bournemouth the rise is more rapid, till in the Scilly Islands the mean January temperature is as high as 46°.2—the temperature of April in London. The highest summer temperatures occur in the valley of the Thames around London. The highest mean temperatures, after allowing for height, are Camden Town and Greenwich, each over 64°; while a large number of places, including Weybridge, have a July temperature of about 64°. "This then is the part of the British Islands where the summer heat is greatest, and it is here where many fruits and flowers can be brought to greatest perfection." We cannot make further extracts from these papers, but we would suggest to Mr. BUCHAN that for garden or agricultural purposes a register of the extreme temperatures, especially of the extreme minima and of their duration, is more valuable than that of the means.

—— ANNUAL CHRYSANTHEMUMS AS AUTUMN FLOWERS.—As late as October 30 large and vigorous plants of these could be seen in flower in a cold and bleak district in Kent. They were the double yellow and the double white varieties. There are certain annuals that flower late in the season, and it is well they should be known, because they are so useful in furnishing cut flowers almost on to the end of the year if the autumn be at all favourable. The two annual Chrysanthemums named are singularly free of bloom, and the more the flowers are cut from them the more prodigal do they appear to be of bloom. One great reason why so many of the annuals have such a short blooming time is because they are such free seeders, and after a short period of profuse flowering it seems as if the whole energies of the plants were required to mature the seeds; but by constantly cutting the flowers from the plants seed-vessels do not form, and a much longer blooming period is thereby secured; and when these annual Chrysanthemums are fully double they supply blooms that are very



FIG. 105.—THE SUCCULENT HOUSE IN THE CAMBRIDGE BOTANIC GARDEN. (SEE P. 587.)

acceptable in a cut state, and last fresh for some time. In this respect the double white and yellow varieties are to be preferred to the larger, more showy, but less durable blooms of the C. tricolor section. These are properly summer-blooming varieties, but those more particularly alluded to carry on their acceptable floral service until it is taken up by the varieties of the hardy perennial Chinese types, which when unspoiled by frost fittingly close the year with their abundant and vari-coloured blossoms.

—— ROSA MINUTIFOLIA.—This is the name of a new Californian Rose described recently by Dr. ENGELMANN, and remarkable for its small foliage and showy pink flowers.

—— A TENDER AUTUMN.—This term may be appropriately applied to the season of the year through which we are now passing. On the last day of October varieties of Tropæolum Lobbianum and the pretty yellow T. canariense were as vigorous almost in exposed positions in the open ground as in September, and many other garden flowers of a tender character continue to bear their flowers with a profusion unusual to the season. Summer lingers as if unwilling to bring its reign to a close, and there is some consolation in a fine and mild autumn succeeding such a shortlived summer as that of 1882. Lately we were cutting a pretty bouquet of blossoms from a bush of Nigella hispanica, and near it were dwarf Nasturtiums, Marigold Meteor, invaluable in autumn; Violas in variety, Omphalodes verna, double and single Primroses, Mignonette, and some lingering blooms of Scarlet Invincible Sweet Peas. Across the road, where there was a clearance made in the woods, or "springs" as the Kentish yeomen term it, the Primroses are blooming as if it were March and April, instead of autumn. Many a posy of pretty Primroses is this autumn being gathered by loving sympathetic hands, and sent to the children's hospitals in London. The Kentish woods and lanes are lovely just now; the pretty blossoms that are yielding a foretaste of their spring beauty mingle with rich hues of leafage most attractive in decay, and the seasonable song of the robin is heard in the hedgerows. We echo a thousand desires that Nature will yet stay her wintry visitation, that the attractive tints she casts abroad with no niggard hands may be preserved for a few weeks longer even in decline. What a change the autumn of 1882 is from some that have preceded it, when Dahlias and other tender plants were irretrievably destroyed by the first week in September, and by the end of October not a trace of a Chrysanthemum remained for the short autumn to lend a touch of grace and beauty with which to gild its funeral pall.

—— CHINA ROSES FOR AUTUMN BLOOMING.—It is not too much to say that in the open ground these will outlast all other sections of Roses for yielding flowers up to the end of October. During the past week we have seen dwarf bushes blooming freely, and a charming posy of autumn flowers was formed in great part of these Roses. The China Roses are always of compact growth; their profusion of pretty pink flowers holds the growth in check. The China Roses do not succeed well as standards; they do best when worked on low stocks, or as a fringe to beds on their own roots. They are almost scentless, but they make up for this in profusion of bloom. The common China is one of the most serviceable for gardens, and when planted in a moderately warm and dry soil and mulched with a little manure and leaf-mould in autumn or spring will last a long time. Rose growers state that when a rural district is built upon, and becomes populated the China Rose is among the very first among the Roses to show that the air has become too impure for many valued garden plants. It is in open pure country districts, where soil and position are suitable, that one sees this fine old Rose to the best advantage, and it is further stated by experienced rosarians that where the common China Rose thrives, the planter of Roses may extend his Rose garden with confidence, provided the soil be made suitable. In the somewhat retentive sandy loam of some parts of Kent we have this season seen the common China Rose blooming with great freedom up to within the past fortnight.

—— SEEDLING SINGLE DAHLIAS.—We are pleased to see that raisers of single Dahlias have made up their minds that the standard of quality as regards size shall be strictly adhered to. Messrs. KEYNES & CO., of Salisbury, have sent us specimens of a new single Dahlia which they consider to be an improvement on that well known variety, Paragon. The flowers are smaller than those of Paragon, with a "maroon eye," and the petals are rather more reflexed, and more regularly marked. The flowers had, however, been bruised in transit, so that their true character could not be clearly determined.

—— CHRYSANTHEMUM SEGETUM GRANDIFLORUM.—This, which represents a fine large-flowered variety of the yellow-flowered British Corn Chrysanthemum, which is in course of being distributed by Mr. B. S. WILLIAMS, represents a plant that is likely to prove very useful indeed for cut purposes. The blooms are of a bright sulphur-yellow colour, measuring 2 to 2½ inches in diameter, and invaluable for cutting from, as it comes into bloom when there is a scarcity of other flowering plants. The seed can be sown in autumn for early flowering, but the seed-pans and young seedling-pans must be kept in a cool place, and have a plentiful supply of air. When the seed is sown in spring it succeeds better in a cold frame, or the pans can be put out-of-doors so soon as the weather permits, and the plants placed in the open ground when large and strong enough, where they will flower freely until the end of July. It may be said to fill up a kind of gap between the spring and the summer-flowering plants.

—— NEW ONIONS.—At this season of the year novelties in vegetable as well as flower seeds are announced. A very fine form of the White Spanish, named Rousham Park, is amongst the announcements, and it is said to have resulted from a cross between the White Spanish and Champion; but there is much danger of assuming too much in the matter of crosses between Onions. The Rousham Park appears to be a very fine selected type of the White Spanish, with the base convex instead of concave, as is often the case with this type, and well filled out. This is said to show the influence of the Champion in the parentage; but as much can be accomplished by careful selection. Another new variety is from an Italian source, and is known as the Como. This is a small Onion with a red skin and white flesh; it is flat in shape, and it is reported to be a long keeper, remaining plump and sound throughout the winter, without especial care in keeping. It is said to be grown on the high mountains of the Lake of Como, where the climate is very cold, and where the snow lasts from December until February. From this it would appear to be a hardy variety. Possibly something may be seen of it during the coming summer. One would imagine it to be a flat pale form of the Blood Red Onion, without any tinge of colour permeating to the flesh; but it must be quite small in size, as the circumference is only 2 or 3 centimetres.

—— SCHIZOSTYLIS COCCINEA AS A POT PLANT.—This is, perhaps, save in exceptional situations, the only way to grow this plant in order to have it in good bloom. During such a favourable autumn as that we are now passing through, clumps of this hardy bulb growing in the open ground are blooming in better condition than usual, but wind and rain prejudicially affect the durability and effectiveness of the flowers. But in the greenhouse the plant is now an object of considerable beauty. Six bulbs so grown with care in a 48-sized pot are now sending up several spikes of flower of a showy character, and it can be had in bloom during the greater part of the winter. If large clumps are grown in the open air, some protection is absolutely necessary to preserve the flowers from the disfiguring effects of bad weather; but even with this precaution sharp frost will sadly affect their beauty.

—— EARLY CAMELLIAS.—When the charming white Camellia makes its first appearance in anything like quantity in Covent Garden Market, the majority of Londoners are often puzzled as to how the flowers are obtained. We have heard it said that Camellias may be had in flower nearly all the season through, but this is not exactly correct. "Camellias! ah, yes—forced." Now, there is no such thing as forcing the Camellia in the ordinary sense of the term; the change is brought about very slowly, or if it is not, it is effected at great cost. The spring is the time to hasten the period of flowering. When a plant has done blooming and begins to grow in the early spring, growth may be accelerated by the application of heat and moisture, but once the buds are set their after development and the opening of the flowers is a work of time. A little time is gained every season until the plants are slowly brought round to flower at the desired period. We have seen the old alba plena flower in August, and the same plant continue to bloom for weeks afterwards. It happens in this way. A shoot or two start into growth before the rest, and having got the start, keep it for the rest of the season. Some cultivators cut a portion of the plant partially back in order to get a succession of flowers from it; but as regards Camellia flowers they are not worth much in the market after January, if as late. When the season has so far advanced that the plants commence to grow naturally, the flowers deteriorate in quality, and are next to worthless for sending long distances by rail. Those, therefore, who would make the most of Camellias should aim to have the crop of flowers secured before the plants start into full growth.

—— HELIANTHEMUMS, OR ROCK ROSES.—How well these are adapted for covering rockwork, or for planting in borders, or in dry situations is abundantly illustrated in the gardens of the Royal Horticultural Society at Chiswick and elsewhere. In the habit of growth they have, in the brightness of the colours of their flowers, as well as in their floriferousness and durability, they are of the greatest value. Here are a dozen varieties that are all of a very attractive character:—Brilliant, orange-scarlet; Curiosity, shaded rose; Magnificent, orange and primrose; Rosy Gem, rich rose; Rotunda, rosy-purple; Royalty, crimson-scarlet; Sudbury Gem, rose; The Bride, white; Guinea, primrose-yellow; Hesperus, pale rose, with lilac centre; Neatness, white, with rosy centre; and Croceum, yellow. All the foregoing are single flowers, and they by no means exhaust the list of named varieties, as it would be possible to make up a list of another twenty at least. There are a few double varieties, such as the double carmine, chocolate, red, salmon, and white. The latter are scarcely so showy as the single forms, but like most double flowers they are more durable than the single ones. But this is of small moment, as the Rock Roses flower with great profusion when in bloom, which is during the spring and early summer months; and they continue to flower much less numerously all the summer through. The plants will flourish in almost any situation where plants will live, and in any ordinary soil.

—— SINGLE DAHLIA PARAGON.—In a *Catalogue* of Dahlias issued by Mr. SAMUEL APPLEBY, St. James' Gardens, Doncaster, in the spring of 1834, and comprising just over ninety varieties, appears the above variety, and it is worthy of remark that it is the only single variety included in the collection, and described as "single, maroon and crimson." Possibly it had so much novelty of character and marking that it was retained in collections as likely to be valuable for seedling purposes. It would be interesting to know who raised it, and when it was first distributed. It is also a matter of interest how this variety has survived for half a century and more, while hundreds of others have passed away into the category of departed things. How and when was it preserved? and who re-introduced it? It has been preserved through something like three generations. It is to be noticed that among the many new varieties of new single Dahlias that have been introduced during the past three years, scarcely one shows an advance beyond Paragon. Messrs. KEYNES & CO., Salisbury, have forwarded blooms of a seedling very like Paragon, but a little smaller: the petals more regularly and constantly marked, and the blossoms rather more reflexed. The body of the petals is of a glossy maroon, and the side markings are vivid crimson rather than magenta-crimson, as in Paragon. Some take exception to the large golden centre of Paragon, on the ground that it is too conspicuous; the form raised by Messrs. KEYNES & CO. has a reddish-maroon disc with a circle of golden florets about it, and then the prominent brightness of the centre is thereby reduced. The distinct marginal stripes of colour found in Paragon will always make it and its allies great favourites with gardeners.

—— SKIMMIA JAPONICA.—Berry-bearing plants are to a certain class of people their all-in-all for winter decoration. They last so much longer in a fresh state than flowering plants, and there is a kind

of appropriateness about them as indoor subjects after the leaves have fallen in autumn. The above plant, which was raised and sent out by Mr. Charles Noble, of the Sunningdale Nursery, Bagshot, and may now be seen in fine form in his nursery, is one of the brightest subjects that can be selected for furnishing purposes at this season. Fancy a vase having a centre of one of these plants covered with berries and surrounded by a broad band of white Roman Hyacinths any time between now and Christmas.

—— Tomatos in Winter.—Tomatos can hardly yet be called a staple article of food, notwithstanding that there is a growing demand for them. The best proof of this is the miserable produce that is displayed for sale in various parts of the metropolis. Some of it, we do not hesitate to say, is unfit for consumption. Were some of our large market growers to take the matter earnestly in hand, this refuse—for it is entitled to no other name—would surely be driven out of the market. Tomatos ought to be very plentiful just now from plants grown out-of-doors in pots and housed some time ago. The best Tomatos we have yet seen were grown in a vinery in November. They want a steady temperature of from 65° to 70°, and a dry atmosphere to finish them off to perfection, and the supply of water to the roots should be considerably curtailed in order to secure high flavour.

—— The Surveyors' Institution.—The first ordinary general meeting of the session will be held on Monday, November 13, when the President, Mr. Edward Ryde, will open the session with an address.

—— Rhus cotinus.—This plant, commonly called the Wig Plant, is one of those distinct things which should not be omitted at planting time wherever there is space to introduce a variety of arrangements. Single plants, when they have grown to a good size, are admittedly pretty in their way, but planted *en masse*, as we are wont to plant Ghent Azaleas or Rhododendrons, the effect is very much better, and about this time of year, when the leaves change to brilliant scarlet, they have a striking appearance in the landscape. We should make such an arrangement a temporary one, and thin out the plants as they increase in size to some other suitable situation in single specimens.

—— Chrysanthemum "Adrastus."—This is one of the best of the early flowering section for cutting, and being of dwarf habit is well adapted for the decoration of amateurs' greenhouses. The flowers are purplish-pink, with a shade of lilac in them; and the variety, taking a general estimate of its qualities, seems a desirable one to possess.

—— Ageratum mexicanum.—When the dwarf varieties of Ageratum first came into vogue our old friend, who used to do duty in the long ribbon borders in company with Lobelia cardinalis, Calceolaria amplexicaulis, and other late-flowering bedding plants, was jostled and elbowed from pillar to post until latterly it has only been tolerated in a much shaded shrubbery border, where nothing else would grow and look decent. It has been kept for stock, and a very good stock it makes at this season of the year. We notice in the Parks that tender plants are being taken indoors, and that single Dahlias and carpet bedding are the chief attraction with visitors; but there is one bed in Battersea Park that seems to be the centre of criticism, and it is planted with Eucalyptus globulus, green and dark-leaved Castor-oils, Chrysanthemum fruticosum, and Ageratum mexicanum. The latter was a week or two ago in full beauty—better than it had been this season before; perhaps the plants average about a foot in diameter, and they are covered with flowers and buds enough to keep up a display for weeks to come. The blue flowers have a telling effect among the different coloured leaves, and if those who have despised an old friend think fit to give it another trial it should be as a mixed bed for late autumn.

—— A Sweet-scented Chrysanthemum.—If raisers of new Chrysanthemums could only supply us with a few more distinct and striking colours of as good form and habit as some of the old dull-coloured ones, we should be in a fair way to turn the month of November into a real floral carnival. But even should this be accomplished some of our flower lovers would be sure to call out for sweet-scented Chrysanthemums to go along with them. And this desirable quality appears possible at last, if we can rely upon our sense of smell. The specimen referred to is under the charge of Mr. Newton, of the Inner Temple Gardens, and is called Mdlle. Maulise, a white Japanese variety, the scent of which has a faint resemblance to that of the Neapolitan Violet.

—— Odontoglossum crispum.—At Stevens' Rooms, on Thursday, a nicely spotted and distinct form of Alexandræ, with four branched spikes, and nearly a hundred flowers, sent up from Clovenfords, realised seventeen guineas, the purchaser being Baron Schröder.

—— Gardeners' Royal Benevolent Institution.—We are informed that up to Wednesday last the contributions to the Augumentation Fund amounted to £395 9*s.* 7*d.* The collection for the present season closes on November 30, by which time the committee hope all who still have cards will send them in. A vigorous effort is being made to raise the total to £500, and we sincerely hope the committee may succeed in their laudable undertaking.

—— Publications Received.—Cassell's *Illustrated Almanac*, 1883.—*Our Happy Family.*—*The Little Folks Annual* for 1883 (Cassell & Co.).—*Greater London*, Part I., by Edward Walford (Cassell & Co.).—*The Mungoose on Sugar Estates in the West Indies*, by D. Morris, Director of Public Gardens and Plantations, Jamaica.—*An Appendix to Fruit Farming for Profit*, by George Bunyard, Maidstone.—*The Doomed Comet and the World's End*, by J. A. Westwood Oliver (Wyman & Sons).—*Profitable Market Gardening*, by William Earley (Gill).

—— The Weather.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending Oct. 30, issued by the Meteorological Office, London:—The weather has been much finer than of late in the northern and north-western parts of the kingdom, but over the greater part of England overcast skies and heavy falls of rain have been reported. The temperature has been several degrees lower than during last week, and has ranged from 1° to 3° below the mean for the season. The maxima, which were generally registered either on the 24th or 30th, varied from 58° in the Midland Counties to 52° in "Scotland, E." The minima occurred at most stations on the 26th, and were much lower than any hitherto recorded during the present autumn, the values ranging from 26° in "Scotland, E.," to 32° in "England, N.W." The rainfall has been decidedly less than the mean in Scotland, Ireland, and the north-west of England, but in all other districts an excess is reported. Over central, southern, and eastern England the excess was as great as 1.2 inches, 1.4 inches, and 1.8 inches respectively. Bright sunshine shows a slight decrease in duration in "England, S.," and the "Midland Counties," but a considerable increase elsewhere. The percentages ranged from 53 in "Ireland, N.," and 45 in "Scotland, E.," to 18 in "England, S." Depressions observed:—During this period barometric pressure over our islands and their neighbourhood has been influenced by two well marked and deep depressions. The first of these was small, but deep, and advanced with great rapidity from the south-westward early on the 24th, reaching the north of Denmark by 8 A.M. on the 25th. It then moved less quickly, and in a more northerly direction, at the same time filling up, and finally disappeared over the north of Norway. During its passage over the south and east of England it caused gales of exceptional violence from nearly all points of the compass, and on the following day heavy gales on the eastern shores of the North Sea. The second disturbance appeared to the southward of Brittany on the 27th; it first moved in a south-easterly direction, but during the 28th its course was changed to north-east, and afterwards to N. or N.N.W. The winds were consequently E. to N.E., and, though light in the northern parts of the kingdom, blew strongly at all the more southern stations, and a strong gale over the south-eastern counties.

Forthcoming Chrysanthemum Shows.—November 13 and 14, Stoke Newington; 14 and 15, Southampton; 15 and 16, Bristol, and Borough of Hackney at the Westminster Aquarium; 16 and 17, Kingston and Surbiton; 18, Leicester; 21, Manchester; 21 and 22, Liverpool; 21, 22, and 23, Brighton Aquarium; 22 and 23, Birmingham; 23, Staines; 25, South Shields.

HOUSE FURNISHING.

Fancies in horticultural matters appear to change so swiftly that at times one is apt to think very seriously whether even good ideas are given sufficient time for practical development before something else is suggested or takes their place. Indoor furnishing has undergone many changes of late years, a great many of them for the better, but no one thinks of having fewer plants or flowers in the house, however much opinions may differ as regards their arrangement. Since the system was first introduced it has increased the labours of the gardener, and often rendered his post irksome when material was scarce and expectations large, so large that demands could not be reasonably met with the means and material at command; but better counsels prevail, and we do not now seem to be so fastidious as to the history or value of the plant upon our table as we are of its suitability for the purpose for which it is required. We have heard house furnishing denounced as an unreasonable extravagance upon the resources of the plant department, already slender enough; and we are not prepared to say that at times such things have not taken place. Upon the other hand, owners of large gardens are sometimes weeks in the winter time without seeing their plant-houses, and they derive great pleasure from having a good stock of plants in the house. The obvious way to correct abuses would be to select plants for the house that are neither tender nor valuable, of which any quantity may now be selected and grown in a season or so for the purpose.

Groups of Plants.—These will be in great request in private establishments during the shooting season from now till Christmas, and may be formed of Chrysanthemums and foliage plants without drawing unduly from other resources. One or two early Camellias (Donckelaarii has a fine effect by gaslight), intermixed with green and red-leaved Cannas, might form the bulk of a small group—say, for the decoration of a staircase—and be liberally mixed with well-grown healthy Chrysanthemums having glossy green leaves that add much to the appearance of a group of plants. Effect is often spoilt by cramming too many flowers into a small space; but given a fair proportion of flowers of distinct colours, such as pure white, lilac, red, and crimson, and a feathery natural-looking groundwork of Ferns, hardy or otherwise, and there is only a showy margin required to make an inexpensive and very effective group of plants that will last quite fresh, say, for a week.

Plants for Rooms.—If we accept the fact that a plant is no less beautiful because it is not a denizen of the plant stove, we at once direct attention to subjects that are comparatively hardy for use in sitting-rooms. By selecting the bulk of our stock upon this principle, we are not debarred from introducing choicer foliage or flowering plants from time to time, as the weather may prove favourable.

Dracæna cannæfolia.—This is one of the best of plants for using in front halls—by the way, the worst of all rooms to make a show in, owing to the heavy, sombre surroundings which characterise most of them. The plant in question is a tall grower, with stems and leaves erect, the points of the latter recumbent, and altogether it makes a beautiful specimen for furnishing.

Aralia Sieboldi variegata.—The hardiness of this plant, as well as its general appearance, stamps it at once as one of the best plants of the day for house furnishing in winter. The stock in the country seems to be, if anything, scarce, but we lately saw a noble batch of plants in Mr. W. M. Crowe's Boleyn Nursery, Upton, Essex. The broad silver markings of the leaves were brighter than we are accustomed to see them, and any plant in the batch would make a conspicuous ornament for a sitting-room of ordinary dimensions.

Dracæna amabilis.—As people are as much divided in their tastes as in matters of opinion it may be well to mention plants that are more tender, and certainly more beautifully marked, as well as more valuable than the above for use in sitting-rooms. This variety has bold striking leaves nearly white in the centre, and veined with the richest pink; the lower leaves are green, and heavily marked with deep red. The plant makes a noble object for a sitting-room.

THE SUNNINGDALE NURSERY.

WHEN Mr. Charles Noble pitched his camp afresh (after the dissolution of partnership with Mr. Standish) in the valley of Sunningdale, he selected one of the most convenient situations in the country for the development of an extensive nursery business. Direct communication with the metropolis, and at the same time exemption from the influence of its unpleasant and insidious atmosphere, are advantages which are calculated to operate largely in favour of the rapid growth of trees and plants, and to minimise the labour involved in their production. Sunningdale is close to the station bearing the same name, and is a 24 miles run from London (Waterloo station, South-Western Railway). The neighbourhood abounds in a variety of surface, at times rising abruptly into rugged mounds, and there appears to be a proportion of heath land, freely intermixed with other soils of a distinctive composition. Those whose tastes and sympathies gravitate in the direction of rural scenes would at once appreciate the surroundings, as they would no doubt enjoy the bracing atmosphere that sweeps along the valley from the two adjoining counties of Berks and Surrey. The nursery runs parallel for nearly three-quarters of a mile with the main road—the old coach road between London, Portsmouth, and Southampton—and is within 2 miles of Bagshot. It is intersected about the centre by the main road to Sunninghill and Ascot, and is within a pleasant drive of Windsor Castle. Few nurseries are surrounded by the same number of local attractions. The Pine wood of greyish-green hues which shelters it from the north, the weeping trees of various forms upon the slopes opposite, and the commodious dwelling-house in the Elizabethan style, with its chimneys rising from a grove of Pines, tend rather to convey the idea of a private demesne than of a nursery establishment, where thousands of trees, shrubs, and plants are propagated and grown annually.

The drive or approach to the dwelling-house is from 4 to 5 yards wide, and is high, firm, and dry, sloping from the centre to the stone edging at either side. There is a row of a peculiar variety of Abies Nordmanniana, grafted by Mr. Noble's own hands, on either side of this avenue. The walks, terrace, lawns, and shrubbery beds surrounding the house have been designed in a free and simple style, and are in harmony with the secluded character of the situation. American plants and suitable associates, such as Lilium giganteum, the stems of which latter have been grown from 12 to 14 feet high, measuring from 10 to 14 inches in circumference, and bearing upon an average twenty flowers each, are freely intermixed with the shrubs, and thus present a majestic appearance when in flower. A highly conspicuous ornament by the side of the house is a specimen of Cotoneaster affinis, drooping with clusters of its rich coral-red berries; and upon the lawn in front of the windows are one or two examples of the Stag's-horn Sumach, having a peculiarly rich appearance as the sunshine flits over their deep crimson leaves. It would be strange if, in the midst of such a wealth of hardy plants, some practical evidence of feminine taste and skill were not to be found, some departure from the stereotyped ideas of the gardener—a link to connect Nature in a wild state with Nature dressed. This is found in Mrs. Noble's garden, almost enclosed with choice Rhododendrons, having one of its green sloping banks overhung by a spreading Oak, under whose shade the weary may rest, or read, or admire the beds of hardy Heaths or bands of Azalea amœna, or a border of double Furze and blue Forget-me-Nots edged with Erica carnea. This little garden is freely planted with Pines, which partly overshadow the beds alluded to.

Referring for a moment to the original state of the ground, now stocked with choice trees and plants, as Mr. Noble found it, it speaks volumes as to what may be done by skill and perseverance in reclaiming and improving unfavourable soils. The geological formation of the ground differs widely, and there is no stint of soils, from that heavy enough to make bricks to light mellow loam, peat beds, and even deep strata of the purest sand. Mr. Noble has no doubt that his present nursery ground was once a forest of trees which was destroyed by some fierce gale blowing from the north, as Oak trees of considerable girth have been found in numbers at from 3 to 4 feet from the surface, and always with their tops lying to the south. To reclaim land where a portion of it was so soft that it would hardly bear the weight of an ordinary quadruped might seem to many minds impracticable; but Mr. Noble tells jocularly how upon one occasion he left a pony for a few hours in a certain part of the ground, and when he returned there was nothing above-ground but its head! Another hour, says Mr. Noble, and the head would have disappeared too! But the land has been drained, and thoroughly drained, and what was once a bog or quagmire has for many years been stocked with the finest specimens of Rhododendrons and other American plants. So soft indeed were some portions of the ground, that it was found impracticable to lay the drain-pipes until green slabs of Scotch Fir were placed under them, and these may be seen to this day. The work of reclamation was commenced in December, 1856. The nursery is divided by a walk running lengthwise about 12 feet in width, and also by a stream, the boundary that divides Berks from Surrey, so that in addition to a variety of soils there is also an ample supply of water.

The ground is divided into quarters by hedges of American Arbor-vitæ or Thuia Lobbii. It seems to be a notable characteristic of the soil that the Coniferous tribe attain a degree of colour not often seen elsewhere. The following plants noticed in the border are richly coloured, viz., Retinospora plumosa aurea, Retinospora filicoides, Thuiopsis borealis aurea, Cupressus Lawsoniana lutea, C. erecta viridis, C. Lawsoniana nana, Retinospora obtusa compacta, Cupressus Lawsoniana argentea, the silvery-leaved variety; and of general stock, Arthrotaxus imbricata, an uncommon plant, having a resemblance to the Wellingtonia at a distance, and in habit of growth resembling the Araucaria; Abies magnifica, very good; Thuia Vervæneana, Ilex crenata Fortunei, a plant of compact habit, and hardy enough to be planted anywhere. Samples of Abies Douglasii (the Douglas Fir) are very fine and bearing cones, and for near neighbours bushes of Rhododendrons, var. Blandyanum (colour crimson), Abies Pinsapo and lasiocarpa, Abies Albertiana, Ilex contorta (the Screw Holly), Retinospora filifera, the Whip-cord Retinospora; and Juniperus japonica var. Then follow quarters of standard Apple trees (sorts), young named Rhododendrons, Cedrus Deodara, Abies nobilis, of a deep-green colour; Pinus parviflora, Cryptomeria elegans, a very fine lot; and an equally fine batch of Golden Queen, lævigata, Watereriana and Milkmaid Hollies. Crossing the road that branches from the London and Southampton road to Sunninghill and Ascot, we notice a large quarter of Spiræa palmata, fine plants, with large crowns for forcing. In this portion of the nursery are several span-roofed houses fitted up for propagating the general nursery stock, and they are well adapted to their work. A whole house is filled with Clematis, and we notice a large stock in small pots, as well as the collection of specimens for which the nursery is famous. The new varieties consist of Aurora, Proteus, Xerxes, The President, The Czar, W. E. Gladstone, Lady Constance Kennedy, Pirate King, Daniel Deronda, Jackmanni alba, and George Elliot,—the latter variety being certificated both by the Royal Horticultural and the Royal Botanic Societies.

But of greater interest still is Mr. Noble's stock of bulbs of Lilium giganteum; these are kept in quarters where they are fresh and healthy. We remark that hedges of Conifers are a feature in the nursery, they furnish the necessary shelter, and there is an appearance about them that helps to brighten up their allies, the golden and silver forms of the Conifer family. Those evergreen "breaks" are certainly a great improvement upon the deciduous hedge that always looks so miserably naked in winter. Mr. Noble grows large quantities of his dark crimson Rose Queen of Bedders, which flowers nearly all the season and is now covered with flowers and buds; also hardy Heaths, E. vagans rosea, E. vagans rubra and alba, variegated Loniceras in pots, and other miscellaneous subjects. We should mention as being of especial interest a stock of Wistarias which were raised from seeds brought from Pekin by Mr. Fortune; they were gathered from the white one and produced white and also lilac flowering plants, proving the white to be a variety only. The packing sheds are at the extreme end of the nursery nearest to the railway station, and excellent facilities are provided for loading and unloading in cases of urgency.

The "College Ground" is the title of an adjoining nursery, which is stocked with thousands of standard and other Rhododendrons of various ages and sizes. There is a serpentine path through the ground, and when the stock is in flower the sight may be more easily imagined than described. There is also an assortment of other useful stock, consisting of the Wood Laurel (Daphne Laureola), Vincas, hardy Fuchsias, St. Peter's Wort (Symphoricarpus racemosus variegatus, Spiræa prunifolia fl.-pl., Rhus Cotinus (the Wig Plant), Garrya elliptica, and many other useful plants.

THE NEW NURSERY

lies in an opposite direction, a short distance from the principal entrance. Here we notice that a portion of the ground has been occupied with cereals and root crops previous to planting trees and shrubs. Mr. Noble approves of this method of cleaning the ground and putting it in good heart for tree planting; the ground is well manured for the roots, and trees or shrubs of any kind succeeding them make rapid progress. There are Portugal Laurels, hardy Heaths, extra large Limes, Chestnuts, Poplars, various kinds of cuttings, quarters of Caucasian and other Laurels, Norway Maples, black Italian Poplars, quarters of Plum and Apple stocks for next year's budding, and quarters of young Apple trees comprising over 100 kinds. And Rhododendrons, what numbers!—of named hybrids, of seedlings from hybrids, and of the common Ponticum. Again there are quarters of Spiræa palmata, Ghent Azaleas, Andromeda floribunda, Kalmia latifolia, and small fruits in abundance. We notice Cotoneaster Simonsii, beautifully berried; brakes of Cornus sanguinea, Gueldres Roses, Weigelas, Prunus, Cotoneaster Hookeri, the white Broom (Genista alba), Daphne Mezereum, which blooms in February; Ayrshire Roses in eight distinct kinds, a special quarter of standard Rhododendrons, Osmanthus illicifolius, Erica mediterranea alba, Rhododendron Catawbiense, and many others. About 100 yards north from the dwelling-house are comfortable cottages for the heads of departments, stables, sheds, and other offices, and close by is the Italian Garden, which contains a large assortment of American plants, of which specimens of Andromeda floribunda, over feet in diameter, are the chief objects. Of the many plants that are closely identified with Mr. Noble's name none have proved more useful than Clematis lanuginosa, really the progenitor of all the others, and Skimmia japonica, which is now one of the most conspicuous plants in the nursery, and as useful as a pot plant as it is ornamental out-of-doors.

ALPINE PLANTS.

CAMPANULAS.—The genus Campanula supplies us with a rich collection of very interesting alpine plants, suitable for growing on the rockwork. The tufted and creeping habit of some species is an advantage for large rockeries which it is desired to cover rapidly.

C. barbata, L.—A species found especially in the pasture regions of the Alps. It is clothed with hairs, and its corolla is provided with long projecting hairs, whence the name. The flowers, arranged in erect racemes, are large and bell-shaped, of a very pale violet-blue, or sometimes white, but this variety is rarely permanent in cultivation. It prefers light, fertile, and deep soils, as is indicated by its long tap-roots. It thrives in any soil, but specially in those in which there is no lime. It flowers on the rockery in May and June, and sometimes also in autumn. Seedlings form the best method of multiplication, for it is rarely that it can be uprooted without injury. It prefers a rather shady situation, and is strictly perennial, not merely biennial, as some have asserted.

C. alpina, Jacq.—A species found on limestone rocks in Tyrol and the Carpathians. It is not so tall-growing as the preceding, and has smaller flowers of a deeper colour. The plant is downy, and the flowers, borne on long pendulous stalks, form very elegant clusters. It may be cultivated like the preceding, but requires lime.

C. speciosa, Pourr.—A Pyrenean species related to C. barbata, but the flowers, instead of being pendulous, are erect, forming spikes of lesser stature, and with fewer flowers. The whole plant is downy, except the flower. It may be cultivated like C. barbata.

C. glomerata, L.—An indigenous plant in our mountainous regions and in the plains. The flowers, of a deep violet colour, are grouped in terminal heads, which are very beautiful, especially in the double-flowered variety. There are also a large-flowered and white-flowered varieties. It may be grown on the

rockery or on the border. It is reproduced by seed, by division of the stock in spring and autumn, and flowers in May.

C. spicata, L.—A superb plant, found in the hotter valleys of the Alps, but unfortunately biennial. Its stem, which attains a height of 50—60 cm., is erect and covered with flowers from base to summit. The flowers are large and blue. It requires a warm position on the rockery.

C. thyrsoidea, L., is also a biennial. It is found on the pasturages of the Alps and on the Jura. It is a very distinct species, the flowers of which are arranged in a close spike, and are of a pale yellow colour and very fragrant. It flowers for a long period, and the flowers expand from the top of the stem downward. It thus happens that while the top of the stem bears ripe seed the base of the spike is in full flower. The spike is stiff, firm, and about 25—30 cm. in height. Seeds grow well, and produce strong plants. Care must, however, be taken to grow them in a moist cool light soil, and in a slightly shady situation. They may also be grown by transplanting one-year-old plants from the Alps. This plant is not always merely biennial, as sometimes it lasts for several years. It would be more correct to say that it always dies after flowering.

C. rhomboidalis, L.—A very pretty species, met with in the pasturages of the Alps and Jura. The leaves are crenulated and very pretty, and the flowers, arranged in panicles, have a very pretty effect. It may be cultivated like C. glomerata.

C. linifolia, Lam.—A charming alpine with large and beautiful flowers of a deep blue colour and with slender elegant leaves. It requires light soil and a slightly shaded position.

C. pusilla, Hænicke.—A dwarf species, creeping over calcareous rocks and carried by floods into the plains. It is one of the best plants for the rockery, which it serves to adorn all the summer with its pretty blue flowers. It requires to be kept in place, as it spreads widely and seeds freely. There is a white variety.

C. cæspitosa, Scop., resembles the foregoing, but grows naturally at much greater elevations. It requires a light, well-drained soil and an easterly aspect. The true C. cæspitosa is not what is commonly grown under that name, and which is only C. pusilla.

C. pulla, L.—A Tyrolese species with very pretty long deep blue pendulous flowers, arranged in loose racemes. It requires a calcareous soil, and a shady position.

C. Vanneri, Boiss.—A native of Southern Austria. A superb plant. The foliage is shining green, forming a large tuft, from the middle of which uprises majestically a pyramidal stem covered with long tubular deep violet flowers. This grand plant is somewhat difficult to cultivate. M. Boissier has it planted on a vertical wall in his garden at Valleyres, where it succeeds well. It grows also in a horizontal position, but I have always seen it do best when growing in the cleft of a rock or a wall. It must be multiplied by seed sown in a light soil and shady position. The plant itself prefers a light shaded position. With me it always dies after flowering.

C. garganica, Tenore.—A charming plant, found wild in the Adriatic Isles, and on the rocks bordering the sea in Southern Austria. It is a creeping species, the branches covered with blue flowers. It is very free flowering, and flowers during the summer. Its foliage is delicate and pretty. It is cultivated on dry and hot calcareous soils. It is multiplied by seed, and by division of the tufts or by cuttings.

C. Monetiana, Reich.—A species with erect flowers, larger than those of the preceding, and which is met with in the chinks of limestone rocks in Southern Austria. Culture and multiplication as for the preceding.

C. Reineri, Perpont.—A superb plant, very dwarf, which covers the clefts of the rocks in Tessin, and which grows also in the mountains of Lombardy. The flowers are large, violet-blue, and solitary. It requires a dry soil and a warm position. It is cultivated like C. Vanneri, on walls or rocks that are nearly perpendicular.

C. Waldsteiniana.—A native of Southern Austria. A plant with delicate foliage, and bearing numerous flowers on short stunted leafy branches. The flowers are long, small, and deep blue. It is a very pretty and rare species, and requires a soil rich in humus, but light, well drained, and a shady aspect.

C. cenisia, L.—One of the most beautiful of the alpine species. It is not confined to Mont Cenis, as its name would imply, but occurs throughout our Alps where slaty rocks prevail. When it is wished to transplant it the stones between which it is growing must be broken, and care taken to disentangle and extricate the roots from the pebbles which surround them. Once removed it must be placed in a well-drained pot covered with a layer of light peaty soil mixed with granitic sand and fragments of slate. It must be kept dry in winter, and in spring should be placed in a niche protected from heavy rains and exposed to the east or to the west. The niche must be well drained and supplied with a compost such as that just indicated. I have had this year in the Botanic Gardens a very fine tuft which was covered with flowers during July and August. I have not yet tried to grow it from seed. *H. Correvon, Botanic Gardens, Geneva.*

FRUIT NOTES.

Notes on Apples at North Riding Asylum, Clifton, York.—In reply to Mr. Culverwell, at p. 566, permit me to say that I was serious when I wrote my notes on the above subject at p. 491; and I have every reason to believe that my friend, Mr. Macintosh, was in the same state. I do not often record my impressions and experience in the horticultural press, but when I do so it is a truthful statement of them at the time of writing. While on this topic permit me also to remark that charges like Mr. Culverwell's, which in a measure impute unworthy motives [Surely nothing of the kind was intended. Ed.], have, to my knowledge, a deadening effect, in preventing many practical gardeners from giving their experience on various subjects. Not being of a querulous or pugnacious temperament, they do not care to run the risk of a "wordy warfare" with those who probably, in practical knowledge and skill, are their inferiors, Had Mr. Culverwell given your readers a full list of the Apples that succeed with him, and a description of the soil they grow in, and the shelter or other local conditions, he would have done them a service. Here, only some ten miles from Clifton, I do not find my experience to agree with Mr. Mackintosh's; but that does not prove he is wrong, our soil being of quite a different nature to his. As I inferred in my notes, those of your readers who were in similar circumstance as to soil, &c., might benefit by Mr. Macintosh's experience. Mr. Mackintosh did not plant the bulk of the Apple trees at Clifton, consequently he is not responsible for their being planted north of the Trent. Permit me to ask if all the varieties of Apples planted by Mr. Culverwell at Thorpe Perrow have succeeded? If not, probably they might have done so if planted "south of the Trent." Though I have seen Norfolk Beefing, which is such a favourite with Mr. Culverwell nearly dead with canker in the comparatively warm climate of Hampshire, at Bolton Hall, Bedale, some 15 miles above Thorpe Perrow, I have seen finer samples of some varieties of both Apples and Pears than could be produced in a garden in Hampshire belonging to the same proprietor. I only mention this to prove that soil, shelter, and other favourable local conditions, are the main factors in hardy fruit culture. I do not think Mr. Culverwell is unfavourably situated in these respects; hence, with his practical knowledge in utilising them, the good results in Apple and Pear culture at Thorpe Perrow. *H. J. Clayton, Grimston, October* 31.

Dr. Hogg Peach.—In answer to the enquiry at p. 566 respecting its quality and merits for open-air culture, I have to say that here it has proved to be in both respects first-class. The tree is of robust habit and a certain cropper, the fruit is of medium size and of a deep crimson colour next the sun. It ripens about the second week in August, and would, therefore, make a capital succession to Hale's Early. It is also a good forcing variety; we have it in an early house where it has always done well. It was raised by the late Mr. T. Rivers, as were also Magdala and Large Early Mignonne, both of which are equally good for open-air culture or for forcing, and ripen about the same time as Dr. Hogg. Of the three varieties I should give preference to Large Early Mignonne on the ground of size; this variety always grows to a large size, and the quality is of the finest. *W. W., Heckfield.*

HOME CORRESPONDENCE.

Apple Sturmer Pippin. — I never remember such a deficient crop of Apples as there is this year. Ribstons are fetching a guinea a bushel, and Winter Queening (called Duck's-bill in Sussex) are 12*s.* and even culinary Apples are 8*s.* and 10*s.* The cause of all this in this part is that frightful storm of wind and rain (May 29—a perfect hurricane) which destroyed nearly the entire crop here; it came up from Brighton, 32 miles off, at the rate of 90 miles an hour, and brought salt sufficient to scald the tree leaves and leave traces of it on the windows next day; but notwithstanding all this, my favourite Apple, Sturmer Pippin, weathered the storm and bore a fine crop of fruit. Too much can hardly be said in favour of this delightful fruit; the Ribston and Nonpareil are its parents, so that one is not surprised at its excellent quality; but when one considers that it is positively in season for five successive months, I say that it has no rival. For years I have come to the conclusion that few gardens are more than half made—oftentimes an insufficient depth of soil, and still oftener an insufficient amount of shelter. Choice fruit trees, bred with as much care as our racehorses, are planted against unprotected walls and orchards, and the very life is nearly blown out of them for six months of the year; and then the wonder is why the fruit is so scanty—half swelled, cracked before ripe, and sometimes covered by a black fungus. Down in the deer park here there stand in the keeper's garden two Apple trees; they are sheltered on the south-west side, where the prevailing winds come from, by a large farmhouse building and several very large Beech trees: now on these two trees there were more fruit this year than there was in all the parish; therefore, I say plant fruit trees, but look sharp after your shelter. *J. Rust, Eridge Castle.*

Fungus Spores with Spermatia Adhering. —Mr. Chas. B. Plowright, in describing the fungus of corn mildew at p. 237 illustrates Æcidium spores with spermatia adhering to them, and at p. 233 he says, "there is little doubt that they" [the spermatia] "play the part of the male element." When I illustrated the Æcidium disease of Gooseberries in the *Gardeners' Chronicle*, July 16, 1881, p. 77, fig. 16, I figured the same phenomenon, and gave a similar interpretation. Tulasne held the same opinion, but De Bary has dissented from it on the ground that spores can be made to germinate (?) where the spermatia are not present. It would be difficult to prove that spermatia were not or had not been present. It is of the greatest importance to distinguish between germinating and mere bursting and protruding a short mycelial thread. All sorts of spores and even zoospores will burst in this abortive way, and exhibit a sort of spurious germination, but it is nothing but the bursting of a cell wall and the escape of a minute coil of protoplasm, totally different from *bonâ-fide* germination, where the protoplasm is not only protruded, but exhibits the power of speedily producing cell after cell. I still adhere to the view that the spores of the higher fungi are fertilised in a similar manner, viz., by the minute granular bodies produced by the cystidia attaching themselves to the spores. *W. G. Smith.*

Single Dahlias.—We have this season grown several varieties of these, and all have come in for a fair share of admiration by garden visitors, Paragon being the gem of the single kinds. The variety most admired, and I think justly so, has been Juarezii, or what seems to be best known as the Cactus Dahlia, as it is as near like a flower of Cactus or Cereus speciosissimus, as it is possible for two flowers of different species to be. The colour is an intense scarlet, and the flowers show well up above the foliage. It is an invaluable plant for the centres of large beds or for back lines in a large flower border. *W. W., Heckfield.*

Branches Cut from Apple Trees Growing.—Having read an account of branches of the Burr Knot Apple growing when cut from the tree, I send you the following note on a branch of the Winter Box not only growing but flowering and bringing to maturity two Apples. This occurred here this summer, and is the more remarkable from the trees having been cut down and the branches cut out for Pea stakes quite three months before they were used for that purpose. Has any similar instance of such tenacity of life in Apple wood come under your notice? *H. Mount, Trengwainton Gardens, Penzance.*

A Productive Potato.—On October 28 I lifted a "big Potato" of a new sort, which I have named "The Great Archangel." The parent tuber weighed 1 lb. 13 oz, and measured in length 9½ inches. It was planted entire, and threw up fourteen stems of the average height of 4 feet 6 inches, which occupied

a space 11 feet 6 inches in circumference, and yielded twenty-eight tubers of the gross weight of 20 lb. Eight of the tubers weighed 1 lb. and upwards, the heaviest being 1 lb. 12 oz. I should like to know if there is any record of a single tuber having yielded a heavier crop? *Jno. F. Sharpin, Ripon.*

Ferns.—These are very luxuriant this year, owing to the cool moist summer. A fine specimen of Woodwardia radicans growing out-of-doors here has a spread of fronds of 12 feet by 10. It is quite hardy here, having passed the late severe winters uninjured, with the exception of having the fronds browned by the frost. *H. Mount, Trengwainton Gardens, Penzance.*

Cotoneaster rupestris.—Your correspondent, "J. S.," p. 533, speaks in praise of Cotoneaster microphylla as being a most useful trailing plant for covering rockwork, low walls, fences, &c., but says that it is unfit for covering large spaces on account of the slowness of its growth. Has he ever seen Cotoneaster rupestris? against which the same objection cannot be urged. I consider it to be the best of all the trailing Cotoneasters; it is a fast grower, much more so than either microphylla or rotundifolia, and without the coarse appearance of Simonsii; it has glossy, shining foliage, and bright scarlet berries, which are produced in great abundance, and which renders it at this season of the year and during the winter months one of the most striking and attractive hardy trailing plants with which I am acquainted. I enclose branches of five varieties taken from plants of the same age for comparison. *John Charlton, Summer Vale Nursery, Tunbridge Wells.* [We defer comment on the specimens sent till another occasion, but in the meantime refer our readers to the illustrated article on Cotoneasters which appeared in our columns on September 13, 1879. ED.]

The Stinging Tree.—Is the stinging plant which caused such results at Kew (see p. 567) the same poisonous species which existed some years ago there, and which, according to an equally interesting account in *Household Words*, finally disappeared through the hostility of the attendants, who were afraid to touch it? *Medicus.*

Reading Hero Potato.—Among the multitude of new Potatos this one will probably be the most likely to be known far and wide, and to have a place in every garden. It has every quality of a good Potato, being large in size, handsome in form, with shallow eyes, and when boiled or baked of a delicate flavour, and as floury as can be. In growth it resembles Magnum Bonum or Scotch Champion, and in planting a good interval must be left between the sets. This year it is the only Potato entirely free from disease that I have grown. From very remote districts I hear the same excellent account, and there is little doubt that it will be the main crop Potato of the future, as it is not a type of Potato likely to deteriorate [How does our correspondent come to this conclusion? ED.], and as a heavy cropper it has few if any superiors. *W. Carmichael.*

Mealy-Bug, Vines, and Paraffin. — Pray pardon me for giving an additional point—to be most careful to avoid using this in an undiluted state. If not kept well mixed it soon floats on the top of the water, and therefore, if so applied, it will kill the Vine. A very few years ago I had an old experienced gardener who thus killed two of my best Vines down to a few feet of their roots. *W. A. Wooler.*

Herniaria glabra.—If this useful and pretty little plant were better known it could not fail to be more largely used than at present; with the exception of gardens where carpet bedding is done to a large extent one seldom or never sees it, and in botanical works the members of the family are described as uninteresting, which I consider not quite true as regards H. glabra. Where there are large geometrical gardens of Box and gravel, and grass is used in patches or otherwise, H. glabra will be found a much better substitute. In the first place it is very compact in growth, retaining its deep green hue through the severest drought when the grass would be either brown or yellow. It requires no clipping, and is free from that greatest of all pests in grass—the Daisies; and, as it is perfectly hardy, it is the same in winter as summer. We have used it here in this way, and visitors invariably exclaim, "How pretty! What is it?" Where a margin of red sand intervenes between that and the Box the contrast is extremely pleasing. It is also well adapted for an edging to walks, and if once used for that purpose would soon supersede grass, as it grows quickly and thickly together, is much neater in appearance, and gives little or no trouble when once planted. As a carpet for the hardy fernery it has no equal, looking in the distance like a beautiful moss. Veronica repens is a fit companion for it in this respect, but it is not nearly so neat and pretty as H. glabra. *P. Conway, Muntham Gardens, Worthing.*

Anemone coronaria.—I beg to send you a few Anemone buds and flowers cut this morning from a seed bed sown on April 3 last. Treated as an annual we find Anemones very useful for class purposes as well as for their decorative value as cut blooms. This Anemone is one of the flowers which may be cut in the bud stage, as the flowers develope perfectly after being brought indoors and placed in water for a few days; and where gas is not used for lighting purposes, the flowers endure fresh and fair for eight or ten days at least. No other hardy flowers can compete with these for brilliancy of colour at this season, after having endured 5° of frost, as these Anemones have done. Senecio pulcher is still fresh and beautiful in the open air after the same ordeal. *F. W. Burbidge, Trinity College Botanical Gardens, Dublin, Oct. 30.*

To Destroy Scale on Fruit Trees.—I see some of your correspondents ask for the best means of destroying scale. It is difficult to keep this pest from infesting Oranges, but I have found the application of the flame of a petroleum lamp or wax taper rather more than the strong constitution of this insect can bear. It is sufficient to pass the flame lightly along the bark and into the crevices of the old wood to effectually detach these limpets from their anchorage. For the young and tender shoots a dressing of castor-oil left on for a day and then washed off with hot water and soft-soap will be found very effectual. Water heated to 150° will do no damage to the leaves. It is easy to try on a small scale. *T. F. Rivers.*

Alpine Strawberries.—I send you a few alpine Strawberries. Last year I placed a ripe fruit on the soil of a vase just inside the rim, from which two or three seedlings grew. This year the runners grew over the side, and are now about 2½ feet long, and have been much admired. It has fruited well, and one speciality is, that the runners of this year soon flower and bear; the bunch with three is from the runner, and the larger fruit (bunch with two) is from the plant. It is an ordinary alpine sort, but I submit that it might be used for ornamental purposes; but if thus grown, and given some slight protection, it would yield fruit in the open garden at a season when they would be somewhat valued. *W. A. Wooler, Sadberge Hall, Darlington.*

The Close of the Flowering and Growing Season in the Open Air.—The fierce storm of wind, rain, and snow that we had on Oct. 24 has completely changed the face of the garden. Up to the afternoon of that day, though we had much rain and a good deal of rough weather, not a few remnants of summer and a great deal of autumnal beauty were still present in our gardens. The storm has passed over it, and it is gone, no more to return this season. That storm was peculiar alike in its suddenness and severity. The night of the 23d was clear and mild. About 7 o'clock next morning it began to rain in torrents, and with the exception of a few pauses to gather up the clouds anew for yet heavier downpours, it continued to fall in torrents throughout the day. About 2 P.M., however, the wind veered suddenly round to due east; it began and continued to blow a hurricane till nearly 5 P.M., when it somewhat moderated; about 3 o'clock large flakes of snow began to mix thickly with the rain; for several hours the air was so filled with water, snow, and leaves as to reduce the daylight to something like a twilight gloom, and this with the roar of the wind gave everything a fearfully lowering appearance. Having occasion to be a good deal out in the storm, it reminded me very much of that of last October, as well as of that other wind that wrecked the Tay Bridge; and if it extended all over the country I should not be surprised to hear that it has proved almost as destructive to horticultural objects and other property. Writing broadly, it has wrecked the gardens, and has loosened, blown out, or broken off more Rose trees and bushes than either of these winds; this has arisen from the enormous downpour that has converted not a few Rose beds and borders into a swamp. The purchase of the wind on the branches, still laden with green leaves, forced the boles, driven hither and thither by its force, to dig a hole around them, that soon got filled with water; the latter of course weakened the hold of the roots on the earth, with the result of enabling the wind to lay them prostrate, or drag them right out of the soil—a thing I have never seen done to the same extent before. Probably hardly ever before had so much rain fallen in so short a time, to be quickly succeeded by such a violent wind, still accompanied with torrents of rain, for it must not be supposed that it ceased raining when the snow began to fall, about 3 P.M.—the snow was simply added to the rain, and the latter seemed, if possible, to fall faster than before. The violence of the wind partially subsided about 5 P.M., though it still blew a gale at 9 P.M. As far as I have been able to ascertain, no serious damage has been done among the trees here; but as the leaves were exceptionally green, thus giving an enormous purchase power to the wind, it is feared that on thin soils and in exposed localities the gale may have ranked in destructive force with that which wrecked the Tay Bridge or of last October. It is almost necessary to go to Scotland to see what these gales were like; it is hardly an exaggeration to assert that whole tracts of woods that would be reckoned large forests in most districts south of the Tweed were prostrated by these storms. Gangs of woodmen, with all the best modern appliances for dealing with heavy timber, have in fact been in the plantations ever since, yet is their work far from completed. As I walked among or drove past hundreds of those prostrate trees in September, I could not help gaining a new idea of the tremendous force of the elements that had laid so many proud forest giants so low. Going direct from Dupplin woods to the Tay Bridge, the marvel was less that it fell on that awful night, but that such a frail, fairy-like structure should have stood so long in such a fearfully exposed position. Certain it is that no trees in the British Isles could have withstood such a storm, if by any possibility they could have changed places with the bridge. *D. T. Fish.*

Globe Artichokes. — Whether Mr. Shirley Hibberd's plan (p. 567) of sowing seed of the above in the autumn is better than spring sowing I am unable at present to say; this much, however, I can freely state, viz., no one need have any misgivings on the score of success resulting from seed sown in the spring. For the past few years it has been our practice to treat the Globe Artichoke as an annual: we are still of opinion that this is by far the best plan, and have detailed our *modus operandi* in your columns more than once. To avoid repetition I will simply state that we sow in heat early in the year, pot off when large enough, and plant out in April; by planting out an equal number of the largest and smallest plants from the same sowing Artichokes may be had both early and late. Indeed we cut our first this year in July, and have at the present time a good supply, with every prospect, if the weather continues mild, of having plenty at Christmas. *J. Horsefield.*

The Jerusalem Artichoke.—In your leader of the 21st inst. you say of Jerusalem Artichokes that they have nothing to do with Jerusalem or Artichokes; that is of course true of the thing, but not of the name. The name Artichoke was given because the root recalled the taste of the Artichoke, and by the old writers, Bacon, Gerard, and even Dr. Johnson later, the name was stronger even, viz., Artichokes of Jerusalem. This did not mean that the plant really came from Jerusalem, but Jerusalem, like India and "Welsh," were commonly used to signify that the plants were exotics, and from unknown countries. (!) The modern derivation from the Italian is most unlikely. Our ancestors were not likely to take the Italian name, and then immediately corrupt it; and I have never been able to find with certainty that the plant ever was called Gira sole. *Henry L. Ellacombe, Bitton, Oct. 26.* [It is not prudent to say what our ancestors may have done, but when Josephine de Malines becomes almost immediately "Joseph on the Palings" one must certainly admit the fact of speedy corruption of foreign names. ED.]

Pilocarpus pennatifolius (Jaborandi or Vegetable Mercury), a very interesting Brazilian plant of the natural order Rutaceæ, is now in flower in the large Economic-house at the Royal Botanic Society's Gardens, Regent's Park, and will be visited no doubt by many students and scientific men. The properties of the Jaborandi drug are well known in the Brazils, but although extraordinary power in many cases is attributed to it, it does not seem to be officially recognised in the British Pharmacopœia. Experiments have, however, proved it to be a very powerful agent, and when the application of it is better known it may be brought into general use. An alkaloid called pilocarpine has been extracted by Mr. Gerrard from the leaves and bark, and experiments on the lower animals showed that a tenth of a grain ejected into the jugular vein produced profuse salivation almost instantly, caused a retardation of the heart's action, and had a marked influence on the blood pressure. Jaborandi, when applied to the eye, contracts the pupil; and in the human subject is said to be the most powerful sialogue and sudorific known. It is also said to be useful as an antidote and a diaphoretic. Viewed from a gardener's point of view, the plant is well worth growing both for its ornamental character and also for its singular and pretty appearance when in flower. In habit of growth it resembles a pale green upright growing Rhopala, except that the leaflets are rounded and plain-edged. The specimen now in flower at the Botanic Gardens is about 5 feet in height, and bears six spikes, each about 2 feet in length. The spike I counted had over 200 star-shaped flowers, each about

one-third of an inch across. The petals are five and the stamens five. The flowers are borne on short footstalks and are set on the long drooping spikes at equal distances somewhat as in Sacc olabium guttatum and the colour is dark blood-red, which makes a pretty contrast with the bright yellow anthers. The plant is also seeding, and is highly interesting both to students and plantsmen. Nicotiana madagascariense (Madagascar Tobacco), the pretty sweet Olea fragrans, and that lovely blue aquatic Pontederia (Eichornea) azurea, are also in bloom there. *James Office, Harrow-on-the-Hill.*

Reports of Societies.

Fungus Foray of the Hackney Natural History Society.—On Saturday, October 21, the members of this Society explored the Chingford portion of Epping Forest for the examination and determination of fungi. The conductors were Dr. M. C. Cooke, Mr. J. English, and the writer of these lines. Mr. Raphael Meldola, President of the Essex Club, was also present. A worse day for an excursion was never known, and the forest was visited in a continuous downpour of the heaviest rain, the woods were full of steam and mist, and the mud in some places seemed to be bottomless. Notwithstanding these serious disadvantages between twenty and thirty members were "up to time," some in waterproofs, some with umbrellas and leggings, and others quite unprotected against the elements; perhaps the last were best off, for they soon got thoroughly wet through, and as they could then get no worse they kept tolerably cheerful all the rest of the day. This part of the forest (in common with some other parts) is badly afflicted with "Aunt Sallies," "roundabouts," "knock-'em-down," shooting booths, and other intolerable and disgraceful nuisances—'Arry and 'Arriet, and half tipsy hafers are very strong in spending an 'appy day at Chingford. At night the forest trees are ornamented with stinking paraffin lamps, blue and red fire is lit up close by, and what with appeals to ride on roundabouts, to fly up in the air in a swing, to try one's luck at shooting for nuts, or to go to the concert where "all the seats are free," this part of the forest is a very pretty place indeed. Chinese lanterns, with squibs, crackers, and scratch-backs add their delights to the scene.

Opposite the Forest Hotel are some Elm trees, and on two of these were growing groups of Agaricus ulmarius, far out of reach. One member boldly essayed to climb one of the trees and secure some examples—this he did with success, he then mounted the second tree and got nearly to the top, when on taking the last step upwards the branch upon which he held with his hand gave way, and he fell several feet a nasty cropper into the middle of the half dead tree. It is to be hoped that he was not seriously damaged, but this member had to forego the pleasures of the foray for a return journey to London.

The heavy downpour of rain, the driving wind, the scudding leaves, and the deep tenacious mud made botanising rather difficult. Two interesting species of the subgenus Flammula were speedily met with in Agaricus flavidus and spumosus. Some beautiful specimens of Agaricus dryinus were gathered from the trees (a wag who happened to be passing said he thought they looked more like wetinus). Another tree produced several specimens of the beautiful, and by no means common Agaricus adiposus, with a bright sulphury top covered with thick adipous gluten. The grassy places were thickly dotted with different species of Hygrophorus and the yellow Clavaria inæqualis. Many species of Coprinus were met with, and Agaricus stercoriarius and A. appendiculatus. The Beech trees produced the beautiful A. mucidus and Polyporus cuticularis, and the old Oaks exhibited the vegetable beef-steak, Fistulina hepatica. The vegetable oyster, Agaricus ostreatus, was met with in several places. Amongst interesting species growing on the ground was Polyporus rufescens and many examples of the uncommon fungus named Agaricus Worthingtonii by Professor Friss in compliment to a *Gardeners' Chronicle* wood-cutter. An example or two of the edible A. procerus were found with a large number of common species.

At 5 o'clock the whole party adjourned to Fairmead Lodge for tea. Near this house there is an old Oak, said to measure 33 feet in circumference at its thickest part, about 6 feet from the ground. On this occasion the tree kindly provided some fine luscious examples of the appetising vegetable beef-steak. After tea the meeting was addressed at some length in a pleasant speech by Dr. Cooke, the whole party then went into an adjoining room and the fungi collected during the day were carefully examined and discussed. Most of the species were common, and this was a very good thing, for it is much better to be acquainted with common everyday things than rarities that are perhaps only seen once in a lifetime. The information given by the conductors was valuable, as with a moderate amount of attention it must have enlightened the assembled members as to the names and qualities of a good many common fungi. *W. G. Smith.*

FORESTRY.

Forest Work for November.—Planting should occupy most of the forester's time during open weather in November, as we consider this one of the best months for general forest planting. Large specimen trees and evergreens may now be transplanted with safety, choosing, if possible, dull damp weather for the operation.

The thinning of plantations may be proceeded with where foresters are not deterred in this department of their work through game preservation. Where such is the case it is advisable to have other works in an advanced state until the covers have been shot through. This is a good time for grubbing out old hedges, or planting new ones, also for cutting over those that have become bare and hollow through neglect. In the formation of new hedges the preparation of the ground should be the first and most important point. The trimming of hedges should be prosecuted with vigour, and finished as quickly as possible.

Look to plantation ditches and watercourses, and see to the mouths of closed ditches, as they are liable at this time to get choked with leaves and branches. Collect leaves, and have them at once conveyed to the manure-heap, where a mixture of lime will hasten decomposition.

Collect seeds of the Scotch Pine, Spruce and Silver Firs, Oak, Plane, &c. Such as are not sown at once should be stored away in a dry and airy situation, avoiding if possible the use of bags or boxes in storing, which frequently damage the germination of seeds.

Examine tree-guards, and see that all newly planted trees are staked, to avoid rocking with the wind. Where rabbits are numerous provision against their attacks should be provided.

All nursery ground, as soon as vacant, should be deeply trenched or dug, and left fully exposed to the winter frosts. *A. D. Webster, Penrhyn Castle, North Wales.*

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, Nov. 1, 1882.

Month and Day.	Barometer. Mean Reading Reduced to 32° Fahr.	Barometer. Departure from Average of 18 years.	Temperature of the Air. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years	Hygrometrical Deductions from Glaisher's Tables 6th Edition. Dew Point.	Degree of Humidity. Sat = 100.	Wind. Average Direction.	Rainfall.
	In.	In.	°	°	°	°	°	°			In.
Oct. 26	29.33	—0.37	53.6	32.3	20.7	42.2	— 5.0	39.4	87	S.: S.W.	0.18
27	29.23	—0.50	50.5	41.0	9.5	46.1	— 0.8	42.0	89	E.: N.E.	0.32
28	29.33	—0.40	48.0	43.2	4.8	46.5	— 0.2	48.3	89	E.: N.E.	1.60
29	29.67	—0.07	49.0	42.5	8.5	44.0	— 2.6	38.1	75	W.: WNW	0.00
30	29.65	—0.09	51.9	36.0	15.9	45.9	— 0.6	43.6	92	W.: WSW.	0.55
31	29.84	+0.09	55.0	41.2	13.8	48.3	+ 1.9	41.3	87	W.: WSW.	0.00
Nov. 1	29.41	—0.31	57.0	47.5	9.5	52.3	+ 6.1	41.0	72	S.: S.W.	0.00
Mean	29.50	—0.21	52.1	40.3	11.8	46.5	— 0.2	42.0	83	W.: WSW	2.05

Oct. 26.—Dense fog in morning; fine and partially cloudy till afternoon; showery in evening; generally fine at night.
— 27.—Overcast. Rain fell during the greater part of the day.
— 28.—Overcast. Frequent rain till evening.
— 29.—Fine day and night.
— 30.—A dull, overcast day. Slight rain all the morning; heavy rain in evening. Strong gale, with squalls at times. Fine night.
— 31.—Fine, bright day; nearly overcast at night.
Nov 1.—Fine day; gleams of sunshine at times. Gale in afternoon and early part of evening. Fine night, cloudless.

Erratum.—Oct. 24. For "just before noon, 28.61. The lowest point, at 7 A.M.," read "just before noon, 28.61 (the lowest point). At 0.7 P.M. was 28.63 inches."

London: *Atmospheric Pressure.*—During the week ending October 28, the reading of the barometer at the level of the sea decreased from 29.38 inches at the beginning of the week to 29.24 inches by 9 A.M. on the 22d, increased to 29.55 inches by 3 P.M. on the 23d, decreased to 28.79 inches by noon on the 24th, increased to 29.58 inches by midnight on the 25th, decreased to 29.39 inches by 3 P.M. on the 27th, and was 29.59 inches by the end of the week.

The mean reading for the week at the level of the sea was 29.45 inches, being 0.37 inch lower than last week, and 0.45 inch below the average of the week.

Temperature.—The highest temperature in the week was 55°.5, on the 22d; on the 28th the highest temperature was 48°. The mean of the seven high day temperatures was 52°.4.

The lowest temperature in the shade in the week was 32°.3, on the 26th; on the 28th the lowest temperature was 43°.2. The mean of the seven lowest temperatures was 39°.8.

The greatest range of temperature in one day was 20°.7, on the 26th; the smallest was 4°.8, on the 28th. The mean of the seven daily ranges was 12°.6.

The mean temperatures were—on the 22d, 48°.4; on the 23d, 47°.3; on the 24th, 45°.2; on the 25th, 43°.7; on the 26th, 42°.2; on the 27th, 46°.1; and on the 28th, 46°.5; and these were all below their averages by 0°.3, 1°, 2°.7, 3°.8, 5°, 0°.8, and 0°.2 respectively.

The mean temperature was 45°.6, being 3°.6 lower than last week, and 2° below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun, was 108° on the 23d. The mean of the seven readings was 84°.4.

The lowest reading of a minimum thermometer with its bulb placed on grass was 29°.3, on the 26th. The mean of the seven readings was 35°.

Rain.—Rain fell to the amount of 2.71 inches, of which 1 inch fell on the 28th.

England: *Temperature.*—During the week ending October 28 the highest temperatures were 62° at Sunderland, 59° at Brighton, and 58° at Plymouth; the highest temperature at Bolton was 51°.2, and at Sheffield and Bradford 53°. The general mean was 55°.6.

The lowest temperatures in the week were 30° at Truro, 30°.3 at Nottingham, and 30°.9 at Wolverhampton; the lowest temperature at Brighton was 38°.8, at Plymouth 36°, and at Liverpool 35°.4. The general mean was 33°.

The greatest ranges of temperature in the week were 27° at Sunderland, 26° at Truro, and 25°.7 at Nottingham; the least ranges were 17°.2 at Bolton, 17°.9 at Liverpool, and Bradford 18°.2. The general mean was 22°.6.

The mean of the seven high day temperatures was highest at Sunderland 57°.1, and at Truro and Cambridge; and was lowest at Bolton and Bradford, 49°.3, and at Wolverhampton and Sheffield 50°.3. The general mean was 52°.1.

The mean of the seven lowest night temperatures was highest at Brighton, 42°.7, at Plymouth 42°, and at Liverpool 40°.4; and was lowest at Wolverhampton, 36°.3, at Nottingham 36°.5, and at Leicester 37°.2. The general mean was 39°.3.

The mean daily range was greatest at Sunderland, 17°, at Cambridge 15°.3, and at Leicester and Hull 14°.8, ; and was least at Liverpool, 9°.3, at Bradford 9°.7, and at Brighton 10°.9.

The mean temperature of the week was highest at Sunderland, 47°.9, at Brighton 47°.4, and at Plymouth 47°.; and was lowest at Wolverhampton and Bolton, 42°.5, and Nottingham 42°.8. The general mean was 44°.8.

Rain.—The largest fall was 4.18 inches at Bristol, of which 2.10 inches fell on the 24th; at Blackheath 2.71 inches, at Hull 2.47 inches, and there were falls exceeding 2 inches at Truro, Brighton, Cambridge, Wolverhampton, and Nottingham. The smallest falls were 0.49 inch at Liverpool, 0.94 at Bolton and Sunderland, and 0.98 inch at Bradford. The general mean was 1.91 inch.

Scotland: *Temperature.*—During the week ending October 28 the highest temperature was 54°.2, at Greenock. The highest temperature reached at Perth was 52°. The general mean was 53°.2.

The lowest temperature in the week was 24°, at Perth; at Aberdeen the lowest temperature was 35°.1. The general mean was 30°.1.

The mean temperature was highest at Aberdeen, 44°.4; and lowest at Perth, 39°.4. The general mean was 43°.

Rain.—The largest fall was 0.89 inch, at Paisley; and the smallest 0.03 inch at Leith. The general mean fall was 0.34 inch.

JAMES GLAISHER, F.R.S.

Answers to Correspondents.

APPLE ORCHARD: *T. Meaver.* It is a losing business to attempt to infuse fresh life into old Apple trees by dressing or manuring them in any way. We would strongly advise you to grub up the lot, and to plant afresh with a carefully selected stock of good bearing varieties. In case you have the ground to spare, it would be a good plan to plant a young orchard at once, to be coming on, and you then spare the old trees for a year or two longer, until the young ones come into bearing, which they would do the second year after planting, if good-sized trees are obtained in the first place. If, however, you must use the orchard a second time, root out the trees, and trench the ground, giving a heavy dressing of fresh soil if possible. You might plant thickly at first, and remove every alternate tree afterwards. In case you decide upon keeping the old trees your best remedy would be to "head them back," and graft fruitful kinds on to them in the spring. We doubt very much whether you will improve their condition by manuring. The trees have evidently seen their best days.

ARTILLERY PLANT: *J. Colebrooke.* It is so called from its anthers bursting in a manner resembling the action of artillery and liberating the pollen.

BOOKS: *A. M.* Paxton's *Botanical Dictionary* (Bradbury, Agnew, & Co.), or Johnson's *Gardeners' Dictionary* (G. Bell & Sons).—*E. V. Barcote.* Johnson's *Gardeners' Dictionary.*

BOTANY: *J. S. U.* If you really mean to study it seriously, we recommend you to attend the course of lectures at the School of Science, South Kensington. Write to the Secretary for a prospectus. If you will tell us what special department you wish to study, we will give you further information.

GRASS SEEDS: *J. C. J.*—We do not know any accessible work in which the seeds are figured in the way you mention.

INSECTS: *C. E. P.*—The insects sent are the young state of a small plant bug. They do much mischief to Chrysanthemum buds. See our article on them in the *Gardeners' Chronicle*, October, 1881. *I. O. W.*

NAMES OF FRUITS: *J. Day, Garliestown.* 1, Beurré Rance; 2, Beurré Diel; 3, Beurré Rance; 4, Easter Beurré. *Apple:* King of the Pippins.—*J. G., No.* 1. 3, Cox's Orange Pippin; 10, Rymer; 18, Cox's Orange Pippin; 19, New Hawthornden; 20, Dutch Mignonne; 22, Mank's Codlin; 23, Black Pear of Worcester; others are quite indefinable.

NAMES OF PLANTS: *Juvenis* must send larger specimens; we have no time to waste over mere scraps.—*W. A. Wooler.* Suckers of common English Elm (Ulmus campestris).—*F. L.* We cannot name them without flowers. If you pot them in a good porous compost, and give them cool greenhouse treatment, you will not be far wrong.—*J. C.* Bowiea volubilis.—*W. McK.* 1, Aster versicolor; 2, A. diffusa; 3, A. cordifolius; 4, A. lævigatus; 5, A. acris (punctatus); 6, A. lævis.—*J. S.* 6, Didymochlæna lunulata, sometimes called D. truncatula.—*C. Ross.* 1, Pinus Laricio; 2, P. pyrenaica; 3, Asplenium umbrosum; 4, Blechnum occidentale; 5, Lastrea hirtipes; 6, Polypodium drepanum.—*T. Bennet.* 1, Lastrea dilatata ramosa; 2, L. dilatata.—*D. C.* 1, Begonia metallica; 2, B. semperflorens; 3, Pinus excelsa; 4, P. Cembra; 5, not recognised; 6, Bladder Cherry (Physalis Alkekengi).

PHYLLOXERA: *M.* We know of no better plan than the radical one you mention. The French use a liquid bisulphide of carbon with success, but we have not heard of its use in this country. The Cucumber roots were badly affected with the Cucumber Vibrio, or Anguillula.

VINES: *W. H. D.* We can trace nothing serious the matter with your Vine leaves, except what is clearly accounted for by the attacks of brown-scale and red-spider, which seem to be rather plentiful. The black matter upon the leaves is solely the result of the attacks of brown-scale, which always leaves such marks behind it upon Vines or Peach trees. The leaf having its stem injured seems rather dried up, which is only a natural consequence of the injury. Having cropped Vines heavily for eight years in a narrow border, you cannot expect them always to continue vigorous. We would give the Vines a rest, or plant afresh. The small berries are imperfectly stoned, and have not swollen to their normal size. The damping of the berries means nothing. Trebbiano is one of the most tender-skinned Grapes—perhaps the most tender, if we except Duke of Buccleuch and Golden Champion; and it should not surprise an experienced Vine grower to see a few berries damp off after so much wet weather.

CATALOGUES RECEIVED.

ANTHONY WATERER, Knap Hill, Woking—American Plants, and other Hardy Trees and Shrubs.

LITTLE & BALLANTYNE, Knowefield Nurseries, Carlisle—Trade List of Nursery Stock.

COMMUNICATIONS RECEIVED.—I. Hoffner, Cincinnati.—J. F. McE.—Sir Trevor Lawrence.—E. M.—A. O. Walker.—L. Jordan.—H. Knowles.—W. D.—T. Bennett.—J. McC.—G. B. & Co. (your request shall be attended to).—W. J. W.—W. B.—J. Anderson.—W. B.—T. M.—C. W. D. (with many thanks)—H. Correvon, Geneva.—J. M.—J. S.—M. L., Baden Baden (next week).—J. C. S., Erfurt.—H. G. E.—C. J. Maximowicz, St. Petersburg.—Wild Rose.—R. I. L.—H. A.—*Cape Times.*—W. T. D.—W. H. F.—H. S.—D. P.—W. B.—M. J. B.—W. L.—F. R. C.—J. F.—W. B. H.—R. T. W. Ottolander, Boskoop.—G. B.—J. C. M.—C. B. P.—J. R. J.—D. C. P.—C. B. C.

Markets.

COVENT GARDEN, November 2.

MARKET steady; no alteration. *James Webber, Wholesale Apple Market.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldii, doz.	12 0	24 0	Ficus elastica, each	1 6	7 0
Arbor-vitæ (golden), per dozen ..	.. 6 0	18 0	Foliage Plants, various, each ..	.. 2 0	10 6
— (common), dozen	6 0	12 0	Fuchsias, per dozen	4 0	9 0
Begonias, per doz. ..	6 0	12 0	Genista, per doz ..	8 0	12 0
Chrysanthems., doz.	6 0	18 0	Heliotrope, per doz.	3 0	6 0
Coleus, per dozen ..	4 0	6 0	Hyacin. (Rom.), pot	1 6	2 0
Cyperus, per dozen	6 0	12 0	Hydrangea, doz. ..	9 0	12 0
Dracæna terminalis	30 0	60 0	Marguerite Daisy, per dozen ..	.. 6 0	12 0
— viridis, per doz.	12 0	24 0	Myrtles, per doz. ..	6 0	12 0
Epiphyllum, dozen	18 0	30 0	Palms in variety, each ..	.. 2 6	21 0
Euonymus, various, per dozen ..	6 0	18 0	Pelargoniums, scarlet, per doz.	.. 2 6	6 0
Evergreens, in var., per dozen ..	.. 6 0	24 0	Solanums, per doz. ..	9 0	12 0
Ferns, in var., dozen	4 0	18 0			

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 blooms	0 2	0 4	Lilac (French), bun.	8 0	9 0
Arum Lilies, per doz.	6 0	8 0	Lilium various, per 12 blooms ..	.. 3 0	6 0
Azalea, 12 sprays ..	1 0	2 0	Marguentes, 12 bun.	6 0	9 0
Bouvardias, per bun.	0 6	1 0	Mignonette, 12 bun.	1 6	4 0
Camellias, per dozen	2 0	5 0	Narcissus, 12 sprays	2 6	3 0
Carnations, 12 blms.	1 0	3 0	— (paper-white) per bunch ..	.. 1 0	1 6
Chrysanth., 12 bun.	6 0	12 0	Pansies, 12 bunches	1 0	3 0
— (Fr.) per bunch	0 6	1 6	Pelargoniums, 12 spr.	0 9	1 0
— (best white), bun.	2 0	3 0	— zonal, 12 sprays	0 3	0 6
— 12 blooms ..	1 0	2 6	Primula, double, per bunch ..	.. 1 0	1 6
Cornflower, 12 bun.	2 0	4 0	Roses (indoor), doz.	1 0	3 0
Dahlias, 12 bunches	3 0	6 6	— (outdoor), doz ..	0 6	1 0
Epiphyllum, 12 blms.	0 9	1 0	— Coloured, doz...	1 0	2 0
Eucharis, per doz. ..	3 0	6 0	Stephanotis, 12 spr..	6 0	8 0
Fuchsias, 12 bunches	6 0	8 0	Tropæolum, 12 bun.	1 0	2 0
Gardenias, 12 blms..	4 0	6 0	Violets, 12 bunches..	1 0	1 3
Gladioli, 12 sprays ..	1 6	3 0	— French Czar, bun.	1 6	1 9
Heliotropes, 12 sp. ..	0 6	1 0	— Parme (Fr.), bun.	3 6	4 6
Hyacinths (Roman), 12 sprays ..	.. 2 0	3 0	White Jasmine, bun.	0 9	1 0
Lapageria, white, 12 blooms ..	2 0	4 0			
— red, 12 blooms..	1 0	3 0			

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d	s. d.
Apples, ½-sieve ..	2 6	4 6	Lemons, per 100 —	6 0	10 0
Aubergines, per doz.	4 0	..	Melons, each ..	2 0	4 0
Cobs, 100 lb.	.. 45 0	50 0	Pears, per dozen ..	1 0	2 0
Figs, per dozen ..	0 6	1 0	Pine-apples, Eng., lb.	4 0	6 0
Grapes, per lb. ..	1 0	2 6			

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, per doz. ..	.. 3 0	6 0	Garlic, per lb. ..	1 0	..
— Jerusalem, doz..	4 0	..	Herbs, per bunch ..	0 2	0 4
Asparagus (Sprue), per bundle ..	1 6	..	Horse Radish, bund.	4 0	—
Beans, French, English grown, p. lb.	0 8	..	Lettuces, Cabbage, per score ..	.. 1 6	..
Beet, per doz. ..	1 0	..	Mint, green, bunch..	0 4	..
Bruss. Sprouts, bush.	5 0	..	Mushrooms, p. baskt.	1 6	2 0
Cabbages, per doz. ..	1 0	2 0	Onions, per bushel..	3 0	..
Carrots, per bunch..	0 4	0 6	— Spring, per bun.	0 6	..
Cauliflowers, English, dozen ..	2 0	4 0	Parsley, per bunch..	0 4	..
Celery, per head, ..	0 4	..	Radishes, per doz. ..	1 6	..
per bundle ..	1 6	..	Seakale, per punnet	2 0	..
Cucumbers, each ..	0 6	1 0	Small salading, pun.	0 4	..
Endive, per score ..	1 0	..	Spinach, per bushel	2 0	..
			Tomatos, per doz. ..	2 0	..
			Vegt. Marrows, doz.	3 0	..

POTATOS:—Magnum Bonums, 90s. to 100s; Regents, 80s. to 90s.; Myatt's, 100s. to 110s. per ton.

SEEDS.

LONDON: *Nov.* 1.—The market for agricultural seeds continues firm at the recent advance. As regards red Clover, values still point upwards. Choice Trefoil keeps scarce and dear. Of French Italian the supply is also just now short. Owing to the late excessive rains, the sowing demand for winter Vetches is for a time suspended. Canary, and especially Hemp seed, continue to droop in price. Blue Peas are now unusually cheap. There is no change in Linseed. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

HAY.

Tuesday's Whitechapel Market report states that the supply was short on account of the wet weather, and the demand rather slow. Quotations:—Prime Clover, 115*s.* to 125*s.*; inferior, 75*s.* to 80*s.*; prime meadow hay, 95*s.* to 105*s.*; inferior, 36*s.* to 60*s.*; and straw, 30*s.* to 46*s.* per load.—On Thursday there was a short supply, with a brisker trade and firm prices.—Cumberland Market quotations:—Superior meadow hay, 95*s.* to 110*s.*; inferior, 68*s.* to 84*s.*; superior Clover, 120*s.* to 130*s.*; inferior, 75*s.* to 98*s.*; and straw, 40*s.* to 45*s.* per load.

POTATOS.

The Borough and Spitalfields Markets reports state supplies are moderate, and the demand steady. Quotations:—Regents, 80*s.* to 90*s.*; Champions, 70*s.* to 80*s.*; Magnum Bonums, 90*s.* to 100*s.* per ton; and German reds, 4*s.* 6*d.* per bag.—The imports into London last week consisted of 400 bags from Harlingen, 90 Boulogne, 107 sacks St. Nazaire, 50 barrels 8 sacks Bremen, 2625 casks 4293 bags Hamburg, and 5 bags from Christiana.

COALS.

The following are the prices current at market during the week:—Ravensworth West Hartley, 15*s.* 6*d.*; Walls End—Hetton, 20*s.*; Hetton Lyons, 17*s.* 6*d.*; Lambton, 19*s.* 6*d.*; Wear, 17*s.* 6*d.*; Tunstall, 17*s.* 6*d.*; Chilton Tees, 18*s.*; Hawthorn, 17*s.* 9*d.*

SUTTONS' FLOWER ROOTS.

CHIONODOXA LUCILIÆ.

"Glory of the Snow."

Each, 6d.; per dozen, 5s.

A valuable hardy early flowering bulb, recently introduced from Asia Minor by G. Maw, Esq., who describes the plant in bloom as one of the most sumptuous displays of floral beauty he ever beheld, resembling the blue and white Nemophila insignis in colour, but more intense and brilliant. It has been awarded a First-class Certificate by the Royal Horticultural Society, and is undoubtedly one of the very best hardy bulbous plants of its class, far surpassing any of the Squills, to which genus it is closely allied. It is as easily cultivated as the well-known Scilla præcox.

SUTTON & SONS,

THE QUEEN'S SEEDSMEN, and Seedsmen by Special Warrant to H.R.H. THE PRINCE OF WALES,

READING, BERKS.

JAMES DICKSON & SONS.

GRAPE VINES of the usual excellent quality can now be supplied, price 5*s.*, 7*s* 6*d.*, and 10*s.* 6*d.* each; the stronger will fruit next year either in pots or planted out.

CHRYSANTHEMUMS.—Well-grown plants of leading kinds, for immediate blooming, can be supplied at 12*s.* per dozen and upwards.

STRAWBERRIES.—By now planting transplanted runners a crop may be depended upon next year. Strong plants in large and small pots for forcing and planting can also be supplied.

AZALEAS, CAMELLIAS, WINTER FLOWERING and other PLANTS.

CATALOGUES with full particulars on application to

"NEWTON" NURSERIES, CHESTER.

To the Trade.

STANDARD and HALF STANDARD ROSES, of good quality, at reasonable prices.

L. WOODTHORPE, Glazenwood Nurseries, Braintree.

SPECIAL OFFER.

GLOBE ARTICHOKES, strong, 3*s.* per dozen.

CURRANTS, White, strong, 8*s.* per 100.

SPRUCE FIR, 2-yr. 2-yr., 7*s.* per 1000.

CHESTNUTS, Scarlet, fine Standards, 6 feet stems, 8*s.* per dozen, 55*s.* per 100.

THOMAS PERKINS AND SONS, 34, Drapery, Northampton.

TO THE NURSERY TRADE.

SCOTCH FIRS, 1 to 1½, 1½ to 2, 2 to 2½ feet.

LARCH FIRS, 2 to 3, 3 to 4, 4 to 4½ feet.

THORNS or QUICKS, strong, 1½ to 2, 2 to 3 feet.

All thoroughly prepared for lifting. Special prices and samples on application to

HOGG AND WOOD, Nurserymen, Coldstream, N.B.

SINGLE DAHLIAS.—Large Ground Roots of my special strain, in all shades of colour—these flower much earlier than young green plants—9*s.* per dozen, 50*s.* per 100.

Trade price on application.

THOMAS S. WARE, Hale Farm Nurseries, Tottenham, London.

H. LANE AND SON have 130 Acres of NURSERY STOCK to offer, in great variety, including:—

EVERGREEN TREES and SHRUBS.—Cedars, Cupressus, Junipers, Piceas, Retinosporas, Thuias, Wellingtonias, Aucubas, Bays, Berberis, Box, Cotoneasters, Hollies, Laurels, Yews, &c.

DECIDUOUS TREES and SHRUBS.—Acers, Ash, Beech, Birch, Chestnuts, Elms, Hawthorns, Limes, Mountain Ash, Planes, Poplars, Sycamores, Weeping Trees, Deutzias, Elders, Forsythias, Gueldres Rose, Lilacs, Ribes, Spiræas, Weigelas, &c.

FOREST TREES.—Ash, Beech, Chestnut, Larch, Scotch, Spruce, and Austrian Firs, Hazel, Oak, Poplar, Quick, &c.

RHODODENDRONS, ROSES, and FRUIT TREES in great variety of all descriptions.

VINES in pots, &c.

CLIMBERS for Walls, &c.—Clematis, Honeysuckles, Ivies in great variety, Jasmines, Wistarias, Virginian Creepers, &c.

CATALOGUE on application

The Nurseries, Berkhamsted, Herts.

Double White Primulas.

WE beg to say that we have now a splendid stock in 5-inch pots, 15*s.* per dozen. Nice plants full of crowns, ready for shifting, 10*s.* per dozen.

SINENSIS Seedlings, 1*s.* 6*d.* per dozen; in small pots, 2*s.* 6*d.*; 5-inch pots, 6*s.* per dozen.

Calceolarias (Herbaceous).

All fertilised with the true CLOTH OF GOLD.

FROM what has already been published of the superiority and the perfection of our collection for so many years, and the satisfaction and many 1st prizes they have secured, we need only say that we have now some thousands of plants just ready. They are so clean and full of vigour that they will be sure to give satisfaction. 2*s.* per dozen, 12*s.* per 100.

Cinerarias.

MARCH PAST strain, fine plants, ready for a shift, 3*s.* per dozen; in 5-inch pots, 6*s.* per dozen.

DOUBLE Seedlings, in small pots, 4*s.* per dozen; in 4-inch pots, 7*s.* per dozen.

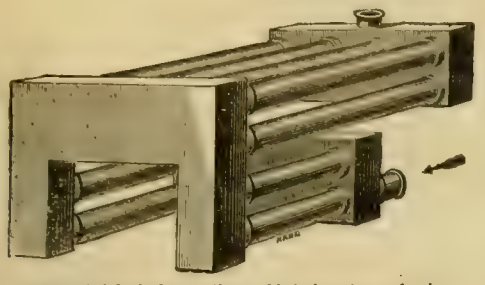
BEDDING PANSIES (VIOLAS, an acre).—We beg to offer the above in any quantity, good and strong, for immediate planting, in the most effective colours—Blue, White, Yellow. Flower all the year. 8*s.* per 100. For newer kinds see CATALOGUE, post-free.

H. CANNELL & SONS,

THE HOME FOR FLOWERS SWANLEY KENT

THE THAMES BANK IRON COMPANY,

UPPER GROUND STREET, LONDON, S.E.,



Horizontal Tubular Boiler. Made from 6 to 14 feet long.

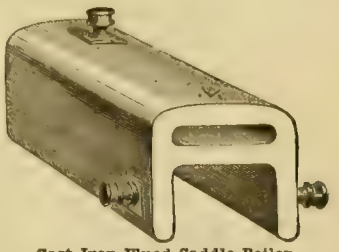
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Hot-water and Hot-air Apparatus erected Complete, or the Materials supplied.



Cast Iron Flued Saddle Boiler.
Made in Cast Iron, 3 feet long. This Boiler will be found to be more durable in Cast Iron than in Wrought Iron.

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and should be seen by all persons contemplating building in the coming season. New Blocks have been specially prepared, giving sections, plans, and views of every description of house, with all the most recent improvements and accessories. MESSENGER AND CO. invite all persons who intend building to inspect this Catalogue, and to obtain estimates from them before giving their orders for the ensuing season.

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Gentlemen waited upon and consulted with in every part of the Country. Plans and Estimates free on application.

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CULVERWELL'S GIANT MARROW PEA.



Price, 2s. 6d. per Half-pint Packet; 1s. 6d. per Quarter-pint Packet.

TRADE PRICE ON APPLICATION.

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Special Price LIST of Cheap Manufactures just published, consisting of

NURSERYMEN'S GREENHOUSES,

SPAN AND LEAN-TO, ALL SIZES;

CUCUMBER AND MELON FRAMES, PIT LIGHTS, BIJOU GREENHOUSES, PLANT PROTECTORS, WALL COVERS, AMATEUR'S GREENHOUSES, &C.,

Extract from Letter. "Kindly send me another of those very useful Lists, 'Nurserymen's Greenhouses.' The one I had I have just sent to a friend who purposes building some glass, and to whom I have recommended your firm.—G. M., *Wemyss Bay, Greenock*"

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CONSERVATORIES & HOTHOUSES.

CATALOGUES FREE.

THE LARGEST & BEST MANUFACTURERS.

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EXCELLENCE ECONOMY

R. AND G. NEAL, NURSERYMEN, SEEDSMEN, and CONTRACTORS, Wandsworth Common, S.W., respectfully invite an inspection of the large and varied Stock of SHRUBS, FOREST, ORNAMENTAL, FRUIT and ROSE TREES grown at their Nurseries, which are now in fine condition for transplanting. All plants delivered free by own vans, within 6 miles of the Nursery. Builders supplied at Trade Prices. CATALOGUES on application.
The Nurseries are within 1 mile of the Clapham Junction and Wandsworth Common Stations.

To the Trade.

LARGE YELLOW CROCUS, first size.
LILIUM CANDIDUM.
Price on application.
E. P. DIXON, Hull.

Johnstone's St. Martin's Rhubarb.

EARLIEST and BEST in CULTIVATION. Strong roots, 1s. each, 9s. per dozen. Trade price on application.
W. P. LAIRD AND SINCLAIR, Nurserymen, Dundee, N.B.

SEAKALE FOR FORCING.—Excellent large Roots. Price on application to
ALFRED ATWOOD, Market Gardener, 48, Shillington Street, Battersea, S.W. (late of Fulham Fields).

Special Offer to the Trade of

LEICESTER SEEDS, which may be had on application to
HARRISON AND SONS, Seed Growers, &c., Leicester.

Gardenias.

MESSRS. JOHN STANDISH AND CO.'S Stock of GARDENIAS was never so extensive or good as it is this season. They have thousands of plants to select from, in all sizes, from fine specimens in 18-inch pots to small plants in 60's. All clean and healthy, and to a large extent well set with buds for winter-flowering. VERY REASONABLE Prices will be quoted on application.
Royal Nurseries, Ascot, Berks.

To the Trade.

MESSRS. LITTLE AND BALLANTYNE beg to intimate that they have issued their TRADE NURSERY LIST. Should any of their Customers not have received a copy, another will be posted on application.
Special offers to large buyers of Seedling and Transplanted FOREST TREES of superior quality, will be promptly given when requested.
The Nurseries, Carlisle.—Nov. 1.

A. M. C. JONGKINDT CONINCK, Dedemsvaart, by Zwolle, Netherlands, has to offer:—
MANETTI STOCKS,
QUINCE.
Prices on application.

TO the NURSERY and SEED TRADE.—Rollisson's Telegraph CUCUMBER SEED, 16s. per ounce; Seedling Alpine AURICULAS, nice healthy plants, out of pots, 20s. per 100. Prompt cash.
J. BOOTH, Florist, Failsworth, Manchester.

Surplus Stock.

ISAAC DAVIES AND SON have still 50,000 RHODODENDRONS, Hybrid Seedlings, raised from varieties which have been hybridised to obtain brilliant colours. Price LIST of these and other Plants, now offered cheap to clear ground, forwarded on application.
Brook Lane Nursery, Ormskirk.

To the Trade.—Green Euonymus.

J. NOBLE begs to offer many thousands of the above, bushy well grown stuff, at 25s., 30s., 40s, per 100.
The Nurseries, Pond Lane, Clapton, E.

ANEMONE JAPONICA ALBA and ROSEA, 10,000 extra strong plants, splendid stuff, flowered this season, 2s 6d. per dozen, 16s. per 100.
VIOLETS, Double Russian, full of flower-buds, very strong compact plants, fine for potting; Single ditto, The Czar, also full of flower-buds, 2s. 6d. per dozen, 16s. per 100, package included.
PANSIES, Cloth of Gold and Wm. Gladstone, the two best yellow varieties for bedding, good plants, 1s. per doz., 7s. 6d. per 100.
CARNATION, Much Welcome, a choice hybrid, very fine white flowering variety, perpetual bloomer, 3s. 6d. per doz, 25s. per 100, package included.
HENRY GODFREY, Nurseryman and Seedsman, Stourbridge.

Sharpe's Victor Potato.

CHARLES SHARPE AND CO. can supply the above at present in nicely sprouted sets fit for immediate planting in pots and frames. The crop should be ready at the close of the year. Early orders requested, the stock being limited. Price 1s. per pound. Trade price on application. Victor, planted in pots on Nov. 11, 1881, was ready Jan. 12, 1882.

JOHN SCOTT, The Royal Nurseries, Merriott, Somerset, offers:—
PICEA NORDMANNIANA, in large or small quantities. This noble Pine is one of the handsomest and hardiest of the Fir tribe. On the Crimean and other mountains it attains a height of 100 to 150 feet, clothed with lovely dense green branches to the ground. J. S. offers the following sizes:—500, 18 inches high by 18 inches in diameter, at £5 per 100; 500, 2½ feet by 2½ feet, at £10 per 100; 300, 3 feet by 3 feet, at £15 per 100; 400, 4 feet by 4 feet, at £25 per 100; and a few fine specimens, 8 feet high by 6 feet. All the above are densely feathered to the ground.
J. S. also offers BIOTA SIEBOLDI, 6 feet high by 8 feet; and fine healthy collections of all the best EVERGREENS, from 1½ foot to 2, 2½, 3, 3½ and 4 to 8 and 12 feet, all transplanted during the last six months, at 12s. to 40s. per dozen. DECIDUOUS and FOREST TREES by the 1000, and FRUIT TREES in large numbers at low prices. For sorts see Scott's *Orchardist*.

LEICESTER RED CELERY.—Ten thousand packets of this splendid variety are now ready for delivery. Shilling packets, trade price, 6s. per dozen, 42s. per 100. Post-free.
HARRISON AND SONS, Seed Growers, &c., Leicester.

ROSES!—ROSES!!—ROSES!!!—Fine stock of all the leading sorts, including many new ones, my own selection.
STANDARDS, from 15s. to 21s. per dozen.
HALF STANDARDS, 12s. to 18s. per dozen.
DWARFS, 9s. to 12s per dozen.
WILLIAM MEADMORE, Market Place, Romford, E.

WEBB'S PRIZE COB and other FILBERT TREES, Calcot Gardens, near Reading.
Apply to Mr. COOPER, F.R.H.S., Calcot Gardens, near Reading, Berks.

Game Covert.

THOMAS METHVEN AND SONS have a fine Stock of MAHONIA AQUIFOLIA, 1½ to 2 feet, RHODODENDRON PONTICUM, and COTONEASTER SIMONSII, suitable for above, and will be happy to quote prices. Leith Walk Nurseries, Edinburgh.

Planting Season.

JOHN PERKINS AND SON beg to draw attention to their large stock of the following, the whole of which have excellent roots:—
AUCUBA JAPONICA, 1 to 3 feet.
CUPRESSUS LAWSONIANA, 1½ to 10 feet.
HOLLY, Variegated, 1 to 4 feet.
LAURELS, Common, 1 to 3 feet.
,, Portugal, 1 to 4 feet.
,, ROTUNDIFOLIA and CAUCASICA, 1 to 3 feet.
LAURUSTINUS, 1 to 2 feet.
PICEA NORDMANNIANA, 2 to 6 feet.
THUIA AUREA, 1 to 3 feet.
,, GIGANTEA, 1 to 6 feet.
,, LOBBII, 3 to 4 feet.
YEWS, English, 2 to 3 feet, 3 to 4 feet, and 4 to 5 feet; also large stocks of transplanted FOREST TREES, ASH, ALDER, BIRCH, ELMS, HAZEL, HORNBEAM, Evergreen PRIVET, PINUS AUSTRIACA, LARCH, Scotch and Spruce FIRS, various sizes, 1 to 4 feet; WHITETHORN QUICKS.
An inspection particularly solicited.
WHOLESALE and RETAIL CATALOGUES on application.
52, Market Square, Northampton: Nurseries—Billing Road.

NYMPHÆA ODORATA MINOR.—A miniature Water Lily of the most charming description. Flowers about one-third the size of our native species. Colour white to deep rose. Strong roots, 5s. each.
HOOPER AND CO., Covent Garden, London, W.C.

FLOWERING SHRUBS, in great variety, such as Hydrangeas, Lilacs, Deutzias, Spiræas, Cytisus, Broom, Pyrus, Berberis, Double Cherry, Scarlet Hawthorns, Gueldres Rose, &c., 8s. per dozen, 50s. per 100.
Descriptive LIST on application.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

ROSES—Carriage Paid—ROSES.
(To any Railway Station in England.)
Twelve distinct varieties, Perpetuals, 1st Prize flowers, 10s. 6d. 100 in fifty varieties, 1st Prize flowers, 65s.
The plants are very fine, stout, and well-rooted. Terms cash. Usual Trade Discount.
The EXORS. of the late H. BLANDFORD, The Dorset Nurseries, Blandford.

Escalonias

MACRANTHA and RUBRA, 1 to 1½ foot, fine, 16s. per 100.
HUGH DICKSON, Belmont Nursery, Belfast.

HORIZONTAL TRAINED FRUIT TREES.—For extra sized Horizontal Trained Pears, which will cover bare walls, and come into bearing at once.
PYRAMID APPLES and PEARS and ESPALIER APPLES, extra transplanted, and in fruiting condition.
AUCUBA JAPONICA, beautifully coloured and very fine.
AUCUBA VERA, thickly set with berries.
Through trucks to any part of the United Kingdom. Plants and Trees added to compensate for freight. Apply to
GEORGE SMITH, The Dell Nursery, Rock Ferry, Cheshire.

RASPBERRY CANES.—500,000 of the celebrated Carter's Prolific (see *Mark Lane Express*, Aug. 1, 1881, p. 1044) to dispose of, at £2 per 1000. Samples of 100, 5s., packing included, free at Railway Offices in London: no CHANGE of rail. Payments to accompany Orders. Postal Orders on Knockholt. Apply to
ALBERT AND EDWIN BATH, Colgates Farm, Sevenoaks, Kent.

Special Offer.
CEDRUS DEODARA.
CRYTOMERIA ELEGANS.
VARIEGATED YEWS.
H. LANE AND SON, having many thousands of the above, well transplanted, can offer them very cheap; also many other TREES and SHRUBS.
The Nurseries, Berkhampstead, Herts.

LILY of the VALLEY.—Plant at once for forcing, for Christmas decorations, or for early spring blooming. 50 extra strong, finest-picked crowns for 1s.; 100, 1s. 9d.; 1000 for 12s. 6d.; all sent free and carefully packed. Satisfaction guaranteed.
H. JALLAND, Horncastle, Lincolnshire.

LILY of the VALLEY ROOTS for SALE, 7s. per bushel, basket included.
2-yr. old Red CURRANT Trees, a very large sort, and heavy bearers. £5 per 1000, or £2 15s. for 500. Post-office orders payable in advance.
T. MILLS, Market Gardener, Chiswick, Middlesex.

Large Quantity of

FIRST-RATE NURSERY STOCK, all transplanted within 2 years, to be cleared at nominal prices. Send for LISTS to
F. W. AND H. STANSFIELD, The urseries, Pontefract, Yorkshire.

CEDRUS DEODARA.—"The Indian Cedar."—Beautiful specimen trees, frequently transplanted and well-rooted, offered at the undermentioned low prices, to effect a clearance:—

5 to 6 feet, 48s. per dozen	7 to 8 feet, 72s. per dozen
6 to 7 feet, 60s. per dozen	8 to 10 feet, 84s. per dozen

ABIES DOUGLASII.—One of the most noble trees grown, well rooted specimens:—
6 to 7 feet, 3s. 6d. each; 36s. per dozen
7 to 8 feet, 4s. 0d. each; 42s. per dozen
8 to 9 feet, 5s. 0d. each; 60s. per dozen
The above-named trees are highly suitable for Avenues, Lawns, Shrubberies, or Woods, and the opportunity of purchasing on such terms rarely occurs.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

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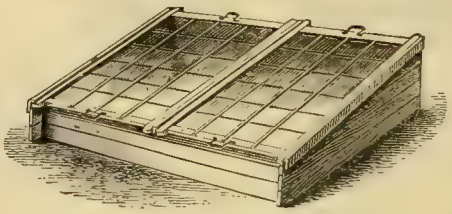
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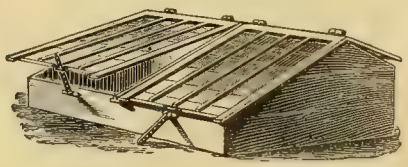
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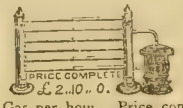
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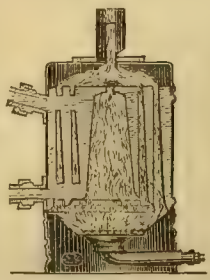
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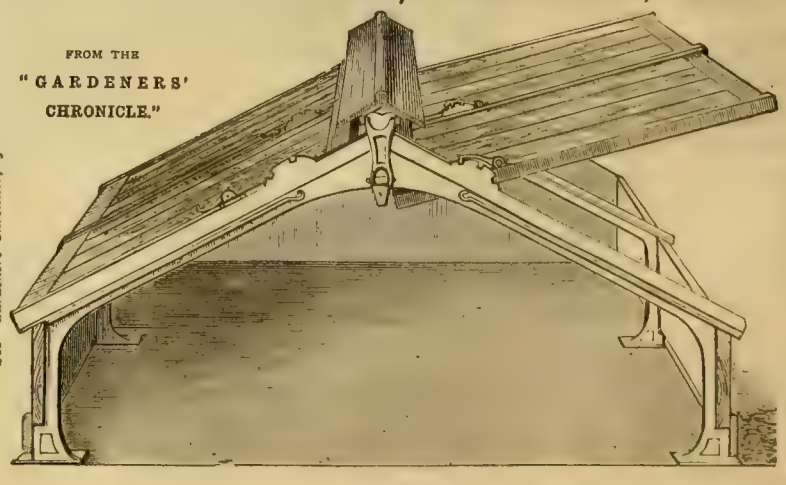


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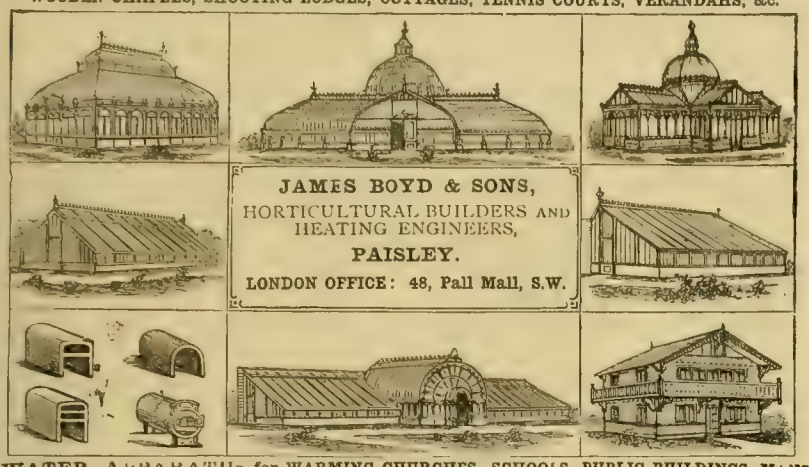
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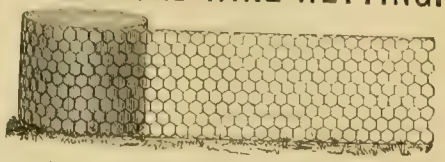
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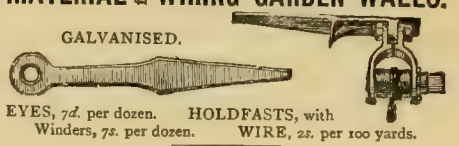
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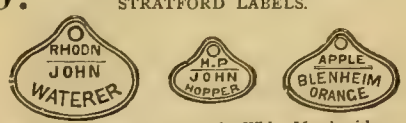
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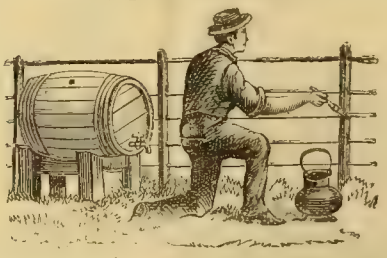
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TO NOBLEMEN and GENTLEMEN.—Wanted a situation in a Gentleman's garden under a good Foreman in the Houses. Aged 20. Can be well recommended from last and present employers.—E. CLEMENTS, Gardener, Debdale Hall, near Mansfield, Notts.

TO GARDENERS.—A young man (age 17) seeks a situation under a Gardener. Good character from last place.—T. TEBBY, Welton, Daventry.

TO GARDENERS.—£10 Bonus will be given by an intelligent young man, honest and trustworthy, for a situation where he could learn every branch of the profession. Seven years' experience.—W. F. SELLENS, 31, King Henry Walk, Mildmay Park, London, N.

TO NURSERYMEN.—Wanted, a situation in the Houses. Age 21. Six years' experience. Good references as to ability, &c.—T. BACCHUS, The Gardens, Malvern House, Sydenham, S.E.

TO NURSERYMEN.—Wanted, a situation of Trust. Six years' experience. Good references.—G. G., Gregory & Evans, Effingham Nursery, Lee, S.E.

TRAVELLER, SHOPMAN, BOOK-KEEPER.—R. W. JACK is open to engage with any House where good knowledge of the Wholesale and Retail Seed Trade is required. Town or country.—66, Canonbury Road, London, N.

To Nurserymen and Seedsmen.

BOOK-KEEPER, SHOPMAN, or some position of trust.—Age 37; good references.—A. B., 170, Ladbroke Grove Road, Notting Hill, W.

SHOPMAN or MANAGER.—Thirteen years' experience in first-class Houses; thoroughly acquainted with all branches of the Trade. Highest references.—G., 73, Victoria Street, Belfast.

SHOPMAN (HEAD).—Thoroughly experienced. Seven years' good character from last situation.—A. P., *Gardeners' Chronicle* Office, 41, Wellington Street, W.C.

To Nurserymen and Seedsmen.

SHOPMAN and GENERAL ASSISTANT.—Age 23; most respectably connected. Five years' first-class experience; unexceptionable references. The Advertiser has been apprenticed, and has a good knowledge of the Seed Trade, but is anxious to acquire Instruction in the Nustery Department, with a view to a Partnership, or Purchase of a Business in a year or two; the amount of salary is therefore of only secondary importance.—C. E. R., *Gardeners' Chronicle* Office, 41, Wellington Street, W.C.

SHOPMAN or COUNTERMAN (WHOLESALE or RETAIL).—Age 32; seventeen years' experience.—X., *Gardeners' Chronicle* Office, 41, Wellington Street, W.C.

SHOPMAN (or SECOND)—Age 27; open to re-engagement. Over eleven years' good experience in the Nursery and Seed Trade. Could keep Books if necessary.—H. PATTERSON, Bars Farm, Haddington, N.B.

SHOPMAN (ASSISTANT), in a good House.—Age 24; nine years' experience. Good reference.—T. H., W. Troughton, Seedsman, 4, Church Street, Preston.

SHOPMAN (ASSISTANT).—Seven and a half years' experience. Good references.—ADONIS, 3, Wingham Villas, Wandsworth Common, London, S.W.

SHOPMAN (ASSISTANT).—A young man with four years' experience in all the branches of the Seed Trade, desires engagement.—For particulars apply to DICKSON AND TURNBULL, Brechin.

SEEDSMAN (ASSISTANT).—Age 22; seven and a half years' experience Good references.—W. PEARSON, 111, Midland Road, Bedford.

WAREHOUSE PORTER.—Age 19; thoroughly understands Crossley's Gas Engine and all Warehouse Work.—T. B. E., 18, Astley St., Old Kent Road, S.E.

HOLLOWAY'S PILLS.—Liver Complaints and Disorders of the Bowels.—It is impossible to exaggerate the extraordinary virtue of this medicine in the treatment of all affections of the liver or irregularities of the bowels. In cases of depraved or superabundant bile these Pills, taken freely, have never been known to fail. In bowel complaints they are equally efficacious, though they should then be taken rather more sparingly, for every medicine in the form of an aperient requires caution when the bowels are disordered, although at the same time a gentler or more genial aperient than these Pills in moderate doses has never yet been discovered. If taken according to the printed instructions, they not only cure the complaint, but improve the whole system.

NEW EARLY RHUBARB,

CHARLES KERSHAW'S "PARAGON."



THIS is unquestionably the finest variety of Rhubarb ever offered; in mild seasons it is ready to pull in February. The crowns and stalks are produced in such profusion that more than twice the weight can be pulled from this than from any other sort. Its productiveness is so great that Charles Kershaw has often, from roots three or four years old, made in six weeks, the **LARGE SUM OF ONE SHILLING EACH,** or from an Acre containing 4840 Plants, put in 1 yard apart, has made the astounding sum of more than

£240.

The colour is a splendid red, flavour excellent, and it has this qualification over all others, **IT NEVER SEEDS.** The illustration is taken from a plant lifted out of some hundreds which were planted single crowns in the Autumn of 1880.

Price, per strong plant, 5s.; per three plants, 13s. 6d.; per five plants, £1.

PRICE TO THE TRADE ON APPLICATION.

Early orders are requested, as the Stock is limited. Persons with whom I have not had the pleasure of doing business must in all cases accompany their orders with remittance.

TESTIMONIALS:—

From the GARDENERS' CHRONICLE.—"*Report of the Fruit Committee of the Royal Horticultural Society, April* 11, 1882."

"Mr. Charles Kershaw, of the Slead Syke Nurseries, Brighouse, sent samples of a very good seedling Rhubarb, which the committee seemed to think well of."

"*New Market, Huddersfield.*

"I have pleasure in stating that during the last three years I have sold a large quantity of Mr. Chas. Kershaw's new Rhubarb; it is by far the handsomest and best that comes into the market, the colour is such a bright red and the leaves are so very small that when bunched it has an exceedingly neat and tidy appearance, it also bears handling well, in fact I can sell no other sort until I have finished it. On referring to my books I find that in 1880, from the middle of March to the first week in May, I had 4000 dozen bunches; when I saw the small piece of ground it was pulled off I was astonished. Last year I had about the same quantity, and this year I have had more, as I began to have it the first week in March.—I am, Sir, yours, &c.,

"G. H. HOWARTH, Fruit and Potato Salesman."

From Mr. SAMUEL PEEL, *Market Gardener, Strawberry Lodge, Elland.*

"Some time ago Mr. Charles Kershaw sent me for trial some roots of his new Rhubarb, and as I am an extensive grower of Rhubarb, I have had a good opportunity of testing it, and have found it much superior to all other sorts. It is a heavy cropper, very early, of fine flavour, and the colour is a most beautiful red, with me it has never produced a seed crown."

(Signed), "S. PEEL."

"*Belsfield Gardens, Windermere, October* 25, 1882.

"During the time I was Gardener to Sir Titus Salt, Bart., Crow Nest, Lightcliffe, near Halifax, I had frequent opportunities of seeing Mr. Chas. Kershaw's Seedling Rhubarb. It is a very early sort (when ours was only making its appearance he was pulling), the colour is a good red, and the plant an enormous cropper; on one occasion when paying a visit to the nursery I saw pulled from one root twelve bunches, which Mr. Kershaw told me were then selling for a shilling: and I saw hundreds of other plants equally good. Without doubt this is a valuable acquisition. By sending out this variety Mr. Kershaw will become a benefactor to his country.

(Signed), "JOHN NICOL."

"*Brighouse, October*, 1882.

"For several years during the season, Mr. Chas. Kershaw has supplied me in quantity daily with his new Rhubarb—there is no sort that I am acquainted with that can equal it in colour or quality. I believe it to be the best Rhubarb grown. I cannot speak more highly of it than it deserves."

(Signed), "JONATHAN MARSDEN, Fruit Merchant."

ADDRESS IN FULL:—

CHARLES KERSHAW, THE SLEAD SYKE NURSERIES, BRIGHOUSE.

Editorial Communications should be addressed to "The Editors;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
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THE

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NOTICE to SUBSCRIBERS and OTHERS. The King Street, Covent Garden, Post Office being closed, Post-office Orders and Postal Orders should now be made payable at Drury Lane.

THE GARDENERS' CHRONICLE IN AMERICA.

The Subscription to America, including Postage, is $6.35 for Twelve Months.

Agent for America:—C. H. MAROT, 814, Chestnut Street, Philadelphia, U.S.A., to whom American Orders may be sent.

ROYAL BOTANIC SOCIETY, Regent's Park, N.W.

ARRANGEMENTS for 1883:—

SPRING EXHIBITIONS, Wednesdays, March 28, April 25.

SUMMER EXHIBITIONS, Wednesdays, May 16, June 13.

EVENING FÊTE, Wednesday, June 27.

ROYAL AQUARIUM, Westminster, NOVEMBER 15 and 16.

CHRYSANTHEMUM, FRUIT, and VEGETABLE EXHIBITION. Schedules and all particulars of WILLIAM HOLMES, Frampton Park Nursery, Hackney, London, E.

KINGSTON and SURBITON CHRYSANTHEMUM SOCIETY.

The SIXTH ANNUAL EXHIBITION of the above Society will be held in the Drill Hall, Kingston, on THURSDAY and FRIDAY, November 16 and 17, when the final ties for the First Champion Challenge Vase will be decided, and a New Challenge Vase, value 25 Guineas (open to subscribers of 21s.), will be offered, in addition to over £100 in Money Prizes. Schedules and further particulars on application to T. JACKSON, Hon. Sec., Fife Road, Kingston.

To the Trade.

HYBRID GLADIOLI.

Lowest prices extant. LIST on application to HOOPER AND CO., Covent Garden, London, W.C.

CHRYSANTHEMUMS. — Our Collection, comprising all the latest novelties, as well as the best of the old, is now in full bloom. An inspection invited.

T. JACKSON AND SON. Nurseries, Kingston-on-Thames.

GREEN EUONYMUS.—Extra bushy, about 1 foot, fit for 48 and 32-pots, 15s. and 20s. per 100. Package free for cash only. Also 20 fine Specimens, about 6 feet, to be sold cheap.

J. W. CHAPMAN, Floral Nursery, Ramsgate.

GUARANTEED TRUE HIGHLAND NATIVE SCOTCH FIR SEED.—We are now Booking Orders for the above on very easy terms. Before purchasing send for prices to

WM. WISEMAN AND SON, Nurserymen, Elgin, N.B.

LARCH, extra fine, clean, 2½ to 3½ feet, 25s. per 1000. SCOTCH FIR, 1 to 2 feet, 15s. per 1000. AUSTRIAN PINE, 1 to 2 feet, 25s. per 1000, all well rooted.

W. JACKSON, Blakedown, near Kidderminster.

WEDDING, COURT, BALL or other BOUQUETS arranged to order, and all kinds of WREATHS, CROSSES, or other DESIGNS for Church Decoration or Funerals. Price List on application, post-free.

JOHN RAINS, Centre Row, Covent Garden Market, W.C. Old Established.

Single Dahlias.

POT ROOTS, GROUND ROOTS, and SEED.

Ten First-class Certificates have been awarded to my novelties of this season. The Trade supplied.

THOMAS S. WARE, Hale Farm Nursery, Tottenham, London.

CREEPERS for WALLS, TRELLISES, &c., in great variety. See Descriptive LIST. Most of these plants being in pots, may be moved now.

RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

To the Trade.

TEA ROSES, a few fine Standards and Half-Standards, best sorts only. A lot not easily met with.

T. LAXTON, Bedford.

Standard Roses.

E. S. KNOX, NURSERYMAN, Alcester, offers strong STANDARD ROSES with fine heads at 15s. per dozen, or 110s. per 100, own selection.

ROSES, Standard Gloire de Dijon, very fine, £5 5s. per 100; Half-Standard, do., £4 10s. per 100. Other good varieties can be supplied at same price, W. P.'s selection.

W. POTTER, Camden Nursery, Sissinghurst, Staplehurst, Kent.

To the Trade.

STANDARD and HALF STANDARD ROSES, of good quality, at reasonable prices.

L. WOODTHORPE, Glazenwood Nurseries, Braintree.

Christmas Roses.

BUDDENBORG BROTHERS, BULB GROWERS, Hillegom, near Haarlem, Holland, are now booking orders for the above. Prices will be given on application.

To the Trade Only.

TEA ROSES, on own roots, extra strong, out of 4½-inch pots, £2 per 100, or cash.

MAIRIS AND CO., Weston-in-Gordano, Bristol.

GILBERT'S CHOU DE BURGHLEY is one of those things that leaves all others of the Brassica tribe far in the rear, in fact a "march onwards" which seldom occurs. Enclose stamp and addressed envelope for particulars. Seed, 2s. 6d. per packet. The Trade supplied on liberal terms.

R. GILBERT, Burghley Gardens, Stamford.

Floral Commission Agency.

WANTED, Consignments of Maréchal Niel ROSES, English Neapolitan VIOLETS, EUCHARIS, STEPHANOTIS, and CHOICE FRUIT.

W. CALE, Floral Commission Agent, 4, Tavistock Row, Covent Garden, W.C.

WANTED TO BUY, SNOWDROPS, any quantity. Sample and price to

GOLDSMITH AND LUFF, 118, York Road, Westminster Bridge Road, S.E.

WANTED, large or small pots of EUCHARIS AMAZONICA; also, large plants of WHITE AZALEAS, shape no object if well set with flower-buds. Cash or EXCHANGE.

W. M. CROWE, Boleyn Nursery, Upton, Essex.

To Nurserymen.

WANTED, 600 good, well-grown LIME TREES, from 10 to 11 feet high. Send sample tree with lowest price to

A. WELLS, Belvedere, Kent.

WANTED, clean grown transplanted OAKS, 5 to 6 and 6 to 8 feet.

THOMAS PERKINS AND SONS, 34, Drapery, Northampton.

WANTED, GOOSEBERRIES, of sorts, 2-yr. and 3-yr. old.

THOMAS IMRIE AND SONS, The Nurseries, Ayr, N.B.

WANTED, strong CRAB STOCKS, also a quantity of 1-yr. and 2-yr.

T. EVES, Gravesend Nurseries.

WANTED, a large number of strong Standard APPLES, early sorts chiefly, and Perry and Cider varieties.—State lowest cash price to

CONTRACTOR, 41, Wellington Street, Strand, W.C.

Notice to Senders.

WANTED, CUCUMBERS, GRAPES, TOMATOS, Quinces, Marie Louise and other Pears: also Stephanotis, Roses, Odontoglossum, Vanda cœrulea, Phalænopsis, and other good varieties of Orchids; Gardenias, Tuberoses, and other choice cut flowers.

WISE AND RIDES, Fruit and Flower Salesmen, Covent Garden, W.C.

To the Trade.

WANTED, QUOTATIONS of PEAT, best LOAM, SILVER SAND. Samples post paid. Also POTS, PIPES, EDGING TILES, TOBACCO PAPER, MUSHROOM SPAWN, and SUNDRIES. Address,

HORTICULTURE, 3, Providence Terrace, Sefton Street, Putney, S.W.

SUTTONS' CHOICE FLOWER ROOTS, CARRIAGE FREE.

For Prices and full particulars, see SUTTONS' AUTUMN CATALOGUE, Gratis and post-free on application.

SUTTON AND SONS, The Queen's Seedsmen, READING.

TO THE NURSERY TRADE.

SCOTCH FIRS, 1 to 1½, 1½ to 2, 2 to 2½ feet.

LARCH FIRS, 2 to 3, 3 to 4, 4 to 4½ feet.

THORNS or QUICKS, strong, 1½ to 2, 2 to 3 feet.

All thoroughly prepared for lifting. Special prices and samples on application to

HOGG AND WOOD, Nurserymen, Coldstream, N.B.

Lilies, and other Bulbous Plants for Autumn PLANTING, ORCHIDS, &c.

THE NEW PLANT AND BULB COMPANY beg respectfully to invite an inspection of their CATALOGUE, No. 60. Post-free on application.

Lion Walk, Colchester.

EUONYMUS, Green and Silver Variegated, 2-yr. old, fine bushy plants, 50s. per 1000, cash.

RICHARD ILLMAN, Strood, Rochester.

LARGE STOCK of HELLEBORUS NIGER (Christmas Rose). For prices apply to

JULES DE COCK, Nurseryman, Ghent, Belgium.

CHESTNUT (Spanish), Hazel, Ash, Larch, Scotch, Birch, Alder, Willow, and Thorn Quick.—Stout, well-rooted, transplanted. A large quantity to be sold.

GEO. CHORLEY, Coaster's Nursery, Midhurst.

Seedling Forest Trees, &c.

TRADE CATALOGUE of above now published, and may be had free on application.

W. P. LAIRD AND SINCLAIR, Nurserymen, Dundee, N.B.

SAXIFRAGA DIVERSIFOLIA.—New Seed of this most distinct Himalayan yellow-flowered species is now offered in 2s. 6d. and 3s. 6d. packets.

RODGER, McCLELLAND AND CO., Nurserymen, &c. Newry.

To the Trade.

WILLIAM BARRON AND SON'S new Wholesale CATALOGUE, post-free on application.

Elvaston Nurseries, Borrowash, Derby.

Autumn List.

JOHN LAING AND CO.'S New CATALOGUE of Dutch Bulbs, Roses, Fruit Trees, &c.; also Revised LIST of Tuberous Begonias, has been issued to all Customers. Copies gratis on application. Goods all first quality at moderate rates. Address

JOHN LAING AND CO., Nurseries, Forest Hill, S.E.

LILIUM AURATUM.—Good, plump, sound bulbs, 4s., 6s., 9s., 12s., 18s. and 24s. per dozen; extra strong, 30s. and 42s. per dozen. All other good LILIES at equally low prices.

Mr. WILLIAM BULL'S Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

ERICA HYEMALIS—Surplus Stock—to the Trade and others, in very fine, healthy, well-grown, bushy plants, well set with buds, 13s. per dozen, 85s. per 100, basket and package included.

HY. GODFREY, Nurseryman, Stourbridge.

Chrysanthemums.

CHARLES TURNER'S extensive Collection, containing many thousand plants, is now in fine bloom. An inspection is invited.

The Royal Nursery, Slough.

MESSRS. GREGORY AND EVANS have now a large quantity of ERICA HYEMALIS, GRACILIS and CAFFRA (HEATHS), in full flower, of first quality, to dispose of. Prices on application.

Longlands Nursery, Sidcup, Kent, and at Lee.

STRONG QUICK, for Hedging, from 25s. to 50s. per 1000.

RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Vines.—Vines.—Vines.

B. S. WILLIAMS has much pleasure in intimating that his stock of VINES is unusually fine this year, the Canes being very strong and well ripened. For List of Prices see B. S. W.'s BULB CATALOGUE for 1881.

Victoria and Paradise Nurseries, Upper Holloway, London, N.

6000 Grape Vines.

THE LIVERPOOL HORTICULTURAL COMPANY (JOHN COWAN), Limited, The Vineyard and Nurseries, Garston, near Liverpool, have a splendid stock of VINES, grown from eyes this year, suitable for present planting.

CATALOGUE free. The Trade supplied.

Also a large stock of TEA ROSES.

CABBAGE, CAULIFLOWER, LETTUCE PLANTS, &c., Autumn sown, best varieties, in any quantities. LIST, and printed copy of many recent (1882) Testimonials, on application. Prices moderate, no charge for packages.—EDWARD LEIGH, Dunsfold, near Godalming.

ROBINSON'S CHAMPION OX CABBAGE.—Strong Plants, 2s. 6d. per 1000.

THOMAS PERKINS AND SONS, 34, Drapery Northampton.

SALES BY AUCTION.

Dutch Bulbs.—Sales every Monday.

MESSRS. PROTHEROE AND MORRIS will SELL at the Mart, Tokenhouse Yard, City, E.C., every MONDAY, at half-past 12 o'Clock precisely, over 800 lots of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, SNOWDROPS, and other ROOTS, from Holland; in lots to suit all buyers.

Catalogues at the Mart, and 8, New Broad Street, E.C.

Order of Sale.—Sunbury and Hampton.

By order of the Executors of the late Mr. R. A. Osborn.

MESSRS. PROTHEROE AND MORRIS beg to announce their

ORDER of SALE for NEXT WEEK.

TUESDAY, November 14, at the Sunbury Nursery.
WEDNESDAY, November 15, ditto, ditto.
THURSDAY, November 16, ditto, ditto.
FRIDAY November 17, at the Hampton Nursery.
SATURDAY, November 18, ditto, ditto.

For particulars see following advertisement. Catalogues at the Auctioneers' Offices, 8, New Broad Street, E.C.

Sunbury and Hampton, Middlesex.

By order of the Executors of the late Mr. R. A. Osborn.

GREAT UNRESERVED SALE of the whole of the unusually well grown NURSERY STOCK, FRUIT TREES, &c.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, Osborn's Nursery, Sunbury, Middlesex (about ten minutes' walk from the station), on TUESDAY NEXT, November 14, and two following days, and at Osborn's Nursery, Tangley Park, New Hampton (about ten minutes' walk from Hampton or Fulwell Stations), on Friday and Saturday, November 17 and 18, at 12 o'Clock precisely each day, the first portion of the exceedingly well grown and thriving young NURSERY STOCK, which is in the best possible condition for removal, and comprises large quantities of various Coniferæ and Evergreen Shrubs in all sizes, 5000 Aucubas, 4000 Privet, 10,000 Limes, also other Ornamental Trees, 2000 Yews, 5000 Euonymus of sorts, 18,000 Green Hollies, 6000 fine Variegated Hollies, 84,000 Fruit Trees, including 62,000 Dwarf-trained, Pyramid, Standard, and Maiden Apples, Pears, Plums, Cherries, Peaches, Nectarines, &c, of all the best sorts in cultivation, and for the growth of which the firm of Messrs. Osborn has been so long celebrated; also 22,000 Gooseberries and Currants, 10,000 beautifully grown Standard and Dwarf Roses, consisting of all the finest varieties; 3000 Moss and Provence Roses, 10,000 Seakale, thousands of small Coniferæ, and other Stock, too numerous to mention. May be viewed.

Catalogues had at the Nurseries, of Messrs. WALKER AND CO., 5, Southampton Street, Bloomsbury, W.C.; and of the Auctioneers and Valuers, 8, New Broad Street, E.C.

N.B.—The Auctioneers particularly invite the attention of Noblemen and Gentlemen, and others extensively engaged in planting, to this Sale. The Stock is in the best possible condition, and the collection of Fruit Trees is, without doubt, the largest and finest in the kingdom; and the whole will be sold without the slightest reserve.

The productive FREEHOLD ESTATE of 17 acres, with the modern Glass Erections and Dwelling-house TO BE SOLD. Particulars of Messrs. P. & M., as above.

Friday Next.

13,000 fine Bulbs of LILIUM AURATUM from Japan, a consignment of CAMELLIAS, AZALEAS, and DECORATIVE PLANTS from Belgium, a collection of English-grown LILIES and Hardy BULBS, and an assortment of HYACINTHS, TULIPS, and other ROOTS from Holland.

MESSRS. PROTHEROE AND MORRIS will SELL the above at the Auction Mart, Tokenhouse Yard, City, E.C., on FRIDAY NEXT, at 12 o'Clock precisely. Catalogues had at the Mart, and 8, New Broad Street, E.C.

Isleworth, Middlesex.

Five minutes' walk from the Station.

THREE DAYS' SALE of NURSERY STOCK and ORNAMENTAL TREES.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. C. Lee & Son, who require the land for other purposes, to SELL by AUCTION, on the Premises, the Arboretum and Wood Lane Nurseries, Isleworth, W., on TUESDAY, November 21, and following days, at 12 o'Clock precisely each day, several Acres of valuable NURSERY STOCK, which has been carefully prepared for removal, including about 15,000 splendidly grown Ornamental Trees from Messrs. Lee's well-known collections, 1000 Purple Beech, 1000 Limes, 8000 Euonymus of sorts, 2000 Ivies in pots, 3500 Clematis of sorts in pots, 5000 Gooseberries and Currants, specimen Coniferæ and Evergreens, 8000 Seedling Briers, 18,000 small Coniferæ for growing on; also 2000 Camellia Stocks, 1000 double white Camellias, Heaths in flower in 6-inch pots, and other stock.

May be viewed. Catalogues had on the Premises, and at Messrs. LEE'S Hammersmith Nurseries, or of the Auctioneers and Valuers, 8, New Broad Street, E.C.

N.B. There will also be a SALE of a portion of the remarkably well-grown specimen CONIFERÆ and OTHER STOCK at Messrs. Lee's Nursery, Feltham, on TUESDAY, November 28.

Catalogues may be had as above.

Feltham, Middlesex.

ALTERATION of DATE from November 29 to TUESDAY, November 28.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nursery, Feltham, by order of Messrs. Lee & Son, on TUESDAY, November 28, at 12 o'Clock precisely, the surplus stock of handsome specimen CONIFERÆ, such as Cupressus, Thuias, Abies, Piceas, Thuiopsis borealis, &c., and quantities of smaller stock for effective planting, the whole being in the best possible condition for removal.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 8, New Broad Street, E.C.

Richmond, S.W.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. G. & W. Steel to SELL by AUCTION, on the Premises, The Nursery, Richmond, S.W., on WEDNESDAY, November 29, a large quantity of well-grown NURSERY STOCK, including 10,000 bushy Euonymus, 4000 green Hollies, 5 to 8 feet; 300 standard Golden Hollies, specimen Coniferæ, &c.

Further particulars next week.

Bridge Nursery, Castlenau, Barnes.

A few paces from Hammersmith Bridge, Surrey side; a short distance from the Metropolitan, District, and South-Western Railways; Barnes and Hammersmith Broadway.

TO NOBLEMEN, GENTLEMEN, OWNERS OF, AND PARTIES FORMING ORNAMENTAL GROUNDS, CONTRACTORS, NURSERYMEN, BUILDERS, AND OTHERS.

COMPLETE and UNRESERVED CLEARANCE SALE—expiration of Lease at Christmas, the LAND let for building purposes—of very choice and well-selected FRUIT TREES, SHRUBS, and PLANTS, TRADE ERECTION of SHEDS, WHEELBARROWS, ROLLER, TOOLS, and DOG PHÆTON.

MR. J. A. SMITH is favoured with instructions from Mr. James Grant to SELL by AUCTION, at the Nursery, near the "Boileau Arms," Castelnau, Surrey, on WEDNESDAY, November 15, and following day if necessary, at 1 o'Clock punctually, the carefully-selected remaining NURSERY STOCK, comprising about 20,000 well-selected, very choice and strongly grown FRUIT TREES, SHRUBS, and PLANTS, consisting of pyramid and standard trained Apples, Pears, Peaches, and Nectarines, Currants, Gooseberries, Poplars, Portugal and rare Laurels, Deciduous Trees, Golden and Green Euonymus, Ivies in pots, Provence and other Roses, special Sweet Brier, Poa stricta, Mahonia, fine plants of Ailantus glandulosa, Evergreens, Herbaceous Plants, Pansies, named, and others of choice varieties; 10 Roods of Collards, the TRADE ERECTIONS, BARROWS, ROLLER, GARDEN TOOLS, and miscellaneous effects.

May be viewed day prior and morning of Sale. Catalogues at the Nursery; the "Red Lion" Inn; "Boileau Arms" Hotel; and at Mr. J. A. SMITH'S Auction, Land, and Estate Offices, 58, King Street East, Hammersmith, W.

Hyacinths, Tulips, Crocuses, Narcissus, Iris, Scillas,

Snowdrops, and other Flower Roots from Holland.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY during November, at half-past 12 o'Clock precisely each day, CONSIGNMENTS of DUTCH BULBS, arriving weekly from well-known farms in Holland, in large and small lots, to suit all buyers.

On view morning of Sale, and Catalogues had.

Monday Next.

IMPORTED and ESTABLISHED ORCHIDS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY NEXT, November 13, at half-past 12 o'Clock precisely, by order of Messrs. Shuttleworth, Carder & Co., a grand lot of imported plants of CATTLEYA SUPERBA, in fine condition; ODONTOGLOSSUM CRISPUM (Alexandræ), LYCASTE SKINNERI, ODONTOGLOSSUM GRANDE, CATTLEYA AUREA, C. MOSSIÆ, C. GIGAS; MASDEVALLIA CHIMÆRA, M. TROCHILUS, M. SHUTTLEWORTHII, and M. HARRYANA; ODONTOGLOSSUM PESCATOREI, O. PHALÆNOPSIS, O. VEXILLARIUM, &c.; all in the best possible condition.

On view morning of Sale, and Catalogues had.

Monday Next.

5000 LILIUM AURATUM, just received from Japan.

MR. J. C. STEVENS will include in his SALE by AUCTION, on MONDAY NEXT, November 13, an importation of 5000 Bulbs of LILIUM AURATUM, just received from Japan in fine condition.

On view morning of Sale, and Catalogues had.

Auction Rooms and Offices, 38, King Street, Covent Garden, W.C.

Wednesday Next.

HARDY PLANTS and BULBS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, November 15, at half-past 12 o'Clock precisely, first-class Standard and Dwarf ROSES, including most of the leading sorts; variegated and green HOLLIES, RHODODENDRONS, common and Portugal LAURELS, specimen CONIFERS, standard ornamental flowering TREES, dwarf trained FRUIT TREES, GOOSEBERRY and CURRANT BUSHES, and other PLANTS, from Wiltshire. Also a consignment of first-class BULBS from Holland.

On view morning of Sale, and Catalogues had.

Thursday Next.

CATTLEYA (WARSCEWICZII) SANDERIANA, Rchb. f.

MR. J. C. STEVENS has received instructions from Mr. F. Sander to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, November 16, at half-past 12 o'Clock precisely, a most extraordinary importation and an altogether exceptionally grand lot of CATTLEYA SANDERIANA, among them masses of such size and health as are seldom seen of any Cattleya; the plants are full of sound leaves and plump unbroken eyes. CATTLEYA SANDERIANA has proved itself the grandest Cattleya extant; it is a wonderful type of Warscewiczii (gigas). The immense spikes bear as many as ten flowers in its native habitat, individually nearly a foot in diameter. It is fully described by Professor Reichenbach in the *Gardeners' Chronicle* of July 1 this year, and flowered first with G. W. Law Schofield, Esq., and since with W. E. Brymer, Esq., M.P., and other gentlemen. The importation was received some time since, and every leaf now on the plants will no doubt remain on them. It is very rare in its native country, and this may probably be the last we can offer. Something like 100 flowers will be on view.

On view morning of Sale, and Catalogues had.

Thursday Next.

VANDA SANDERIANA.

MR. J. C. STEVENS has received instructions from Mr. F. Sander to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, on THURSDAY, November 16, at half-past 12 o'Clock precisely, a grand importation of VANDA SANDERIANA. This wonderful Orchid was discovered by Mr. Röbelen last year, and the flowers and drawing will give some idea of the grand beauty of this the "Queen of Vandas." Professor Dr. Reichenbach in describing it in the *Gardeners' Chronicle*, May 6, says, "The grandest novelty introduced for years." Also an importation of ORCHIDS from Madagascar, in fine health: a grand lot of Odontoglossum Alexandræ, consisting of many fine masses and pieces; splendid importations from the Philippine Islands of Phalænopsis Sanderiana (true), Phalænopsis Stuartiana, Cypripedium ciliolare, Dendrobium Dearei, Lycaste Skinneri, Odontoglossum grande, a wonderful mass of the rare and fine Epidendrum purum in splendid health, &c.

On view morning of Sale, and Catalogues had.

Vanda Sanderiana.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY, November 21, at half-past 12 o'Clock precisely, by order of Messrs. Hugh Low & Co., every plant that comes to hand alive of a large importation of VANDA SANDERIANA collected by Mr. Richard Curnow, who sends dried flowers, which will be on view, and writes that they are about 15 inches in circumference, and that one small plant with three growths, two of them about 15 inches high, the third about 6 inches, had on it no less than seventy-eight fully expanded flowers. This grand novelty is fully described by Professor Reichenbach in the *Gardeners' Chronicle*, May 6, 1882, page 588. At the same time will be offered PHALÆNOPSIS STUARTIANA, P. SANDERIANA, two probably new PHALÆNOPSIS from Malayan India, ODONTOGLOSSUMS from the vicinity of Bogota, CATTLEYA AMETHYSTOGLOSSA, C. TRIANÆ, and other choice ORCHIDS.

On view morning of Sale, and Catalogues had.

West Side, Clapham Common, S.W.

The valuable MATERIALS and FITTINGS, &c., of the palatial mansion, outbuildings, and grounde of 19 acres, to clear the site for building purposes, comprising about 45 tons of lead, quantity of copper, several tons of iron gutters, railings, hot-water pipes, &c., over 1,000,000 bricks, 70 squares of Westmoreland and other slates, stout timber of several roofs, 160 squares of board and timber floors, 85 doors and frames, 75 sashes and frames, French casements of large dimensions, 4 costly stained glass windows, 20 statuary and other marble chimney-pieces with stoves, grand Portland stone staircase in 4 flights, Scagliola and marble columns, fireproof chamber, cornices, gas fittings, and large pier and chimney glasses, noble carved Portland portico, the ornamental iron and copper verandah, 6 stone gate piers and massive gates, fittings of laundry and other domestic offices, 1500 feet of Portland stone coping, and a large quantity of other materials.

MR. DOUGLAS YOUNG will SELL by AUCTION, on the Premises, as above, on TUESDAY, November 28, and three following days, commencing at 1 o'Clock each day precisely.

The Premises may be viewed three days before the sale, and Catalogues obtained of W. N. DUNN, Esq., Architect, 1 and 2, Bucklersbury, E.C.; and of the Auctioneer, 213A, Clapham Road, S.W.

London, West End.

Occupying a prominent position in an important thoroughfare.

TO BE DISPOSED OF, in consequence of the failing health of the proprietor, an old-established FLORIST'S BUSINESS, with Dwelling House, Double-fronted Shop, and several Greenhouses. Lease twenty-five years unexpired. Ground Rent only £25.

Messrs. PROTHEROE AND MORRIS, 8, New Broad Street, E.C.

To Seedsmen and Florists.

FOR SALE, a RETAIL BUSINESS, in one of the best positions in London close to a leading railway terminus. A very moderate Premium will be taken.

A. Z., Hurst & Son, 152, Houndsditch, E.

FOR DISPOSAL, an excellent SEED BUSINESS. Price £375.—Apply, M. D., Messrs. Hurst & Son, Seed Merchants, 152, Houndsditch, London, E.

To Florists and Others.

HALF SHARE of an Old-Established SUBURBAN BUSINESS for SALE, to take position of Partner retiring.

Apply, personally, to Messrs. THURGOOD AND MARTIN, Estate Agents, 27, Chancery Lane, E.C.

TO BE SOLD, or LET, AT ONCE, a small but genuine and well-known NURSERY and SEED BUSINESS, with Freehold Land, Houses, Pit, Plant, &c., on newest principles. Returns good, which may be increased. Satisfactory reasons given for disposal. Apply to

W. A., Hurst & Son, Seed Merchants, 152, Houndsditch, E.

To Gardeners and Florists.

A NEWLY BUILT DWELLING-HOUSE, with Ground Frames and Three Glass Houses. Established business over twenty years. Lease eighteen years. Three miles from Covent Garden. Rent £34, low Premium to an early purchaser.

Apply to Mr. JOHN MITCHELL, 63, Asylum Road, Old Kent Road, S.E.

PROTHEROE AND MORRIS, HORTICULTURAL, MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 8, New Broad Street, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

NOTICE.—FREDK. SMITH, Jun., begs to state that he has PURCHASED of the Mortgagee (who has been in possession of the Nurseries since October, 1881) the ENTIRE STOCK of CHOICE FLOWER SEEDS, including the unsurpassed strains of Balsam, Cineraria, &c., for which the late firm has been noted for upwards of forty years. CATALOGUE (with reduced prices) post-free on application.

West Dulwich, S.E.

Special Culture of

FRUIT TREES and ROSES.—A large and select stock is now offered for sale. The Illustrated and Descriptive CATALOGUE of Fruits, post-free for threepence. The Descriptive CATALOGUE of Roses post-free.

THOMAS RIVERS AND SON, The Nurseries, Sawbridgeworth, Herts.

W. J. WATSON, Town Hall Buildings, Newcastle-on-Tyne, can offer the following, all healthy frequently transplanted stuff:—

LAURELS, Portugal, 18 to 24 inches, bushy, 40s. per 100.
" Common, 18 to 24 inches, 12s. 6d. per 100.
RHODODENDRON PONTICUM, bushy, 40s. and 50s. per
HEATHS, hardy sorts, 16s. per 100. [100.
POPLARS, Black Italian, fine trees, 9 to 10 feet, 25s. per 100.
" Balsam, 7 to 8 feet, 25s. per 100.
SERVICE TREE, 8 to 10 feet, 40s. per 100.
Free on Rails or Steamer.

SEAKALE, exceptionally fine Roots for Forcing, 2s. 6d. per dozen, 16s. per 100.

ASPARAGUS, strong, for Forcing, 12s. per 100; specially selected ditto, 16s. per 100.

RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

THURSDAY NEXT.

CATTLEYA (WARSCEWICZII) SANDERIANA, Rchb. f.

MR. J. C. STEVENS has received instructions from Mr. F. SANDER to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, November 16, at half-past 12 o'Clock, precisely,

A most extraordinary Importation, and an altogether exceptionally grand lot of

CATTLEYA SANDERIANA,

among them masses of such size and health as are seldom seen of any Cattleya. The plants are full of sound leaves and plump unbroken eyes. Cattleya Sanderiana has proved itself the grandest Cattleya extant—it is a wonderful type of Warscewiczii (gigas). The immense spikes bear as many as ten flowers in its native habitat, individually nearly 1 foot in diameter. It is fully described by Professor Reichenbach in the *Gardeners' Chronicle* of July 1 this year, and flowered first with G. W. Law Schofield, Esq., and since with W. E. Brymer, Esq., M.P., and other gentlemen. The importation was received some time since, and every leaf now on the plants will no doubt remain on them. It is very rare in its native country, and this may probably be the last we can offer. Something like 100 flowers will be on view.

On view morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.

NOTICE!—COMMITTEES' MEETINGS, Fruit and Floral, at 11 A.M.; Scientific, at 1 P.M.; General Meeting for the Election of Fellows, at 3 P.M., on TUESDAY NEXT, Nov. 14.

PRIZES offered by Messrs. SUTTON AND SONS.

Open to Noblemen's and Gentlemen's Gardeners only.

For Collection of VEGETABLES, 12 distinct kinds, to be selected from the following:—

3 heads of Cauliflower	9 Potatos
3 sticks of Celery	24 pods of Peas
6 Beet	3 heads of Cabbage
1 brace of Cucumbers	6 Carrots
6 Turnips	12 Tomatos
3 plants of Brussels Sprouts	3 heads of Savoy
6 Parsnips	24 pods of Beans, any variety.
12 Onions	

1st Prize .. £5 5s., or Gold Medal
2d ,, .. £3 3s., or Silver Medal and £1 1s.
3d ,, .. £2 2s., or Bronze Medal and £1 1s.
4th ,, .. £1 1s.
5th ,, .. 10s. 6d.

For 12 Improved READING ONIONS.

1st Prize .. .. £1 1s. | 3d Prize .. .. 10s. 6d.
2d ,, ... 15s. 0d. | 4th ,, ... 7s. 6d.

For 9 Tubers each "Suttons' Early Border" and "Suttons' Prizetaker" POTATOS.

1st Prize .. .. £1 1s. | 3d Prize .. .. 10s. 6d.
2d ,, ... 15s. 0d. | 4th ,, ... 7s. 6d.

For 9 Tubers each "Suttons' Reading Russet" and "Suttons' Fiftyfold" POTATOS.

1st Prize .. .. £1 1s. | 3d Prize .. .. 10s. 6d.
2d ,, ... 15s. 0d. | 4th ,, ... 7s. 6d.

For 9 Tubers each "Suttons' Woodstock Kidney" and "Suttons' Reading Hero" POTATOS.

1st Prize .. .. £1 1s. | 3d Prize .. .. 10s. 6d.
2d ,, ... 15s. 0d. | 4th ,, ... 7s. 6d.

For 9 Tubers each "Suttons' Magnum Bonum," and "Suttons' First and Best" POTATOS.

1st Prize .. .. £1 1s. | 3d Prize .. .. 10s. 6d.
2d ,, ... 15s. 0d. | 4th ,, ... 7s. 6d.

PRIZES offered by Messrs. WEBB AND SONS, The Queen's Seedsmen, Wordsley, Stourbridge.

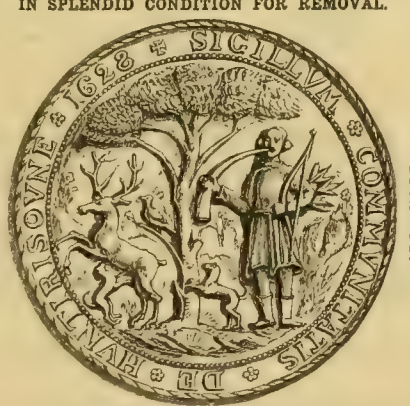
For the best 12 specimens of Webbs' "Improved Schoolmaster" POTATO.

1st Prize .. £2 2s. | 2d Prize .. £1 1s. | 3d Prize .. 10s. 6d.

Admission, 1s.

CHRISTMAS ROSES (Helleborus niger), fine imported crowns, also English-grown, 1 yr. from above.
CHIONODOXA LUCILIÆ (The Glory of the Snow), intense blue with white; charming spring bloomer.
IXIA CRATEROIDES, deep crimson.
GLADIOLUS BRENCHLEYENSIS.
,, COLVILLII ALBA (The Bride).
,, ,, RUBRA.
Low Prices and CATALOGUE of all Dutch, English and French Bulbs on application.
WATKINS AND SIMPSON, Exeter Street, Strand, W.C.

GENERAL NURSERY STOCK,
IN SPLENDID CONDITION FOR REMOVAL.



WOOD & INGRAM'S
GENERAL DESCRIPTIVE
CATALOGUE of NURSERY STOCK,
INCLUDING
FRUIT TREES, FOREST TREES,
HARDY CONIFEROUS and TAXACEOUS PLANTS,
Evergreens, Ornamental Trees and Shrubs,
HARDY CLIMBERS, ROSES, &c.,
Is now ready, and will be sent free on application.
THE NURSERIES, HUNTINGDON.
A BRANCH AT ST. NEOTS.

POTATOS—POTATOS.—Best and cheapest house in Berkshire for all kinds of eating Potatos. Price LIST upon application to C. J. FIDLER, Potato Grower, Reading.

HERBACEOUS and ALPINE PLANTS Cheap, to clear ground—large or small quantities, or in one lot. Could take a few Roses or Shrubs for Potting. W. SIMS, Grove Nursery, Tooting, S.W.

RASPBERRY CANES for SALE.—About 30,000 Carter's Prolific, true to name. Apply to H. THORNTON AND CO. (late Dancer's), Fulham, S.W.

STANDARD and HALF-STANDARD ROSES, fine stuff of the leading kinds. Price on application.
E. J. BATCHELOR, Harlow Heath Nursery, Harrogate.

Apples—Apples—Apples.
DWARF-TRAINED for ESPALIERS.
WOOD and INGRAM have the finest stock of the above (including all the leading varieties) in the Trade. Price 30s. per dozen, package free. N.B.—Also other fruits. Trade price on application.
The Nurseries, Huntingdon.

FOR SALE, a large quantity of HARLINGTON WINDSOR BEANS, grown from the original Harlington Stock. Apply to
J. SMITH AND SON, Growers, Sipson, near Slough; and North Side, Covent Garden Market, W.C.

CHRYSANTHEMUM BLOOM from 40,000 Plants, supplied in large or small quantities for Church Decorations, Ball Parties, &c., in quantities from 5s. upwards. The Trade supplied.
G. A. ROBERTS, Royal Nursery, Feltham, Middlesex.

Continental Seeds.
O. KNOPFF AND CO., Erfurt (Established 1832) offer their well-known FLOWER SEEDS to the Trade. For CATALOGUES, &c., apply to
BECK AND POLLITZER, 211, Upper Thames Street, E.C.

SPECIAL OFFER TO THE TRADE.
200 GRAPE VINES (strong planting canes, in 10-inch pots), well ripened, and in all the best varieties.
2000 SEAKALE, extra strong, for forcing.
2000 RHUBARB of sorts.
6000 STRAWBERRIES of sorts, in 60's.
300 RASPBERRY CANES (strong).
Prices on application.
S. BRADLEY, The Nurseries, Sandiacre, Nottingham.

R. H. VERTEGANS' New Double CINERARIAS (now ready), the finest in cultivation. The set of 12 distinct varieties will be sent, packing and carriage free, on receipt of Post-office Order for 31s. 6d.
VORTIGERN, the finest double crimson, 3 plants showing flower free for 10s. 6d., 1 for 5s
Chad Valley Nurseries, Edgbaston, Birmingham.

LAURUSTINUS, bushy and well-rooted plants, 1 to 3 feet, 50s. to 100s. per 100. Sample dozen forwarded on receipt of 10s.
HOLLIES, Gold and Silver, from 3 to 7 feet, well-rooted plants, 42s. to 90s. per dozen.
,, Green, 1½ to 3 feet, 50s. and 75s. per 100.
Chad Valley Nurseries, Edgbaston, Birmingham.

SURPLUS STOCK
AZALEA MOLLIS, Seedlings, twice transplanted, 4 to 6 inches high, six to nine shoots, from the three following varieties, each kept distinct, viz., Comte de Gomer, Consul Pecher, and Isabelle Van Houtte, in equal quantities of each, 25s. per 100. £10 per 1000
LILIUM AURATUM, fine home-grown flowering bulbs, from our own saved seed, first size, 9s.; second size, 6s. per doz.
RHODODENDRONS.—We have still 5,000 Hybrid Seedlings, raised from varieties which have been hybridised to obtain brilliant colours. Price List of these and other plants, now offered cheap to clear ground, forwarded on application.
ISAAC DAVIES AND SON, Nurserymen, Ormskirk, Lancashire.

ANEMONE JAPONICA ALBA and ROSEA, 10,000 extra strong plants, splendid stuff, flowered this season, 2s. 6d. per dozen, 16s. per 100.

VIOLETS, Double Russian, full of flower-buds, very strong compact plants, fine for potting; Single ditto, The Czar, also full of flower-buds, 2s. 6d. per dozen, 16s. per 100, package included.

PANSIES, Cloth of Gold and Wm. Gladstone, the two best yellow varieties for bedding, good plants, 1s. per doz., 7s. 6d. per 100.

CARNATION, Much Welcome, a choice hybrid, very fine white flowering variety, perpetual bloomer, 3s. 6d. per doz., 25s. per 100, package included.

HENRY GODFREY, Nurseryman and Seedsman, Stourbridge.

To the Trade.—Green Euonymus.

J. NOBLE begs to offer many thousands of the above, bushy well grown stuff, at 25s., 30s., 40s., per 100.
The Nurseries, Pond Lane, Clapton, E.

TO the NURSERY and SEED TRADE.—Rollisson's Telegraph CUCUMBER SEED, 16s. per ounce; Seedling Alpine AURICULAS, nice healthy plants, out of pots, 20s. per 100. Prompt cash.
J. BOOTH, Florist, Failsworth, Manchester.

To the Trade.

MESSRS. LITTLE AND BALLANTYNE beg to intimate that they have issued their TRADE NURSERY LIST. Should any of their Customers not have received a copy, another will be posted on application.

Special offers to large buyers of Seedling and Transplanted FOREST TREES of superior quality, will be promptly given when requested.

The Nurseries, Carlisle.—Nov. 1.

Gardenias.

MESSRS. JOHN STANDISH AND CO.'S Stock of GARDENIAS was never so extensive or good as it is this season. They have thousands of plants to select from, in all sizes, from fine specimens in 18-inch pots to small plants in 60's. All clean and healthy, and to a large extent well set with buds for winter-flowering. VERY REASONABLE Prices will be quoted on application.
Royal Nurseries, Ascot, Berks.

Johnstone's St. Martin's Rhubarb.

EARLIEST and BEST in CULTIVATION. Strong roots, 1s. each, 9s. per dozen. Trade price on application.
W. P. LAIRD AND SINCLAIR, Nurserymen, Dundee, N.B.

R. AND G. NEAL, NURSERYMEN, SEEDSMEN, and CONTRACTORS, Wandsworth Common, S.W., respectfully invite an inspection of the large and varied Stock of SHRUBS, FOREST, ORNAMENTAL, FRUIT and ROSE TREES grown at their Nurseries, which are now in fine condition for transplanting. All plants delivered free by own vans, within 6 miles of the Nursery. Builders supplied at Trade Prices. CATALOGUES on application.

The Nurseries are within 1 mile of the Clapham Junction and Wandsworth Common Stations.

SEAKALE.—A fine stock of good strong forcing SEAKALE. Price on application.
D. S. THOMSON, The Nurseries, Wimbledon.

8000 Winter-Flowering Carnations 8000

TWELVE WELL-ROOTED PLANTS, in six best varieties, by post, 4s.; larger, in 54's, 6s. per dozen, 42s. per 100; in 48's, 15s. and 18s. per dozen, £5 and £6 10s. per 100. See CATALOGUE.
W. M. CROWE, Boleyn Nursery, Upton, Essex.

STEPHANOTIS FLORIBUNDA.—Good plants in 48's, 2s. each, 18s. per dozen, £7 per 100. Prices of larger on application.
W. M. CROWE, Boleyn Nursery, Upton, Essex.

To the Trade.

H. AND F. SHARPE will be pleased to give special quotations for all the leading varieties of VEGETABLE and AGRICULTURAL SEEDS they have grown this season. The quality will be very fine, the Seeds having been harvested in fine condition. They have been grown from the finest selected stocks. The prices will be found very low.
Seed Growing Establishment, Wisbech.

EIGHTY THOUSAND CLEMATIS, in Pots, of all the finest double and single varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants.
Descriptive LIST on application.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

FRUIT TREES.—Standard, Pyramid, 2-yr. and Maiden APPLES, PEARS, and PLUMS. Price per 100 or 1000 on application to
WILLIAM FLETCHER, Ottershaw Nursery, Chertsey, Surrey.

FRANCIS BELL, NURSERYMAN, Easingwold, offers:—
2,000,000 SCOTCH LARCH, 1½ to 2 feet, 2 to 3 feet, 3 to 4 feet.
200,000 SCOTCH FIR, 1 to 1½ foot, 1½ to 2 feet.
200,000 QUICKWOOD, 2 to 3 feet.
The above are recently transplanted, with good leads and roots. For particulars apply as above.

SINGLE DAHLIAS.—Large Ground Roots of my special strain, in all shades of colour—these flower much earlier than young green plants—9s. per dozen, 50s. per 100.
Trade price on application.
THOMAS S. WARE, Hale Farm Nurseries, Tottenham, London.

SPECIAL OFFER.
GLOBE ARTICHOKES, strong, 3s. per dozen.
CURRANTS, White, strong, 8s. per 100.
SPRUCE FIR, 2-yr. 2-yr., 7s. per 1000.
CHESTNUTS, Scarlet, fine Standards, 6 feet stems, 8s. per dozen, 55s. per 100.
THOMAS PERKINS AND SONS, 34, Drapery, Northampton.

Hyacinths, Tulips, &c.

BUDDENBORG BROTHERS, BULB GROWERS, House Bloemswaard, Hillegom, near Haarlem, Holland. Wholesale CATALOGUE now ready and will be sent, post-free, on application.

BULBS.

Illustrative Descriptive List free on application.

SPECIMEN TESTIMONIAL (UNSOLICITED):—

"*March* 10, 1882.—Crocus, &c, in borders, purchased and planted last autumn, are making a fine show, and giving every satisfaction. Hyacinths in pots have been very fine and much praised, having spikes of bloom 9 *inches in length and so close that they appeared to be solid.* Tulips have been very fine and highly praised. Hyacinths in border now showing very strong bloom.

RICHARD SMITH & CO.,
SEED MERCHANTS and NURSERYMEN,
WORCESTER.

Ferns a Speciality.

The largest stock in the greatest number of varieties of

EXOTIC AND BRITISH FERNS

In the Trade, suitable for STOVE and GREENHOUSE cultivation, for Outdoor Ferneries, and other purposes. Special LIST free on application. Illustrated CATALOGUE 6d.

W. AND J. BIRKENHEAD, Fern Nursery, Sale, near Manchester.

DANIELS' CHOICE FLOWER ROOTS.



Our GUINEA BOX of choice Hardy Flower Roots for Outdoor Planting

Contains the following liberal assortment, all in sound picked Bulbs, with full instructions for cultivation (case, packing, and carriage free to any railway station in England or Wales):—

25 HYACINTHS, choice, mixed
200 CROCUS, in fine variety
12 TULIPS, Rex rubrorum
12 TULIPS, La Reine
12 TULIPS, double, mixed
12 TULIPS, single, mixed
12 TULIPS, Parrot, mixed
25 ANEMONES, double, mixed
12 ANEMONES, double, Scarlet
25 ANEMONES, single, mixed
12 POLYANTHUS NARCISSUS, mixed
12 Double White NARCISSUS
12 Pheasant's-eye NARCISSUS
6 CAMPERNELLE JONQUILS
25 RANUNCULI, scarlet Turban
25 RANUNCULI, mixed Turban
50 SNOWDROPS
50 WINTER ACONITES
12 SPANISH IRIS
6 TRITELEIA UNIFLORA
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HORIZONTAL TRAINED FRUIT TREES.—For extra sized Horizontal Trained Pears, which will cover bare walls, and come into bearing at once.
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Through trucks to any part of the United Kingdom. Plants and trees added to compensate for freight. Apply to
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Twelve distinct varieties, Perpetuals, 1st Prize flowers, 10s. 6d.
100 in fifty varieties, 1st Prize flowers, 65s.
The plants are very fine, stout, and well-rooted. Terms cash.
Usual Trade Discount.
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FLOWERING SHRUBS, in great variety, such as Hydrangeas, Lilacs, Deutzias, Spiræas, Cytisus, Broom, Pyrus, Berberis, Double Cherry, Scarlet Hawthorns, Gueldres Rose, &c., 8s. per dozen, 50s. per 100.
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FOR SALE, ADIANTUM CUNEATUM, in 48 and 32 pots, good crowns; three dozen CAMELLIAS, mostly white, in 32-pots; and two good plants of YUCCA ALOIFOLIA VARIEGATA. Price and particulars on application,
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NEW SCARLET-FLOWERED BALSAM IMPATIENS SANDERIANA.

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Have just received, *ex* U. S. Steamship a fine Consignment of this curious and interesting Plant.

It produces rich, coral-red flowers, 1½ inch long, and 1 inch in diameter, and is perfectly hardy.

Price, 3s. 6d. each.

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Every Plant that comes to hand alive of a Large Importation of

VANDA SANDERIANA,

collected by Mr. Richard Curnow, who sends dried flowers which will be on view, and writes that they are about 15 inches in circumference, and that one small plant with three growths, two of them about 15 inches high, the third about 6 inches, had on it no less than seventy-eight fully expanded flowers. This grand novelty is fully described by Professor Reichenbach in the *Gardeners' Chronicle*, May 6, 1882, page 588. At the same time will be offered PHALÆNOPSIS STUARTIANA, P. SANDERIANA, two probably new PHALÆNOPSIS from Malayan India, ODONTOGLOSSUMS from the vicinity of Bogota, CATTLEYA AMETHYSTOGLOSSA, C. TRIANÆ, and other choice ORCHIDS.

On view morning of Sale, and Catalogues had.

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EWING & CO.,

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Great Reduction in Price for Cash Payments, viz.,
15 per Cent. for Cash before delivery.
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After Three Months no discount can be allowed.

We shall be pleased to quote prices for the following in small or large quantities :—

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PURPLE BEECH, best selected dark, broad-leaved variety, of all heights up to 8 feet.

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POPLARS, Black Italian, small or large.

POPLARS and WILLOWS of many choice kinds, in variety.

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150 Bulbs for 5s.

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Special TRADE LIST on application.

W. AND J. BIRKENHEAD, Fern Nursery, Sale, near Manchester.

Come and See.

Begonias, Winter-flowering.

MANY will be surprised to hear that we have a 100-feet house full, splendidly in flower, consisting of thirty varieties of the best of this section, and the exclamation of all is, "I like these as well as the new summer varieties." Certainly they are easier to grow, and much more useful. They are now a grand sight. Varieties in flower, 18s. per dozen; smaller, 12s. per dozen.

Chrysanthemums in full Flower.

THE Largest and the most Complete Collection in the world (650 distinct kinds in flower). No fear of mistakes; all showing flowers in 4-inch pots. For price, &c., see Catalogue, sent post-free, which is the most complete (and illustrated) ever published. Our large house (150 feet long) now contains much the largest collection ever before brought together, and are now a grand sight.

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Zonal Pelargoniums, &c.

OUR three Houses (100 feet each) now present such a sight and blaze of colour which cannot be realised unless seen, and the same may justly be said of our Primulas. These, together with Salvias, now grandly in flower, offer one of the finest floral displays ever seen at this season.

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THE HOME FOR FLOWERS SWANLEY KENT.

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SINGLE DAHLIA SEED, saved from all the best named varieties, including whites, and our novelties for next year—a finer and better strain we feel sure does not exist—20*s.* per ounce, or in retail (2*s.* 6*d.*) packets, price of which may be had on application to
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APPLE TREES with MISTLETO growing on them. Price from 7*s.* 6*d.* to 21*s.* each.
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J. LE CORNU AND SON offer a fine stock of GOOSEBERRIES, Mixed Reds, Mixed Green, &c. CURRANTS—Red Dutch, Raby Castle, White Dutch, Black Naples, &c. Strong stuff, on stems 1 foot high, clear of suckers, 20*s.* per 100, packing included.
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THE LIVERPOOL HORTICULTURAL COMPANY (JOHN COWAN), Limited, The Vineyard and Nurseries, Garston, near Liverpool, have a splendid stock of TEA ROSES in all the leading varieties.
LIST free. Price to the Trade on application.
Also a large stock of GRAPE VINES.

Beautiful Herbaceous Phloxes.—To clear large stocks.

T. L. MAYOS offers 12 distinct varieties, in extra strong established plants of last year, 5*s.* per dozen. These would make a grand show next season.
EUONYMUS, Gold, Silver, and Green-leaved varieties, for window boxes, good plants in pots, one pair of each, 4*s.* the 6 plants.
SCHIZOSTYLIS COCCINEA, now in bloom in open air, strong clumps of 10 bulbs each for 5*s.* per dozen clumps.
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W. ETHERINGTON, Manor House, Swanscombe, Kent.

NEW APPLE, SCHOOLMASTER.
First-class Certificate, R.H.S.
The best Apple introduced for some years.
A large and handsome fruit, of splendid quality, either for cooking or dessert, and suitable for the most exposed situations. See *Florist and Pomologist* and *Herefordshire Pomona* for illustrations. Strong Maidens, 7*s.* 6*d.* each, of the principal Nurserymen. Liberal Trade terms. Coloured plate, price 6*d.* Particulars post-free from
THOMAS LAXTON, Bedford.

Special Offer to Nurserymen and Planters.

P. J. PERRY, NURSERYMAN, Banbury, offers:—

ALDER, 4 to 6 feet. | BEECH, 3 to 10 feet.
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CHESTNUTS, double Scarlet, 10 to 16 feet; stems, 2 feet in circumference.
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" standards, 5 to 12 feet.
LARCH, 1½ to 5 feet. | ELM, English, 6 to 12 feet.
LIME, 6 to 9 feet, 10 to 12 feet, 12 to 15 feet.
PICEA NORDMANNIANA, 2 to 7 feet.
PINUS AUSTRIACA, 3 to 9 feet.
FIR, Scotch, 2 to 3 feet
" Spruce, 18 inches to 2 feet 6 inches.
THUIA GIGANTEA, 5 to 6 feet.
YEW, common, bushy stuff, 2 to 5 feet.
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LAUREL, Portugal, 2½ to 3½ feet.
ROSES, standard, dwarf and pot; including most of the leading sorts.
200 GENISTA FRAGRANS, in 48-pots, 9*s.* per dozen.
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400 FERNS, in variety, chiefly Adiantum cuneatum, Pteris cretica, Asplenium in variety, in 48-pots, 15*s.* per dozen.
200 PELARGONIUMS, young plants, to pot, 5*s.* per doz.
100 GERANIUMS, Zonal, well-grown, full of bud, in 24-pots, 20*s.* per dozen.
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200 AZALEA INDICA, full of bud, in various sizes, from 30*s.* to 36*s.* per dozen.
300 BOUVARDIAS, 12*s.* per dozen.
Prices and samples on application.

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NURSERY STOCK at WORCESTER.

SPECIAL OFFER OF SURPLUS STOCK

OF THE VERY FIRST QUALITY,

At exceedingly Low Prices, is just published, and may be had on application.

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THE LAWSON SEED AND NURSERY COMPANY (LIMITED),

EDINBURGH,

Respectfully invite the attention of intending Planters to their large Stocks of

SEEDLING and TRANSPLANTED FOREST TREES,

ORNAMENTAL TREES and SHRUBS, FRUIT TREES, ROSES, &c.;

And will be glad to submit Special Offers upon application.

TO THE TRADE ONLY.

TEA ROSES—TEA ROSES.

40,000 splendidly grown, extra strong and healthy TEA ROSES, of all the leading kinds, still left, in 4½-inch pots.

Purchasers' Selection .. £3 3s. per 100 | Purchasers' Selection .. .. £30 per 1000
My own Selection .. £2 16s. per 100.

DOUBLE WHITE PRIMULAS.

Strong Plants, in 4½-inch pots, to bloom this Winter, 10*s.* per dozen, 70*s.* per 100.

The above Prices are subject to 10 *per Cent. Discount for Cash.* *CATALOGUES free.*

C. WILSON, SUMMERHOW NURSERIES, KENDAL.

FULHAM FORCING SEAKALE

(STEEL'S STOCK),

THE BEST SENT TO COVENT GARDEN MARKET.

This is admitted to be the finest Kale in the Trade. We have again been enabled to secure a quantity of magnificent Crowns, which we offer (so far as unsold). Orders will be executed in strict rotation, and early application is recommended.

Extra Forcing Roots, Selected .. Per 100 **18s.** | **Strong Planting Roots, Selected** .. Per 100 **10s.**
Strongest Planting Roots, Twice Selected .. **12s.** | **Extra Extra Forcing Roots, Twice Selected 20s.**

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POTATO ONIONS AND SHALLOTS.

FINE SAMPLES. PRICE ON APPLICATION.

JAMES CARTER, DUNNETT & BEALE,

237 & 238, HIGH HOLBORN, LONDON, W.C.

NEW LETTUCE,



COOLING'S LEVIATHAN COS.

We have pleasure in introducing this new Lettuce, and believe it to be a decided improvement on all Winter Cos varieties ; we feel sure it cannot fail to be a great acquisition.

It has been severely tested for two seasons with existing varieties of Cos Lettuces, by ourselves and several well known authorities, and from its distinctive character and the very favourable reports received we have determined to distribute it.

The LEVIATHAN COS is remarkable for the immense size to which it grows, the broadness of its leaf, its extreme hardiness, and its being the last of all Winter Lettuces to run to seed.

Retail Price, in Sealed Packets, 1s.

Trade Price on application.

To show the distinct character of this New Lettuce, we select the following from many Reports and Testimonials received :—

From Mr. W. H. WARD, *Head Gardener to the* Right Hon. the Earl of Radnor, *Longford Castle.*

"I am happy to state that subsequent results have more than justified the favourable opinion I had formed of your broad-leaf Lettuce, inasmuch as the heads remained whole and firm for a week or ten days after the old Bath Cos and other well-tested varieties had gone to seed. I, therefore, have no hesitation in pronouncing it on this account, and also on account of its fine size and robust constitution, as the finest Winter and Spring Lettuce that I am acquainted with."

From Mr. J. HOUSEFIELD, *Head Gardener to the* Right Hon. Lord Heytesbury.

"Your new Lettuce has been submitted to an impartial test, and in my opinion it is a decided improvement on the original Bath Cos. It is quite an acquisition, and richly deserves to be sent into commerce."

From Mr. W. G. PRAGNELL, *Head Gardener to* C. D. W. Digby, Esq., *Sherburne Castle.*

"I have grown your broad-leaf Cos Lettuce, it is a good strain, and I like it very much."

From Mr. G. T. MILES, *Head Gardener to the* Right Hon. Lord Carrington.

"The Lettuce you sent here for trial was excellent in every way."

From "JOURNAL OF HORTICULTURE," *Aug.* 3, 1882.

"NOTES ON VEGETABLES.—A packet of Lettuce seed was sent me by Messrs. Cooling, of Bath, with a request that I should give it a fair trial and report to them accordingly, it being at the time stated to be a selected variety from the Bath Cos, and of which, it may be added, there are so many types. Respecting the particular variety under notice, I can honestly say it is a decided improvement on the Bath Cos, being much broader in the leaf, more crisp, and of larger size. That it will be extensively grown when its merits are well known, and when it is distributed, there cannot be a doubt," &c.

GEO. COOLING & SON,

SEED MERCHANTS, BATH.

INDISPENSABLE for EXHIBITION. UNEQUALLED for TABLE and MARKET.

ORDER OF YOUR SEEDSMAN

LAXTON'S NEW LARGE-PODDED PEA,

EVOLUTION.

The largest podded Pea, with well-filled deep green pods. Between Omega and Telephone. Height 4 feet.

Price, 5s. per packet, sealed.

ORDER OF YOUR SEEDSMAN

LAXTON'S NEW EARLY DWARF PEA,

WILLIAM HURST.

The most prolific and largest podded early dwarf blue wrinkled Pea, as early as Sangster's No. 1, and requires no sticks. First-class for Table, Market, or Forcing.

Price, 3s. 6d. per packet, sealed.

ORDER OF YOUR SEEDSMAN

LAXTON'S NEW EARLY LONG-POD BEAN,

JOHN HARRISON.

The most prolific Bean in cultivation, with long well-filled pods, and quite hardy. Raised between the Aguadulce, the largest podded of all Beans, but which does not fill its pods well, and the hardy Mazagan. Height 2 feet.

Price, 3s. 6d. per packet, sealed.

ORDER OF YOUR SEEDSMAN

LAXTON'S NEW LARGE-PODDED SCARLET RUNNER BEAN,

GIRTFORD GIANT.

The largest podded and most prolific Scarlet Runner. Pods of this variety have been exhibited upwards of 14 in. long, and of great substance. Raised between the Russian White and the Champion Scarlet Runner.

Price, 3s. 6d. per packet, sealed.

☞ In consequence of the recent wet weather, T. Laxton will not be able to execute further orders this season for his large White Runner Bean, The Czar, but Girtford Giant will be substituted.

ORDER OF YOUR SEEDSMAN

LAXTON'S SANDY PRIZE ONION.

The finest of the white Spanish type, grown from large prize bulbs only. To this strain First Prizes have been awarded at the Sandy Show for several years past. Bulbs upwards of 15 in. in circumference have been grown of this variety.

Price, 1s. 6d. per packet, sealed.

ORDER OF YOUR SEEDSMAN

LAXTON'S NEW MAIN CROP PEA,

JOHN BULL.

A blue wrinkled variety, with large well-filled pods. Height 3 feet.

The finest and best for exhibition.
The best for flavour and quality.
The best for a heavy crop.
The best for general cultivation.

Price, 4s. 6d. per quart, sealed.

ORDER OF YOUR SEEDSMAN

LAXTON'S SELECTED DR. HOGG PEA.

The Ne Plus Ultra of the earlies. An entirely new selection of this the finest early high-quality Pea, with large, well-filled, deep green pods. Height 3 feet.

Price, 3s. 6d. per quart, sealed.

Prizes to the amount of £10 10s. will be offered in 1883 for these Vegetables, particulars of which will be duly announced.

Liberal terms to Trade, who can also be supplied by

MESSRS. HURST & SON,

152, HOUNDSDITCH, LONDON, E.

For further information and List of other Novelties in Vegetable Seeds, send addressed envelope to

THOMAS LAXTON,

SEED GROWER, BEDFORD.

THE

Gardeners' Chronicle.

SATURDAY, NOVEMBER 11, 1882.

WYCOMBE ABBEY.

A HOUSE of the time of James I., enlarged by Lord Shelburne, has been replaced by a modern mansion, built of the light-coloured, good looking hard stone of the neighbourhood ; and Loakes manor-house has become Wycombe Abbey. The waters of the Wick flow down the valley from West Wycombe, and, swollen by another stream coming down another valley due north, where it waters the park of Hughenden about a mile above this borough, run through the grounds of the Abbey on its way to Loudwater, Cookham, and the Thames. High Wycombe is sometimes called Chipping Wycombe, having received that name, like Chipping Ongar, as a place were markets were held. In the centre of the town a conspicuous market place, built by Lord Shelburne in 1757, recalls the name of Chipping. A large old Elm tree, the largest along the stream of Wick, stands near the front door of the new Abbey, and marks the former boundary of the borough.

It may here be stated, that at the dissolution of the Templars in 1324 the manors of Temple Wycombe and Loakes were granted to the Knights of St. John of Jerusalem, who founded here an Abbey, and hence the name of the present residence. At the Reformation the Abbey lands were sequestrated by the Crown, and regranted to another line of owners, of whom I have nothing to say except that in the year 1700 they sold them to Henry, Lord Shelburne, son of Sir William Petty. This Irish Baron and subsequent Earl, who owned 80,000 acres in Ireland, survived all his children, and died in 1751, having bequeathed his property to John Fitzmaurice, second son of his sister, Anne, Countess of Kerry. He was immediately made a peer of Ireland, with the titles of Viscount Fitzmaurice and Earl of Shelburne ; and in 1760 a peer of England, with the title of Baron of Wycombe. His eldest son, William, was created Earl of Wycombe and Marquis of Lansdowne in 1784. He married first the daughter of John, Earl of Granville, whose son became Marquis of Lansdowne, and died without issue ; and, secondly, a sister of the Earl of Upper Ossory, whose son, Lord Henry Petty, ultimately succeeded to the marquisate and to this estate. The manor-house of Loakes was much improved by Lord Shelburne, but the builder of the modern house committed such a strange mistake in selecting the old site near the water, instead of a more cheerful, healthy, and attractive one on the higher and drier land of the park, that one cannot but wonder why he pulled down Lord Shelburne's house at all. The roof-tree of one of the most accomplished of English statesmen, the patron of Priestley, the first orator of his time, Chatham alone excepted, should have been sacred.

At the time of Lord Shelburne's residence the manor-house of Loakes, instead of being a short run from Paddington Station, as it is now, was 35 long miles from town by the road ; and partly on account of this seclusion, still more from the accident that no gossiping narrator seems to have passed that way, nothing has been recorded of him. In the early part of the seventeenth century Sir Hildebrand Jacob,

travelling with a servant and a portmanteau, used to arrive at a little town or village, and if the character of the great man of the place proved bookish, instead of smelling of the cellar, he used to send his compliments to the gentleman and say he was come to see him. But he did not come to Wycombe, and, most unfortunately, we know very little of the life which that very interesting man, Lord Shelburne, led at his manor-house of Loakes. He may have planted the Planes about the house, but there are no records, no inscriptions as there are on Cleopatra's Needle, and the origin of these beautiful trees remains obscure. The absence of memoirs of such a man as Lord Shelburne, as regards his home life, is most unfortunate.

We have learned all about Stowe from Horace Walpole and others. The curtain has been raised at Hartwell by Mr. Greville, and we have seen Louis XVIII. and his Court at dinner. We have seen Burke farming at Beaconsfield and walking about with a paddle in his hand. Glimpses have been given us of Cromwell visiting his daughter at Chequers, and longer accounts have been vouchsafed of Hampden, Penn, and John Ellwood the Quaker. We can almost say that we have joined Cowper in his walks at Olney, and heard the post-man's—

> "Twanging horn o'er yonder bridge
> That, with its wearisome but needful length,
> Bestrides the wintry flood."

We have seen Milton sitting in the sun outside his cottage at Chalfont St. Giles, and if we cannot say that we have visited Sir Kenelm Digby at Gayhurst, we have at least seen the large edible snail, Helix pomatia, common in this country and imported by him from the South of France for his beloved wife Venetia. A work on the worthies of Bucks has not yet been written, but the labours of numerous reporters, chroniclers, annalists, and biographers have unfolded most of their tales to a greater or less extent. The *Life of Herschel*, written by his sister Caroline, has supplied us with a graphic picture of the astronomer sweeping the heavens for new planets, and of the biographer herself hanging by a hook, caught in the machinery of the great telescope and crying, "I'm hooked!" The poet Gray has described Stoke Pogis and Burnham Beeches with great minuteness in his letters, and a little research would enable one to sketch many an interesting life connected with this historic county; but of the Earl of Shelburne, first Marquis of Lansdowne, so far as his life at Wycombe is concerned, there is nothing more to say. He owned Bowood, as all the world knows, and this place was sold to the present family in 1798. His *Life*, by Lord Edmond Fitzmaurice, is a brilliant biography of his great ancestor. A blind old lady of eighty-two said of the Marquis of Lansdowne at Paris, "Lord Shelburne flatters extremely; he assures me that he shall come again next year simply and solely for the pleasure of seeing me!" That gives us a glimpse, but not of the man as he was at home.

Guided by some pleasant gossip one would like to accompany the Marquis through his gardens and about his grounds, and note the size of the timber, as well as the manners, of a hundred years ago. What additional growth have the Elms by the Wick attained? All sorts of trees grow here in the bottom watered by the Wick; above the Beech does best, with the Yew. Great men who would be remembered should score their memorials on the solid earth by planting trees or by means of other improvements, or by leaving behind them the records of measurements or other notes which time would render interesting and valuable. There is a tomb in the church at High Wycombe in memory of Henry Petty, Earl of Shelburne, a peer distinguished as the sire of his greater son. In Westminster Abbey there are many such monstrosities of the last century, bad as possible in point of taste. I mention this one because the Earl bequeathed £2000 for its erection. In all such cases a better investment might be found in the planting of trees, either for utility or beauty.

The most remarkable trees at Lord Carington's delightful residence are the Planes, of which I noticed several in the park and grounds. Mr. Miles, jun., son of the well-known gardener here, measured the largest for me; it is 34 yards in diameter, breaks into six main branches at 12 or 14 feet, and droops its branches to the ground. The greatest ornament on the walls of the house at the time of my visit in September was the Ampelopsis Veitchii, which had assumed the richest colours of its species. For the sake of seeing the park, which, I suppose, may be from 200 to 300 acres in extent, we walked up the hill and followed the pathway hedged with Box of the Roundabout Wood, to a point near Keep Hill, where a recreation-ground for the town is sheltered by Dean Garden Wood. The hills of the Chilterns, seen from this spot, are not so high as they are famous. On the left, looking up the valley, is West Wycombe church, oddly built upon the cape of a long ridge. Beyond, but blocked by this high prominence, is the Risborough valley, with the White Cross Hill and others. At the foot of the cape is the village of West Wycombe, and above the stream is the house of Lady Dashwood, hidden by timber, with the park running up the side of the valley. Looking straight across the town of Wycombe, the eye follows another little valley, and detects among the trees the house of a late Prime Minister of England, one of the six who have resided in Bucks, or been closely connected with the county—that is Hughenden; and about a stone's throw below it, as it seems from this distance, is the church, still in the park, but nearer the stream, Hughenden Manor having been built in a good position high up the hill with woods and higher ground behind it on the north side. Beyond the town on the north-east, to the right looking towards Hughenden, the land is arable, with groves and coppices here and there. That distant height capped with wood, with a church and clump of houses, is Penn. Beaconsfield is 4 miles beyond it. The house of Sir Philip Rose, Lord Beaconsfield's constant guest at Hughenden, is hidden by the trees this side of Penn. Wooburn, once the residence of the Whartons, now of Mr. Gilbey, is down the stream beyond Loudwater. Cliveden, where Lord Beaconsfield loved to ramble in the old days, taking his friends there to pic-nic in the Duke's grounds, is on this side the Thames, a little below Cookham.

The quality of the Beech used in the chair-making of this flourishing town varies with the soil and aspect of the wood. Warren Wood, lying high and well open to the wind, produces particularly tough wood. During the great storm of last year 300 trees were blown down, and one of the most sheltered patches of timber in the bottom, protected by high fences, was laid low owing to the shallow roothold of the trees growing on the chalk. I will only add that I very much admired the kitchen gardens of about 3 acres, as well as the trout which breed by millions near the "cascade," and reach sometimes, it is said, the extraordinary weight of 7 lb. *H. E.*

LAPAGERIA ROSEA.—The conservatory in Mr. Turner's nursery at Slough is now gay with a profusion of flowers of this well-known plant. The plant appears to be in a thoroughly floriferous condition, such a crop of flowers being rather remarkable in November. The white variety is also flowering in the same house, where visitors to the nursery will remember may also to be seen the two fine Roses La Marck and Maréchal Niel.

New Garden Plants.

WOODSIA SCOPULINA, *D. C. Eaton*, in *Canadian Naturalist*, ii., 91; Id. *Ferns of North America*, ii., 193, t. 71, figs. 9—12. WOODSIA OBTUSA, *Gray*, in *Sill. Journ.*, xxxiii., 253, not of Torrey.

Rootstocks short, creeping, chaffy, forming large tufts or patches; stalks 2—4 inches high, not jointed, bright ferruginous near the base, paler and stramineous upwards, puberulent like the rachis and the under-surface of the frond with minute jointed hairs and stalked glands; fronds lanceolate oblong, 4—8 inches long, pinnate; pinnæ numerous, 8—15 lines long, oblong-ovate, subacute, deeply pinnatifid, with 5—8 pairs of short ovate or oblong obtuse crenulate or toothed divisions; sori submarginal; indusium very delicate, deeply cleft into narrow segments, which terminate in short hairs composed of irregular cylindrical cells. *Eaton*, "*Ferns of North America*," *l.c.*

This is a dwarf-growing species of Woodsia, found growing in dense masses on rocks and in crevices, its distribution extending from Oregon to Mono Pass, California, and eastwards to Dacotah, Minnesota, and Colorado. It belongs to a division of the genus in which the stipes is not articulated, and the fronds not chaffy, but glandular-pubescent. The fronds do not exceed 8 inches in length, and are usually less, oblong in outline, with oblong ovate pinnæ, cut into oblong crenulate lobes. Mr. Eaton remarks that it is much like W. oregana, another slender species described by himself, the habit and aspect being alike, but the indusium in W. scopulina differs in being deeply and irregularly cleft into laciniæ which are narrowed into rather short articulated hairs or ciliæ, while in W. oregana it is very minute, divided almost to the centre into a few beaded hairs.

We have received fresh specimens of the neat-growing Rocky Mountain Woodsia, as Professor Eaton calls it, from Messrs. W. & J. Birkenhead, of the Fern Nursery, Sale, by whom it is cultivated. As a distinct species of the somewhat uncommon genus Woodsia it will, no doubt, be looked after and appreciated by those who are studying or making up a collection of rare and interesting Ferns. *T. Moore.*

COMPARETTIA MACROPLECTRON, *Rchb. f.*, *Triana.*

As far as I have observed, this species is not very easily flowered. Comparettias are all difficult plants with us, which is astonishing, since in their native haunts they appear to be very modest in their requirements and to be contented with any position, provided they have light and damp air. Thus I have been told that Comparettia falcata grows as well on trees and bushes as on the soil between Fragarias! I have at hand an extraordinary specimen of the species named above. The chief inflorescence has been cut, and I have only a lateral branch which bears four flowers, much larger than any I have seen before. The spur of the lateral sepals is of a light ochre-sulphur colour, and has not that purple line on its back which I observed in other former specimens. The blotches of the petals and lip are very conspicuous. I obtained it from Czechian Bohemia, from Baron B. Hruby, where it was grown by Mr. F. S. Roper. I entertain a modest hope that the Baron may be kind enough some day to let me have a whole panicle, which would be an ornament to my herbarium.

Since I wrote the above I have obtained a glorious inflorescence from Sir Trevor Lawrence—an eight-flowered panicle, from which some flowers and branches had been cut before. The grand lips and petals are suffused with a light purple hue over which the fine purple markings are very conspicuous. The spur is pure white. *H. G. Rchb. f.*

ODONTOGLOSSUM MULUS HOLFORDIANUM, *n. hyb. var.*

An unusually fine variety, with nearly whitish ground colour to the flowers and darkest purple-brown blotches on the sepals and petals. The lip is pure white, and has a very light ochre-coloured disc. There is a large pandurate transverse purple spot before the basilar callus in the fore part of the disc, there is a similar smaller spot on each side of the middle part, and on the base there is on each side a radiating spot and some small dots and spots on the margins.

It came through Mr. W. Bull's hands, having flowered with R. S. Holford Esq., of Weston Birt, Gloucestershire, under the care of Mr. A. Chapman. The Holfordian name is so connected with the development of English horticulture, for more than three decennia, that it is a great satisfaction to pay so well deserved a compliment to this gentleman. *H. G. Rchb. f.*

ON THE HOLLYHOCK DISEASE.

The fungus which produces this disease is only too well known in general appearance, and by the effects it produces. As, however, it has recently been made the subject of comment in the *Gardeners' Chronicle*, a few remarks and observations upon it with special reference to its mode of reproduction may not be uninteresting.

The genus Puccinia is a very extensive one—in this country alone some eighty species have been recorded. It is obvious that a genus of this size is so inconveniently large that its division into subgenera would be highly advantageous to the cryptogamic student. How this may most appropriately be done it is not proposed to discuss here. One group of Pucciniæ however—that to which the Hollyhock parasite belongs—has been called Leptopuccinia. It is characterised by the following points:—The Pucciniæ which belong to it have only one form of fruit, the brand-spores or teleutospores; the Uredo and Æcidium forms being wanting. Each separate group of teleutospores is as a rule subglobose or orbicular, the teleutospores (fig. 106 *a*) are firmly attached to the tissues of the host plant which bears them by well developed mycelium, and moreover they do not easily fall off from their stems or peduncles, but remain attached to their matrix until the latter is disintegrated by those processes of decay which sooner or later cause the dissolution of all vegetable substances. The teleutospores therefore cannot be the means by which the fungus is disseminated, and as there are no Uredo or Æcidium spores, by means of which this can be done, the question naturally presents itself, how is it accomplished? *Cæteris paribus* the smaller the spore the more widely and rapidly is any given fungus spread. We all remember how rapidly the Hollyhock disease spread in this country when it first visited us a few years ago. The physiological peculiarity of the Leptopucciniæ is that the teleutospores germinate upon the host plant as soon as they are ripe by throwing out a promycelium tube from each segment of the spores. Each promycelium tube usually produces three promycelium spores (fig. 106, *b*, *c*, *d*). The promycelium spore is oval, or spherical, or sub-reniform, and measures only from 10 to 15 micromillimetres in the long diameter. The teleutospores readily germinate in twenty-four hours, if kept in a damp atmosphere, as any one may see by placing a diseased Hollyhock leaf under such conditions. If one of the subrotund groups of teleutospores be then viewed as an opaque object with a half-inch objective it will be seen to be surmounted by a forest of hyaline tubes bearing the promycelium spores. The promycelium spores when they fall upon a healthy part of a Hollyhock leaf in from twenty-four to forty-eight hours germinate and protrude small germ-tubes, which immediately bore through the cuticular cells into the substance of the leaf, and so reproduce the disease (fig. 106, *c*, *f*, *g*, *h*, *i*, *j*).

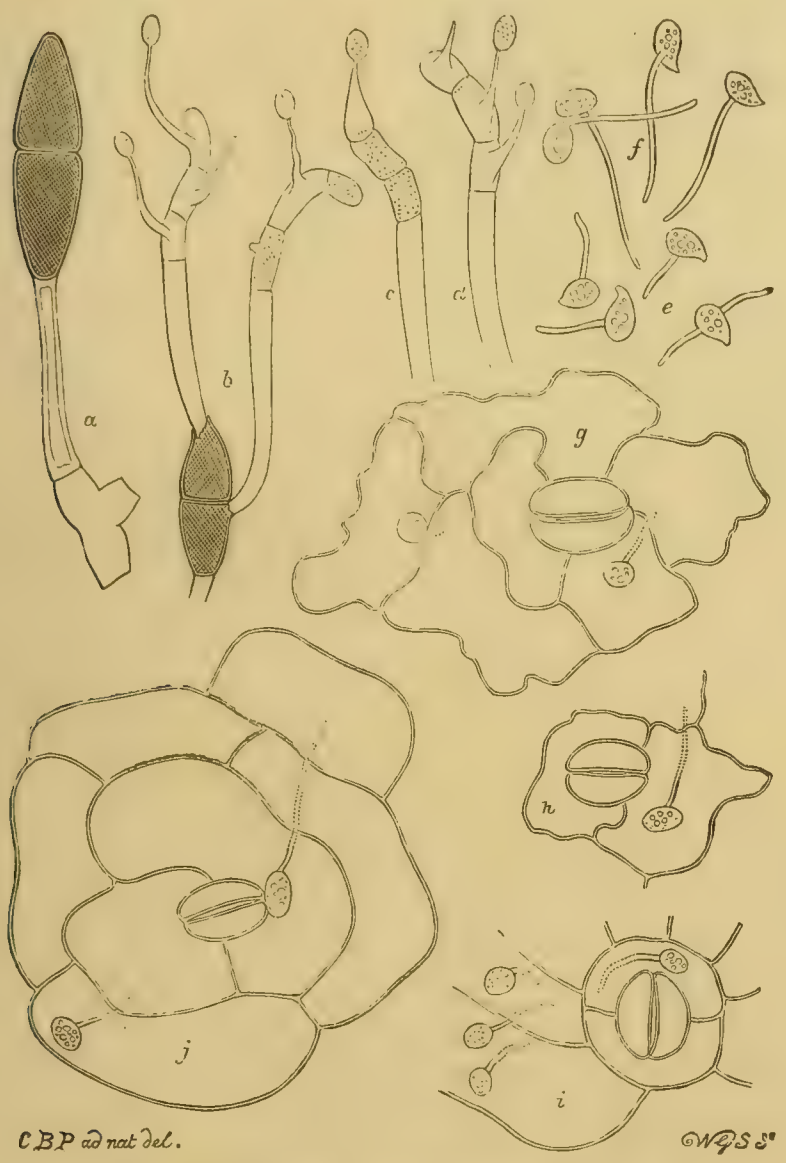


Fig. 106.—Hollyhock fungus.

References.—*a*, Brand or teleutospore, showing its attachment to the mycelium; *b*, The same germinating and producing promycelium-spores, as further illustrated by *c*, *d*; *e*, *f*, promycelium-spores germinating after twenty and forty hours respectively; *g*, *h*, Epiderm of Malva moschata perforated by germinating spores taken from M. sylvestris (after twenty-four and forty-eight hours respectively); *i*, *j*, Epiderm of Hollyhock, with spore-tubes, after twenty and forty hours respectively (camera lucida).

The rapidity and the extent of area over which this fungus spreads is greatly augmented by the fact that it does not confine its ravages to the Hollyhock, but grows with equal facility upon the Mallows generally.

But the question presents itself—How is the fungus kept alive during the winter? True, it may be, that all its host plants are not annuals, but the winter months every one knows are not favourable to the germination of the Uredines. If the brand or teleutospores take upon themselves the functions usually confined to the Uredo-spores of rapid germination they will of necessity germinate as soon as they are ripe, and unless there be a favourable nidus readily available for them to propagate themselves upon they will become effete. For the explanation of this phenomenon—the vernal reproduction—we must look at the process as carried on by an allied Leptopuccinia. On Circæa lutetiana a Leptopuccinia occurs that has been known for many years. On the same host plant, however, there is a Uredo circææ that is far more frequently met with than the Puccinia is. This is not in any way related to the Puccinia, as we have here been in the habit of considering it, but is a distinct species (Melampsora circææ, Schm.), possessing uredo and teleutospores of its own. The true Puccinia circææ has two forms of teleutospores, both very similar in shape and size, but differing in colour. The one kind is found in roundish masses upon the leaves, the teleutospores are clear brown, and germinate at once. The other form occurs more upon the veins of the leaves, but especially upon the stem, in more elongated sori. These brand or teleutospores are of a darker dusky hue, and do not germinate until after a winter's rest. Bearing this in mind we shall find, if we examine a Mallow or a Hollyhock affected with Puccinia malvacearum, that upon the under-surface of the leaves the sori are semiorbicular, and much paler in colour than those which occur upon the stem. These latter cauline sori are often at first surrounded by a yellow margin, where the circumambient mycelium has exhausted the chlorophyl of the plant. They are considerably darker in colour to the naked eye than those on the leaves. As far as my observations have gone, however, there is no hard and fast line between them. When examined microscopically the teleutospores from both sori are very nearly of the same size and shape, but we shall find a greater or lesser number of teleutospores that are somewhat larger, and of a decidedly darker colour. These darker teleutospores are more abundant in the cauline sori, and show no signs of germination, whereas the paler teleutospores complete this process in from twenty-four to seventy-two hours when placed in a damp atmosphere. If an old sorus be examined, we shall find that a variable number of teleutospores have germinated, and are obviously empty, but we shall also find a number of much darker ones in which the process has not taken place. This constitutes an important element in the life history of the fungus, causing the Hollyhock disease, which has, I believe, hitherto been overlooked.

The masses of teleutospores (sori) upon the stems of the Hollyhock and Mallow are also found upon the petioles of the leaves; they are formed about the same time as those upon the leaves, but there is another point in which they differ, and which is worthy of notice as indicating the manner in which the disease is perpetuated. The cauline sori are of the same compact structure as those upon the leaves, but as the stems increase in diameter during the growth of the plant the first-mentioned sori do not increase in size *pari passu* with them. The entire sori become detached from the stem and fall upon the ground, where they probably lie until the next year. It is very easy to observe this, for the lower part of the stems of Hollyhocks affected with the disease will be found to be covered with numerous fusiform scars, devoid of the epidermal coverings proper to the plant, each of which was originally the nidus of a mass of teleutospores. If the stems be examined from below upwards only the places where the sori have been will be seen below; then a few stray sori will be found amongst the scars, and at the upper part of the stem the teleutospores will be seen *in situ*, many of which will be found to be partially detached.

Puccinia malvacearum is known to occur on a great many plants in various parts of Europe; according to Dr. Winter it has been met with upon the following:—

Malva moschata, L.
,, sylvestris, L.
,, vulgaris, Fr.
,, borealis, Wallm.
,, mauritiana, L.
,, crispa, L.
,, glomerata, Hort.
,, verticillata, L.
,, cretica, Cav.
,, mamiliosa
Althæa officinalis, L.
,, rosea, Cav.
,, taurinensis, DC.
Althæa Heldreichii, Boiss.
,, astrocarpa
,, ficifolia, Cav.
Lavatera arborea, teste Ed.
,, thuringiaca, L.
,, trimestris, L.
,, plebeja, Sims.
Abutilon avicennæ, Gaertn.
Malope grandiflora, Paxt.
,, malacoides, L.
Malvastrum tridactylites, Cav.
Kitaibelia vitifolia, W.

Charles B. Plowright, King's Lynn, Aug. 12.

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A BUCKINGHAMSHIRE GARDEN.

FRESH from the charm of another delightful "Note from a Lancashire Garden" in the *Gardeners' Chronicle* of September 23, I am fired with the desire to follow (at a long distance indeed) in the steps of its author, and to chronicle the triumphs and disappointments of another garden, a garden which is such a contrast in climate and soil. A year in this more southern garden ought not perhaps greatly to yield in pleasantness to the annals of its prototype further north, though it may possibly lack, from its more favourable climate, the fascination of success under difficulties, so much more easy to feel than to express. Plenty of difficulty, however, and enough of contrivance and thought, and deep laid plans with doubtful results, come back to memory as we think over the past eleven years of our garden's story. It is only eleven years old, though the place itself is an old place—an old place without a history, for scarce a record remains of it anywhere that we have ever found. Its name occurs on a headstone in the parish churchyard, and on one or two monuments within the chancel of the parish church; there is brief mention of it in Evelyn's *Diary*, with praise of its "exquisitely kept gardens on a flat, and staunch old house." It seems his cousin George Evelyn was amongst the many who have lived here once. At that time the house stood in the forest. Eighty acres of wood surrounded it, where now there lies an ugly treeless stretch of flat cornfields. Quite near, across the road, are the ruins of an ancient nunnery. Our meadow under the high convent wall is called the Walk Meadow, because here the nuns used to walk. The great Walnut tree, which they might possibly have known, only died after we came. It was cut down for firewood, and its hollows were full of big chestnut-coloured "rat bats," very fierce and strong. At that time also white owls lived in the ruins, and used to come floating over the lawn at twilight; until the days of gun licences, since when, they have disappeared. Dim legends surround the place, but nothing clear or certain is known or even said, and there is not a ghost anywhere. All we know is, since taking possession, that wherever a hole is dug in the garden to plant a tree, the spade is sure to strike against some old brick foundation of such firm construction that they have to use the pick to break it up. Bones of large dogs also are found all about the house whenever the ground is broken—remains of the watch dogs, or hunting dogs, of the olden time—also quaintly-shaped tobacco-pipes. I know of nothing to support the tradition that monks abode here once. There are signs of an upstairs room having at some remote time been used as a chapel; a piscina in the wall, and a narrow lancet window having been found and destroyed when the house was in the builder's hands eleven years ago. Broken arches, also, and mouldings in chalk and stone, were dug up out of the foundations of some outhouses at the same time. "They say" there is an underground passage between the Abbey and the house, but I do not believe it, and I do not believe in the murder of a monk by a nun for his money, said to have been committed in what is now our best spare room. Such vague traditions are sure to hang around old walls, like mists about a damp meadow. Very distinct, however, and carved in no vague characters, are certain initials and dates still visible on the stems of the trees in the Lime avenue. When the trees are bare and the western sky is bright, you can see them quite plainly—large capital letters, often a pair, enclosed in a large heart with the date. The dates run from 1668 on to latish in 1700. Those old village lovers must have had sharp pen-knives, which cut deep! They and their names have long passed away and been forgotten; but, for so much as is traced in the living bark, these Limes have proved as good as any marble monument; much better than the long wooden grave-boards which are still in fashion hereabouts. Since the place was ours this short avenue of twenty-four trees has been taken in from the public road; and now the Limes give us cool shade and fragrance and lots of midges, in the hot summer days.

We have had the great pleasure of making the garden. The feature of the place was, and is, two symmetrically planted groups of magnificent Elms in the park field, in which every season we hope the rooks will build. There was everything to be done in the garden, to which these Elms form a background. We found hardly any flowers; a large square lawn laid out in beds, with unsatisfactory turf and shrubberies beyond; a long, broad terrace walk; old brick walls, with stone balls on the corners; two or three old worked iron gates in the wrong places; dabs of kitchen garden and Potato plots; stable-yard and carriage entrance occupying the whole south front, with a few pleasant trees; a young Wellingtonia, an Umbrella Pine, a Sumach, a very large red Chestnut (raised from the first seed of the kind, brought from Spain in the waistcoat pocket of one of our predecessors here), &c.—such was our new playground in 1871. Here we brought a skilful gardener, possessed of common sense and uncommon good taste—can one say much more in a few words?—aided by our own most unscientific but exceeding love for flowers and gardening, and set to work at once. These "gardens on a flat" are transformed. There now are close-trimmed Yew hedges, some of those first planted being 8 feet 6 inches high, and near 3 feet through, while others are kept low and square. There are Yews cut in pyramids and buttresses against the walls, and Yews in every stage of natural growth (I love the English Yew, with its "thousand years of gloom!"—an age that ours, however, have not yet attained). The Wellingtonia, planted in 1866, has shot up to over 40 feet high, and far outgrown its Jack-in-the-Green look. The Stone Pine, alas! has split in two, and been propped up, and although half killed since by frost, yet bears a yearly harvest of fine cones, carefully kept as fire revivers. The borders are filled with the dearest old-fashioned plants; the main entrance is removed to the north side, the stable-yard removed also, and instead thereof are turf and straight walks, and a sundial, and a parterre for bedding-out things—the sole plot allowed here for Scarlet Pelargoniums and the like. In this parterre occurs the only foliage plant tolerated here—a deep crimson velvet-leaved Coleus. The centre bed is a raised square of yellow Stonecrop, with an old stone pedestal, found in a stonemason's yard, bearing a leaden inscription—to Deborah—surmounted by a a ball, on which the white pigeons picturesquely perch.

There are green walks between Yew hedges and flower borders, Beech hedges, and a long green tunnel—the *allée verte*—so named in remembrance of a bower-walk in an old family place, no longer in existence. There are nooks and corners, and a grand, well-shaded tennis lawn, and, crown of all, there is the "Fantaisie"! This is a tiny plantation in the field—I mean The Park—date 1874, connected with the garden by a turf walk, with a breadth of flowers and young evergreen trees intermixed, on either hand. Here all my most favourite flowers grow in wild profusion. The turf walk is lost, after a break of Golden Yew, in a mimic wood—a few paces round—just large enough for the birds to build in, and with room for half a dozen wild Hyacinths and a dozen Primroses under the trees, with moss, Wood Sorrel, and white and puce coloured Periwinkles, and many a wild thing, meant to encourage the delusion of a savage wild! I am afraid I never can be quite serious about a garden, but always am inclined to find delight in fancies and reminiscences of a child's garden, and the desire to get everything into it if I could. This "Fantaisie" was a dream during the past summer—from April, when a nightingale, possessed in song, half hidden, the entrance under low embowering Elm branches and Syringa—through all the fairy days and months, up to quite lately. Yes, even last week, it was fragrant with Mignonette and Ragged Jack (I mean that alpine Dianthus), gay with yellow Zinnias and blue Salvia in rich luxuriance, with a host of smaller, less showy things—with bunches of crimson Roses and pink La France, blooming out from a perfect mist of white and pinkish Japan Anemones, white Sweet Peas, and a few broad Sunflowers towering at the back—their great stems coruscating all over with stars of gold; and here and there clusters of purple Clematis, leaning sadly down from a faggot of brown leaves and dead, wiry stalks, or turning from a weak embrace of some red-brown Cryptomeria elegans. Even last week the borders throughout the garden looked filled and cheerful—brilliant with scarlet Lobelia and tall deep red Phloxes, and bushes of blue-leaved starry Marguerites, and the three varieties of Japan Anemone, with strange orange Tigridias and auratum Lilies and Ladies' Pincushion (the "Sandades" of the Portuguese), and every kind of late as well as summer Roses, the evening Primrose (Œnothera) making sunshine in each shady spot, with here and there the burning flame of a Tritoma (though these have not done well this autumn).

Out near the carriage drive are Golden Rod and crimsoned patches of Azalea, and a second blow of late and self-sown Himalayan Poppies. In one narrow bit of south border one finds that pretty blue Daisy—such an odd, pretty little thing. I remember it in the garden of my childhood, and possess a portrait of it, done for me by my mother; and then, never met with it again till a year or two ago, when unexpectedly it looked up at me, somewhere in a remote country churchyard (I am afraid our present stock comes from that very plant). The long border of many-coloured Verbenas was still rather gay, and the three east gables of the house were all aflame with Virginian Creeper. But two days of rain spoilt us entirely. The variegated Maple slipt its white garment all at once in the night, causing a melancholy gap. In the kitchen garden a bright red Rose or two remains, but along the east border the half-blown buds are rotted away. In the centre of one drenched pink bloom I saw a poor drone, drowned as he sat idly there. Small black-headed titmice are jerking about among the tallest Rose trees, insect hunting; and still tinier wrens flit here and there on the same quest. Great spotted missel thrushes are now haunting the pillar Yews; beginning to taste the luscious banquet just ready for them. While thus amongst the sweet scarlet Yew berries and dark foliage, the thrushes always bring to one's mind the design of an old tapestry.

And this reminds me of the good and abundant fruit-feast we have ourselves enjoyed this season. Strawberries and Raspberries were nothing, but such Gooseberries! Loads of Apricots and Nectarines. Peaches, plenty enough, but no flavour. Figs, enough to satisfy even *our* greediness,—though we have but one tree, on a west wall. Pears, especially Louise Bonne, first-rate and plenty. Apples, a small crop, but sufficient. Wood Strawberries have been ripening under the windows till within the last few days: I planted them there for the sake of the delicious smell of the leaves when decaying — a smell said to be perceptible only to the few. Nuts (Filberts and Kentish Cobs) were plentiful, but we were only allowed a very few dishes of them. A large number of nuthatches settled in the garden, as soon as the nuts were ripe; they nipped them off, and, carrying them to the old Acacia tree, which stands conveniently near, stuck them in the rough bark and cracked them at their ease (or rather punched holes in them). The Acacia's trunk at one time quite bristled over with the empty nutshells, while the husks lay at the roots. The fun of watching these busy thieves at work more than made up for the loss of nuts. We had a great abundance of large green and yellow wall Plums, also a fair quantity of purple. Of sweet Cherries, unless gathered rather unripe, my dear blackbirds and starlings never leave us many. But there were a good lot of Morellos; they don't care a bit for them. Whilst on the subject of fruit, let me say that I never suffer a shot to be fired in the garden, unless to destroy weazels. Our "garden's sacred round" is free to every bird that flies—the delight of seeing them, and of hearing their music, compensates to the full any ravages they may indulge in. Thanks to netting without stint, and our gardener's incomparable patience and long suffering, I enjoy my garden and my birds in peace; and if they ever do any harm, we never know it; fruit and green Peas never fail us! . . . Here is a sunny morning; and the cows are whisking their tails under the Elms, as if it were July. But indeed the last lingering trace of summer has vanished: the garden is in ruins, and already the redbreast is singing songs of triumph. *Oct.* 17.

THE LOWFIELD NURSERY.

THOSE who invest capital in founding a nursery are mostly far-seeing enough to take the general bearings of the situation into consideration beforehand, and to make their choice either from the productive capacity of the soil, or from other local circumstances of a favourable nature for the conduct of business. Where these advantages are secured at the start the inevitable result must be that, as the wheels of a vehicle go smoothly after greasing, so will the affairs of a nursery proceed without friction if there is an energetic head to direct operations. The nursery of Messrs. J. Cheal & Sons, of Crawley, Sussex, is a good example of its kind in this respect. Founded not much over twelve years ago, it has now extended to considerable proportions—indeed, rather more than considerable in some departments—as the cultivation of fruit trees—the chief speciality of the

nursery at present—is carried on extensively and with well-merited success. The nursery occupies a central position between London and Brighton, being near to Reigate and Red Hill, the nearest points of access by rail being Crawley and Three Bridges. It seems a singularly well favoured position for a nursery, and the road from Crawley may be pronounced one of the best in England. These are important advantages, important as regards the safe and ready transit of goods, and equally important to the visitor in regard to personal comfort. But then there were disadvantages of a formidable character to encounter in the drainage of the land, which lies low, in order to make it suitable for a nursery. Fundamentally the system of drainage is the same as that adopted in the fens of Cambridgeshire—wide open drains running parallel with each other at various distances, and emptying themselves into a larger main drain when the water rises above a certain level. The soil of the nursery is a rather heavy loam resting on a clayey subsoil, and is therefore just the place that an experienced person would choose to grow Roses and fruit trees.

The condition of the 40,000 Apple trees of various sizes, and the Pears, especially the cordons, is a good example of the favourable properties of the soil for fruit tree growing. We do not refer to mere growth, the length of the shoots, or an abundance of healthy foliage, conspicuous as these qualities are, but to the remarkable indications of fertility as illustrated by the swarms of fruit-buds with which the trees are furnished to their very base. There is not even the faintest trace of canker in the whole collection, proving in a measure that where the soil and subsoil are favourable, climate has less to do with the appearance of the disease than people are sometimes led to believe. These are advantages favourable to the grower as well as to the purchaser, and the Messrs. Cheal have still another advantage which is not less important—they have unlimited scope of new virgin soil (pasture land) at hand, which is intended to be broken up in plots as occasion demands for the purposes of fruit tree growing. Thus, by frequent changes of cropping, and enriching exhausted portions of the nursery, a constantly accumulating fertility is maintained, and the land is uniformly kept in good heart.

The Messrs. Cheal give much attention to landscape gardening—a branch of their business that appears to be extending, and of which there is a rather pleasing illustration in their own nursery—in the little rock garden—which, if simple, is very effective. It is close to the dwelling-house, facing the main road, and is partly furnished with a selection of alpine and herbaceous plants. It is overlooked by a rustic summer-house, and there is a plot of sweet green lawn in front between the rock garden and the main road. Another mark of skill in the way of rustic-work we noticed at the entrance to the nursery—the sign or title of the firm done in "Sussex Oak," and forming an arch over a broad grass walk, which is at right angles to the Brighton road. Here are borders of Conifers, and other ornamental trees, shrubs and plants arranged for effect, ample space being left between the specimens for each to develope into handsome form. There is in this portion of the nursery a good stock of Roses—a branch of the Messrs. Cheal's business upon which much energy is bestowed, with a view to ultimately making it one of the leading departments of the business.

From here we proceed to the fruit tree quarters, where we noticed some of the finest two-year-old Apple trees possible. The Ribston Pippin is here not only perfectly free of canker, but fruits as freely as Cox's Orange Pippin, makes a better tree, and is a quicker grower. The best and most fruitful varieties are among the following:—Hawthornden (new), Kerry Pippin, King of the Pippins, Lord Suffield, Scarlet Nonpareil, Irish Peach, Adam's Pearmain, Hormead Pearmain (a grand Apple, and a free bearer), Lamb Abbey Pearmain, Cox's Pomona, Reinette de Caux, Boston Russet, Royal Russet, Stirling Castle, Sturmer Pippin, Tower of Glamis, and many others. The stock of Pear trees, although not so remarkable as the Apples, is good generally, and the cordon Pears are really splendid. In point of fertility and for general purposes the following kinds are considered the best:—Williams' Bon Chrétien, Jargonelle, Marie Louise, Doyenné du Comice, Doyenné Boussoch, Doyenné d'Ete, Durondeau, Clapp's Favourite, Brockworth Park, Beurré Superfin, Beurré Hardy, Beurré Diel, Jersey Gratioli, Louise Bonne of Jersey, Marie Louise d'Uccle, Olivier de Serres, Pitmaston Duchess, Vicar of Winkfield, Zépherin Grégoire, &c. The trees are grown upon a variety of stocks, a vast number of Apples being grown upon the Paradise stock, and Pears upon the Quince. The quarters are fully exposed to the south-west winds, and the trees are hardy and well furnished with clean fibrous roots. The general stock is remarkable for good health and variety rather than for size.

We noticed extensive plots of Caucasican and other Laurels, Cotoneasters, Rhododendrons, Veronica Traversii and salicifolius, Spiræa callosa alba, the Sea Buckthorn (Hippophaë rhamnoides), Ceanothus americanus, a fine stock of Portugal Laurels, Berberis Darwinii, seedling Oaks, Pinus austriaca, Populus canadensis nova, which is so useful for street planting; the common Broom, Picea Menziesii and Abies Nordmanniana, Cupressus Lawsoniana, Balm of Gilead Fir, which is a bad grower in Scotland but does well here; American arbor-vitæs, the Sweet Bay (Laurus nobilis), plots of hardy Heaths, double Gorse, Aucubas, and Thuia ericoides. Abies Douglasii grows vigorously in the clayey soil of this nursery, as also Pinus Cembra, Cryptomeria elegans, and several varieties of Cupressus.

Flowering trees and shrubs are also grown in quantities; these consist of Catalpas, Buddleia globosa, Althæas, Spiræa Lindleyana, Diplopappus chrysophylla, Weigelas, Rhododendron ferrugineum, and various others. Peaches, Nectarines, Plums, and Cherries are grown in quarters by themselves, and, like the other fruit trees mentioned, are of different sizes, from one-year-old maidens to those of a bearing size, and covered with fruit-buds.

The glass department is stocked with soft-wooded plants, chiefly Chrysanthemums, Begonias, soft-wooded Heaths, and a nice batch of New Holland plants, together with Azaleas and Camellias. Increased accommodation has lately been added to the seed department of the business, as well as other offices, to say nothing of the extension of the glass department, to which much attention is now being directed. The home nursery consists of about 30 acres; and there are three other branches, where forest trees and the rougher kinds of shrubs are grown, amounting in all to about 50 acres—a by no means insignificant acreage to cover with healthy nursery stock in so short a period.

The Rosery.

THE FORMATION OF A ROSE GARDEN.—November has come round again, and has brought along with its damp and dreariness a shower of Rose catalogues from all quarters of the compass. French growers with their tempting lists of new varieties, which are all "*superbe*, *magnifique*, *hors ligne*," &c.; English growers, with their less effusive but equally enticing lists; and on all sides preparations for the Rose are going on. Old and experienced hands have looked through their Rose grounds, have determined on the changes to be made and the plants to be discarded, have ordered their new plants, and in a quiet business-like way are setting to work; many a gentleman, and perhaps still more, many a lady, who has been captivated by some grand stands of flowers which they have seen at some of the Rose tournaments during the season, is seriously determined on having a Rose garden, or enlarging one already existing, and want to know all sorts of things about them; and it is for these latter that this paper is written. I have now before me a letter asking as many questions as it would take me half-an-hour to reply to, and I therefore conclude that there are many who are situated similarly, and would be glad to receive such information as we can give.

It is a very common expression to hear when people are talking about growing Roses, "Oh, I have not a good Rose soil; and so it is of no use my trying to grow them." Now, I believe that climate has far more to do with successful cultivation than soil; climate you cannot alter, soil you can alter to a great extent to suit your purpose; thus, with the best soil in the world, you cannot grow Roses where they are under the influence of smoke; and although much of the soil in Cornwall is rich and good, yet we are told on high authority that it is impossible to grow exhibition Roses in that county—the climate is too humid, and the growth is consequently too "lithy" to enable the plants to bear first-rate flowers. So again in the bleak and wind-swept districts of the North, the attempt is equally hopeless. But where the climate is favourable, I can point to many instances where the difficulties of soil have been overcome, and first-rate flowers produced. As an instance of this I would adduce the case of Mr. George Baker's garden at Reigate; it is on a hot and gravelly soil, and every Rose grower knows how difficult it is to grow Roses under such conditions; but Mr. Baker was no way discouraged, and his mode of proceeding may be useful to note for those similarly situated. The beds were trenched 3 feet deep, at the bottom was placed a layer of retentive clay, on this a layer of manure, then a layer of good loam (procured in the neighbourhood), and then a layer of manure, and so on, until the beds were filled. This is, of course, expensive, and could only be carried out by those who have means at their disposal, but when this is the case persons may rest assured that success will follow, for nowhere have I seen a better grown collection of Roses than Mr. Baker's. At the same place Mr. Waterlow's garden, at Great Doods, is somewhat similarly situated, but his very successful gardener, Mr. Brown, has not felt it necessary to go to so much expense, but has, by strengthening his beds with good loam and manure, overcome its natural lightness, which Roses do not like. Where, on the other hand, the soil is too heavy, and liable to suffer from wet, a different process is required; the beds require to be thoroughly drained so as to carry off superfluous water, for there are few things which Roses dislike more than water or wet clay being about their roots. The soil should be itself made lighter by the addition of cinder-ashes and road-grit; but there are very few soils where this is requisite, especially if Roses on the seedling Brier, or Brier cuttings are used, for it is in heavy, loamy hedgerows that we find our native Dog Rose flourishing best. Trenching, of course, is the best way of cultivation, but be careful what you are about. A friend of mine determined to grow Roses successfully and largely, left directions that the ground should be trenched 3 feet deep. To his horror he discovered on his return that the effect of this had been to turn up a subsoil of pure hungry sand, burying the good surface soil underneath it.

But where, it may be asked, should I put my Roses? Give them by all means a place to themselves, for are they not worthy of it? Let the position be open, but not, if possible, exposed to destructive winds, which loosen the bushes and admit water to the roots. Let the beds—for I presume that they could be thus grown—be about 4 feet wide; of course, I am also presuming that dwarfs will alone be used. Standards are decidedly a mistake, unless at the back row of a long border; and of all objectionable uses to which even the Rose can be put nothing is more so than a row of standards on grass, and yet how frequently one sees this done—some of them sickly and dying, and where they are alive suggestive of Rose mops. No, the Rose lover will go in emphatically for dwarfs, and will feel assured that he is able to better protect them should an inclement season set in. Dwarfs being decided on, which stock is to be used?—for I am supposing that the Rose garden is to be formed of plants bought in from some of the many Rose growers for sale who now offer their cultures at such tempting prices. The advocates of the Manetti, seedling Brier, and Brier cuttings are each strong in the advocacy of their favourite stock. Roses on the Manetti can be more cheaply purchased than those on the seedling Brier or Brier cutting, but I am inclined to think that, as a rule, the others make the more enduring stock, and certainly for Tea Roses there can be no question. There is another advantage. The tyro in Rose growing cannot always distinguish the growth of the Manetti from that of the Rose, and I have frequently seen what its owner thought to be a most vigorous plant, but which he wondered to find when flowering to be simply a bush of Manetti, which had overpowered the Rose.

And now as to the time of planting. Of course, the reply is immediately made, "The month of November; is it not then that nurserymen remove and forward their Roses?—and does not every Rose book tell us to plant then?" Doubtless, but as many things in Rose growing have been turned topsy-turvy, it may possibly be that this is to be altered. I have often wondered whether the system was quite right. The Rose can hardly be called a hardy flower with us, as 10° of frost injure it and 15° do so very considerably,

while in severe winters, unless very carefully protected, they perish altogether. Might it not then be advisable to alter this practice, *i.e.*, to obtain the plants as usual, but lay them in until February, and then plant them? After such an autumn as this—the wettest October we have had for years, nearly 7 inches of rain [!]—in what condition can any soil be to receive the tender Rose or to encourage its root-action? It may be that, as some say, root disturbance damages root-action, although this is stoutly denied; but when you come to take up Roses, pack them, send them a journey, which perhaps occupies two or three days, and then have to plant them in a soddened and cold soil, when there is little movement in the plants, can they be expected to prosper?—and might it not be for their advantage if this task were not imposed upon them and they were left in comparative rest for the winter, and then when activity really sets in to plant? They would set to work to form roots first of all, and then in about a month or so afterwards they could be pruned. In the case of established plants it would, of course, be best to leave them alone. I am only suggesting this with new plantations.

With regard to sorts I do not think there need be much hesitation now; the National Rose Society has published a most valuable catalogue of exhibition Roses, and I think it may be safely said that as a rule the Rose that is good for the exhibitor is good for the garden also. In making a selection, the beginner, who does not aspire to be an exhibitor, had better avoid all Roses which are said "to be best on maidens," such Roses as Horace Vernet and Xavier Olibo, for example — for this means that they are delicate and weak growers, but Roses which an exhibitor will not care to be without, for he gets blooms from them at times which no other Rose can equal in their especial colour.

Whenever the Rose is planted, be it in November or spring, it should be done carefully; it is best when Roses are received from the nursery to at once lay them in, for even a few hours' exposure is bad for them. Have all the labels ready, and if the plants are laid in singly, it is very easy to fasten on the labels before planting (and here let me say that the Acmé labels, costing about 1*d.* a piece, are the best), and when all is ready begin, not by taking all out at once, but just as you require them. In all cases of dwarfs, no matter what the stock, plant so as to cover the junction of stock and Rose. I say this with all due deference to Mr. Prince, who says "no" in reference to the seedling Briers, but, great an authority as he is on a stock which he has made so peculiarly his own, I must say that, so far as I have seen, wherever his Roses have done best. it has been where his own advice has been disregarded, I do not find that they are liable to throw up underground suckers, and in process of time they root from the Rose as well, and thus become own-rooted plants, as well as having the advantage of a foster mother. Roses should also be firmly planted; they do not, any more than Strawberries, like a "loose" soil, that is one which, however rich, is light, and easily crumbles; and therefore it is best to tread firmly in planting; and where the stems are at all long they ought to be secured by stakes, thus securing firmness above and below: more especially is this the case where gardens are "wind swept," as I know some to be.

No Rose grower who cares for the welfare of his plants will neglect mulching, stable-yard manure being the best, although in the case of newly made beds it is better, perhaps, to use lawn-mowings which have well rotted, or cocoa-nut fibre where it can be easily procured. This protects the Rose in severe winters, and, in the case of the farm-yard manure, may be afterwards dug in to enrich the soil. He will then have done his best to make all secure, and can only hope that success may reward his efforts. *Wild Rose.*

The Rockery.

THE greater part of our alpine plants are spring-flowering species, which gladden our eyes during the first fine days of spring, and are the more valued by us because they are the heralds of summer. These plants, once their perfection past, and at the end of two or three flowering months at the most, offer us little other attraction than that of their foliage, which in some cases is very pretty. But the most beautiful months on a rock garden are certainly those of March, April, May, and June; after this time with alpine plants flowers become rare, and during the three warm summer months we have not many attractive and decorative things if we have not taken the precaution to supply their place with other plants. But on the approach of autumn it happens that a great number of species bloom, while others flower for the second time, and give to our rockeries a very pretty appearance towards the end of the year. There are, moreover, species that have never ceased to bloom during the summer, and which have braved the hottest rays of the sun. These are especially the species of Campanula, Dianthuses, Corydalis, Erodium, Geranium, Sedum, Sempervivum, and Saxifrage, which, with the plants of Southern or Eastern origin, such as the Dalmatian, Greek, and Asiatic species, have the property of flowering during the three dry summer months. The real autumnal species are, however, rare, and except some Silenes and Cyclamen they generally belong to a flora foreign to Switzerland.

But the alpine plants which flower a second time in the autumn under the influence of a cool and damp climate are relatively numerous, this being the case with species essentially alpine. At this moment we have on the rockwork of the Geneva Botanic Garden a number of plants in bloom which would have been more beautiful and more free-blooming if the weather had been less wet. The principal species which flower in autumn, and which I recommend especially to amateurs who desire to have flowers on their rockeries all the year round, are Armeria alpina, A. plantaginea, and A. splendens—bavarica, Geum pyrenaicum, and G. montanum, Helianthemum vulgare, H. apenninum, H. pilosum, Lychnis Lagascæ, Lepidium alpinum, Rhododendron ferrugineum, R. hirsutum, Silene acaulis, S. alpestris, Thlaspi rotundifolium, &c. The species which flower during the warm months of summer and remain in bloom during the autumn, are the various Alchemillas, Androsace lanuginosa, Achillea tomentosa, A. pyrenaica, Anarrhinum crassifolium, the majority of the Campanulas, particularly C. rotundifolia, and its varieties C. pusilla, C. pulla, C. Waldsteiniana, C. turbinata, C. linifolia, Corydalis lutea, Erodium manescavi, Geranium bohemicum, G. sylvaticum, G. phæum, Linaria pilosa, L. Cymbalaria, L. origanifolia, L. hepaticæfolia, L. striata, Globularia trichosantha, Gypsophila repens, Mazus pumilio, Meconopsis cambrica, Œnothera pumila, Papaver alpinum, P. Heldreichii, Paronychia argentea, Potentilla alba, Reseda glauca, Pterocephalus Parnassii, a great number of Sedums and Sempervivums, Stachys rupestris, Symphyandra amœna, Saxifraga Huettii, Viola cornuta, V. rotomagensis, V. striata, Silene saxifraga, Tunica Saxifraga, &c. By planting on the rockery late-flowering species we obtain an uninterrupted succession of flowers from spring to autumn, provided always we have summer-flowering species which will bear the great heat of summer, and which in England, where the climate is damper than with us, is an easy matter. *Henry Correvon, Botanic Garden, Geneva.*

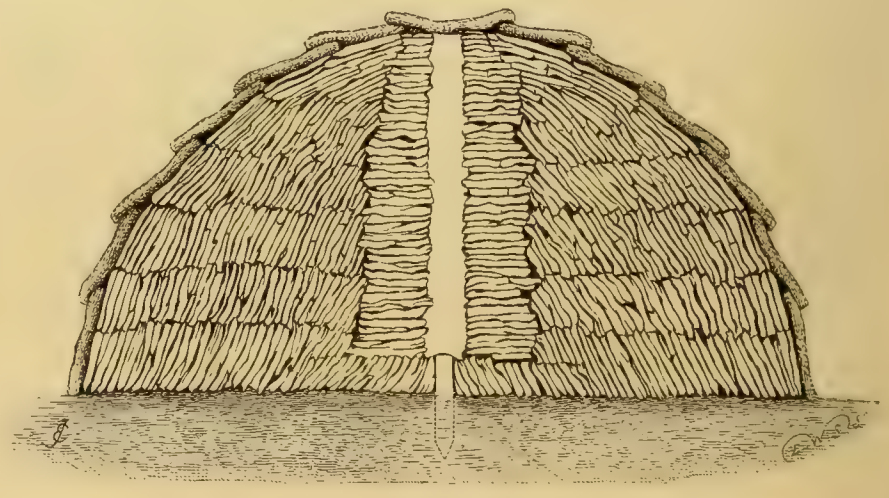


FIG. 107.—SECTION OF A CHARCOAL PIT.

superb plants, with heads of rose-coloured flowers, which produce the grandest effect from the end of August until winter; Artemisia valesiaca, A. argentea, A spicata, A. campestris, and others, of which the foliage is in itself the principal attraction, the flower being inconspicuous; Calamintha alpina, a fine Labiate with small clear lilac flowers, very fragrant; Cyclamen europæum, C. hederæfolium, C. repandum, and C. cilicicum are superb autumn species, which fill the air with perfume until late in the season; Dianthus versicolor, D. multipunctatus, D. viscidus, D. Seguieiri, D. Requienii, D. superbus, D. monspessulanus, D. sylvestris, &c. The corollas of these plants are of a vivid rose colour, sometimes pale lilac, often sweet smelling, and form one of the greatest ornaments of our rockworks during autumn. Erica carnea and its varieties begin to flower in November, and continue to do so during the winter. Gentiana ciliata and G. germanica are two fine autumn species; Erodium malacoides is superb now, Polygala chamæbuxus, Parnassia palustris, Iberis garrexiana, Silene Schafta, Samolus Valerandi, Saxifraga aizoides, Veronica spicata, and others are equally autumn species. Among the good plants which bloom a second time at the end of the season under the influence of a cool and damp atmosphere, are especially Achillea alpina, Androsace chamæjasme, A. obtusifolia several species of Arabis, Arenaria rotundifolia, A. biflora, A. ciliata, Aubrietia deltoidea, A. Hendersoni, Astrantia major, Bellium bellioides, sometimes Draba aizoides, Gentiana

MANUFACTURE OF CHARCOAL.

ENQUIRIES having been from time to time made regarding the production of charcoal for gardening and other purposes, the following simple method, which has been successfully carried out on a large estate, and by which the very finest charcoal is produced, may be interesting if not useful to some of your readers. As now conducted, charcoal is prepared by two different methods. One is that of placing the wood in an iron cylinder, set in brickwork, and surrounding with fire; and the other, by piling the wood in a heap, covering with turf, and setting on fire: but as the latter method is that generally adopted, we purpose giving a description of the mode of operation. Select a piece of ground sheltered from the prevailing winds, and to which easy access with wood can be obtained. A hut or temporary shelter of some kind should also be provided for the men engaged at the work, as during the period of burning constant attention is required, both day and night.

The quality of wood used is not of special importance, although charcoal produced from Ash, Oak, or Beech, is of superior quality to that obtained from most other woods, and may consist of firewood, or any unsaleable pieces of timber that may be come across in the general course of thinning. The wood is sawn into pieces 2 feet in length, and these again split if required to about 3 or 4 inches square, until a sufficient quantity has been cut up for the pit, after

which the building of this is proceeded with in the following manner. The pit is made of a conical shape, 21 feet in diameter, and 9 feet in height. A strong stake is driven into the ground, the top of which is left protruding about 12 inches, around this are placed small pieces of dry Ash or Pine of a similar length, and standing as close to the upright stake as possible. Another layer is formed in the same manner, and so on until a circle of about 4 feet in diameter is obtained. A circle of 1 foot in diameter, and having the top of the stake formerly driven into the ground as centre, is next made by placing the wood horizontally side by side on the upright pieces, laying others on these in a similar manner until the pit is of the required height, thus forming a sort of chimney, by means of which the pit is fired; the wood used here being dry pieces of Ash 24 inches in length, but split rather smaller than the ordinary pieces. Outside this the wood is placed on end and reclining inwards, this being continued until the pit is of the required size.

The top half of the pit is now carefully examined, and any crevices between the wood are packed full of small pieces of turf and sawdust to exclude the air. The pit is then covered with newly cut turf, beginning at the base and working towards the top, each row of turf overlapping by a few inches the previous one, the circular hole or chimney being left open for firing. The best turf for this purpose is that grown on loamy soil, that from clay being too stiff, and leaving a residue after burning of clods instead of fine soil. The turf may be cut of any convenient length, but not over a foot in width, the quantity required being about three loads. The pit is next fired by dropping a quantity of burning wood and some dry pieces of Pine or Ash into the opening left at the top. After having become thoroughly lighted the top turf is put on, which completely shuts up the chimney when the process of charring commences.

During the period of burning constant attention is required day and night, more especially should the weather be stormy, for the wind blowing for some time from one point generally causes that side to burn very rapidly and "flat" into a hole; should this occur the hole must at once be filled with knotty logs, which should be laid aside for this purpose when splitting the wood, and re-covered with turf, any crevices being carefully filled with sawdust to exclude the air. During mild weather less attention is required; the pit burns uniformly all over, and produces the best charcoal.

The time required in burning varies from seven to nine days, much depending on the state of the weather, mild requiring the longest period. As the charring proceeds the turf gradually disappears, until only a slight covering of burnt earth remains, at which point the pit is reduced to about half its original size. When cool the pit is ready for being opened, the charcoal being extracted by means of a light rake resembling a drag, but with much finer teeth; and after becoming thoroughly cool is stored in a dry shed until required for use. By the above method the very finest charcoal is produced, and of superior quality to what is generally sold. The accompanying illustration (fig. 107) represents a section of charcoal pit ready for firing.

Properties and Uses of Charcoal.—The principal use of charcoal is for combustion, for which purpose it is found not only cleaner to use but also productive of greater and more lasting heat than most other combustible matters, and therefore it is of inestimable value for cooking purposes.

Great care should be exercised in the using of charcoal, as during its combustion carbonic acid is formed by the union of the oxygen of the air with carbon, which acts upon the human system as a powerful sedative poison. It is of frequent use in the garden for potting purposes, Vine borders, flower-beds, &c., and in the transmission of bulbs nothing is better for packing than charcoal dust. The consumption of charcoal for gunpowder-making is also very great, preference, however, being given to that produced from certain kinds of wood. Charcoal is a good disinfectant, tasteless, inodorous, and full of pores; nearly 100 inches of gaseous ammonia being absorbed by a cubic inch of fresh charcoal. *A. D. Webster, Penrhyn Castle, North Wales.*

GRAPES SHOWN AT EDINBURGH.

Mr. McIndoe, gardener to Sir Joseph Pease, Bart., M.P., Hutton Hall, Guisborough, who, it will be remembered, took such a strong lead as an exhibitor of fruits at the late Edinburgh show, has been kind enough to send us a successful photograph of the dozen bunches of Grapes which won for him the 1st prize in the premier class on that occasion. The exigencies of space do not permit of our reproducing the picture in its entirety, but we have selected for engraving two fine bunches of Trebbiano, and the two grand examples of Barbarossa which took the Veitch Memorial Medal as the two best bunches of black Grapes in the show. These are shown in the centre of our illustration (fig. 108), the Trebbianos being on either hand. The Barbarossas weighed 9 lb. 14 oz. and 10 lb. 2 oz. respectively, the heaviest being the one on the right. The Trebbiano on the left weighed 9 lb. 15 oz., that on the right 9 lb. 13 oz. The other sorts shown were Mrs. Pince's Black Muscat, two bunches weighing 3 lb. 8 oz. and 3 lb. 12 oz. respectively; Golden Champion, 4 lb. 3 oz. and 3 lb. 9 oz.; Black Hamburgh, 4 lb. 7 oz. and 4 lb. 6 oz.; and Gros Colmar, 4 lb. 6 oz. and 4 lb. 2 oz. respectively, the aggregate weight of the dozen bunches being 72 lb. 1 oz. Considering their size they were remarkably well finished, and reflected the highest credit on their grower.



Fig. 108.—Mr. McIndoe's "Veitch Memorial" prize grapes.

Dracæna Baptistii.—Those who are fond of high colour in foliage plants will not easily find one to surpass the above variety in general appearance, especially if the plant is required to take a place as an individual ornament. The leaves are of a blood-red colour, margined with salmon and pink, and there is a deep vein up the centre of the leaf of the same colour.

SLEBECK PARK.

Slebeck, Pembrokeshire, is situated upon an estuary of Milford Haven, and is a place of some antiquarian interest, having been once a commandery of the Knights of St. John of Jerusalem. It was also a favourite resort of pilgrims, and many miraculous cures are said to have been wrought there, most probably at the shrine of some now forgotten saint. It has not yet been precisely ascertained by whom or at what time Slebeck was founded. The first authentic mention of it is in 1148, when the then Bishop of St. David's granted and confirmed the appropriation of several churches in his diocese to the Knights of St. John at Slebeck, and the estimation this order was held in was such that we find the masters of the commandery of Slebeck filling some of the highest offices under the Crown. The different Earls of Pembroke also highly favoured this establishment, not only by increasing its possessions, but by annexing to it various privileges and liberties. Nothing much now remains of this church militant, except the picturesque Ivy-clad ruins of the chapel on the lawn near the present mansion. When the religious houses were dissolved in the reign of Henry VIII. Slebeck was demised to Roger Barlow, the discoverer, with others, of Peru. His great-grandson, John Barlow, was a strenuous loyalist in Charles I.'s time, and who went to the assistance of the King, when most of his tenants were cut to pieces, and he himself was obliged to abscond and remain away for many years. His property by ordinance of Parliament was settled on Colonel Horton, who burnt at Slebeck, whilst in his possession, a noble library and a most valuable collection of MSS. The cannon-balls of the Roundheads are still to be picked up in the neighbourhood of a ruined castle on the estate. At the Restoration the Barlows, of course, regained their property. The family of the Barlows held Slebeck for nearly three centuries, and a baronetcy was conferred upon one of them in 1677. About a century later the male line became extinct, and it passed through heiresses into other hands. The present proprietor is the Baron de Rutzen, who inherited it from his mother, the late Baroness de Rutzen.

When the tide is in at Slebeck there are few places that excel it in beautiful views of wood and water, the banks of the river being clothed with timber down to the water's edge. There are several miles of carriage drives through the forest and park, and in the woods are some very fine old Silver Firs, many of them measuring from 10 to 12 feet in circumference and from 100 to 120 feet in height.

The gardens, in which there is a good range of glass, are very ancient, and are laid out in walled terraces, the walls being covered with fruit trees. The upper terrace commands a fine view of the river on the one side, the other side being planted with Coniferæ and Rhododendrons, and forms a splendid promenade. The present Baron has planted large numbers of ornamental trees and shrubs in the grounds, some of which are now fast growing into nice speci-

mens, Cupressus Lawsoniana being the best. This is a tree which thrives well in this part of the country; as also do some of the Abies, the Silver Firs in particular. The south-westers from the Atlantic blow here with great severity, so that it is a matter of great difficulty to grow the choice varieties of Coniferæ. *Cambrensis.*

Notices of Books.

Field and Garden Crops of the North-West Provinces and Oudh. (Government Press.)

Under this title a series of descriptions of cultivated plants is given, with indications of the mode of cultivation, the cost, and other agricultural details. Accompanying the text are a number of lithographic plates illustrative of the plants, which, if somewhat vague and unfinished in point of detail, are as a whole lifelike and faithful. The botanical notes are written by Mr. Duthie, the Superintendent of the Saharunpur Botanical Gardens; those relating to agriculture are edited from various Government reports by Mr. Fuller, the Assistant Director of Agriculture and Commerce of the North-west Provinces, who has also incorporated the results of his personal research and observation as manager of the Cawnpore Experimental Farm. The introduction contains statistical data relating to the area under cultivation, the population, the climatal features, the soil, and other particulars of importance to the cultivator. The plates, which are the work of Mr. Hormusji, a Parsee artist, illustrate the various cereals, together with Millet, Rice, Sugar-cane, Poppy, Tobacco, Cotton, Hemp, Cicer arietinum, Phaseolus Mungo, P. radiatifolius, P. aconitifolius, Indigofera tinctoria, Carthamus tinctorius, Crotalaria juncea, and Hibiscus cannabinus. The volume is the first of a series in which it is proposed to describe the cultivated products of the North-west Provinces, and to furnish in a convenient form all the information on the subject that is likely to be wanted either by the student of Indian agriculture or by the administrative officers of the Government.

A Manual of Exotic Ferns and Selaginella, &c. By E. Sandford. London: H. J. Infield, 160, Fleet Street.

This is a well-meant attempt to furnish a manual of Ferns, but we cannot say it is a very successful one, or one likely to bring much credit to the author, whose knowledge of Ferns may be adequate to the self-imposed task, but whose knowledge of literary composition is by no means sufficient for the purpose. To justify this verdict we must quote a few examples. On the second page of the introduction we find this sentence:—"Such genus as Davallias, Nephrolepis, Goniophlebiums, Pleopeltis, some of the species of Adiantums, and several others," Again, at p. 13:—"Some genus are easily got from spores," and on the same page "some genus grow very freely," and "some of the common species of some genus"—enough this to show that the author is at least not a genius in writing a book. Nor are the names of plants free from error in spelling, for we find Nepherolepis for Nephrolepis, Niphobulus for Niphobolus, Cyrtomum for Cyrtomium, Lonchites for Lonchitis, and many other such-like blunders both of generic and specific names, which could not, by any stretch of charity, be set down to accident. The author, moreover, does not appear to acknowledge any rule as to the use of capital initials, since he uses them where they should not be, as in Ochracea, Peruviana, Schizophyllum, Chiloensis, Serpens, Sanctum, Alcicorne, &c.; and omits them when he should have employed them, as in lingua, marantæ, claytoniana, phyllitidis, struthiopteris, stemmaria, paradiseæ, nidus, &c. The authorship of generic names is not always correctly set down. Thus Springel is given as the authority for Selaginella, instead of Spring; Sellignea is ascribed to J. Smith instead of Bory, and Polypodium to Swartz instead of Linnæus. We do not always agree with the synonymy: for instance, Davallia decora is not dissecta, Lastrea Sieboldii is not podophylla, and the species of Dennstædtia should all go under that genus or under Sitolobium (properly Sitobolium), not be divided between the two. The descriptions suffice to give some general idea of the size and character of the plants, but are rarely sufficiently comparative or diagnostic to serve to identify the plants. Over and beyond all this, however, a good deal of information useful to inexperienced cultivators is scattered through the work, the contents of which are conveniently arranged in alphabetical order. The author would have done well to have got some competent friend to revise his manuscript before committing it to print.

Orchid Notes and Gleanings.

MAJOR LENDY'S ORCHIDS.—A pleasant place is Sunbury House, with its broad stone stairs, old-fashioned arrangement, and wonderful painted ceilings, on which in bygone ages immense sums must have been spent. Situate as it is in 20 acres of garden and pleasure ground, with Sunbury Weir within a few yards of the gates, and beautiful scenery all around, it is a place in which one might be happy with any style of gardening. So thought Major Lendy, and until recently he devoted himself almost entirely to outdoor gardening, arranging shrubberies to conceal boundaries, to hide objectionable objects, and to improve the scene. In the kitchen garden he was equally diligent, planting the whole of the fruit trees which are now old bearers. All this time the usual greenhouse and bedding plants were cultivated, as cut flowers for indoor decoration were in great demand with the ladies. Such plants, however, always failed to give the necessary supply in autumn, winter and spring, and in order to fill up the blank the Orchid collection was started about three years ago. The Major and his gardener are delighted and enthusiastic, and the result is that although but four good houses are devoted to Orchids they have now (and always have, I understand) a wonderful show of bloom. The flowers of the Orchids also meet with much more favour than any others, as they are beautiful and durable, many of them lasting perfect for six weeks after being cut. The first is an East Indian house, containing a number of healthy little specimens of many good things, and some good masses of Dendrobium formosum giganteum, Saccolabium Blumei, Angræcums, &c., in bloom. The most noticeable feature in the house is the full, numerous and healthy collection of Phalænopsis. All that can be obtained are there, except P. intermedia Portei and quantities of P. amabilis, P. rosea, P. rosea leucaspis, and two P. Lowei in bloom. All are in remarkable health, and they evidently like the house which was built for them—a circumstance which does not always take place when houses are built for special plants. The second is an intermediate-house. In it are vigorous young plants of most of the showy Cattleyas, Oncidiums, Lælias, &c., thriving and giving a fair sprinkling of bloom and a greater promise for the future. The third or cold house is literally a mass of flower, and affords a telling argument in favour of Orchid-growing. The two side stages bear a healthy stock of plants not in flower in the usual way, and arranged over them, right throughout the house, are the specimens in flower. This gives the whole house a very gay appearance, and at the same time affords an opportunity of examining each plant by itself, while the arrangement of the flowering plants over and amongst the growing ones, does not in the least interfere with their comfort, as they are continually being moved about. The flower show is at present composed of Dendrobium Lowii, D. bigibbum, D. chrysanthum, Cattleya superba splendens, C. Eldorado, C. marginata, Masdevallia bella, M. Tovarense, twenty-four blooms on a plant 8 inches across; M. Reichenbachiana, M. Harryana, M. Veitchii, Mesospinidium vulcanicum, Odontoglossum bictoniense, O. Uro-Skinneri, O. grande, O. Alexandræ, O. Pescatorei, O. Andersonianum, O. gloriosum, O. Rossii majus, O. Roezlii, O. ramosissimum, Oncidium cucullatum, O. Forbesii, O. prætextum, O. varicosum, many grand varieties; O. incurvum, Lælia anceps, with a dozen spikes; L. Perrinii, fine pans of Pleione lagenaria maculata and Wallichiana, each with forty to sixty blooms; a grand variety of Vanda cœrulea, with over twenty large flowers; some Sophronitis, and a fine specimen of Houlletia Brocklehurstiana: this last demands more than passing mention for, although it is an old plant, it is still rare and little known. It bears a stout ascending spike furnished with about a dozen wax-like flowers, each about 2 inches across; the ground colour is yellow, the greater part spotted over with dark crimson, and the lip is white, spotted with black. The whole aspect of the plant is very striking and the odour of its flowers delightful. A well-furnished Dendrobe house complete the Orchid accommodation of Sunbury House, not one inch of which is to be grudged if one may judge by the results. In the pleasure grounds are some magnificent Cedars (one spreading nearly 100 feet across); the winds have unfortunately played havoc with two of them, notwithstanding Major Lendy's care to preserve them. *James O'Brien, Harrow-on-the-Hill.*

CATTLEYA LABIATA PERCIVALIANA.—This much-talked-of plant is sending up flowers everywhere where a few plants of it are in stock. Mr. R. P. Percival has many well advanced in bud, Mr. Southgate some still more forward, and Mr. James, of Norwood, and Mr. Bull, and Messrs. Veitch, of Chelsea, also have it with buds. If it had bloomed here at the same time as in its native country, it would have been much earlier. It will probably under cultivation go back to its proper season. Bloom when it may, during autumn or winter, it cannot fail to be a valuable addition to our Orchid-houses. By its appearing in bud everywhere now, a great weight must be taken off Mr. Sander's mind, as every one said it certainly would not be the autumn flowering plant it was warranted to be; so determined an autumn or winter flowerer however does it prove, that in many cases it has made special small growths in order to have them ready at the proper time, although the plants (as at Messrs. Veitch's) did not bloom on the larger growths already furnished with sheaths in the summer. *James O'Brien.*

The Kitchen Garden.

So far the weather in November has been no improvement upon that which characterised the month of October, consequently the ground is still saturated with water, and on this account such work as the wheeling of manure on to the vacant pieces of ground, together with the digging or trenching of the same, will have to be deferred. However, there are plenty of jobs which can be done when the ground is too wet for digging or trenching, and which are best done when the ground is damp—not swamped. In the first place, the garden walks should be kept thoroughly free from weeds and fallen leaves, and be subsequently rolled in order that they may again present a firm, smooth surface. In the next place there is the turning and re-turning of manure-heaps, the gathering of a sufficient quantity of Oak and Chestnut leaves, and carting them to the leaf-coop. Then, again, there is the question of Pea and Bean sticks to be considered. The necessary quantity of new ones being ascertained, they should be ordered from the woodman at once, so that they may be trimmed, sharpened, and tied up in bundles during inclement weather, and be put away ready to hand for future use. As a rule there are plenty of jobs reserved for doing on wet days, such as the making and tying up of labels in different sizes for pot-plants, seed-beds, Roses, &c., mat-tying, the making of crooks for pegging and layering plants, together with the preparing, sizing, and tying up in bundles of sticks for pot and border plants; also the breaking, sifting, and sizing of crocks and looking over seed Potatos and other roots. If the natural condition of the soil is not specially adapted to the growth of some kinds of vegetables something should now be done with a view to correcting it. If the soil is too stiff much may be done to ameliorate its condition, if the garden is properly drained, by the judicious use of leaf-soil and chalk, which should be well incorporated with it, and ridged up roughly during the winter, so as to be fully exposed to the influence of the weather. On the other hand, if the soil is considered too light, recourse should be had to clay, roadside parings, and such-like materials, which will produce a chemical change in the soil, and thereby render it more suitable to the growth of certain crops. Broccolis and other winter plants of the Brassica tribe which have been loosened about the collars by the force of the gales which we have recently experienced, should, if not already attended to, be made firm again. Breadths of Cauliflowers should be looked over at short intervals, and

have all full-sized heads cut and spread out on a shelf in a cool dry shed, and those which are not yet fully developed should have a couple of leaves bent over them as a protection from frost. Globe Artichokes, which are still producing a few "chokes" of good quality from spring plantings should have any old stems and bad leaves that are still adhering to the plants cut away. Then give a good surface-dressing of well rotted manure (to be dug into the ground in the spring) and upon this put a good mulching of long litter, the latter to be wrapped closely round the crowns of the individual plants as a protection from frost. This will be a good time for those who intend to make their first gathering of Peas and Beans next season from seed sown in drills in a warm situation to make their first sowing, but where the accommodation for raising these in heat about the end of December is to be had, it is certainly the most preferable mode of procedure. With regard as to the varieties of early Peas and Beans for this and subsequent sowings, the following may be depended upon:—Beans—Seville Longpod; Peas—Laxton's Earliest of All, Day's Early Sunrise, Ringleader, Emerald Gem, and William I., all excellent early varieties, especially the first-named sort, which should be grown by every one who aims at gathering a dish of Peas out-of-doors the third week in May.

Forcing Department.—A few roots of Mint and Tarragon should now be put in heat, and as the individual pods of French Beans attain their proper size pick them, and spread them on a shelf in a cool dry room with their ends in water until sufficient for a dish has been gathered. This will be a good time to make a sowing for early work of the Stamfordian Tomato in large 60-pots, two or three seeds in each pot, to be thinned out to one plant subsequently. Place them on a shelf near the glass in some of the forcing-houses, to prevent their becoming drawn; attend also to the thinning and arranging of the shoots, &c., of established plants. Asparagus just coming through the soil should have an abundance of air on all favourable occasions, to prevent the "grass" from making a weakly growth. *H. W. Ward, Longford Castle Gardens, Wilts.*

The Orchard House.

Even where there are two houses, an early and a late one, the trees will not require much attention at present. They are out-of-doors, plunged in cocoa-nut fibre refuse, the best material by far for this purpose. If there is any scale upon the trees an opportunity is afforded to wash it off with a sponge and strong soft-soapy water, taking care not to injure the blossom-buds during the operation. This is also a good time of the year to urge the importance of cleanliness. Even if the trees are not turned out-of-doors (as it is not safe to do so in some districts), they may easily at this season be crowded into a corner of the house while the rest of it is being washed. The internal arrangements may also be remodelled or put straight. Nothing is better, or more in keeping with the character of the house, than a neat gravel path, with edgings of tiles or fancy bricks; the tiles should be cleaned, and a fresh surfacing of gravel placed on the surface, rolling it in firmly. It is astonishing for how long a period the trees will remain in health grown in pots year after year; but in a large collection a few of them will get bare of branches, rendering them unsightly. When that is the case it is best to throw them away and replace them with young trees. I find it answers best to purchase "maiden" trees—that is, those that have grown one year from the bud. Such trees are inexpensive, and if they are carefully lifted and potted they will produce a crop of fruit the second season. When the trees come home from the nursery they should be at once potted, first cutting off any bruised roots. The pots best suited for them are those which are 9, 10, and 11 inches in diameter, inside measurement. The compost, which should be good stiff turfy loam enriched with well-rotted stable-manure, should be pressed in quite firmly amongst the roots. I generally put the trees in the orchard-house for the winter, but they may be plunged out-of-doors with the others amongst cocoa-nut fibre refuse. Do not prune the trees after repotting, but rather defer this until the roots have taken hold of the soil. The trees should be potted in November, and pruned about the end of January. A great variety of trees is not required; complete selections have been made on previous occasions, and good new ones do not appear at very frequent intervals. The new race of early Peaches is a great boon to amateurs who do not force their trees, as they ripen their fruits so very far in advance of the older sorts. Amsden June and Alexander may both be grown; to succeed them Hale's Early and Early York; after this Early Grosse Mignonne, Royal George, Bellegarde, Noblesse, Walburton Admirable, Barrington, Goshawk, and Princess of Wales; of Nectarines, Lord Napier, Stanwick, Elruge, Rivers' Orange, Violette Hâtive, Pine-apple, Prince of Wales, and Victoria. All the above are good orchard-house varieties. *J. Douglas.*

The Orangery.

Just a reminder as to cleanliness in connection with these trees, as well as the Peaches. It is difficult to get such work done during the summer, when so much is waiting to be attended to. The brown-scale which attacks the leaves and branches can only be destroyed by carefully washing it off by hand. Bug will also get on the trees, and also on the fruit; but a gardener that allows this pest to get the upper hand of him must either be incompetent or overdone with work. See that the requisite temperature is kept up, as advised at p. 495; and, what is also of great moment, attention to watering the roots of trees that are ripening their fruit, that they be not overcharged with so much moisture that the skin cracks. *J. Douglas.*

Plants and their Culture.

Greenhouse Plants. — Advantage should be taken during the next few weeks of any favourable opportunity to look over the stock of all hard-wooded plants that may require staking and the growths regulating. A good batch of sticks should be prepared and painted for this purpose; although many of the old ones will be available again, the greater part will be rotten at the bottom and consequently shorter. These should be wiped clean if any insects are infesting the plants from which they have been taken. For all ordinary purposes, when grown for home decoration a too rigid and formal shape should not be adhered to. Neither is it necessary to use such a great number of sticks as are oftentimes seen stuck into the balls of plants with fibrous surface-roots, utterly regardless of the injury that is inflicted thereby. Training and tying for home uses only is quite different from that practised in the case of exhibition plants. These latter are necessarily tied more severely for travelling purposes, this being essential to secure a safe transit. Uniformity in shape has also its object in exhibition plants, the idea aimed at being to bring all the flower-buds into a position whereby they will each and all display themselves to the best advantage. Following this line of culture is a mistake in the case of plants that are not intended for exhibition, more so perhaps in the training of Indian Azaleas than in any other individual class of plants. Experienced hands at tying plants will always avoid using extra sticks when slinging with thread from stick to stick can be resorted to. This resource is a great aid in tying plants of slender growth, such, for instance, as Dracophyllum gracile, Boronia pinnata, and many of the Cape Heaths. When the re-tying of any plant is in process it will be advisable to remove any sour or inert surface-soil and replace it with fresh compost, using sharp silver-sand rather freely, and pressing all down firmly. In the case of any specimen Aphelexis the centre of the plant should be kept as free of sticks and growths trained in an upright manner as possible in order to give every encouragement to the young shoots proceeding from the crown of the plant. These will in process of time work in to replace those of extreme length. Carefully remove any dead pieces of wood in these and all other plants. A goodly amount of this will be found in dense growing subjects, such, for instance, as the Phœnocomas, and if allowed to remain will tend to encourage damp. When any of the following plants are under hand look out sharply for white-scale, viz., with Acacias, Acrophyllums, Boronias, Darwinias, and Pimeleas. A small stiff brush will be about the best thing to use, dipping it occasionally in a little insecticide, and having previously taken the precaution to tie something around the stem to absorb any superfluous quantity that would otherwise run down into the root. Chorozemas are also liable to the attacks of this insect. When they are trained to a trellis these can be the more readily eradicated. If the plants are quite clean the system of bush training is preferable, as the growths will not then be so crowded as on the surface of a trellis. Eriostemons should be almost self-supporting; to attain this end the pruning of any lengthy shoots should be practised. Crowea saligna, an extremely pretty autumn flowering plant, could be treated in like manner. In the case of Cape Heaths be careful to avoid inserting any sticks (more than is absolutely necessary) close in and around the stem of the plant. If occasional shortening of the leading growths of such as E. Cavendishiana and other dense growing kinds is practised, hardly any supports will be required. When Pleroma elegans becomes tall and straggling, instead of spending time in trying to make a shapeable plant it will be much the better plan to cut the same hard back, similar to the treatment given to show Pelargoniums—taking care, however, to withhold water for some days previously, to prevent any exhaustion from bleeding. After this is done, the plant may be placed in heat to aid it in making a good break; if a few shoots are disposed to take the lead they must be pinched. After an even break has been secured, continue to pinch out the points after every two or three pairs of leaves are made, and with a little perseverance a dense bushy plant will be the result. Monochætums may be treated in like manner. I would, however, advise those who have a convenient place to grow these fine Melastomaceous plants to keep a few young ones always coming on. Those who possess any of the following climbing plants at present under training either as bushes or on trellises, may make a pleasing effect with them by running some up wires strained under the rafters, viz., Bignonias, Acacias, such as A. Riceana, Brachysemas, Chorozemas, Kennedyas, Trachelospermums, and Sollyas. While for the end of a span-roofed house, if perchance that should be of brick, an excellent place will be to hand for Luculia gratissima, and if it can be "turned out" so much the better.

The winter flowering Epacris are now with us yielding a nice lot of small sprays that are useful for cut purposes. Considering the extremely long time these plants last in flower when in a healthy state, the wonder is that they are not more generally grown. At this stage and onwards we find them thrive best when watered pretty freely. Never allow them to suffer when coming into flower, for a drop of water or small blooms will be the result. Soft-wooded Heaths that are in small pots and advancing towards the flowering stage must not be kept on the dry side or many of the buds instead of developing themselves will turn yellow and die just when a good crop of bloom is expected. Any greenhouse Draceenas, such as D. australis and D. indivisa, if grown too tall may be rooted off close up to the lower leaves. For large plants a 6-inch pot should be sawn in two, then fitted securely around the stem, filling in around the latter with good soil and some sphagnum moss to retain moisture. Repeat this performance again when the pot is well filled with roots, using a 10-inch pot in the same way. To encourage the emission of young roots, the stem should be cut half through below the newly added pot and the plant kept somewhat dry in the lower one. In this way we have taken off large heads, scarcely losing any leaves in the operation. *James Hudson, The Gardens, Gunnersbury House, Nov. 7.*

Peaches and Nectarines.

The very wet autumn we have had has not been at all favourable for replanting, lifting, or root-pruning, which should by this time be pretty well finished, as I think it is always best done before the trees quite lose their leaves. At the same time the Peach tree is very accommodating as regards removing, for if done carefully they may be moved at any time up to their coming into bloom; in fact, on one occasion, owing to alterations, I moved young trees when the shoots were an inch or two long with satisfactory results. Push on with the cleaning, dressing, and training of the trees in early houses, so as to have all completed, and the house started, by the end of the month. The heat may now be turned off succession-houses, and they may be kept as cool as possible. Examine roots of trees in houses with fixed roofs, and if at all approaching dryness give a thorough soaking of water. Still keep on a little fire-heat in late houses until the wood is thoroughly ripe and the trees lose their leaves; with me they are holding them much longer than usual this season. *J. Wallis, Keele Gardens, November 7.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Nov. 13	Chrysanthemum Shows at Lambeth (three days) and Stoke Newington (two days). Sale of Orchids and Dutch Bulbs, at Stevens' Rooms. Sale of Dutch Bulbs, at the Mart, by Protheroe & Morris.
TUESDAY,	Nov. 14	Royal Horticultural Society: Fruit and Floral Committees, at 11; Scientific Committee, at 1; National Auricula Society, at 12 30; Van Houtte Memorial Committee, at 12.30; Pelargonium Society, at 1. Chrysanthemum Shows at Putney, Walton-on-Thames, and Southampton (two days). Sale of Fruit Trees, at Osborn's Nursery, Sunbury, by Protheroe & Morris (three days)
WEDNESDAY,	Nov. 15	Meteorological Society, at 7 P.M. Papers: On Certain Types of British Weather; by the Hon. Ralph Abercromby, F.M.S. On the use of Kites for Meteorological Observation; by Professor E. Douglas Archibald, M.A., F.M.S. The Meteorology of Mozufferpore, Tirhoot, 1881; by Charles N. Pearson, F.M.S. Chrysanthemum Shows at Clifton, Bristol (two days), and Westminster Aquarium (two days). Sale of Hardy Plants and Bulbs, at Stevens' Rooms.
THURSDAY,	Nov. 16	Linnean Society, at 8 P.M. Papers: 1. Flora of Madagascar; J. G. Baker. 2. Cerebral Homologies in Vertebrates and Invertebrates; Professor Owen. 3 Passifloreæ from Ecuador and New Grenada, an Account of the Collection made by M. André; Dr. Maxwell T. Masters. 4. On Finsch's Fruit Pigeon; E. P. Ramsay. 5. Mollusca of "Challenger" Expedition, XVI, Rev. R. B. Watson. Chrysanthemum Shows at Kingston-on-Thames (two days) and Tunbridge Wells (two days). Sale of Imported Orchids, at Stevens' Rooms
FRIDAY,	Nov. 17	Chrysanthemum Show at Croydon (two days) Sale of Fruit Trees, at Osborn's Nursery, Hampton, by Protheroe & Morris (two days) Sale of Bulbs and Plants, at the Mart, by Protheroe & Morris.
SATURDAY,	Nov. 18	Chrysanthemum Show at Leicester Sale of Hardy Plants, and Bulbs, at Stevens' Rooms.

A LETTER which appeared in the *Times* a few days ago, with the signature "Chrysanthemum," is at once encouraging and disappointing. The letter was written *àpropos* of the Chrysanthemum show in the Temple Gardens, and the writer, rightly judging that it would be interesting from a scientific and Darwinian point of view to have such information, asks to know how many new varieties have been added to the list since Mr. BROOME started the exhibition some quarter of a century ago. The writer points out in what way such information would be useful in unravelling the course of evolution in this particular plant.

The letter, as we said, is encouraging, because it affords evidence that knowledge and intelligent interest in flowers and their history is gradually permeating among the general public. All can admire the beauty of a flower, but relatively few hitherto have been able to take an intelligent interest in it. People walk through the world with their eyes, if not shut, only half open, and thus deprive themselves of, to say the least, one-half of the pleasure which the intelligent perception of a natural object is calculated to give. You will hear people talk of botany as a dry study—dry, indeed, to those who study it in the wrong way, but abounding in interest and replete with beauty for those who know how properly to use their eyes, and make the best of the information obtained by their means. In looking at a flower for its beauty only, quite independently of its history and adaptation to the work it has to do, how much more is to be enjoyed by him who seeks to understand and appreciate the sources of its beauty, the gradations and harmony of colours, the beauty and symmetry of form, the proportion and arrangement of parts, and so forth.

But in another sense the letter is discouraging. After all that has been done for the last quarter of a century—after all that has been written about the Chrysanthemum—here is a writer, evidently intelligent and interested, but who is equally evidently ignorant of what has been done in this way, and writing to the *Times* upon a subject as to which, if he had referred to a horticultural or botanical paper, he would readily have obtained the information he wants. Still the encouragement far outweighs the disappointment, and we rejoice at the evidence that people are beginning to look at flower-shows as something more than "sights," and on their gardens and their flowers as something more than pretty playthings.

It is not requisite for us here to tell the oft-told history of the Chrysanthemum, but now that another candidate for public favour is about making its appearance—and one so beautiful that when sufficiently known it is sure to become a prime favourite—it may be well to put on record all that we at present know of it.

Every gardener is familiar with the very beautiful everlasting plant known in gardens as Acroclinium roseum, but which is more correctly called Helipterum roseum. Mr. J. C. SCHMIDT, of Erfurt, Mr. BENARY and others have recently sent us specimens of a new form, catalogued as "A. roseum, flore-pleno," and which will, we suppose, be dubbed the double Acroclinium, though, as we shall point out, it is by no means a "double" flower in the more correct and restricted application of the term. The structure of the ordinary Helipterum or Acroclinium is pretty much that of other so-called everlasting flowers—that is to say, the small and relatively inconspicuous tubular flowers are massed together into close heads surrounded by several rows of overlapping scales of a beautifuly rosy-pink colour. Between the flowers themselves are also scales like those on the outside of the head, and indeed continuous with them. These scales are not always present, and when present they are generally small. But in the new variety these inter-floral scales, if we may so call them, are largely developed and of the same lovely rose colour as those on the outside.

We have then in this so-called double Acroclinium the same condition of things as occurs in the green Dahlia, only in that flower the scales are green and leaf-like, here they are rose-coloured and petaloid. Mr. SCHMIDT tells us, in a letter which we print in another column, that he selected this new variety from the ordinary form, and "improved" it by repeated selection in the way familiar to raisers, and which "Chrysanthemum" of the *Times* would be interested in knowing. The purport of the scales is, no doubt, two-fold—they protect the flowers from cold or wet, and by their bright coloration they attract the insects presumably necessary for the formation of abundant and healthy seedlings.

To those who look upon a flower simply for its beauty's sake, as well as to those who enjoy the higher mental delights a flower is capable of affording, we commend this very lovely variety, in the full confidence that it will meet with general appreciation.

—— PLANT NOMENCLATURE.—Professor REICHENBACH desires us to say that he is not responsible for the addition of his well known symbol at the end of the plant described by him on p. 586. This is true. We admit that we attached the Professor's initials, and we did so because he was the one to describe the species. The compliment is the same, and no one would accuse the Professor of self-glorification, neither would any botanist attach any significance to the description with Mr. SANDER's name attached to it. The suffix to the name of a species of the initials of the botanist who describes it of itself conveys, and is intended to convey, no other meaning than the record that the plant was described by the author in question, or that the name given to the plant is the one which in the author's opinion is the right one. In this case it was evident from the context that Professor REICHENBACH was the one to describe the species, and that he named it at the request of Mr. SANDER. To have adopted any other plan would have been to cast responsibility on the wrong person, and, as we think, to infringe the canon laws of nomenclature.

—— A SEEDLING OAK.—A batch of seedling Oaks may now be seen in Messrs. J. CHEAL & SONS nursery which have developed some beautifully coloured leaves, and one especially is of distinct habit from the rest. They are all seedlings from the Scarlet Oak, but the one in question appears to be well worth looking after, as it is thought, and may prove. to be a distinct variety.

—— TOMATO PRESIDENT GARFIELD.—At the monthly meeting of the Scottish Horticultural Association, held in Edinburgh on Tuesday, the 7th inst., Mr. GEORGE GOODFELLOW, The Gardens, Caldwell House, Glasgow, exhibited a very fine example of the above weighing 2 lb. 6 oz.

—— ROYAL MANCHESTER AND NORTHERN COUNTIES BOTANICAL AND HORTICULTURAL SOCIETY.—The following are the dates selected for this Society's meetings and shows in 1883:—Meetings in the Town Hall, March 20 and April 24; National Horticultural Exhibition in the Gardens at Old Trafford, May 11; Rose Show at the Gardens, July 21; Cottagers' Show at the Gardens, September 8; Chrysanthemum Show at the Town Hall, November 20.

—— SEAFORTHIA ELEGANS. — The *Illustration Horticole* notes that the finest specimen of this Palm in Europe has been purchased of the Compagnie Continentale by the King of BAVARIA. The packing-case, we are told, was more than 12 mètres long (a mètre is about a yard and a quarter).

—— LABELS FOR PLANTS.—In addition to the prize offered by Mr. G. F. WILSON, F.R.S., particulars of which have already been announced, a prize of five guineas has been placed at the disposal of the Council of the Society of Arts by Mr. E. G. LODER for the best permanent border label suitable for private gardens the cost of which should not exceed £4 per thousand. Both awards will be made on the recommendation of the committee appointed for the purpose by the Council.

—— FRANKENTHAL GRAPE.—Count ODART, the well known "Ampelograph," is stated in the *Revue Horticole* to have given his opinion that this Grape is only esteemed by *frelons* (wasps) and the inhabitants of Paris.

—— FLORAL SPONSORS. — Amusing as are the horticultural blunders occasionally perpetrated by our contemporaries of the general Press, seldom has one more absurd been made than was found in one of the "pictorials" of last week, in which the writer, in commenting upon the Temple displays of Chrysanthemums, wonders upon what principle the "Benchers" proceed in naming the varieties there so admirably grown. White Venus, being beautifully soft, and a well-rounded floral ball, is thought to be an appropriate designation; an opinion, by-the-bye, that is, from an artistic point of view, most heretical. VENUS, whether white or black, is invariably presented in form something more natural and graceful than as a rounded ball; and did the barristers furnish their Chrysanthemums with names they would probably have thought that "a soft round ball" would have been not inappropriately named "The Client." But our critic, whilst satisfied with the embodiment of the evening goddess, carps at the selection of a rakishly dishevelled red flower as the embodiment of the Prince of WALES. Of course the absurdity of such an appellation is evident when we remember that his Royal Highness is neither red, rakish, nor dishevelled; and did the responsibility of naming Chrysanthemums rest with the Benchers, we may be sure that they would have exhibited a more excellent taste. But the real absurdity of the critique is found in the amusing error into which the writer has fallen when he assumes that the barristers find the names for their beautiful flowers. Probably many persons have from time to time been perplexed in endeavouring to comprehend how plants have come by their names, and not least have marvelled at the singular taste—or, rather, lack of it—oft displayed in their selection, but few have fallen into so egregious an error as has our pictorial critic. The naming of florists' flowers, especially where rapidly produced, affords tests of the taste and knowledge of raisers, out of which ordeal they do not always come favourably. Too many find their prototype in the fickle-minded maid who in wandering through the Willow bed to find the handsomest wand foolishly selected the worst to be found at last.

—— BOUVARDIA DAZZLER.—From Messrs. HUGH LOW & CO. we have received a superbly flowered plant, in a 48-pot, of the fine new Bouvardia Dazzler,

for which Mr. W. Balchin, of Hassock's Gate, received a First-class Certificate from the Floral Committee two years ago. The style and habit of the plant proclaim its character as a good grower and free bloomer, and its colour, a pure bright scarlet, is a most welcome tint at this season of the year. The trusses are not large, but of a size that renders them invaluable for bouquet work.

—— The Planting Season.—To a great many owners of gardens, beginners in the art of gardening, the long lists of good things that are recommended must be perplexing. Those who are in quest of knowledge as regards what to plant are often as badly off for information as to how and where to plant it. Hence we find the most egregious blunders committed from time to time by amateurs and others calling themselves gardeners who from charitable motives we will say no more about. But people who have no idea of the practical themselves shou'd go about their business differently. Nurserymen would only be too glad to send competent men who would not only plant things in their right places, but would also plant them properly, and at very little more cost than is charged by those whose principal qualification is a smooth tongue and a rather profuse habit of bowing, which are poor compensation for the maltreatment of valuable plants. Here is an example of what we were eye-witness to about this time last year. A new garden, a fruit garden, was being laid-out and planted, and the gardener—so he was called—planted the trees in a downpour of rain, when the soil, which was heavy, was like putty. The tree's roots were put in a bunch into a hole, and at least 3 inches of the stem of the tree along with them; the soil was then pounded as hard as possible over the roots; and often while the baking process was going on we would have enjoyed a quiet word with the gardener! Now can these trees by any possibility succeed?—and if they do not, who is to blame?

—— Coronilla glauca.—A nice little batch of this old favourite plant, seen in flower a few days ago in Messrs. J. Cheal & Son's nursery, Crawley, Sussex, remind us of the change that has taken place in plant-growing during the last decade, to go no further back. Plants that used to be grown by the dozen are now grown by the hundred, and many good and useful old plants have grown very scarce. The subject of this notice is one of them, and yet it makes a conspicuous greenhouse plant with very little care. Messrs. Cheal & Sons are growing it in small plants of a useful size for sitting-rooms or window furnishing, and it certainly makes a prettier object than the Cytisus, which is grown in thousands for a similar purpose by market growers.

—— Omphalodes verna.—Looking through an old-fashioned Kentish flower garden, a few days ago, we came upon some large patches of this charming creeping Forget-me-not that were flowering freely, and a few sprays greatly helped by means of the rich blue of its blossoms a very pretty posy picked in the open air at the end of October. The plants were growing in a stiff sandy loam, partly in the shade of evergreens, and here it flourished with a freedom unknown in gardens where special attempts are made to cultivate this lovely spring-flowering plant. With it we gathered blooms of double lilac and double white and the common yellow Primroses, Marigold Meteor, Nigella hispanica, Viola Bluebell Improved, Pansy Bluebeard, Anemones of the A. japonica type, fancy Pansies, China Roses, Mignonette, Chrysanthemums, and Fuchsia gracilis. And when these flowers were arranged in a small centre-piece, and occupied the centre of the tea-table, all were delighted that so much of beauty yet appeared in the outdoor garden with winter coming on so rapidly. But there was no flower that could match the simple grace of the lovely blue Omphalodes.

—— Aster (Diplopappus) chrysophylla.—Cheerless indeed have our gardens and grounds begun to look since the late destructive storm, which has been most severe in its action upon trees, and blew Dahlias and such-like tender plants into shreds in most places, whether they were sheltered or not. It must therefore be interesting to notice such plants as from their habit and vigour of growth are capable of withstanding the fury of a gale, and give us good effects after a deluge of rain. The plant in question is one that no kind of weather seems to affect, and its milky-white flowers, and the golden hue of its stems, render it a most useful and attractive plant for grouping in beds with a view to producing late autumn effects.

—— Leeks for Market.—It is worthy of record that Leeks appear to be present in the market gardens round London much more prominently than is generally seen, and the season proved one highly favourable to their rapid and fine development; so



Fig. 109.—Ornamental trees at Slebeck Park, Pembrokeshire. (see p. 621.)

much so that early in October roots of large size were being dug and sent to market. It would seem that the Leek is more popular in London circles than it formerly was, and it is perhaps not to be wondered at that so delicious a vegetable, when properly prepared and served, should be in brisk demand. The practice among the London market gardeners appears to be to sow the seed early in March in raised beds under cold frames, and to transplant into highly manured ground in showery weather, and as soon as it can conveniently be done. They are planted out in lines a foot to 15 inches apart, and pretty close together in the lines. The Leek must have well manured ground, so that the plants may be encouraged to grow into size as soon as possible. Those who grow Leeks for exhibition plant out more widely apart, and they water their plants freely with liquid-manure during the season. A great deal of the Leek seed sold in this country comes from the south of France; the seeds of the Musselburgh and other fine varieties are grown in this country.

—— ASTER AMELLUS BESSARABICUS. — This variety deserves a place in the choicest collection of border plants; we are not, indeed, sure whether a whole mass of such colour would not be a good way of spreading the popularity of such flowers, which do not seem to make headway among the masses owing to the existence of so many worthless varieties. After the gale of the 24th ult., accompanied as it was by heavy showers that knocked tender plants and flowers to pieces, the above plant, from its stout vigorous habit, was not in any way injuriously affected, and looked as bright after the storm as if the sun had been shining and the weather calm for a month.

—— NORTH OF SCOTLAND HORTICULTURAL ASSOCIATION.—The following papers are announced to be read at the monthly meetings of this Association during the present session: — November 17, "The Furnishing of Cut Flowers and Ferns during the Autumn and Winter Months," A. LAWSON; "Novelties of the Past Season," A. GRIGOR. December 15, "Horticulture, Past and Present," D. DARLING; "The Culture of the Onion." A. GREIG, 1883. —January 19, "Mixed Flower Gardening *v.* the Bedding-out System," "Mixed Flower Gardening," J. KERR. February 16, "Plants suitable for Table Decoration," JAMES COCKER; "The Cultivation of Celery for Exhibition," G. WILSON. March 16, "The Relationship of Animals to Plants; or the Affinity of Plants to Animals," ROBERTSON MUNRO; "Ferns and Fern Culture, with Notes on BRITTEN'S recently published work on European Ferns," A. ROBSON. April 20, "Fertilised Moss," J. SIM. May 18, "The Beauty and Hardiness of Japanese Plants," J. FORTUNE. June 15, "Is the taste for Single Flowers, such as Dahlias, Marguerites, Sunflowers, &c., in the right direction as bearing on Horticulture?—with some explanation how the taste for such has been brought about," JAMES HENDERSON; "Orchids," J. F. SMITH. August 17, "The Cultivation of the Carnation," J. MINTY; "Some Remarks on the Culture of Vegetables," A. MORTIMER.

—— TRIPOLI ONIONS.—It is the rule to sow Tripoli Onions about the second or third week in August, raising the seed in a bed, and then planting out permanently in a prepared bed when the plants are ready. The great advantage of sowing in autumn is that good and useful Onions can be had for culinary purposes, to come in between those stored away for winter use—which by the end of the spring are exhausted—and previous to the early spring sown varieties coming into use. The usual course is to transplant Tripoli Onions early in spring. One very successful grower prepares his beds in October by throwing out the soil 6 inches deep all the length and width of the intended bed, laying the soil in a ridge on either side, and these ridges remain undisturbed all the winter. Then, as much rotten dung as will fill up the bed to its natural level if trodden down solid, and this is well dug into the soil to the depth of 18 inches; and it is kept turned over during the winter. At the end of February or beginning of March, when the weather is favourable, transplanting is done, the preparatory process being to dig the bed well over once more. Then the soil is trodden down until it is pretty solid, and then some 3 inches of the soil from the ridges is laid on the surface. The reason for adding this is, that it is found the Onions are not so liable to maggots, mould, or rot, as they would be if planted directly on the manured soil. Again the surface is trodden firmly, then raked over in order to loosen it a little on the surface, and to make it smooth and fine. The bed thus prepared, the Onions are planted in rows, about 13 inches between the rows and 9 inches apart in the rows. At the time of planting the Onions are covered with half an inch of soil, and when they commence to grow they soon emerge from the soil and swell into size rapidly. On early soil Tripoli Onions sown where they are to stand to mature, and on well prepared ground, will turn in almost if not quite as early as when sown in autumn and transplanted. The late Mr. JOHN STANDISH used to demonstrate this fact in a remarkable manner at the Royal Nursery at Ascot. On the light sandy soil of the Ascot nurseries, Tripoli Onions thus sown grew rapidly into a great size, especially the white Italian, the early red Italian, and the Giant Rocca, three of the best varieties that gardeners can cultivate.

—— FREESIAS.—These belong to a genus of Cape bulbs that appear to be just now attracting some attention. Two especially are to be commended, viz., Leitchtlinii and refracta alba. A very fine variety named Leichtlinii major is said to have originated by crossing two varieties which came from the Cape, but fuller particulars of the parentage are not forthcoming. The large flowers are cream-coloured, marbled or mottled with orange, and are borne in a kind of wing or line of several flowers, two or three at least of which issue from a stiff stem. Refracta alba has pure white flowers, blotched with yellow on the lower petal, and it is said to be exceedingly fragrant. The Freesias are particularly recommended for producing flowers for cutting from, and the unexpanded buds continue to open for days after the sprays have been placed in water. In regard to the cultivation of these bulbs the most suitable compost is one made up of two parts of loam, one part leaf-soil, and one part peat, with the addition of silver-sand to render the whole thoroughly porous. The bulbs may be potted at any time from August to the end of October. The pots can be stood out-of-doors, under the shelter of a wall, if possible, and for the first month plunged in a bed of fine ashes or cocoa-nut fibre. When they start into growth this covering should be removed. When frost threatens the plants should be removed to a cool greenhouse, and given a light and airy position. But little water is required until the grass-like foliage appears. In December occasional waterings with weak liquid manure-water will be found beneficial.

—— CYANOTIS BARBATA.—This is a pretty Spider-wort, with narrow leaves and dark blue flowers, the stamens with rather long upright filaments, densely clothed with deep blue hairs. It flowers freely in small pots, and at a rather dull season, and is, moreover, a plant of the easiest cultivation. As an interesting and decidedly pretty greenhouse plant, it can be recommended for general cultivation. It is a native of India, and was received at Kew from one of the leading London nurseries under the name of Tradescantia species.

—— NERINE FILIFOLIA.—Most of the Nerines are really handsome plants, and worthy of general cultivation. All are natives of South Africa, and are by no means difficult to grow. The present species is a graceful plant, with very narrow Rush-like leaves and scapes, a foot or more in height, bearing umbels of rose-red flowers; it is now flowering in the Cape-house at Kew.

—— ADVENTITIOUS BUDS.—M. CARRIÈRE gives, in the last number of the *Revue Horticole*, a series of illustrations showing the production of adventitious buds from the interior of the tubers of Potatos, a condition of things of which we have given frequent illustrations.

—— PAROCHETUS COMMUNIS.—This charming little creeper should be much more generally grown and more widely known than seems to be the case at present. In habit it is not unlike our native Wood Sorrel, Oxalis Acetosella; the leaves are prettily marked, and its beautiful cobalt-blue pea-shaped flowers are borne (either singly or in pairs) on stalks rather longer than the leaves. These begin to open in late autumn, after nearly all other outdoor plants have passed. A fine turf of this species is now one of the most striking ornaments in Mr. STEVENS' wonderful garden at Byfleet. It makes a beautiful subject for hanging-baskets, and when grown in pots and moved indoors at the end of the season there is, of course, no fear of its flowers being ruined by cold or excessive rain. It is a native of alpine, temperate, and subtropical Himalaya from Simla to Assam, and flourishes at altitudes of from 4000 to 13,000 feet. It is also found in Ceylon, Burma, Java, Zambesiland, &c.

—— NEWCASTLE-UPON-TYNE BOTANICAL AND HORTICULTURAL SOCIETY.—We have received the schedule of this Society's arrangements and prizes for 1883. Owing to the Town Hall being engaged the spring show cannot be held until May 2 and 3. The summer exhibition will be held, as usual, in Leazes Park, the dates selected being July 25 and two following days.

—— BEGONIA SOCOTRANA, figured and described in *Gardeners' Chronicle*, vol. xv., tab. i., is perhaps by far the most beautiful Begonia, either species or hybrid, which flowers during the dull late autumn and early winter months. Its fine peltate leaves and large rose-pink flowers render it a very striking and most distinct plant. No doubt before long it will have given rise to quite a new race of interesting and handsome hybrids, It is now flowering finely at Kew.

—— SENECIO PULCHER.—Hardly more than a dozen years have elapsed since this fine herbaceous plant was introduced to British gardens by Mr. TYERMAN, who first flowered it in 1871. It still remains by far the handsomest Groundsel hitherto discovered, and in all probability is likely to maintain that position. It has very large flower-heads, with large golden discs and bright red-purple rays. Its native country is South Brazil. A nice specimen in fine bloom is now the most attractive object on the new rockery at Kew.

—— HOUSE DECORATION. — A garden, whether large or small, that is fairly stocked with Conifers and other ornamental plants and flowering shrubs, contains much that is valuable, and that, judiciously used, will relieve the gardener of a part of the incubus which indoor decoration entails upon him at this season. There are many shrubs that flower through the autumn and on into winter that are very effective for certain purposes of decoration, such for instance as the filling of tall glasses, which look better in many large rooms than the choicest of plants. They have this advantage also, that you can arrange them as often as you like to the exact size that you want them. Let us give an illustration. Suppose the glasses are 3 feet in height, with a proportionate base, and the tube gradually widening to the top, where the margin becomes reflexed, we begin by filling the tube with clear water. We next obtain a few sprays—the tips of the branches—of Cupressus, placing the tops downwards, until the tube is closely packed with green from top to bottom. This arrangement makes the tube—or, shall we call it the stem of the glass?—quite bright and green. But there is another object in view as well. We want a foundation, a hold, for the stems of the branches that are to form the head, and we wish them entirely concealed from the eye. The head, or top, should be in proportion to the height of the glass and the size of the room, and if there is choice of material, it should be selected so as to be in contrast with the prevailing colour of the walls of the room. A healthy glaucous green looks well anywhere, and against the most cheerless surroundings we ever saw, therefore we should begin by placing a row of green drooping branches of Cupressus Lawsoniana, cut to the proper length, to hang over the margin of the glass, and continue with branches of various colours. Such plants as Aucubas, Leycesteria formosa and sprays of Cotoneaster that are now beautifully berried, especially Cotoneaster affinis, would yield a good effect. But even a glass dressed in this way would look tame without being touched up a little. This, however, is easily done, by procuring a few plumes of Pampas-grass—about three would be enough for a single glass, and let the plumes have an oblique position at equal distances above the general body of the material to break the formality of the arrangement. Then insert a few of the drooping leaves of the Pampas-grass among the other shoots, so as to hang gracefully over the margin of all, and drape the stem of the glass with Ivy and you have a very pretty ornament for a room which will look well even

in a dark corner where a good plant would scarcely be seen.

—— Microcachrys tetragona.—In the Winter Garden at Kew a good specimen of this rare and curious Conifer is in fine fruit, and is at the present time one of the most striking plants in the house. Probably in few places except Kew can this plant be found in Britain; it is, however, well worth growing for cool-house decoration. A good figure was given in the *Botanical Magazine* many years ago. It is there spoken of as "Surely one of the most remarkable of Conifers, and is in other respects one of the most interesting, being extremely rare in its native country, and presenting the unique character in the order of bearing a fleshy, brilliantly-coloured cone. It is true that we have in the Yew, and in various species of Podocarpus, &c., fleshy, highly-coloured fruits, but a Conifer with the scales themselves of young cones assuming a pulpy texture, semi-transparent consistence, and bright colour, is unique in the order." It inhabits the tops of a very few mountains of Tasmania, where it forms low straggling bushes. The female plant is, of course, the handsomer; the male does not look unlike some of the hardy Junipers, &c.

—— Orange Culture in Florida.—The general progress of Pensacola, United States of America, seems to be attracting attention just now in that part of America. Florida is spoken of as the health resort of America. "For the invalid," it is said, "Florida will become in many respects what Italy is to the rest of Europe. Its climate being particularly suited to those afflicted with pulmonary diseases, thousands resort there every winter. The attractions of Florida are abundant for every one, young or old, well or infirm. There is every inducement for a sportsman, as game and fish abound everywhere. The agriculturists will find that they can grow everything at all seasons of the year; the fruit growers are making fortunes." Orange groves, it seems, are being prepared in large numbers, and buildings erected for new settlers. "The raising of Orange seedlings for the groves, the clearing of large tracts of land, fencing, setting out the trees, planting gardens, building railroads, mills, factories, schoolhouses, churches, and making hundreds and thousands of boxes for transporting the fruit during the winter months, and the general prosperity, gives all disposed plenty of work beyond a doubt." The winter of 1880-81 gave ample proof of the localities best suited to the cultivation of the Orange. For forty-eight years the mercury had not marked such a low degree of temperature in the South; Orange trees that were planted a hundred years ago in Louisiana were killed. In Florida the Orange trees were damaged from the border of Georgia in lat. 30° 21′ N. to lat. 29° S., the frost being very little felt in Orange County. At this point and south are situated at present the finest Orange groves in Florida, and if, during such an unprecedented cold winter the trees were only slightly hurt, no fear will exist for their damage hereafter. North of Orange County there is a risk in planting the Orange, Lemon, Lime, Citron, Guava, Fig, Banana, or Pine-apple, but not so in Orange County. Strawberries and Grapes also come to perfection, the former ripening in January, and continuing till May. The climate is all that could be desired. Sudden climatic changes are rare. The thermometer in summer has been seen at 97°, but never higher, while in winter it is rare to find it as low as 34°. "Most excellent land for an Orange grove near transportation facilities can be purchased at 25 dols. per acre, unless fronting on one of the numerous and beautiful lakes: 100 dols. per acre is paid for such land. Ten acres is the average quantity of land bought for Orange groves. Having selected land of a dark grey colour, underlaid with yellow clay or yellow sand as a subsoil, the first thing to be done is to clear it, grub it, and break it up thoroughly, then fence it in. The soil must then be prepared with manure according to the necessity of the soil selected. Next purchase 600 3-year-old budded Orange trees, now selling (May, 1882) at 65 to 70 cents each. These have to be hauled, set out by experienced hands, and watered. The best months for planting are from December to March, after rain. . . . During the eighth year the trees, when cared for as described, bloom and produce on an average fifty Oranges each, or, say, 30,000 Oranges, which sell for 1½ c. apiece. Contractors agree to pick them, and give 1 c. for each Orange, sometimes more; that would give 300 dols. In the ninth year the yield of fruit is generally double, or 600 dols., and in the tenth year, in all probability, the return would be 1200 dols., or £247. The trees in some of the groves, eleven and twelve years old, are now yielding 10 dols. per tree, or 6000 dols. (£1235), which is certainly a good return for an outlay of £588 and some patience." To those who might require a much more rapid return for their investment, the growth of Orange seedlings is recommended. During the past eight years 25,000,000 Orange trees have been planted in Florida. Attention is drawn to the fact that, while in European Orange gardens the trees do not fruit until they are sixteen years old or more, they begin to bear at eight years in Florida.

—— Pancratium fragrans.—A fine plant of the above is now in flower in Mr. Turner's nursery, Slough. The single spike is bearing nine large handsomely developed flowers, which, either used singly or in a cluster as borne upon a spike, are so showy at this period of the year. Perhaps the flowers are more useful as a centre to a bouquet than for any other purpose.

—— Publications Received.—*Elements of Sylviculture*, second edition, translated from the French of the late M. G. Bagneris (Wm. Rider & Son).—*Amateur Work*, Vol. I. (Ward, Lock & Co.).

—— The Weather.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending Nov. 6, issued by the Meteorological Office, London:—The weather has continued cloudy and very rainy in all parts of the kingdom. Over the "Wheat-producing districts" the rainfall has been less heavy than it was last week, but in all the "grazing" districts it has been much heavier. Thunderstorms occurred on the 1st or 2d at several of our north-western stations, and on the 4th in the east of England. The temperature, which has been much higher than of late, has exceeded the mean in all districts. Over eastern, central, and southern England the excess was as much as 5° or 6°, in "Scotland, W.," and the other parts of England, 4°, and in Ireland and the east of Scotland from 2° to 3°. The thermometer was generally highest on the 5th, when it rose to 60° or 61° in nearly all the English districts, to 59° in Ireland, and to 54° and 58° respectively in the east and west of England. The minima were nowhere so low as those of last week, and varied from 40° in "England, N.W.," and "England, S.," to 30° in the east of Scotland. Rainfall has again been more than the mean in all districts, the excess being considerable at all the western stations. Bright sunshine has been much less prevalent than during last week in Ireland, Scotland, and the western and extreme north-eastern parts of England, but in "England, S." and the "Midland Counties" a slight increase in duration is reported. The percentages ranged from 11° in "England, S.W.," and 13° in "Scotland, W.," to 31° in "England, S." Depressions observed:—Numerous disturbances, some of which were very deep, have again traversed our islands and their neighbourhood in an easterly or north-easterly direction, bringing a succession of strong winds or gales from between south and west to all parts of the kingdom. The most important depressions were those of the 1st and 3d.

—— Gardening Appointments.—Mr. James Symons, from Levernholm Gardens, Glasgow, as Gardener to the Right Hon. Lord Young, Silverknowes, Davidson's Mains, Edinburgh.—Mr. David Hepburn, Gardener at Restalrig Park, Leith, as Gardener to M. H. Houston, Esq., Beechill, Haddington.—Mr. Robert Ballantine, Gardener at Scaurs, Jedburgh, as Gardener to Mrs. Hunter Campbell, Ormidale, Argyllshire.—Mr. James Martin, from Drylaw House, Davidson's Mains, Midlothian, as Gardener to Mrs. Ferrier, Belsyde, Linlithgow. (All through Messrs. Downie & Laird.)—Mr. George Drummond, lately Foreman at Broxmouth Park, Dunbar, N.B., as Gardener to Major-General Feilden, M.P., Witton Park, Blackburn, Lancashire.—Mr. R. Frisby, formerly Gardener to the late Sir F. H. Bathurst, Bart., Clarendon Park, Salisbury, as Gardener at Worden Hall, Preston.

GRAPES AT THE EDINBURGH SHOW.

At the International Fruit and Flower Shows held at Edinburgh, Grapes have always formed an important feature in the display. At the recent show they were exhibited in much greater numbers, and on an average of as good quality as ever they have been seen on any former occasion. Some classes, Hamburghs in particular, have been seen finer at previous shows; but taking the enormous collection of Grapes exhibited altogether, it is doubtful if ever a better average has been seen, certainly not at any of the great fruit shows that have been held during the last quarter of a century, and the Royal Caledonian Horticultural Society must be congratulated upon drawing forth such an extensive and splendid display. Evidently to bring out variety and to exhibit the leading sorts of Grapes at their best, the Society is in the habit of offering prizes for special classes or sorts of Grapes, the number at the recent show amounting to a dozen. As it may be interesting to many to learn the position in popular favour which the Grapes occupy for which the Society especially offered prizes, the following analysis has been drawn up, from figures collected at the show:—

Analysis of the Grapes Exhibited at the Great International Show, Edinburgh, 1882.

Description of Grapes.	Classes.	Prizes.	Entries.	Bunches.	Value of Prizes.	Rate per Bunch.
					£ s. d.	£ s. d.
1. Muscat of Alexandria	4	9	66	97	13 10 0	0 2 9
2. Alicante	4	9	58	86	13 10 0	0 3 1
3. Black Hamburgh	4	9	56	83	13 10 0	0 3 3
4. Lady Downe's	4	9	50	76	13 10 0	0 3 6
5. Gros Colmar	1	3	14	28	6 0 0	0 4 3
6. Madresfield Court	2	5	16	27	7 10 0	0 5 6
7. Alnwick Seedling	1	2	8	8	3 0 0	0 7 6
8. Muscat Hamburgh	1	3	6	12	6 0 0	0 10 0
9. Golden Champion	2	4	7	7	4 10 0	0 12 10
10. Mrs. Pearson	1	2	4	4	3 0 0	0 15 0
11. Gros Maroc	1	2	1	4	3 0 0	0 15 0
12. Duke of Buccleuch	2	5	3	4	7 10 0	1 17 6
Totals	27	62	292	436	94 10 0	0 4 9
Any other White	2	5	33	57	7 10 0	0 2 7
Any other Black	2	5	23	41	7 10 0	0 3 7
Finest Flavour, Black	1	2	17	17	3 0 0	0 3 6
Finest Flavour, White	1	2	15	15	3 0 0	0 4 0
Finest Bloom	2	4	33	33	4 10 0	0 2 3
Heaviest Black	1	2	6	6	3 0 0	0 10 0
Heaviest White	1	2	5	5	3 0 0	0 12 0
Twelve bunches, six sorts	1	3	12	144	30 0 0	0 4 2
Six bunches, six sorts	1	3	12	72	16 0 0	0 4 5
Four bunches, four sorts	1	3	13	52	10 0 0	0 3 10
Six bunches, three sorts	1	3	6	36	8 15 0	0 4 10
Totals	41	95	467	914	190 15 0	0 4 2

As might be anticipated Muscat of Alexandria worthily tops the list as the most popular of "show Grapes," as well as being first-class in every point which constitutes a good Grape, which undoubtedly secured for it the Veitch Memorial Medal, awarded to the best white Grape in the show. Alicante, in point of flavour only second-rate, stands second on the list, owing, no doubt, to its being an easy Grape to grow, and September being the height of its season. In a better year for Hamburghs, which are third on the list, although only by a shade lower than Alicante, they would certainly hold second place, and probably might be first. The middle of September, as everybody knows, is rather late to see Hamburghs at their best, and this season has evidently been unfavourable to them. Lady Downe's figures fourth in the list, the position it holds among Grapes generally, being due to its first-rate keeping properties. It is, however, closely followed by Gros Colmar, which has risen rapidly in popular favour, especially as a market Grape, although of very indifferent flavour. Madresfield Court, with its many excellent qualities, is sixth, and deserves its place, and the newer Grape, Alnwick

Seedling, seems to be taking a good position. The remaining four on the list deserve a better position when seen at their best, but here they do not figure to advantage. There are several other good Grapes for which the Society might offer special prizes, so as to bring out their merits, and add to the attractions of future shows. The Frontignan and Chasselas classes are worthy of some encouragement in respect to their very excellent flavour; and such generally useful and easily grown Grapes as Buckland Sweetwater and Foster's Seedling, with such good sorts as Mrs. Pince's Black Muscat, Canon Hall Muscat, Barbarossa (which, by the way, carried off the Veitch Memorial Medal as the best black Grape in the show) [see p. 621], Trentham Black, and Black Prince, are surely of some account, as they are frequently seen in good condition in gardens throughout the country. By offering special prizes for some of the large-bunched kinds—such as Barbarossa and Trebbiano—it would ensure their being shown in a ripe state, which they so seldom are when mixed up with others in collections.

On the whole, the half-dozen sorts of Grapes at the top of the list, with Buckland Sweetwater and Foster's Seedling, are the popular Grapes of the day, and societies desiring to make a large and fine display of Grapes will do well to offer liberal prizes for these kinds. A prize rate of about 5*s.* per bunch is seen to bring out these in abundance, and prizes at the rate of 10*s.* per bunch ought to be sufficient to bring out the merits of the rarest specialities. This is conclusively shown by the totals in the above analysis, where about 4*s.* 9*d.* is the average rate per bunch for the twelve specially named sorts of Grapes, and only about 4*s.* 2*d.* per bunch for the whole of the Grape classes, exclusive of seedlings, of which there were four entries for prizes amounting to £7, or at a rate of 35*s.* per bunch—a rather high figure for nothing particularly noteworthy. *X.*

PLANT PORTRAITS.

ANTHURIUM GUSTAVI, Regel, *Gartenflora*, t. 1076.—Leaves tufted, on long, subterete petioles, blades cordate ovate, glabrous, with about thirteen pairs of nerves on either side of the midrib.

APHELANDRA CHAMISSOANA, Nees, *Bot. Mag.*, June, t. 6227.—An Acanthaceous stove shrub, with lanceolate leaves tapering to the stalk, the blades dark green, with the veins picked out with greenish-white; flowers large, yellow, in terminal clusters, with toothed bracts of the same colour. Brazil. It is the A. punctata of Mr. Bull's catalogue.

BILBERGIA EUPHEMIÆ, E. Morr., Bromeliaceæ, *Bot. Mag.*, June, t. 6632.—Leaves sheathing, lanceolate, toothed, green; spikes pendulous, bracts cream-coloured, corollas violet. Brazil. Hort. Kew.

BOLLEA CŒLESTIS, Rchb. f., *Gartenflora*, t. 1675, see *Gard. Chron.* 1876, p. 756; *Bot. Mag.*, 1879, t. 6458.

CROTON MUSAICUS, *Revue Horticole*, June 1.—Leaves narrow, lanceolate, with a crimson disc and margin, the areole of the leaf filled in with crescentic green spots.

DRACÆNA GOLDIEANA, Baker, Liliaceæ, *Bot. Mag*, June, t. 6630.—See *Gard. Chron.* 1882, vol. xvii., p. 42.

HELICONIA TRIUMPHANS, Hort. Linden, *Illust. Hort.*, t. 448.—A Musaceous plant, with long-stalked, cordate, oblong-acute leaves, deep green, banded transversely with black bars. Sumatra.

KENTIA LUCIANI, *Illust. Hort.*, t. 451.—A greenhouse Palm, with fine pinnate, arching fronds.

OPUNTIA STRICTA, Haworth, *Gartenflora*, May, 1882, t. 1082.

PONTHIEVA MACULATA, Lindl.; Hook. ., *Bot. Mag.*, t. 6637.—A remarkable terrestrial Orchid, described in these columns by Mr. N. E. Brown, at pp. 496, 562, vol. xvii.

SCROPHULARIA CHRYSANTHA, Jaub., Scrophulariaceæ, *Bot. Mag.*, June, t. 6629.—Herbaceous; leaves stalked, cordate, ovate acute, rugose, dentate; flowers with small urceolate, yellow corollas, in terminal clusters. Caucasus, Armenia. Hort. Kew.

STACHYURUS PRÆCOX, Sieb. and Zucc., Ternstromiaceæ, *Bot. Mag.*, June, t. 6631.—Climber, with broadly lanceolate acuminate, rugose, dentate leaves; and long spikes of pale greenish flowers. Japan. Hort. Kew.

VIOLA PEDUNCULATA, Torr. et Gray, *Flore des Serres*, t. 2426.—A large yellow scentless flowered Viola: see *Bot. Mag.*, t. 5004.

ACROCLINIUM ROSEUM.

THE single Helipterum (Acroclinium roseum), a native of Texas, was imported into Europe not so very long ago, and immediately gained the favour of nearly every one who saw it. Especially the bouquetists and wreath-makers found it to be a very good addition, and used the little pink-coloured flowers freely to fill baskets, arrange bouquets, and for general flower-work. Six years since I discovered amongst the Acrocliniums which I cultivated on a space of 10 to 12 acres a few plants, the flowers of which showed a slight inclination to become double. These few plants I picked out, and with the greatest



FIG. 11.—THE "DOUBLE" ACROCLINIUM: FLOWERS ROSE-COLOURED.

care I selected again and again the proper plants, so as to obtain a double flower.

I have now succeeded in getting this novelty nearly constant. Only about 25 per cent. of the seeds sown last harvest from good double flowers, turned out single flowers. After a period of six years' unceasing care, I offer my new Acrolinium roseum flore-pleno



FIG. 111.—THE "SINGLE" ACROCLINIUM.

(J. C. Schmidt) as a very valuable addition to the class of everlasting flowers.

The single Acroclinium being a very favourite flower, without which the composition of flower-work cannot be effected, the new Acroclinium roseum flore-pleno will doubtless obtain still more favour from consumers, as in the case of the forms of Helichrysum and Xeranthemum, of which flowers the double varieties are always preferred to single ones.

The demand for material to make wreaths and bouquets of dried flowers is increasing from year to year, and every good novelty in this department is generally accepted with great satisfaction. *J. C. Schmidt, Erfurt.*

PITMASTON DUCHESS PEAR.—Mr. J. Whitfield, Beechwood, Aigburth, near Liverpool, informs us that on Monday he gathered a fruit of this Pear which weighed 25¼ oz., from a cordon tree purchased last November.

NEW PLANTS CERTIFICATED

BY THE ROYAL BOTANIC SOCIETY, 1882.

**** *B.C., Botanical Certificate; F.C., Floral Certificate; both being equal to a First-class Certificate.*

Abutilon Brilliant .. .. George, March 29—F.C.
,, Emperor .. .. .. George, March 29—F.C.
Acer cratægifolium Veitchii .. Veitch, May 17—B.C.
,, japonicum aureum .. Veitch, May 17—B.C.
,, polymorphum decompositum .. .. .. Veitch, May 17—B.C.
,, ,, linearifolium .. Veitch, May 17—B.C.
,, ,, ribefolium .. .. Veitch, May 17—B.C.
Adiantum dolabriforme .. B. S. Williams, May 17—B.C.
,, Lathomi .. .. .. B. S. Williams, March 29—B.C.
,, Legrandii .. .. .. Veitch, July 5—B.C.
,, Pacotti .. .. .. Bull, April 29—B.C.
,, Victoriæ .. .. .. Bull, April 26—B.C.
Aërides Lawrenceanum .. Spyers, July 5—B.C.
Agapanthus umbellatus aureus var. .. .. .. B. S. Williams, May 17—B.C.
Alsophila Rebeccæ .. .. Bull, March 29—B.C.
Amaryllis Duke of Albany .. Veitch, March 29—F.C.
,, Dr. Masters .. .. B. S. Williams, April 26—F.C.
,, Indian Chief .. .. Veitch, March 29—F.C.
,, Mrs. B. S. Williams .. B. S. Williams, April 27—F.C.
,, Shakespeare .. .. Veitch, March 29—F.C.
,, The Giant .. .. Veitch, March 29—F.C.
Asparagus plumosus nanus .. Veitch and Williams, March 29—B.C.
Auricula (alpine) Gladiator .. Turner, April 27—F.C.
,, ,, Mentor .. .. Turner, April 27—F.C.
,, ,, Charles Darwin .. Turner, April 27—F.C.
,, ,, J. T. D. Llewellyn .. Turner, April 27—F.C.
,, ,, Amazon .. .. Turner, April 27—F.C.
,, (show) Mrs. Moore .. Douglas, April 27—F.C.
,, ,, Jumbo .. .. .. Douglas, April 27—F.C.
Azalea indica, Madame de Grève .. .. .. Little, March 29—F.C.
,, Mr. F. Cobert .. .. Todman, March 29—F.C.
,, pontica narcissiflora .. Veitch, April 27—F.C.
Begonia Arthur G. Soames .. Laing, May 17—F.C.
,, lineata .. .. .. Veitch, July 5—B.C.
,, Madame Comesse .. Laing, July 5—F.C.
,, Madame Stella .. .. Laing, July 5—F.C.
,, Marquis of Bute .. .. Laing, May 17—F.C.
,, Wm. Bealby .. .. Laing, May 17—F.C.
Caladium albo luteum .. .. Laing, May 17—F.C.
,, Ibis Rose .. .. .. Laing, May 17—F.C.
Calanthe Textorea .. .. Spyers, July 5—B.C.
Calceolaria Cloth of Gold .. Rapley, May 17—F.C.
Cattleya gigas alba striata .. James, July 5—B.C.
,, gigas grandiflora .. .. B. S. Williams, July 5—B.C.
,, Mossiæ Southgatei .. James, July 5—B.C.
Clematis Daniel Deronda .. Noble, April 27—F.C.
,, Darwin .. .. .. Noble, April 27—F.C.
,, Princess Beatrice .. Noble, April 27—F.C.
Cœlogyne Massangeana .. B. S. Williams, April 26—B.C.
Corysanthes eximia .. .. Spyers, July 5—B.C.
Corylus aurea .. .. .. Paul & Son, May 17—B.C.
Columnea Kalbreyerii .. .. Veitch, March 29—B.C.
Crinum Makoyanum .. .. B. S. Williams, April 26—B.C.
Croton aureo-marmoratus .. Veitch, July 5—B.C.
,, Baron Schröder .. .. B. S. Williams, May 17—B.C.
,, Bruce Findlay .. .. B. S. Williams, July 5—B.C.
,, Daysering .. .. Veitch July 5—B.C.
Cyclamen Crimson Gem .. Little, March 29—F.C.
,, Emily Little .. .. Little, March 29—F.C.
,, Rose Queen .. .. Little, March 29—F.C.
,, striata .. .. .. Little, March 29—F.C.
,, Tinted Gem .. .. Little, March 29—F.C.
,, White Gem .. .. Little, March 29—F.C.
Cymbidium Parishii .. .. Spyers, July 5—F.C.
Cypripedium calceolus .. Veitch, March 29—B.C.
,, grande .. .. .. Veitch, July 5—B.C.
,, insigne aureum .. .. Bull, March 29—B.C.
Davallia tenuiculata .. .. B. S. Williams, March 29—B.C.
,, fijiensis plumosa .. Bull, April 26—B.C.
,, tenuifolia Veitchiana .. Veitch, July 5—B.C.
Dendrobium Falconeri giganteum .. .. .. Veitch, March 29—B.C.
Dicksonia chrysotricha .. Veitch, July 5—B.C.
Dieffenbachia majestica .. B. S. Williams, March 29—B.C.
Dracæna fragrans variegata .. Bull, March 29—B.C.
,, Thomsoniana .. .. Veitch, July 5—B.C.
Gloxinia Cordelia .. .. Veitch, July 5—F.C.
Godetia Duchess of Albany .. Daniels, July 5—F.C.
Grammatophyllum Ellisii .. Low, July 5—B.C.
Gymnogramma Laucheana grandiceps .. .. Dixon, April 27—B.C.
Hoya globulosa .. .. .. Cranston, March 29—B.C.
Hyacinth Challenger .. .. Veitch, March 29—F.C.
,, Charles Dickens .. .. Veitch, March 29—F.C.
,, delicata .. .. .. Veitch, March 29—F.C.
,, Duke of Albany .. .. Veitch, March 29—F.C.
,, Surprise .. .. .. Veitch, March 29—F.C.
Kentia costata .. .. .. B. S. Williams, May 17—B.C.
Lasia stipulata .. .. .. Veitch, July 5—B.C.
Leea amabilis .. .. .. Veitch, March 29—B.C.
Lobelia Finsbury Park Blue .. Veitch July 5—F.C.
,, pumila Ingrami .. .. Wood & Ingram, July 5—F.C.
Lycaste Deppei punctatissima B. S. Williams, July 5—B.C.
Medinilla amabilis .. .. Bull, April 26—B.C.
Nepenthes madagascariensis .. Veitch, July 5—B.C.
,, Mastersiana .. .. Veitch, July 5—B.C.
,, Rajah .. .. .. Veitch, July 5—B.C.
Odontoglossum cordatum aureum .. .. .. James, July 5—B.C.
,, Halli nigrum .. .. Bull, March 29—B.C.
,, ,, pictum .. .. Bull, April 26—B.C.
,, Leeanum .. .. .. Veitch, March 29—B.C.
,, Pescatorei album .. Bull, March 29—B.C.
,, ,, Veitchii .. .. Veitch, March 29—B.C.
,, tripudians aureum .. Veitch, July 5, B.C.
Osmunda japonica corymbifera Veitch, July 5—B.C.
,, javanica .. .. .. Veitch, July 5—B.C.
Pansy Eclipse .. .. .. Hooper, May 17—F.C.
,, General Garfield .. Hooper, May 17—F.C.
,, Mrs. Llewellyn .. .. Hooper, April 27—F.C.
Pelargonium (decorative) Bridesmaid .. .. Wiggins, April 27—F.C.
,, (show) Adventurer .. Foster, July 5—F.C.
,, (show) Diadem .. .. Foster, July 5—F.C.
,, (show) Foster .. .. July 5—F.C.
,, Rose Superb .. .. Wiggins, July 5—F.C.
,, Sister of Mercy .. .. Foster, July 5—F.C.
Pellæa Dominana .. .. B. S. Williams, May 17—B.C.
Pescatorea Klabochorum .. B. S. Williams, May 17—B.C.
,, Lehmanni .. .. Vervaet, May 17—B.C.
Phalangium elegantissimum .. B. S. Williams, May 17—B.C.
Phalænopsis Stuartiana .. Lowe, March 29—B.C.
,, ,, nobilis .. .. Lowe, March 29—B.C.
,, tetraspis .. .. .. Veitch, July 5—B.C.

Pinguicula caudata	Veitch, March 29—B.C.
Pleopeltis fossa	Veitch, July 5—B.C.
Polypodium ornatum	Veitch, July 5—B.C.
Primula acaulis Croussii flore-pleno	Paul & Son, March 29—F.C.
,, obconica	Veitch, March 29—B.C.
Pratia angulata	Veitch, May 17—B.C.
Reseda odorata prolifera ..	Balchin, May 17—F.C.
,, ,, ,, alba ..	B. S. Williams, May 17—B.C.
Rhododendron balsaminiflorum album	Veitch, July 5—F.C.
,, ,, aureum	Veitch, July 5—F.C.
,, Favourite	Veitch, March 29—F.C.
,, Star of India	Veitch, July 5—F.C.
Rose Her Majesty	Bennett, July 5—F.C.
,, Lady Mary Fitzwilliam.	Bennett, July 5—F.C.
,, H.P., Queen of Queens.	W. Paul, May 17—F.C.
Sarracenia Courtii	Veitch, July 5—B.C.
,, melanorhoda	Veitch, July 5—B.C.
,, porphyroneura ..	Veitch, July 5—B.C.
Scolopendrium vulgare densum	Kelway, May 17—B.C.
Selaginella grandis	Veitch, July 5—B.C.
Sobralia xantholeuca	Veitch, July 5—B.C.
Trichopilia Backhousiana ..	Dorman, May 17—B.C.
Viola Mrs. Laing	Hooper, April 27—F.C.
Zygopetalum Clayii	B. S. Williams, March 29—B.C.

CONDITION AND PROSPECTS OF THE SEED CROPS.

THIS is a matter of considerable importance to the gardener as well as to those who are engaged in the seed trade. The business transactions of some of the larger wholesale houses, for instance, are so extensive, and provision has to be made for such large stocks of some kinds of seeds, thus requiring much foresight, judgment, and decision, that these matters have to be planned with all the care of the details of a campaign; and when this is done an untoward season will sometimes bring down almost to ruin the citadel of hope reared at so much cost of labour and anxiety. It is only those who are acquainted with the inner life and working of the seed trade that can at all comprehend the nature and extent of the contracts that have to be made and the important results depending on them.

The spring of the present year was one pregnant with hope for the seedsman and gardener. They were led to think that a series of years of bad or deficient harvests was drawing to a close, and that the dawn of better times was at hand. So far was this hope realised that the crops of early Peas and Broad and Longpod Beans were both good and well harvested, and the samples this season are better than they have been for three or four years past. But between the times of the early and main harvests a great change for the worse took place in the weather; and during July and August rain fell frequently and in great quantities, to the serious detriment of the crops. The wrinkled Peas generally, and the main crop and late varieties especially, were seriously injured by the continued wet, and inferior samples are the consequence. Scarlet Runners, which are always a late crop, will certainly not produce a heavy yield; but as harvesting is only just completed, or scarcely so, a better estimate of the probable crop can be ascertained later on. The difficulty seems to be to get the haulm sufficiently dry to carry from the fields. Cabbage seed is but a short yield—not so much, however, owing to the state of the weather as to the fact that the hearts, which were of the most promising character during the autumn of last year, did not run to seed, the proportion averaging only one in ten or thereabouts. Broccolis have furnished good crops, and the same can be said of Kales and Brussels Sprouts. Cauliflower is so little grown in this country for seed purposes that the crop is of comparatively little importance.

The seed crops of early Carrots proved good, but the later crops have suffered severely from the wet. James', the Long, Surrey and the Altrincham Carrots are largely grown in Essex for seed purposes. The crops of Parsnips are plentiful and of good quality.



FIG. 112.—HELIPTERUM (ACROCLINIUM) ROSEUM FLORE-PLENO. (SEE P. 628.)

Nothing could have been more promising in the middle of August than the Onions being grown for seed. Strong stalks had thrown large and symmetrical heads full of what promised to become plump and well-matured seeds. There is no lack of seed, but a great deal of it is small, discoloured, and of poor quality. The consequence is that the seed will have to be sown thickly, and growers of Onions must give every assistance to their growing crops in order to combat the effects of these defects in the seeds.

Many of the foregoing seeds are largely grown abroad, but there the harvest generally is thin and spare this year. In Germany and other seed growing districts wet weather prevailed during late summer and autumn, as in this country, and seriously interfered with the condition and ingathering of the seeds.

In the agricultural department the yield of Turnip and Swede seeds is much lower than was expected. In the early part of the year Mangel Wurzel promised well, and it was confidently expected the yield per acre would be unprecedentedly large. The action of the weather has so affected the seed that it is small and badly coloured, and the crop will not be half what was anticipated. The growth of Mangel seed therefore cannot be anything like up to the average.

Flower seeds which are grown in the open air consist mainly of annuals, and these generally ripen early and have been secured generally in good condition. Some later matured things have suffered more or less from wet. Mignonette is almost a failure, owing, not to the wet so much as to the ravages of a a small fly. Its effect on the plants was to prevent them from flowering, and thus the seed crop is next to nothing practically. But Mignonette is largely grown abroad, and thus there will be forthcoming an adequate supply: besides, the large houses in the trade hold over good stocks of leading seeds generally for the following year. Sweet Peas, which are very largely grown in this country, are a fair average crop. Annual flower seeds generally have been late in maturing this season, but it has not materially affected the average crop.

Let us hope the season just now coming to a close, with storm and flood alternated by gleams of brilliant sunshine and drying winds, that appear to have driven from the face of the earth for a time the proverbial fogs of November, is terminating a cycle of bad seasons for gardener and agriculturist alike. The season of 1882 is a decided improvement in many particulars on that of 1881, and 1883 will come in anticipated by thousands of wishes, that it will so abundantly bring forth "the kindly fruits of the earth, that in due time we may enjoy them," with thankful hearts.

FRUIT NOTES.

CORDON PEARS AND APPLES.—If one may judge from the signs of the times the cordon system of fruit growing is gaining in favour, and if the progress is slow, it is at least sure. It is strange that three-fourths of our fruit-growing population, owners of small gardens, have not seen the great benefits of the system long ago. If you want to cover a wall at once with fruit-bearing trees, plant cordons, oblique or perpendicular as fancy or fashion may dictate. You get larger fruits than you can obtain by any other system, and, as a rule, you get a handsome instalment the year after planting. Apples upon the Paradise stock, and Pears upon the Quince, seldom fail to fruit early. Those who have no walls may succeed nearly as well by forming arches over the main walk or walks of their garden, and plant them with cordons. It is a good way of utilising space, and of making a garden ornamental—of providing shade and shelter, to say nothing of profit. Horizontally-trained cordons may be planted at the front or along the backs of borders parallel with the alley, and these will be found to bear fruit when the crops upon trees are totally destroyed by winds as they were during the past year. These cordon fruit trees are covered with fruit-buds to their very base, the best example of the single and double cordon that we have seen for a long time being in the fruit nursery of Messrs. J. CHEAL & SONS, Crawley, Sussex. The Messrs. CHEAL have several illustrations of the cordon method of fruit growing in their nursery. The trees are trained upon arches, against wooden fences, on walls, and upon the horizontal system trained to a single wire. The trees are remarkable both for their health and fertility, and are planted at about 15 inches apart. We were told of a gentleman who lately planted a "diamond fence" of cordon fruit trees, and who is much pleased with the experiment. There is no reason why any quantity of fruit trees should not be planted in the same way in sheltered situations. The hardy fruit crop has been so thin this season that people should leave no stone unturned to improve the condition of things as early as possible. A number of cordon trees are an ornament to any garden, leaving utility out of the question; but it is owners of medium-sized gardens who will find them of most benefit.

APPLES IN YORKSHIRE. — I can assure Mr. Clayton that I had no wish to impute unworthy motives to either him or his friend Mr. Macintosh, and am sorry that he has threatened to throw up the sponge because his list is a little criticised. To adopt the seventeen sorts marked with an asterisk only out of a list of sixty-one sorts, is what I should call a regular slaughter of the innocents. However, I hope Mr. Clayton will live through this, and give us some of his useful hints, as he has done before, in the columns of the *Gardeners' Chronicle*. My object in writing at all, was to show that many of the sorts not

taken into account were really good if treated under certain conditions; no doubt a long list could be made out suitable for the north of Yorkshire. Mr. Clayton said in his first letter that all the Apples are on the Crab, and planted about fifteen years; in his letter at p. 597 he says Mr. Macintosh did not plant the bulk of the trees, consequently he was not responsible for their being planted north of the Trent. That is not my contention; I still maintain that many good Apples are marked as useless, either from canker, bud-growth, or other causes. We cannot very well contend against the climate with tender sorts, but we can in a great measure prevent the canker in trees: such a thing is hardly known in the gardens here. We never plant a fruit tree of any sort without first removing all the subsoil, and then filling in the hole with maiden loam; if this had been done with the cankered trees in Hampshire, the canker would soon have disappeared. Mr. Clayton says he has seen better Apples grown at Bolton Hall, 15 miles further north than Thorpe Perrow, than could be grown in the warm climate of Hampshire; this, I must confess, I do not understand. I know Bolton Hall Gardens well, and have more than once supplied the late Lady Bolton with a list of Apples to be planted at Bolton. Apple culture in that grand old garden is a complete blank—very few are grown there at all. The present gardener, Mr. Hall, is doing there what should have been done years before; he is removing a quantity of old useless Peach and other trees from the long terrace walls, and planting good useful Apple trees. The same might be said of a quantity of Pears that hardly wanted planting on this side of the Channel: those he is getting rid of as fast as possible, either by grafting or planting. I noticed when I was last there a few very fine Apples growing against the wall, on some very fine young trees that were growing probably in the Chelsea Nursery the year before; from the appearance of the fruit and wood they were planted in the right sort of stuff to give an account of themselves in the future. Wyken Pippin and Worcester Pearmain are two sorts likely to prove useful for the North, the few we had have ripened up well. *William Culverwell.*

DR. HOGG PEACH.—Your correspondent, "A. S." (p. 566), need have no apprehension as to this excellent Peach not succeeding with him out-of-doors, providing that he obtains a strong healthy young tree, and plants it in good soil with ample drainage, in a situation that is favourable to the growth of Peach trees generally. It is a robust grower, a free bearer, and the fruits, which are very large, and of a rich brisk flavour, ripen about the middle of August. When grown under glass and with judicious treatment, Dr. Hogg is truly a noble-looking Peach, and one that, as it becomes better known, is destined to be more extensively cultivated than at present it appears to be. *H. W. Ward, Salisbury.*

APPLE LEMON PIPPIN.—To those who are about planting, let me bring before their notice specially the Lemon Pippin as being one of the best—suitable either for kitchen use or dessert. Lemon colour, slightly oval, and perfect outline; flesh white, firm, and with an agreeable acidulous flavour. In use from October to April—a strong point in its favour. It is very prolific, and succeeds well on bush, pyramid, or standard. Baked it retains its beautiful shape. For dessert it is very handsome. For market purposes it commands the best price. *D. C. P.*

THE FORGE APPLE.—This is the local name for an Apple that is largely grown in Sussex, a pretty conical-shaped, striped fruit, said to be of excellent quality. As seen in Messrs. J. Cheal & Son's nursery, Crawley, Sussex, the tree is a close grower, and is perfectly smothered with fruit-buds from top to bottom. Whether trained as a bush standard or as an espalier the variety seems to be equally fruitful.

GENTIANA KURROO is a lovely Gentian, related to, though considerably handsomer than, our native G. pneumonanthe. It has dark green foliage and azure blossoms sprinkled with pearly white. It is a native of Western Temperate Himalaya at elevations of from 5000 to 8000 feet above the sea-level, and is a recent addition to our list of cultivated Gentians. On the new rockwork at Kew it may now be seen in flower.

HOME CORRESPONDENCE.

The Potato Disease and Mr. Wilson's Sclerotias.—The curious point about these bodies is, that of their connection with Peronospora having been so long overlooked. This is the more remarkable when we remember the number of mycologists who have specially studied the life-history of this fungus, over which so many battles have been fought during the last few years. How is it, we are tempted to ask, that these by no means inconspicuous bodies should have escaped the keen eye of De Bary when he in his numerous investigations traced the mycelium of the Peronospora amongst the cells of its host plant, unless it be that these bodies are produced only under certain special conditions, and do not accompany the Peronospora in its more frequent manifestations? But Mr. Wilson by no means favours this view; on the contrary, he finds them abundantly, and, as I gather, not confined to any particular sort of Potato, or circumstance of growth, season, or locality. That these bodies have been seen by mycologists previously does not in any way detract from the importance and originality of Mr. Wilson's observations. That this has been the case I think does not admit of doubt. Probably one of the first, if not the first to observe them, was Martius. In his book on *Die Kartoffel Epidemie*, published at Munich in 1842, he figures them on plate iii., figs. 19, 23, and 24, as Protomyces spores in diseased tubers. At fig. 25 he gives a representation of a mass of hyphæ arising from a substratum of similar bodies. Figs. 36, 37, and 38, show enlarged views of these dark bodies, and represent the fungus we have hitherto known under the name of Tubercinia scabies, Berk. In the *Annals and Magazine of Natural History* for June, 1850, Messrs. Berkeley and Broome describe the species of Tubercinia, one the above, and the other (T. trientalis) on the leaves of Trientalis europæa. It is curious that these two species should have lain dormant, so to speak, for upwards of thirty years, and within a few months of each other should have, by different observers, been made the subject of investigation which has resulted in the demonstration of their conidial fructification. In the last part of De Bary's *Beiträge zur Morphologie und Physiologie der Pilze*, published this year, M. Woronin has given the life-history of Tubercinia trientalis. On plate i. the conidia are depicted in their various stages, fig. 4 shows three conidiiferous hyphæ emerging from a stoma in exactly the same way as Mr. Wilson, at figs. 77 and 78 on p. 480 of the *Gardeners' Chronicle*, shows the conidiiferous hyphæ of P. infestans, only the conidiiferous hyphæ of T. trientalis are simple and bear but one conidium on each. At fig. 10, M. Woronin shows the germ-tubes of the conidia of T. trientalis boring their way through the epidermis, or rather insinuating the extremities of their germ-tubes between the epidermal cells. On the next plate the germination of the Tubercinia spores themselves is shown producing promycelium and spores after the manner of the Ustilaginei generally. Mr. Wilson has promised to give us his views upon the dissemination of the fungus more in detail, a promise the fulfilment of which we all look forward to with great interest. *Chas. B. Plowright*, 7, *King Street, King's Lynn, Oct.* 30.

Rudbeckia pinnata.—Under this name I grow a very characteristic species of the genus. It is of tall slender growth, not unlike that of R. subtomentosa, but less robust, and increasing very slowly. It is even later in flower, the flowers not beginning to open this year till Michaelmas. The stalks are wiry and upright, each bearing at the end a single flower, which has in the centre a light brown cylindrical cone three-quarters of an inch long, the size of a piece of common drawing pencil, from the base of which the large and long light yellow petals turn straight down, as thin in substance as if cut out of yellow silver-paper, but resisting the weather well, and lasting a long time. It is a distinct and peculiar flower, though not gay in colour. *C. Wolley Dod, Edge Hall, Malpas.*

Winter Blooming Anemones.—Blessed indeed are those who, like Mr. Burbidge, have a good bed of Anemones to gather flowers from just now. Whilst almost all other flowers, Chrysanthemums alone excepted, seem to have been washed or blown into utter desolation, the Anemone, with its buds buried below the soil when the fierce storm and the tempestuous blast sweeps over our gardens, quickly at the bidding of the first gleam of winter sunshine unfolds them for our joy and delectation. I have two batches of Anemones just now in full growth—one throwing bloom most abundantly, the other raised from seed saved and sown during the past summer that will produce flowers freely in the spring. If I were growing these Anemones solely to get all the bloom from them possible I should certainly plant so that a low span frame could be dropped over the bed, and thus keep them protected from their worst enemies—rain and white frosts. Where this is not a convenient arrangement the roots will lift well, always having good clumps of soil attached. The lifting should be done at the end of September, before much growth is made; and if put into a frame that contains some light soil, into which the fine roots will run freely, they soon get established, and produce a mass of elegant laciniated leafage and an abundance of beautiful flowers. And then what colours, too, a fine strain gives—crimson, scarlet, pink, purple, blue, white, mixed colours, and all of fine form and very striking. It is doubtful whether at this time of the year any other family of plants that are hardy will produce more varied hues or beautiful flowers. And then what a wealth of plants and bloom may be got from but a packet of seed, the which, as Mr. Burbidge has shown, if sown in the spring will give hundreds of strong flowering plants in the autumn and winter. I find Anemones like a stiff loam immensely, but they are not over-particular, and also do well in light soil, especially if helped with a dressing of cow manure. Even if the plants did not bloom at all, clumps would be grateful for their handsome foliage only; but when they flower so freely, and specially at such unseasonable periods, then they become invaluable. *A. D.*

Finding Water by Means of the Divining Rod.—The discovery of hidden springs or underground currents of water by means of a divining rod is a belief as old as the history of the human race; once accepted and accredited as almost a divine gift it became, when superstition swayed the world, and what was not understood was readily attributed to supernatural agencies, a source of danger and terror to the unfortunate possessor of the gift. In more tolerant times the remarkable power of working the divining rod has been found in persons little desirous of being distinguished by gifts they could neither explain nor control; and when the matter has been taken up by those who have witnessed and profited by the aid of a water-finder there have been always people more or less scientific ready to discredit the whole thing, classing it amongst popular fallacies the pure light of science has dispelled. I may say that this part of Leicestershire and portions of the adjoining county of Lincoln are not well situated for obtaining supplies of good and wholesome water, and some country gentlemen whose unaided search for water had been unsuccessful were induced to secure the assistance of a person residing in the West of England credited with the power of finding water by means of the divining rod, who in several cases successfully achieved the desired results, and water, where water existed, was found and utilised. A neighbour of mine watching the proceedings of the water-finder was induced to try the experiment himself, and, very much to his surprise, discovered in himself the power he had witnessed in the professional manipulator. Hearing of instances in which he had exercised this new found faculty, I invited him to make an experiment at Belvoir, and particularly in one spot, where a command of water was very desirable. I watched his proceedings, I must confess, with a certain degree of incredulity, not that I doubted the good faith of my friend, but never having previously witnessed the operation of water-finding, it seemed to me that, as in the case of animal magnetism and spiritualism, a large amount of faith was a necessary element in the belief. Cutting a small flexible branch from a Lime tree, and fashioning it in the form of a fork, he took the twigs that represented the fork in his hand, and bending slightly, passed, holding the straight portion of the stick near the surface, rapidly over the ground. After beating about like a foxhound seeking for a lost trail, he slowly came to a stand, and to my astonishment I saw the stick of itself curl upwards; he at once said, "There is water here;" and the place was marked. Going over a considerable space of ground I saw the stick affected in the same way several times, and in each case a mark was placed on the spot where the indications were strongest. I had one crucial test, which I determined to have tried. After a landslip I had cut a deep drain through the sloping bank, and on the level ground below formed a tank, thinking in very dry seasons the water, which ran pretty regularly into and through the tank, might be useful. The mouth of this tank was covered with a large flat stone, soil spread over it, and then turfed. Taking the operator to this part of the garden I said carelessly, "You will not find water about here, the subsoil being clay; but, just for curiosity, try across this piece of lawn." He proceeded, and reaching the ground above the tank, I saw the stick bend upwards and the holder's arm quiver with the exertion of keeping it down. He then said, "There is a stream of water here, and not far down." From

that moment I believed in the divining rod when held by the diviner. It seems to me that the solution of this apparently mysterious sympathy of a green wand with the subterranean water springs is not altogether beyond our reach. The rod or stick is a very unimportant agent; it is the individual who holds it that gives it the virtue it seems to possess: he happens to be so constituted as to be especially susceptible to electrical influences. Placing himself over an escaping current of electricity, which probably he has attracted, he is for the moment a conductor, and the wand receives so much of the stream as causes it to bend within the holder's hands. We know that currents of polarity strike through the earth, pulsating almost like the life-blood of a living creature. We know that electricity permeates animate as well as inanimate matter, that every passing cloud is charged with it, and that water, and especially underground currents of that element, seem especially to attract it. It seems clear to me that the electricity that follows subterranean water-courses is readily drawn upwards by the powerful attraction of a living creature that has an extraordinary affinity for it. I say extraordinary—the gift is rare—probably not one person in 20,000 possessing it; that some do there can be no possible doubt. I must not omit to add, that in two places indicated by the motion of the divining rod, and marked as above described, wells were sunk and water found; and a reservoir holding 8000 gallons is constantly filled by water proceeding from these rod-discovered wells. *W. Ingram, Belvoir.* [If our correspondent's suggestion be correct (which is open to question), the matter might easily be tested by electric apparatus more sensitive than a man with a rod in his hand. Ed.]

Potato Notes.—A couple of notes upon Potatos in these columns last week show that some curious notions respecting them are entertained. One person, finding a huge tuber of a new sort, possibly White Elephant or Queen of the Valley, somewhat profanely designates this tuber the Great Archangel. Had he termed it the "Claimant" or "Beelzebub," the taste shown would perhaps have been, like the tuber, coarse, but natural. The tuber was in the first place no monstrosity, thousands as big are lifted in this country annually; and, in the second place, the planting of it in its entirety was an absurdity. The resulting crop was but a moderate one, about 12 per cent. increase, or rather less than 1½ lb. per stem; whilst had the tuber been cut into a dozen sets the produce would most likely have been doubled. Probably not one person in a thousand would think of planting a 29 oz. tuber entire merely for the sake of an experiment, and it is an undesirable example to follow. When we recollect the enormous produce obtained from single pounds of Snowflake and Eureka Potatos several years since, Mr. Sharpin's produce sinks into insignificance. As to Reading Hero, of which Mr. Carmichael writes in such glowing phrase, I can but say that, whilst it is a good main crop kind, its top growth is tall and rank beyond all reason, for giant stems 4 feet high should give an immense yield in return. So far from that being the case, however, other good kinds ready to lift a month earlier, and such as may be planted several inches closer together, and farther, have tops of not more than one-half the height, produced with me much larger crops. Indeed, Reading Hero is a late cropper, and therefore if it loses its leafage early, as it did this year, the produce is nipped in the bud, or reduced one-half its proper quantity. Overhauling a few of Sharpe's Duke of Albany Potato the other day, I found decaying some half-dozen tubers, each of which had been perforated with the digging fork; all others were perfectly sound. This simple fact affords another proof of the truth of Mr. Jensen's statements with respect to the action of the live fungus spores upon injured or bruised tubers. *A. D.*

Productive Potatos (see p. 597).—Last year I planted a tuber of Late Rose that weighed nearly 1 lb. It came up very strong with about a dozen stems, and when fully grown measured 6 feet in diameter. I had it earthed up twice, using a barrow-load of earth each time, and when taken up the produce weighed 27 lb. of good-sized tubers, with very few small ones. *Joseph Carter, Arlington Court, Barnstaple, Devon.*

Anemone coronaria. — I send two or three blooms for you to see what may be done in the open air in November at Howth, a promontory which lies on the sunny side of Dublin Bay. They are from seeds sown last March on the edge of a sunny Vine border fully exposed to sun and wind. These flowers are the result of many years' selection, and I imagine you will think them bright and fair as hardy flowers of November. *F. W. Burbidge.* [Very fine for the season. Ed.]

Schizostylis coccinea and other Plants in November.—It is quite common to read, even in Calendars, of recommendations for the treatment of this brilliant flower under glass and the care it is said to require. I have splendid tufts of it now (Nov. 3), at the back of a border, certainly the most brilliant outdoor flower at present, and on which the only care bestowed is to occasionally ask some of my flower-loving visitors to take home a tuft, so that it shall not engross too much space. It is spoken of as a "miniature Gladiolus." With me there is nothing miniature about the spikes, as each throws out a dozen blooms, and I have measured some of those fully expanded this morning, after forty-eight hours' rain and storm, and found them slightly over 1½ inch across: just as large as the last bloom of Kelway's new Gladiolus, Lord Newport, growing beside—the last of the season. With single Dahlias, outdoor bedding Fuchsias, Marigold Meteor, a few whitish Carnations, a few of the "the last Rose of summer," Dickson's new Violas, the never-ending Matricaria inodora fl.-pl., &c., but especially Schizostylis, I have gathered a fine bouquet to-day. *W. J. Murphy, Clonmell.*

The Grapes at Clovenfords.—On referring to my notes I find I made a mistake in the estimate of the weight of the Gros Colmar crop at Clovenfords (p. 587, col. *a*), in putting it at 2000 lb. per house; it should have been 4000. Last year the principal house reached 3740 lb.: this year they are so much heavier as to quite warrant the calculation being put at 4000. *T. B., Nov.* 8.

Florists' Flowers.

Chrysanthemums at Slough. — If the show of these useful winter flowers in Mr. Turner's nursery does not kindle enthusiasm in the hearts of all who have the opportunity of seeing them, it would be hard to tell what description of floral exhibition would have that effect. Such a display often engenders a love for flowers, the sight piques one's sensibilities, and the outcome of it is that we take to cultivating the plants. It is a practical method of illustrating the beauty of the flower, but, in order to be intelligible and consistent, we must state how this is done. Mr. Turner has three houses filled with plants, one—the principal one—is over 100 feet long, having a low staging on either side the path which runs up the centre. The two sides are filled with plants of various heights and colours. When you enter the door, the first sight causes you to wince, so bright is the effect from the leafless trees and somewhat dismal associations you have left outside. After a first look, silence is broken by the attendant, who knows the names of the varieties by the flower, and a great many of them by the leaf. "That, sir, is Cassandra; this is George Glenny, or White Globe"—pointing to each variety. Well, you do not like to pose as a benighted amateur even before Mr. Turner's cultivator-in-chief, and so it is your turn to say something, and the next few moments finds us discussing various points of cultivation. To our mind the chief merit of this remarkable collection lies in the clean healthy foliage, the dwarfness of the plants, and the fine form and good colour of the flowers. Inexperienced people—good in their way, perhaps good cultivators of other kinds of plants—assert that to have large flowers you must have plants as tall as fishing-rods. Those people should see Mr. Turner's collection. The two banks of flowers are tapered from top to bottom with that exactness and taste which always characterise Mr. Turner's arrangements. The colours are beautifully blended, and the effect unique. The plants, or rather flowers, are not yet at their best, but they very soon will be. We rather like the present admixture of open flowers and buds, and the glossy hue of the leaves. There is George Glenny, with beautifully formed flowers; Cassandra, tinted with pink; James Salter, lilac; Mrs. George Rundle, pure white; and Chevalier Domage, a handsome reflexed flower, and perhaps the brightest yellow in existence. But it is in taking a full length view of the two banks of flowers that their extreme attractiveness is realised. The half open buds of red, crimson, lilac, pink, and yellow are very striking in contrast with the large flowers of White Globe (by the way, very fine), Empress of India, Mrs. Heale, and other white coloured sorts. The finest incurved flowers at present open in addition to those above-mentioned consist of Golden Empress of India, Lady Hardinge, and Mrs. W. Shipman, a sport from it; Caractacus, a variety resembling Cassandra, but having more pink in it; Prince Alfred, Barbara, Beauty, Inner Temple, and a great many others. Mr. Turner is rich in Japanese sorts, and these are an important feature of the show. The finest open flowers consist of Madame Rendatler (shaded rose), Orphée (rich crimson), Mons. Charles Hubert (canary-yellow), Oracle (rosy-purple), Criterion, Soleil Levant (yellow), Meteor (also bright yellow, and very fine), La Charmeuse (purple, tipped with white), La Frisure (rose), La Nymphe (delicate peach, shading to white), Peter the Great, and Bouquet Fait. The orange-coloured varieties of the Bismarck type are most effective in a collection, and we think more of them ought to be grown. We noticed several Anemone-flowered varieties and reflexed flowers in the collection, which adds materially to the effect as a whole, and renders an inspection of the stock more interesting than if an equal show were produced with less variety of forms. Mr. Turner has given much attention to the cultivation of medium-sized flowers, and those of the different other sections that are most useful for the decoration of small houses, and the show of these dwarf plants laden with flowers of all shades of colours struck us as being the most useful work of the season. There are scores of people growing and showing the "big flowers," and we are glad to see that varieties that are best suited to the masses are not being forgotten.

Auriculas in Scotland.—At this season of the year Auriculas generally begin their winter's rest, and assume small dimensions; but at the present time, owing to the previous mild weather, they are fresher and stronger than I have seen them for some years. They are in vigorous health, and have already made nice roots, thus establishing themselves before the rigours of winter come. The careful removal of withered leaves is essential to the welfare of the plants, and this year frequent examination of the pots has been necessary to keep them free from slugs, which have for some months past been very abundant and troublesome. There is a good promise of offsets for next season, but if the demand continue as great as it has been this year they will all be needed. From correspondents in Scotland I learn that there has been a good deal of autumn bloom thrown up. This corresponds with the condition of my own stock, and was to be looked for this season, because in spring many plants did not bloom which should have done, and therefore the likelihood was that they would flower in autumn. I notice that all these plants have thrown up bloom, and, to keep them company, some of the earliest re-potted have done the same. I suppose England has also had its share, for I see that some plants which I recently received from Yorkshire are now in bloom. Curiously enough, McLean's Unique, which almost never fails to bloom in autumn, has this year shown no sign, and Cunningham's St. Augustine, which in spring is somewhat coarse and irregular, has just now given a remarkably neat and pretty bloom. Possibly this variety might always come more satisfactorily if grown in poor soil; at all events the experiment can be easily made. And here I may give a bit of information to those who have not seen Lightbody's Queen of Violets in perfection. To bring out its remarkable beauty, its admirable proportions, and distinct colours, grow it in poor soil. When grown in rich soil it has no edge. In Scotland at present a good deal of attention is bestowed on seedlings, some of which I may have to note after next bloom. *J. M., Mains, by Dundee, Oct.* 30.

Natural History.

The Rat.—Of the smaller animals of creation no less than of the larger ones we often hear and read strange things, and not unfrequently observe them in the act of doing things one would never dream of. A rather remarkable instance of the carnivorous, or I may say reptilian, propensities of one of these long-tailed gentlemen occurred in the gardens here the other day, and one, which, although it may not appear to be anything wonderful to those well versed in natural history, will doubtless prove to be of some

interest to a few of your readers, as undoubtedly it was to the writer when he was first made acquainted with it. One of our men a few ago was working at a Pear tree which was being root-pruned and where for some time it had been known there was a colony of rats; the order of the day was to keep a sharp look-out for them, and to place as many *hors de combat* as possible. Having thrown out the soil to the depth of about 18 inches or 2 feet, our man John and would-be rat-killer was compelled to relinquish operations for a time owing to a sudden downpour of rain, and took shelter under the wall close by with his shoulders enveloped in a mat. For the next few minutes John's eyes were fixed steadily on the roots of the tree and its surroundings, with the expectation no doubt that he should see "something." "Yes; well—and what was it?" "Oh, a good big lobworm—a regular long and fat one too," says John. In a moment or two afterwards out came from amongst the roots one of our long-tailed enemies, presumably in search of a meal, and after a short reconnaissance in different directions the worm was sighted, and without any further delay was seized and carried triumphantly by the rat down into his hole. Now then, reader, should the question at any time be put to you, Do rats ever eat worms? you may without hesitation answer in the affirmative.

Nothing, it would seem, in the way of food comes amiss to them. It is on record that they sometimes eat frogs and not unfrequently members of their own family, and as for stealing oil out of long-necked bottles, why, they are adepts at it—this feat being accomplished, so we are told, by pushing their tails down the neck of the bottle into the oil and licking it off afterwards. They are also fond of fowl's eggs, and whilst one will lie on its back with an egg clasped between its forelegs, another will drag it along by the tail. Doubtless innumerable other instances of their extreme cunningness and voracity might be given; my only object, however, in penning these lines is to inform those who never heard of it before that "rats will sometimes eat worms." *J. Horsefield, Heytesbury.*

The Poultry Yard.

SUNFLOWER SEED FOR FOWLS.—In some of the livestock papers there has been a good deal said about this lately. All agree that Sunflower seed in moderation is a good food for fowls, but the opinion is not so unanimous as to how to secure it. It can always be bought, but some say grow it; others assert it will never mature in this country, and many know nothing of it; but we are in a position to give some practical results. Two or three years ago we always bought our poultry Sunflower seed; but once, when in the neighbourhood of London, we saw many of the flowers growing, and thought them so showy that we resolved to introduce them to our garden. With this object in view, two years ago we bought a packet o seed in the spring, sowed it in a large shallow box in a little heat in March, had the plants hardened off and put in the open beds and border in May. These bloomed in July, and we had plenty of seed in August and September. Some of the flowers were 12 inches in circumference, and contained about 1 pint of seeds. The bloom comes on the top of the main stem first; but when this withers, and the seed is well developed, it is cut off and put into a shed, or room, to dry. Then the side-shoots come into flower, and they go on bearing a succession until this time; seed can thus be secured from plants which have been grown as ornaments in the flower-beds, and where much of it is wanted a patch of them may be grown together. We find the home-grown seed better and much cheaper than that from the shops, and no one need fail to produce it, providing the seed is sown early enough, and the plants forwarded under protection in spring. In some of the public gardens about Edinburgh I lately saw some Sunflower plants which I fear would not bloom this season; but I should say the seed must have been sown late in the open ground, and a good harvest of seed need not be expected from this plan of culture as a rule, especially in the North. Rich soil suits them best, and as the plants are very liable to become "top-heavy," they should be supported before any injury results from this.

FOWLS IN GARDENS.—It is often said fowls are bad gardeners, but this is not our opinion. For several years we have kept a number of fowls in the kitchen garden, and part of the pleasure-grounds too, and we have always found them do much more good than harm. Scratching the soil is about the only injury they can do in a garden, but when brought up in a place of the kind from the first they are not so liable to do this as when they are only allowed in now and again, or get in by chance. We find them excellent for picking up and destroying all kinds of grubs and larva. There is nothing escapes their notice, and some things which they do not eat are pecked at to find out what they are until they are killed. Our manure-heaps, which are off at the side of the kitchen garden, form one of their favourite resorts. They go all round and over them daily, and this is satisfactory, as there are many grubs and insects introduced to vegetable quarters and flower-beds with the manure; but this daily scouring thins them well before the manure is much used. Unless in hot weather in summer they seldom touch any of the greenstuff, and in this way they are not half so bad as ducks. Some time ago we bought some fancy ones of these to put in the kitchen garden, but they were more destructive on the Cabbage and other plants than the snails, and we were glad to turn them out into a pond.

SHOW *versus* TABLE FOWLS. — In showing any kind of produce it is a great matter when the prize samples are simply representatives of the main stock. Show fowls are often considered to be something very different to the best kind of fowls for laying and the table, but it is a mistake to make any difference, or think they cannot be alike, as we never yet found a fowl which made a good show one that was not superior in other respects. Our Dorkings, French varieties, and Scotch Greys, have all been noted in the show-pens, but they have also distinguished themselves at home for their useful qualities. We have had pullets laying this season when four months old, and cockerels weighing 7 lb. when five months old, and I do not think anything much better than this could be desired or secured in any way. Besides profit, there is no doubt a great deal of pleasure in keeping a pure breed of good fowls, but a nondescript race is never satisfactory. *Henwife.*

FORESTRY.

THINNING.—The subject of early and timely thinning young plantations, especially of Pine and Fir, appears to the writer of such immense importance that he hereby once more, and for the last time at present, takes up the subject. If the enormous evils entailed by the neglect of early thinning could by any possible means be remedied by future treatment the magnitude of the evil would thereby be greatly modified, but as in this case prevention is everything and cure nothing, or next to nothing, notes of warning, loud and long, clear and distinct, are all the more needful of being sounded.

Few proverbs are more literally true than the one, "As we sow, so shall we reap." At every stage of growth, and in every phase of development, the accents ring forth, "As ye sow, ye reap." With only a very slight modification of the words we have the exact term of expression suited to our present case, "As ye thin, so shall ye profit," and it may truly and emphatically be added, "If ye thin sparingly, ye shall also cut sparingly. To any one, even the least accustomed to observe rural objects, it must appear obvious that the country in general is by far too much filled with small pole-like trees, fit only for paling rails, prop wood, and minor purposes, of which there is much greater supply than demand, at least at anything like remunerative prices, while on the other hand, except in very rare and isolated cases, there is scarcely to be met a wood or plantation, not to speak of a forest, of well grown, mature, heavy timber, suitable for house and other buildings. Few, if any, will venture to dispute that the Scotch Pine timber of Strath Spey, Strath Dee, and many other straths in the North, and localities in the South, contain, or perhaps more correctly speaking, did once contain, timber unsurpassed in point of quality and durability by any in the known world.

The Larch timber also in Ross-shire, Inverness-shire, Perthshire, and Argyleshire, including also many other districts both north and south, and all over the United Kingdom, is found both in sufficient size and quality as to suggest the question, Why have we not a hundred or a thousand times more of it—enough, indeed, to supply all our demands? The answer is, Because it either had not been planted, or was neglected in future treatment, conspicuously in thinning.

The Oak, also, of Perthshire, Kent, Sussex, and many other districts where heavy loams and strong clays abound, is unsurpassed for strength of fibre and durability by the wood of any other country or clime yet known, and all that is further required is vastly more of it, and good trees to occupy the place of worthless ones.

Seeing, then, that we have soil, climate, and other conditions under which those species enumerated, as well as many others, attain their highest desired or perhaps possible state of perfection, the questions come up again and again, Why have we not more of such timber trees? Why are the millions of money which we pay annually to foreign nations not kept within our own shores, and paid to our landed proprietors to enable them to improve their estates and better the condition of the inhabitants? The reply again is, Because we do not employ the right and proper means to attain it. "As we sow, we reap." It is absolutely pitiable to see so many young plantations, especially those of the Pine tribe, under what is termed approved forestry, actually falling into ruin for want of room, light, and air!

The twofold question is quite a pertinent one: How many trees are planted upon an acre, and what becomes of them? In extensive moorland planting the plants are often successfully planted at about 4½ feet apart, or, say, 2000 plants to the acre, and smaller plantations at about 3000 or sometimes 4000 plants to the acre according to liability to death and injury, &c. As to what becomes of the plants, few can, and fewer still care about answering the question, and those who remain silent on the point often show more wisdom than those who speak. Statements are not wanting, written and verbal, intended to show that several thousands of trees can be grown profitably upon an acre of ground as a forest crop. Such statements must be received only at what they are worth, and wise are they who do not value them very highly.

The forester should give much the same account of his three or four thousand plants per acre as the farmer gives of his Turnip seeds, or rather Turnip plants—namely, that he puts the greater part of them out of the way and out of sight as soon as possible, in order to allow the crop to grow. As soon as the crop of trees is fully established, and all blanks made good by lifting a tree with a ball of earth here and there, and planting it in the open space—when this is done, and the trees advanced to from 4 to 6 feet in height, they should be thinned out to something near 8 feet apart, or say 800 trees to the acre. This, then, is the crop to operate upon, so as to produce the most valuable crop of timber the ground is capable of sustaining.

It is to be feared that the enchanting desire to preserve and prolong the undeniable beauty of a young plantation too often leads to its ruin. There are but few, if any, rural objects so charming and beautiful as a healthy, well-grown young plantation at from ten to fifteen years old. At that stage of growth the trees, if not equal in size, have at least more that appearance now than at any other period of growth, and their general uniformity is more perfect than it will ever be again. The different shades of rich lustrous green, varying from the deep blue to the bright yellow—the annual growths, too, both vertical and lateral, have an attraction all their own at this particular stage of growth, which, when once thinned, they soon lose, never again to acquire.

If to these charms we add yet another apology for neglect of early thinning, we shall see there are, if not reasons, at least means of explaining and accounting for the maltreatment to which our young plantations are too much as a rule subjected.

With not a few (and rightly so) the primary object in growing trees is to derive revenue from them, and when they see young plants within sight, as they consider, of yielding some return for their outlay, there is nothing more natural than that they should embrace the opportunity within reach. While some rejoice at hearing of great profits derived from things, others, and with better reason, grin and grow sad over it, for the practice has only a faint but true parallel in the practice of paying instalments, but never making a full settlement. A few profitable

things are of themselves not a bad thing, but in proportion as they are good the ultimate crop is bad. By the early thinning system, which we uniformly recommend, the following advantages are gained:—First, less expense in doing the work of thinning in all future time; second, preventing the plantations from ever being littered with dead branches, &c.; third, the crop receives room at the proper time in order to secure continuous growth; fourth, thinning to very young trees does less harm than to trees further advanced; fifth, prolonged thinning is the indirect cause of flooding the market with small kinds of little value; sixth, the crop of large mature timber per acre is double, if not triple, the value of small; and seventh, gladness instead of sorrow, pleasure instead of pain, gain instead of loss. *C. Y. Michie, Cullen House, Cullen, Banffshire, October* 17.

Obituary.

WE regret to record the death, on October 31, at Cambridge Villa, Fulham Fields, of Mr. WILLIAM ELLIOTT, the well-known and much-respected market gardener, aged seventy-five.

—— We learn with deep regret of the death, on Wednesday evening last, of Mr. F. FAULKNER, gr. to F. Leyland, Esq., Woolton Hall, Liverpool. Mr. Faulkner, it will be remembered, was the winner of the Challenge Vase at the Kingston Chrysanthemum Show last year, and was one of the three competitors who was to have taken part in the final contest for the trophy next Thursday. Only a short time ago Mr. Faulkner appeared to be in his usual health, and his early, almost sudden demise will be regretted by a wide circle of friends about Liverpool. Mr. Faulkner was an excellent cultivator, especially of stove and greenhouse plants, and discharged with much ability the duties of gardener-in-chief at Woolton Hall, one of the leading garden establishments about Liverpool. Mr. Faulkner was in the prime of life, and leaves a widow and young family to mourn his loss.



STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, NOV. 8, 1882.

Month and Day.	Barometer. Mean Reading Reduced to 32° Fahr.	Barometer. Departure from Average of 18 years.	Temperature of the Air. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 30 years	Hygrometrical Deductions from Glaisher's Tables 6th Edition. Dew Point.	Degree of Humidity. Sat. = 100.	Wind. Average Direction.	Rainfall
Nov.	In.	In.	°	°	°	°	°	°			In.
2	29.64	—0.12	57.0	46.5	10.5	51.6	+ 5.6	48.1	87	W.; S.S.W.	0.18
3	29.64	—0.13	57.0	49.5	7.5	52.6	+ 6.8	49.0	88	W	0.06
4	29.62	—0.16	57.0	48.0	9.0	51.6	+ 6.0	43.3	73	W.	0.06
5	29.74	—0.05	60.0	46.8	13.2	54.0	+ 8.6	47.1	77	S.W.; W.S.W.	0.00
6	29.80	0.00	56.0	44.5	11.5	50.1	+ 5.0	45.2	83	W.; S.W.	0.26
	29.56	—0.24	49.0	44.5	4.5	45.9	+ 1.2	39.5	79	W.; W.S.W	0.36
8	29.34	—0.46	49.5	39.9	9.6	45.2	+ 0.9	34.2	64	W.	0.07
Mean	29.62	—0.17	55.1	45.7	9.4	50.1	+ 4.9	43.8	79	W.	0.89

Nov. 2.—Fine morning, sun shining brightly, blue sky; dul afternoon, rain at intervals, cloudless at times. Cool night.
— 3.—Very fine bright day till 2 P.M.; cloudy afternoon. Squally, bad night.
— 4.—Fine day and night; gale of wind nearly all day. Fine night; clear.
— 5.—A dull day; cloudy; gale of wind all day. Fine night; gusty wind.
— 6.—Fine morning; sun shining; blue sky. Dull and overcast afternoon. Heavy rain at night.
— 7.—A dull, overcast, cold day and night. Steady rain all the evening.
— 8.—Dull, overcast morning. Fine bright afternoon; sun shining, deep blue sky, windy. Strong wind with lightning at night; cold.

LONDON: *Atmospheric Pressure.*—During the week ending November 4, the reading of the barometer increased from 29.59 inches at the beginning of the week to 29.95 inches by midnight on the 29th, decreased to 29.79 inches by midnight on the 30th, increased to 30.05 inches by 3 P.M. on the 30th, decreased to 29.52 inches by 3 P.M. on November 1, increased to 29.86 inches by 9 A.M., and decreased to 29.80 inches by 3 P.M. on the 2d, increased to 29.88 inches by 3 P.M. on the 3d, and was 29.99 inches by the end of the week.

The mean reading for the week at the level of the sea was 29.82 inches, being 0.37 inch higher than last week, and 0.11 inch below the average of the week.

Temperature.—The highest temperature in the shade in the week was 57°, on November 1, 2, 3, and 4; on the 29th the highest temperature was 49°. The mean of the seven high day temperatures was 54°.9.

The lowest temperature in the shade in the week was 36°, on the 30th; on the 3d the lowest temperature was 49°.5. The mean of the seven lowest temperatures was 44°.2.

The greatest range of temperature in one day was 15°.9, on the 30th; the smallest was 7°.5, on the 3d. The mean of the seven daily ranges was 10°.7.

The mean temperatures were—on the 29th, 44°; on the 30th, 45°.9; on the 31st, 48°.3; on the 1st, 52°.3; on the 2d, 51°.6; on the 3d, 52°.6; and on the 4th, 51°.6; of these the first two days were below their averages by 2°.6 and 0°.6 respectively, and the last five days were 1°.9, 6°.1, 5°.6, 6°.8, and 6° respectively above their averages.

The mean temperature was 49°.5, being 2°.9 higher than last week, and 3°.3 above the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun, was 110°. The mean of the seven readings was 91°.4.

The lowest reading of a minimum thermometer with its bulb placed on short grass was 31°.5, on the 30th. The mean of the seven readings was 38°.1.

Rain.—Rain fell to the amount of 0.75 inch, of which 0.55 inch fell on the 30th.

ENGLAND: *Temperature.*—During the week ending November 4 the highest temperatures were 60°.1 at Cambridge, 59°.3 at Brighton, and 59° at Sunderland; the highest temperature at Bolton was 54°.6, at Wolverhampton 54°.8, and at Sheffield and Hull 55°. The general mean was 56°.7.

The lowest temperatures in the week were Wolverhampton 32°.6, at Nottingham 33°, and at Cambridge, 34; at Bradford the lowest temperature was 40°.4, and at Sheffield, Leeds, and Sunderland was 39°. The general mean was 36°.1.

The greatest ranges of temperature in the week were 26°.1 at Cambridge, 23°.9 at Brighton, and 23°.3 at Nottingham; the least ranges were 14°.7 at Bradford, 16° at Sheffield, and 17° at Leeds. The general mean was 20°.6.

The mean of the seven high day temperatures was highest at Cambridge, 56°.9, at Truro, 56°.4, and at Sunderland 56°.2; and was lowest at Bolton, 51°.5, at Bradford 51°.6, and at Wolverhampton 52°.2. The general mean was 54°.3.

The mean of the seven lowest night temperatures was highest at Brighton, 45°, at Truro 44°.7, and at Bradford 44°.4; and was lowest at Wolverhampton, 39°.1, at Bolton 40°.1, and at Leicester 40°.5. The general mean was 42°.6.

The mean daily range was greatest at Leicester, 14°.3, at Sunderland 14°.1, and at Cambridge 13°.2; and was least at Bradford, 7°.2, at Leeds 9°.7, and at Sheffield 10°.2. The general mean was 11°.7.

The mean temperature of the week was highest at Truro, 49°.9, at Cambridge 49°.6, and at Brighton and Blackheath 49°.5; and was lowest at Wolverhampton, 44°.9, at Bolton 45°.1, and at Nottingham 46°.2. The general mean was 47°.8.

Rain.—The largest falls were 1.84 inch at Bolton, 1.71 inch at Bristol, and 1.63 inch at Bradford. The smallest falls were 0.49 inch at Cambridge, 0.72 inch at Brighton, and 0.75 inch at Blackheath. The general mean fall was 1.05 inch.

SCOTLAND: *Temperature.*—During the week ending November 4, the highest temperature was 53°.7, at Glasgow. The highest temperature reached at Dundee was 52°. The general mean was 53°.

The lowest temperature in the week was 26°.5, at Glasgow; at Edinburgh the lowest temperature was 37°. The general mean was 32°.3.

The mean temperature for the week was 44°.5, being 1°.5 above that of the week immediately preceding, and 4°.3 above that of the coresponding week of 1881, and was highest at Leith, 46°.5; and lowest at Perth, 40°.9.

Rain.—The largest fall was 2.74 inch, at Greenock; the smallest was 0.75 inch at Dundee. The general mean was 1.54 inch.

JAMES GLAISHER, F.R.S.

Answers to Correspondents

BOOKS: *J. S. U.* The third edition of Henfrey's *Elementary Course of Botany* (Van Voorst) would suit you better than the books you name.—*Gardener.* There is no Dictionary that we know of containing the terms you require. See the last edition of Henfrey's *Elementary Course of Botany*, where you will find most of the terms you mention.—*S. Littleton. Choice Stove and Greenhouse Plants* (2 vols., 5s. each), published by Mr. B. S. Williams, Victoria and Paradise Nursery, Upper Holloway, N.—*C. T.* There is no English book on the subject, but there are several German works. Mr. Berkeley's articles are scattered through many volumes of the *Gardeners' Chronicle*, and have unfortunately never been reprinted.

CAMELLIA BUDS: *H. L.* The fine constitution of the Camellia, and the apparent health of its leaves, frequently lead cultivators to a wrong conclusion. There are, however, certain symptoms, brought about by certain causes, which are unmistakable, and these are beginning to develope themselves in the samples sent for our inspection. The buds are not as fully developed as they should be, and you will find when the flowers expand that the petals will be short, and generally wanting in substance. Wherever you see that brown scaly-like substance upon the buds you may be sure there is something wrong at the root; either the plant has been allowed to get too dry during the formation of the buds, or the soil is too wet, owing to bad drainage; in fact, any cause that brings about inaction of the roots will produce the symptoms. Camellias bear shifting so well, and are often so improved by the shift, that we would advise you to lift the plant before growth commences in the spring, see to the drainage, and replant in fresh soil. There appears to be some insect eating the buds; you will have to trap these, but they have nothing to do with the brown scale-like appearance of the buds.

CAMELLIAS: *W. B.* If given weak liquid-manure will do the plants good, but will not add much to the size of the flowers this season. You must begin to use it earlier, when the plant is making its season's growth.

CONCRETE FLOOR: *G. C.* We cannot say from experience that a concrete floor is injurious to plants, but from what you state we would advise you to have the "material" of which the floor is composed thoroughly examined by some competent authority. If you tell us more of your mode of treating the plants we will advise you further. Please say the form of house, and how far the plants are from the glass.

DRYING ORCHID FLOWERS: *E. W.* This is a difficult and unsatisfactory operation, owing to the fleshy nature of the flowers. Use plenty of drying-paper; heat it before the fire before using it; change it very often; and have between every dozen sheets or so a light frame of lattice-work in wood or wire, so as to allow of the passage of air, and ensure with the above precautions rapid drying. Sometimes the specimens are dried with a hot flat-iron, but we cannot recommend the process, particularly if the specimens are wanted for use, not merely to look at.

GOOSEBERRIES: *T. A.* 1, red—Dan's Mistake, and Bobby; yellow—Leveller, and Goldfinder; green—Stockwell, and Grace Darling; white—Overseer, and Fascination. 2, Messrs. Salsbury & Sons, Melbourne, near Derby.

KAINIT: *H. B.* We do not know any case where it has been used for Vines, but we have no doubt, as you say, that it would be beneficial where the border contained an insufficient supply of potash, or in a form not readily available. For grass land it is used in the proportion of 5 cwt. to the acre.

LAPAGERIA: *Lincoln.* No doubt it would grow in the house you describe, but we much doubt if it would flower so freely as if it could have more light.

NAMES OF FRUIT: *J. M.* Your Grape is, we believe, White Nice.—*A. O. Walker. Pears*—1, Doyenné du Comice; 2, St. Germains.—*T. P.* Pear somewhat decayed; but we believe it to be Gansell's Bergamot. *Apples*—2, Orange Pippin: the others we do not recognise.—*Hy. Knowles.* We cannot name the fruit you send. Such miserable wizened samples we have seldom seen.

NAMES OF PLANTS: *Bessy Johns.* The Arauja, or Physianthus albens.—*C. W., Weybridge.* Bupleurum stellatum.—*Evergreen A.* The large-leaved form of Ficus stipulata.—*C. T.* The woolly variety of Thymus Serpyllum.—*W. Miles.* Marchantia polymorpha, commonly called Lungwort.—*Constant Reader.* Asclepias curassavica.—*W. D.* 1, Juniperus chinensis; 2, Juniperus virginiana; 3, Sequoia sempervirens (the Redwood of California); 4, Lonicera sp.; send again when in flower.—*A. O. W.* Please say where your plant came from. At present we fail to identify it.—*J. G.* 1, One of the smaller forms of Selaginella Martensii; 2, Selaginella Kraussiana; 3, Nephrodium molle; 4, Chrysanthemum frutescens var.; 6, Doryopteris pedata; 7, Coronilla glauca; 8, Asplenium flaccidum var.; 9, Asplenium lucidum; 10, Selaginella Galeottii. No. 5 was not in the box.

PITCH PINE: *H. B.* It has been used for many years in the construction of hothouses, and with very great advantage, by reason of its durable character.

PUFF-BALL: *A. O. W., Nant-y-Glyn.* The fungus is

the species you mention—viz., Lycoperdon saccatum; the spores are echinulate.

TAR ON PIPES: *J. P.* You will do no good with anything until you have burned the tar off the pipes, and painted them instead with lamp black and linseed oil. If the pipes are easy of access you will not have much trouble, but of course you must be careful not to set fire to the house.

TUBEROSES: *C. Urquhart.*—You will have no difficulty in obtaining any quantity of good strong bulbs during the present month. Put from three to six bulbs in a 6-inch pot, drain well, and use good fibrous loam in a mellow condition. For potting you may use a slight admixture of leaf-mould with the loam, and put a little sharp silver-sand under the base of the bulbs. In the spring of the year, give bottom-heat—say from 70° to 80°—to start the plants into free growth. Be sure that the bulbs have made roots before you plunge them in bottom-heat. Pot up at different times to give a succession of flowers. Those that you require for planting out-of-doors should be brought forward in pots, be well hardened off, and planted out in a growing state. They are easily managed after they have started into growth. Any respectable nurseryman can supply you.

VINES: *H. H.* Grapes may shrivel from various causes—the border may be too dry; if so, water it gently, but first of all examine its condition before applying the water. We suspect the sour berries are shanked. The Vines may have been overcropped, or the drainage of the border may be stopped up—there are many reasons why Grapes shank. The Vines should still bear well under good treatment. The mouldy berries are caused by a low, damp atmosphere, and if the wood of the Vines is not well ripened the berries are sure to be badly affected during foggy weather. To prevent this, close the ventilators early in the day, taking care to have a dry atmosphere by keeping a gentle circulation of heat in the hot-water pipes. But your best plan will be to examine the border, as you suggest. Commence by cutting a trench the full length of the border at the point farthest away from where the Vines are planted, using a four-pronged fork for the purpose. Remember the points of the roots are the main feeders, and these must be strictly preserved. Keep a watering-pot filled with water beside you, and some soft matting, with which tie the roots in bunches together, and lean them back on the border, dewing them over at the same time with water through a fine syringe, and throw a mat over them to keep them moist. Continue in this way until you satisfy yourself as to the condition of the border, using the fork all the time to take the soil from the roots. In case you decide to renew the border with fresh soil, which we expect you will have to do, you cannot do better than follow this advice to the end, and put the roots carefully back into the fresh compost, laying them in singly in the soil and keeping them as near the surface as possible.

VINES AND MEALY-BUG, &c.: *J. C. L.* You will do the Vines no harm now, or in the spring, by either washing or syringing them with a solution of paraffin provided it is properly applied. A wine-glassful of paraffin will be sufficient to a gallon of water, and one person should keep the liquid constantly stirred while another syringes the Vines with it. We have frequently used it at the strength recommended upon stove and other plants without the slightest injury to them and with very satisfactory results as regards destroying the mealy-bug. Because some men misapply it and injure their trees or plants is no reason why others should not use it carefully. (2.) A Pear will do very well in a cool Peach-house, if it has plenty of sun and light and the house is not forced. You say the Pear is to be planted against the north wall; if it is to be under glass as you say in a lean-to house how can it be against a "north wall?" Assuming that you have made an error in respect to the aspect of the wall, we would advise you to plant a tree of Marie Louise.

CATALOGUES RECEIVED.

T. LAXTON, Bedford—Novelties in Vegetable Seeds, &c.
F. URQUHART & Co., Inverness—Price List of Nursery Stock.
W. SMITH & SON, Aberdeen—Select List of Roses.
M. BRUANT, Poitiers, France—New Hybrid Begonias.
DICKSON & ROBINSON, 12, Old Millgate, Manchester—Descriptive List of Roses.
ERNEST BENARY, Erfurt—Select Novelties, Bulbs, Tubers, and Choice Florists' Flower Seeds.
F. BURVENICH, Gentbrugge, near Ghent—Hardy Trees and Shrubs, Fruit Trees, &c.
R. & G. CUTHBERT, Southgate, N.—Roses, Fruit Trees, &c.
GEO. COOLING & SONS, Bath—Roses, Fruit Trees, Shrubs, &c.
W. ETHERINGTON, Manor House Gardens, Swanscombe, Kent—Chrysanthemums.
EDWARD CAVES, Newport, Isle of Wight—General Nursery Stock.
KELWAY & SON, Langport—Wholesale List of Gladioli.
BALTET FRÈRES, Troyes, France—Hardy Trees and Shrubs, Roses, Fruit Trees, &c.
LOUIS VAN HOUTTE, Ghent, Belgium—General Nursery Stock.
L. SPÄTH, Köpnickerstrasse, 154, Berlin—Hardy Trees and Shrubs, Fruit Trees, &c.

COMMUNICATIONS RECEIVED.—J. S.—B. F. (many thanks).—J. G.—D. P. L.—J. C—G. R. (next week.)—E. S. Berkeley.—C. W. D.—J. Squibbs (many thanks).—R. J. L. (at Kensington).—C. V. G., Antwerp.—H. M., Warwick.—H. C., Geneva.—T. C.—G. Routledge & Sons.—G. N.—Rodger, McClelland & Co.—Prof. Babington.—G. Willers.—Dr. Langston.—R. McIntosh.—D. T. F.—T. P. & Sons.—W. D.—W. B. C.—Baron Todaro, Palermo.

Markets.

COVENT GARDEN, November 9.

THE first cargo of St. Michael's Pines has just reached us in fair condition, and home-grown fruit has received a severe check. Grapes are still in good supply, at previous rates. Apple market dull, with moderate consignments of American goods. Kent Cobs steady. *James Webber, Wholesale Apple Market.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldii, doz.	12	0–24 0	Ferns, in var., dozen	4	0–18 0
Arbor-vitæ (golden), per dozen ..	.. 6	0–18 0	Ficus elastica, each	1	6– 7 0
— (common), dozen	6	0–12 0	Foliage Plants, various, each ..	2	0 10 6
Begonias, per doz. ..	6	0–12 0	Fuchsias, per dozen	4	0– 9 0
Bouvardia, doz. ..	10	0–18 0	Genista, per doz. ..	8	0–12 0
Chrysanthems., doz.	6	0–18 0	Hyacin. (Rom.), per pot	1	6– 2 0
Coleus, per dozen ..	4	0– 6 0	Marguerite Daisy, per dozen ..	6	0–12 0
Cyclamen, doz. ..	9	0–24 0	Myrtles, per doz. ..	6	0–12 0
Cyperus, per dozen	6	0–12 0	Palms in variety, each	2	6–21 0
Dracæna terminalis	30	0–60 0	Pelargoniums, scarlet, per doz. ..	2	6– 6 0
— viridis, per doz. ..	12	0–24 0	Solanums, per doz. ..	9	0–12 0
Epiphyllum, dozen ..	18	0–30 0			
Euonymus, various, per dozen	6	0–18 0			
Evergreens, in var., per dozen	6	0–24 0			

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 blooms	0	2– 0 4	Lilac (French), bun.	8	0– 9 0
Arum Lilies, per doz.	6	0– 8 0	Lilium various, per 12 blooms	3	0– 6 0
Azalea, 12 sprays ..	1	0– 2 0	Marguerites, 12 bun.	6	0– 9 0
Bouvardias, per bun.	0	6– 1 0	Mignonette, 12 bun.	1	6– 4 0
Camellias, per dozen	2	0– 4 0	Narcissus, 12 sprays	2	6– 3 0
Carnations, 12 blms	1	0– 3 0	—(paper-white), Fr., per bunch	0	9– 1 3
Chrysanth., 12 bun.	4	0– 9 0	Pansies, 12 bunches	1	0– 3 0
— (Fr.) per bunch	0	6– 1 6	Pelargoniums, 12 spr.	0	9– 1 0
— (best white), bun.	1	0– 3 0	— zonal, 12 sprays	0	3– 0 6
— 12 blooms ..	1	0– 2 6	Primula, double, per bunch	1	0– 1 6
Cornflower, 12 bun.	2	0– 4 0	Roses (indoor), doz.	1	0– 3 0
Cyclamen, 12 blooms	0	3– 0 6	— (outdoor). doz ..	0	6– 1 0
Epiphyllum, 12 blms.	0	9– 1 0	— Coloured, doz...	1	0– 2 0
Eucharis, per doz. ..	3	0– 6 0	Stephanotis, 12 spr..	6	0– 8 0
Fuchsias, 12 bunches	6	0– 8 0	Tropæolum, 12 bun.	1	0– 2 0
Gardenias, 12 blms..	4	0– 6 0	Violets, 12 bunches..	1	0– 1 3
Gladioli, 12 sprays ..	1	6– 3 0	— French Czar, bun.	1	0– 2 0
Heliotropes, 12 sp. ..	0	6– 1 0	— Parme (Fr.), bun.	3	6– 4 6
Hyacinths (Roman), 12 sprays	2	0– 3 0	White Jasmine, bun.	0	9– 1 0
Lapageria, white, 12 blooms	2	0– 4 0			
— red, 12 blooms..	1	0– 3 0			

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve ..	2	0– 2 6	Lemons, per 100	—	6 0–10 0
Aubergines, per doz.	4	0– ..	Melons, each ..	2	0– 4 0
Cobs, 100 lb.	45	0–50 0	Pears, per dozen ..	1	0– 2 0
Figs, per dozen ..	0	6– 1 0	Pine-apples, Eng., lb.	2	0– 2 6
Grapes, per lb. ..	1	0– 2 6			

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, per doz.	3	0– 6 0	Garlic, per lb. ..	1	0– ..
— Jerusalem, doz..	4	0– ..	Herbs, per bunch ..	0	2– 0 4
Asparagus (Sprue), per bundle ..	1	6– ..	Horse Radish, bund.	4	0– –
Beans, French, English grown, p. lb.	0	8– ..	Lettuces, Cabbage, per score	1	6– ..
Beet, per doz. ..	1	0– ..	Mint, green, bunch..	0	4– ..
Bruss. Sprouts, bush.	3	0– 4 0	Mushrooms, p. baskt.	1	6– 2 0
Cabbages, per doz. ..	1	0– 2 0	Onions, per bushel..	3	0– ..
Carrots, per bunch..	0	4– 0 6	— Spring, per bun.	0	6– ..
Cauliflowers, English, dozen ..	2	0– 4 0	Parsley, per bunch..	0	4– ..
Celery, per head, ..	0	4– ..	Radishes, per doz. ..	1	6– ..
per bundle ..	1	0– ..	Seakale, per punnet	2	0– ..
Cucumbers, each ..	0	6– 1 0	Small salading, pun.	0	4– –
Endive, per score ..	1	0– ..	Spinach, per bushel	2	0– ..
			Tomatos, per doz. ..	2	0– ..
			Vegt. Marrows, doz.	3	0– ..

POTATOS:—Magnum Bonums, 100s. to 120s.; Regents, 90s. to 110s. per ton.

SEEDS.

LONDON: *Nov.* 8.—There was but little business doing on to-day's seed market, the attendance being small. Red Clover maintained the firm attitude it has lately assumed; the continuation of the wet weather still further reduces the prospects of this year's crop. Some home-grown Alsike of fine quality is now being offered, for which high prices are paid. Trefoil and foreign Italian are both somewhat dearer. Rape seed is wanted for France, but comparatively little is to be had. Canary continues dull and neglected, and is a shade cheaper. Hemp seed is now rapidly falling to its usual price. There has been a slight advance in Buckwheat. Linseed is difficult of sale at lower quotations. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

POTATOS.

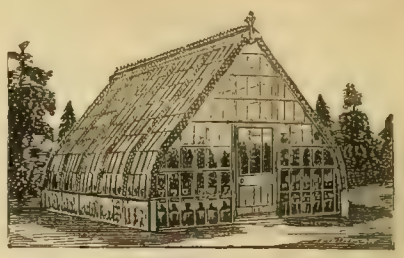
The Borough and Spitalfields Markets reports state that there have been fair supplies and a good trade at the following quotations:—Regents, 90s. to 100s.; Champions, 80s. to 90s.; Magnum Bonums, 100s. to 110s. per ton; German reds, 4s. 9d. per bag.

COALS.

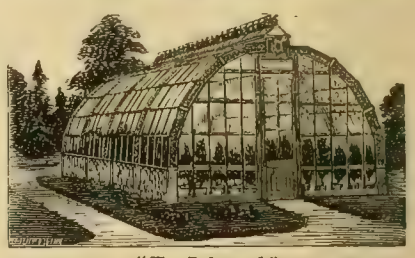
The following are the prices current at market during the week:—East Wylam, 17s.; Ravensworth West Hartley, 15s. 6d.; Walls End—Hetton, 20s. and 19s.; Hetton Lyons, 17s. 6d. and 16s. 6d.; Lambton, 19s. 6d. and 18s. 6d.; Wear, 17s. 6d. and 16s. 6d.; Tunstall, 18s. 6d.; Tees, 19s.

Government Stock.—Consols closed on Monday at 102⅛ to 102¼ for delivery, and 102⅜ to 102½ for the account. The same figures were recorded on Tuesday Wednesday, and Thursday.

REGISTERED DESIGNS.



"The Chatsworth."



"The Balmoral."

The above are drawn from Photographs of Conservatories erected upon their

SHUTTER-BAR SYSTEM of GLAZING

BY

ARTHUR DASHWOOD & CO.

HORTICULTURAL BUILDERS

AND

HOT-WATER ENGINEERS,

who, having been entrusted with the erection of the extensive series of HORTICULTURAL BUILDINGS in the beautiful Grounds of Forest Lodge, have great satisfaction in printing the following letter received from J. FREEMAN, Esq.:—

"FOREST LODGE, FARNBOROUGH, HANTS,
"August 1, 1882.

"DEAR SIRS,

"Now that sufficient time has elapsed since the completion of my Greenhouses built by you, to make me appreciate your System of Glazing, I have much pleasure in stating that I am perfectly satisfied with the whole work done; and, to show how strong the buildings are, they resisted the severe gales we had last autumn and this spring. The Houses, which consist of over *thirty-four thousand* (34,000) square feet of glass, did not have a single pane broken during the gale of October 14, 1881. The Heating has been well carried out, and has given me great satisfaction in its working, which consists of 1¾ mile of 4-inch piping. The Pulsometer you have erected works also well; in fact I am very pleased with the large outlay I have made, and shall be glad to testify to your good workmanship to anybody who may be desirous of giving you an order. You are also at liberty to use the above.

"Yours faithfully,

"J. FREEMAN.

"Messrs. ARTHUR DASHWOOD & CO.,
"75, Mark Lane, London, E.C.

Plans and Estimates free on application for Small or Large Greenhouses.

The Sycamore Horticultural Works,

WIMBLEDON,

Adjoining the All England Croquet Grounds.

London Office—75, MARK LANE, E.C.

ILLUSTRATED CATALOGUE POST-FREE.

Planting Season.

ANTHONY WATERER begs to invite attention to the following well-grown and properly rooted NURSERY STOCK :—

AUCUBA JAPONICA, 1½, 2, and 3 feet Thousands.
BOX, Green and Variegated, 2, 3, 4, 5, 6, and 7 feet Thousands.
YEWS, English, 2, 3, 4, 5, 6, 8 to 10 feet. Thousands.
,, Golden, all heights up to 10 feet, and various shapes—Globes, Pyramids, &c. Thousands.
,, Irish, 5, 6, 7, to 10 feet.
JUNIPERS, Chinese, 5, 6, 7, to 10 feet.
PICEA PINSAPO, 5, 6, 7, to 10 feet.
,, NORDMANNIANA, 5, 6, 7, to 10 feet.
SPRUCE FIRS, well furnished, 3, 4, 5, 6, and 7 feet. Many thousands.
,, Black, 3, 4, and 5 feet.
SPRUCE, Hemlock, 4, 5, and 6 feet.
WEAKE'S ARBOR-VITÆ, 4, 5, 6, and 7 feet.
HOLLIES, common Green, of all heights, up to 10 feet. Thousands.
,, Green, of sorts, such as LAURIFOLIA, MYRTIFOLIA, HODGINS', ALTACLARENSE, Yellow-berried, &c. An enormous Stock.
,, Variegated, from 3 to 5, 6, 7, 8, and 10 feet.
,, Waterer's, beautiful Specimens.
,, Golden Queen, up to 10 feet. Hundreds.
,, Silver Queen, up to 10 feet. Hundreds.
,, Perry's Weeping Standards and Pyramids.
,, Golden Weeping Standards and Pyramids.
The Stock of Hollies of various kinds comprises many thousands, and affords a choice quite unequalled.
CUPRESSUS LAWSONIANA ERECTA VIRIDIS, 3, 4, 5, 6, 7, and 8 feet. Thousands.
,, ,, GRACILIS, 3 and 5 feet.
,, ,, ARGENTEA, 3 and 5 feet.
,, ,, LUTEA, hundreds of fine plants, 3, 4, and 5 feet high.
RETINOSPORA PLUMOSA AUREA, 3, 4, and 5 feet.
,, OBTUSA AUREA, 4, 5, 6, and 7 feet.
,, PISIFERA AUREA, 3 and 4 feet.
THUIOPSIS DOLABRATA, 3, 4, 5, and 6 feet. Hundreds.
BEECH, Purple, 6 to 10 and 12 feet Thousands.
LIMES, 10, 12, 14, 15, and 16 feet. Thousands.
PLANES, 10 to 20 feet.
MAPLE, Norway, 10 to 15 feet.
CHESTNUT, Horse, 10 to 16 feet.
,, Scarlet, 10 to 16 feet.
POPLAR, CANADENSIS NOVA, 10 to 16 feet. Thousands.
OAKS, Scarlet American, 10 to 12 feet.
ACER DASYCARPUM, 10 to 16 feet.
,, SCHWEDLERII, 10 to 12 feet.
And a vast and Miscellaneous Stock of Flowering DECIDUOUS SHRUBS and EVERGREENS, which intending purchasers are respectfully invited to come and see.
Knap Hill Nursery, Woking, Surrey.

To the Trade.

SEAKALE, extra strong, selected for forcing; also POTATO ONIONS, SHALLOTS, and GARLIC. Prices on application.
W. TAIT AND CO., Seed Merchants, Dublin.

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STRAWBERRIES, &c.
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Indoor Plants. Per dozen.—*s. d.*

HERBACEOUS CALCEOLARIAS, out of pots .. 1 6
,, ,, in pots.. .. .. 2 6
CINERARIAS, in 5-inch pots 6 0
SOLANUMS, full of berries, in 5-inch pots 6*s.* and 9 0
CYCLAMENS, very fine, in 5-inch pots .. 6*s.*, 9*s.*, and 12 0
BOUVARDIAS, for early blooming, in 5-inch pots, 6*s.*, 9*s.*, and 12 0
AZALEA INDICA, Ghent or Mollis, with buds, 21*s.*, 24*s.*, and 30 0
HYACINTHS to name .. .. .. 5*s.* and 6 0
,, Roman .. .. per 100, 22*s.* 3 0
TULIPS, to name .. per 100, 6*s.* and 8*s.*; 1*s.* and 1 6
HARDY HEATHS, to name 4 0
LEDUMS, KALMIAS, GAULTHERIAS 6 0
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CLIMBING PLANTS in great variety .. 6*s.*, 9*s.*, and 12 0
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All the above Florists' Flowers of the finest varieties, many new. Herbaceous Plants, many thousands of the most showy kinds—12 sorts, 3*s.*; 50 sorts, 11*s.*; 100 sorts, 22*s.*
Spring-blooming Plants, such as POLYANTHUS, Seedling PRIMROSES (all colours), WALLFLOWERS, CANTERBURY BELLS, ARABIS, AUBRIETIAS, DAISIES (Red, White, or Rose), MYOSOTIS, SILENE COMPACTA, 4*s.* per 100. 35*s.* per 1000.
TULIPS, for Bedding, to name, 5*s.* per 100.
CROCUS, 2*s.* per 100.
SNOWDROPS, 2*s.* 6*d.* per 100.
PRIMROSES, Double White, Sulphur, and Lilac, 24*s.* per 100, 3*s.* 6*d.* per dozen.
HEPATICAS, Double Red and Single Blue, 24*s.* per 100, 3*s.* 6*d.* per dozen.
SWEET VIOLETS, in good Clumps, for Forcing, 30*s.* per 100, 4*s.* per dozen; ditto, ditto, in small plants, 15*s.* per 100, 2*s.* per dozen.
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AMERICAN WONDER.. .. 50*s.* per bushel.
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AZALEA MOLLIS, strong bushes, well set with flower-buds.
DEUTZIA GRACILIS, extra strong plants.
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4000 Azaleas, Camellias, Ericas, and Epacris. 4000

AZALEA INDICA, in best varieties, for forcing, including Whites, well set with buds, 24*s.*, 30*s.* and 42*s.* per dozen, £8 to £15 per 100.
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HEATHS and EPACRIS, best varieties, well set with flower, 18*s.* and 24*s.* per dozen.
CAMELLIAS, in best varieties, including Whites, 25*s.*, 30*s.*, and 42*s.* per dozen, £9 to £15 per 100.
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	Per dozen	*s. d*
ADIANTUM CUNEATUM	21*s.* per 100	3 0
,, CONCINNUM	..	3 6
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,, EXCISUM	..	3 6
HEMIONITIS PALMATA	..	4 0
GYMNOGRAMMA LAUCHEANA vars.	21*s.* per 100	3 0
,, DECOMPOSITA	..	3 0
PTERIS MAGNIFICA	18*s.* per 100	2 6
,, CRETICA	20*s.* per 100	3 0
,, PALMATA	..	4 0
BRAINEA INSIGNIS	..	6 0
LYGODIUM SCANDENS	21*s.* per 100	3 0
DRACÆNA VEITCHII and AUSTRALIS, PANDANUS UTILIS, LATANIA BORBONICA, CHAMÆROPS HUMILIS, C. EXCELSA ..	..	3 0
ARALIA SIEBOLDII, GREVILLEA ROBUSTA ..	..	2 6
ALLAMANDA GRANDIFLORA	..	15 0
CLEMATIS INDIVISA LOBATA	..	15 0
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DIPLADENIA BREARLEYANA	..	15 0
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AZALEA MOLLIS, with from 10 to 30 buds
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KALMIA LATIFOLIA, nicely grown plants with flower-buds on wellnigh every shoot.
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DEUTZIA CANDIDISSIMA, fl.-pl., established in pots.
HYDRANGEA PANICULATA GRANDIFLORA, very strong.
ANDROMEDA PULVERULENTA or SPECIOSA.
These can be obtained in satisfactory plants and at fair prices from
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5000 Cyclamen persicum. 5000

ALL from the finest procurable strains, good plants in 60-pots, 3*s.* 6*d.* and 5*s.* per dozen; extra large, 10*s.* per dozen: for early flowering.
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ASH, Common, 3 to 4 feet, 4 to 5 feet.
,, Mountain, 3 to 4 feet, 4 to 5 feet, 5 to 6 feet, 7 to 8 feet, 8 to 9 feet.
OAK, English, 1½ to 2 feet.
POPLAR, Black Italian, 3 to 4 feet, 4 to 5 feet, 5 to 6 feet.
SYCAMORES, 2 to 3 feet.
CHESTNUTS, Horse, 9 to 10 feet, 10 to 12 feet.
ELDER, Golden, 2 to 3 feet.
THORN QUICK, strong, 3-yr., 4-yr., strong.
HOLLIES, Hodgins', maderensis, Golden Queen, Silver Queen, Old Silver, myrtifolia, ovata, Shephardii, common Green, in all sizes.
LAURELS, Common, 12 to 18 inches, 1½ to 2 feet, 2 to 2½ feet, fine.
CUPRESSUS, in variety, from 1½ to 7 feet.
RETINOSPORA PLUMOSA, 1 foot, bushy.
YEWS, English, 18 to 24 inches, 2 feet, 2½ feet, 2½ to 3 feet.
AZALEA Pontica, 4 to 6 inches.
RHODODENDRONS, Hybrid and Pontica, 3 to 4 inches, 4 to 6 inches, 6 to 9 inches, 9 to 12 inches, 12 to 15 inches, 15 to 18 inches, 1½ to 2 feet, 2 feet; ditto, choice named sorts, bushy, in 100 varieties.
,, CUNNINGHAM'S WHITE, 9 to 12 inches, 12 to 15 inches, 15 to 18 inches.
,, CAUCASICUM PICTUM, 9 to 12 inches, 12 to 15 inches, 15 to 18 inches.
RHODODENDRON STOCKS, strong.
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W. JACKSON AND CO., Nurseries, Bedale, beg to offer the Nobility and Gentry—
50 CAMELLIAS, handsome specimens, 3 to 3½ feet, by 3 feet through, £5 5*s.* each.
20 YUCCAS, PALMS, and DRACÆNAS, handsome specimens, 3 to 4 feet, £3 3*s.* each.
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CLEAN HEALTHY PLANTS, in 5-inch pots, to flower this winter, 2*s.* each, 18*s* per dozen; nice plants in 60's, 9*d.* each, 6*s.* per dozen. A few large plants, about 4 feet, which will be full of flowers this winter; price on application. CATALOGUE free.
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ROSES, well rooted, many-shooted, truly named, of matured growth, and of the best kinds.
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FIRST-CLASS CERTIFICATE.
SALTMARSH AND SON are now supplying strong maiden trees of this excellent variety, without which no collection, however small, will be complete, at 3s. 6d. each; also a few strong 2-yr. pyramids, on Crab and Paradise stocks, at 5s. to 7s 6d. each. Price to the Trade on application.
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Our Stock, which is one of the largest in Scotland, comprises FOREST, FRUIT, and ORNAMENTAL TREES, DECIDUOUS and EVERGREEN SHRUBS, ROSES, GREENHOUSE PLANTS, &c.; also a very large and splendid Stock of THORN QUICKS, for Hedging and for Filling up Gaps.
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LARCH FIR, 3 to 4 feet, and 4 to 5 feet.
SCOTCH FIR, 1½ to 2 feet, and 2 to 3 ft. [to 5 ft.
SPRUCE FIR, 1½ to 2 feet, 2 to 3 feet, 3 to 4 feet, and 4
PINUS AUSTRIACA, 1½ to 2 feet.
HAZEL, 2 to 3 feet, and 3 to 4 feet.
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SPIRÆA PALMATA:
The largest stock for forcing in the world.
LAURUS CAUCASICA:
The finest Laurel ever introduced.
RHODODENDRONS:
All kinds and all sizes.
STANDARD RHODODENDRONS:
You may select from thousands.
HARDY TREES, SHRUBS, ROSES, &c.
For general planting, acre after acre.
Intending planters are invited to come down and see the stock. The Nursery is ten minutes from Sunningdale Station, S.-W. Railway.
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NEW ROSES of 1882, in pots.—Vendors' Selection, 30s. per dozen; Purchaser's, 36s. per dozen. The above comprise all the best English and French-raised Hybrid Perpetuals, Perpetual Polyantha, Teas, Hybrid Teas, and Perpetual Moss.

ROSES of 1881, of above-named classes, 18s to 24s. per dozen, in pots.

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Fine collection of all leading sorts.
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12-oz. Sample Packets, free by post, 12 stamps.
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COCOA-NUT FIBRE REFUSE.
4d. per bushel; 100 for 25s.; truck (loose, about 2 tons), 40s.; 4-bushel bags, 4d. each.
LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack; 5 sacks, 25s.; sacks, 4d. each.
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COARSE SILVER SAND, 1s. 9d. per bushel; 15s. per half ton, 26s. per ton; in 2 bushel bags, 4d. each.
YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1s. per bushel.
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Manures, Garden Sticks, Virgin Cork, Tobacco Cloth, Russia Mats, &c. Write for Free PRICE LIST.
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JULY 1, 1882.—In consequence of the great scarcity of husks and enormous Continental demand for our "Refuse," we are compelled from this date to advance prices as follows, and only orders accompanied by remittance will receive attention (in rotation). We also find it necessary to caution purchasers to beware of spurious imitations and buy the genuine "Refuse" direct. Sacks, 1s. 6d. each; 10 Sacks, 13s.; 15 Sacks, 18s.; 20 Sacks, 23s.; 30 Sacks, 30s. (all Sacks included); Truck-load, free on rail, £2. Limited quantities of P.M. *Special Quality*, granulated, in sacks only, 2s. 6d. each (2 prize medals), valuable for potting and use in conservatory. Terms strictly cash with order.—To obtain the genuine article, buy direct from the Manufacturers, CHUBB, ROUND AND CO., Fibre Works, West Ferry Road, Millwall, London, E.

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LOAM, splendid Yellow Fibrous, 15s. 6d. per ton. Useful Brown PEAT, 22s per ton, free to Bricklayers' Arms, S. E. R. Fine ORCHID PEAT, as supplied to the principal Orchid Growers. Prices on application.
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SUSSEX DOWN TURF, of finest quality for price, on rail at Portslade Station (4 miles from Brighton) in large or small quantities. Special quotation to the Trade. Apply,
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This is the Manure used to produce the splendid Grapes grown at the Tweed Vineyard, Clovenfords.
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AMERICAN BLIGHT on APPLE TREES CURED by rubbing a wet hard Painter's brush on Gishurst Compound, and working the lather into the infected part.

GISHURSTINE keeps feet dry, softens hard boots, preserves leather, takes a polish. In boxes, 6d. and 1s. each.—Wholesale by PRICE'S PATENT CANDLE COMPANY (Limited). Retail by Seedsmen and Oilmen. Complaints are made of difficulty in getting Gishurstine. Some leading Nurserymen have put it on their lists, others are requested to do so.

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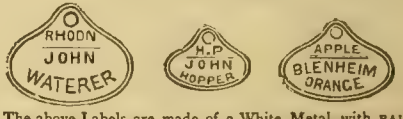
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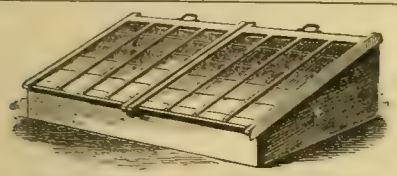
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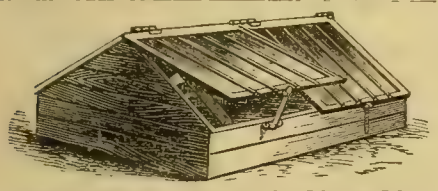
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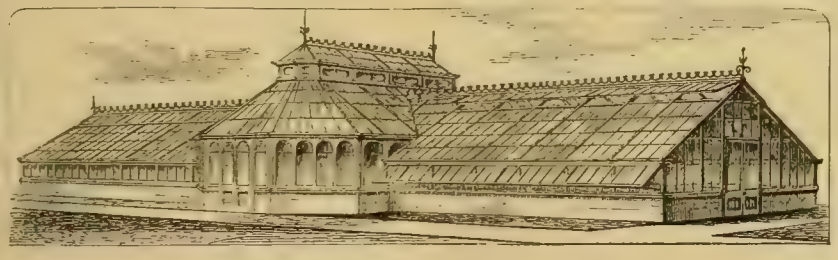
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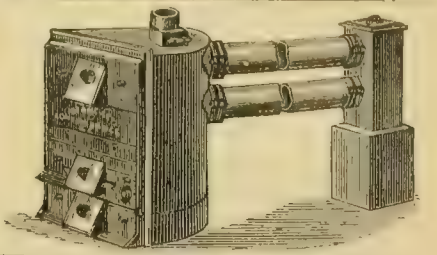
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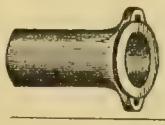
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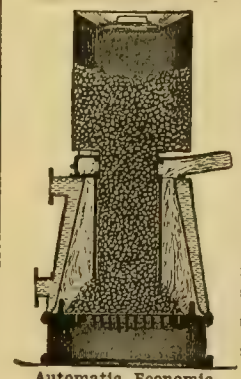
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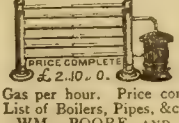
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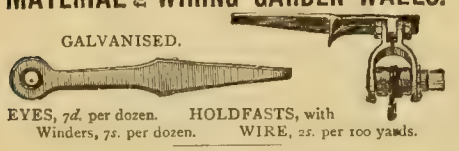
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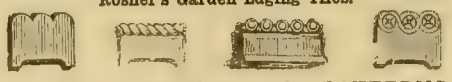
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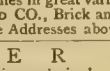
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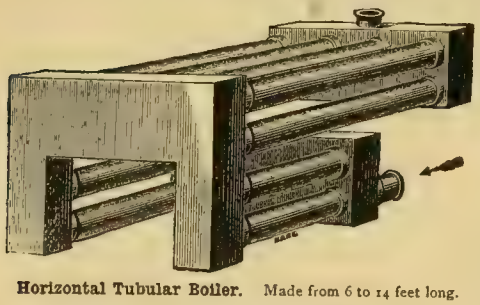
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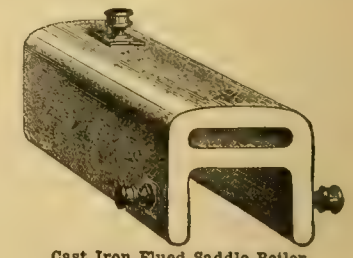
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RODGER, McCLELLAND and CO., Nurserymen, &c., Newry.

Seedling Forest Trees, &c.

TRADE CATALOGUE of above now published, and may be had free on application.

W. P. LAIRD and SINCLAIR, Nurserymen, Dundee, N.B.

CHESTNUT (Spanish), Hazel, Ash, Larch, Scotch, Birch, Alder, Willow, and Thorn Quick.—Stout, well-rooted, transplanted. A large quantity to be sold.

GEO. CHORLEY, Coaster's Nursery, Midhurst.

Floral Commission Agency.

WANTED, Consignments of Maréchal Niel ROSES, English Neapolitan VIOLETS, EUCHARIS, STEPHANOTIS, and CHOICE FRUIT.

W. CALE, Floral Commission Agent, 4, Tavistock Row, Covent Garden, W.C.

WANTED, a few large Specimens, in good condition, of EUCHARIS AMAZONICA and PANCRATIUM FRAGRANS; also large plants of CAMELLIAS ALBA PLENA and IMBRICATA. State number of flowering bulbs, and where can be seen, and lowest price. Address

JAS. LARMOUR, Wilson Street, Belfast.

WANTED, CUPRESSUS MACROCARPA, about 275 plants, 3 to 4 feet. Must be well furnished, with good leaders, and in pot. Send Price to

The EXECUTORS of the late H. BLANDFORD, The Dorset Nurseries, Blandford.

WANTED, large or small pots of EUCHARIS AMAZONICA; also, large plants of WHITE AZALEAS, shape no object if well set with flower-buds. Cash or EXCHANGE.

W. M. CROWE, Boleyn Nursery, Upton, Essex.

WANTED, in quantity, WEEPING BIRCH. State size, quantity to offer, and price. Must be well-rooted.

WILLIAM FELL and CO., Nurserymen, Hexham.

WANTED, SPRUCE FIRS, for Christmas trees, from 3 to 20 feet, well furnished. State particulars to

W. FROMOW and SONS, Sutton Court Nursery, Turnham Green, London.

WANTED, 100 to 200 fine feathered SPRUCE FIRS, from 6 to 12 feet high, suitable for Christmas Decorations.—Address, stating price and particulars to S. WENTWORTH, St. John's Market, Liverpool.

WANTED, GOOSEBERRIES, of sorts, 2-yr. and 3-yr. old.

THOMAS IMRIE and SONS, The Nurseries, Ayr, N.B.

WANTED TO PURCHASE, Standard and Dwarf-trained APPLES, PEARS, PLUMS, and CHERRIES. Must be clean, well-grown, and rooted, &c.—Apply to

W. W. JOHNSON and SON, Nurserymen, Boston.

WANTED, APPLE, PEAR, and CRAB STOCKS, strong and fit for working.—Address with prices to WM. WOOD and SON, The Nurseries, Maresfield, Uckfield, Sussex.

Notice to Senders.

WANTED, CUCUMBERS, GRAPES, TOMATOS, Quinces, Marie Louise and other Pears; also Stephanotis, Roses, Odontoglossum, Vanda cœrulea, Phalænopsis, and other good varieties of Orchids; Gardenias, Tuberoses, and other choice cut flowers.

WISE and RIDES, Fruit and Flower Salesmen, Covent Garden, W.C.

To the Trade Only.

TEA ROSES, on own roots, extra strong, out of 4½-inch pots, £2 per 100, or cash.

MAIRIS and CO., Weston-in-Gordano, Bristol.

To the Trade.

STANDARD and HALF STANDARD ROSES, of good quality, at reasonable prices.

L. WOODTHORPE, Glazenwood Nurseries, Braintree.

CREEPERS for WALLS, TRELLISES, &c., in great variety. See Descriptive LIST. Most of these plants being in pots, may be moved now.

RICHARD SMITH and CO., Nurserymen and Seed Merchants, Worcester.

Single Dahlias.

POT ROOTS, GROUND ROOTS, and SEED.

Ten First-class Certificates have been awarded to my novelties of this season. The Trade supplied.

THOMAS S. WARE, Hale Farm Nursery, Tottenham, London.

GUARANTEED TRUE HIGHLAND NATIVE SCOTCH FIR SEED.—We are now Booking Orders for the above on very easy terms. Before purchasing send for prices to

WM. WISEMAN and SON, Nurserymen, Elgin, N.B.

GILBERT'S CHOU DE BURGHLEY is one of those things that leaves all others of the Brassica tribe far in the rear, in fact a "march onwards" which seldom occurs. Enclose stamp and addressed envelope for particulars. Seed, 2s. 6d. per packet. The Trade supplied on liberal terms.

R. GILBERT, Burghley Gardens, Stamford.

Special Offer to the Trade.

SINGLE DAHLIA SEED, saved from all the best named varieties, including whites, and our novelties for next year—a finer and better strain we feel sure does not exist—20s. per ounce, or in retail (2s. 6d.) packets, price of which may be had on application to

KEYNES and CO., Salisbury.

Pansy and Stock Seeds.

DOWNIE and LAIRD can offer Show and Fancy PANSY SEEDS. Also East Lothian STOCK SEEDS. Prices on application.

DOWNIE and LAIRD, Seedsmen and Nurserymen, 17, Frederick Street, Edinburgh.

SPECIAL OFFER.

GLOBE ARTICHOKES, strong, 3s. per dozen.

CURRANTS, White, strong, 8s. per 100.

SPRUCE FIR, 2-yr. 2-yr., 7s. per 1000.

CHESTNUTS, Scarlet, fine Standards, 6 feet stems, 8s. per dozen, 55s. per 100.

THOMAS PERKINS and SONS, 34, Drapery, Northampton.

TO THE NURSERY TRADE.

SCOTCH FIRS, 1 to 1½, 1½ to 2, 2 to 2½ feet.

LARCH FIRS, 2 to 3, 3 to 4, 4 to 4½ feet.

THORNS or QUICKS, strong, 1½ to 2, 2 to 3 feet.

All thoroughly prepared for lifting. Special prices and samples on application to

HOGG and WOOD, Nurserymen, Coldstream, N.B.

SINGLE DAHLIAS.—Large Ground Roots of my special strain, in all shades of colour—these flower much earlier than young green plants—9s. per dozen, 50s. per 100.

Trade price on application.

THOMAS S. WARE, Hale Farm Nurseries, Tottenham, London.

Gooseberries and Currants.

J. LE CORNU and SON offer a fine stock of GOOSEBERRIES, Mixed Reds, Mixed Green, &c. CURRANTS—Red Dutch, Raby Castle, White Dutch, Black Naples, &c. Strong stuff, on stems 1 foot high, clear of suckers, 20s. per 100, packing included.

High View Nurseries, Jersey.

FRUIT TREES.—Standard, Pyramid, 2-yr. and Maiden APPLES, PEARS, and PLUMS. Price per 100 or 1000 on application to

WILLIAM FLETCHER, Ottershaw Nursery, Chertsey, Surrey.

Order from your Seedsman

LAXTON'S SANDY PRIZE ONION, AND OTHER NOVELTIES.

Particulars in previous Advertisement, or post-free from THOMAS LAXTON, Bedford.

LEICESTER RED CELERY.—Ten thousand packets of this splendid variety are now ready for delivery. Shilling packets, trade price, 6s. per dozen, 42s. per 100. Post-free.

HARRISON and SONS, Seed Growers, &c., Leicester.

Order from your Seedsman

LAXTON'S NEW BEANS JOHN HARRISON and GIRTFORD GIANT.

Particulars in previous Advertisement, or post-free from THOMAS LAXTON, Bedford.

WEDDING, COURT, BALL or other BOUQUETS arranged to order, and all kinds of WREATHS, CROSSES, or other DESIGNS for Church Decoration or Funerals. Price List on application, post-free.

JOHN RAINS, Centre Row, Covent Garden Market, W.C. Old Established.

SALES BY AUCTION.

Hyacinths, Tulips, Crocuses, Narcissus, Iris, Scillas, Snowdrops, and other Flower Roots from Holland.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY during November, at half-past 12 o'Clock precisely each day, CONSIGNMENTS of DUTCH BULBS, arriving weekly from well-known farms in Holland, in large and small lots, to suit all buyers.

On view morning of Sale, and Catalogues had.

Tuesday Next.

AERIDES EMERICI, &c.

MR. J. C. STEVENS will include in his SALE by AUCTION, on TUESDAY NEXT, November 21, PHALÆNOPSIS SPECIOSA, Rchb. f. (true), one plant (see *Gardeners' Chronicle*, April 30, 1881)—this beautiful sweet-scented Phalænopsis now offered for the first time in England; AERIDES EMERICI, Rchb. f. (true), one plant with fourteen leaves, well established (see *Gardeners' Chronicle*, November 4, 1882), one ditto with thirteen leaves; THRIXSPERMUM BERKELEYI, Rchb f. (true), one plant with seven leaves (see *Gardeners' Chronicle*, April 29, 1882), the most beautiful of the species—Professor Reichenbach says, "I love this chaste beauty, and he who loves an Aërides must become attached to this plant;" D. FORMOSUM BERKELEYI, recently named, and not yet described, one fine plant in flower, and two others (all true). All the above plants were collected by Lieut.-Col. Berkeley, the original discoverer. Also two plants of PHALÆNOPSIS TETRASPIS.

On view morning of Sale, and Catalogues had.

Auction Rooms and Offices, 38, King Street, Covent Garden, W.C.

Tuesday Next.

5000 LILIUM AURATUM, just received from Japan, in fine condition.

MR. J. C. STEVENS will include in his SALE, on TUESDAY NEXT, November 21, 5000 Bulbs of LILIUM AURATUM, just received from Japan, in prime condition.

On view morning of Sale, and Catalogues had.

Auction Rooms and Offices, 38, King Street, Covent Garden, W.C.

Vanda Sanderiana.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY, November 21, at half-past 12 o'Clock precisely, by order of Messrs. Hugh Low & Co., every plant that comes to hand alive of a large importation of VANDA SANDERIANA collected by Mr. Richard Curnow, who sends dried flowers, which will be on view, and writes that they are about 15 inches in circumference, and that one small plant with three growths, two of them about 15 inches high, the third about 6 inches, had on it no less than seventy-eight fully expanded flowers. This grand novelty is fully described by Professor Reichenbach in the *Gardeners' Chronicle*, May 6, 1882, page 588. At the same time will be offered PHALÆNOPSIS STUARTIANA. P. SANDERIANA, two probably new PHALÆNOPSIS from Malayan India, ODONTOGLOSSUMS from the vicinity of Bogota, CATTLEYA AMETHYSTOGLOSSA, C. TRIANÆ, and other choice ORCHIDS.

On view morning of Sale, and Catalogues had.

Wednesday Next.

CONSIGNMENT of PLANTS from GHENT.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, November 22, at half-past 12 o'Clock precisely, a consignment of 200 choice named Indian AZALEAS, well set with bloom-buds; half-specimen CAMELLIAS, choice sorts, with flower-buds; 120 AZALEA MOLLIS, the hardy Japanese Azalea; DRACÆNAS, PALMS, &c., for table decoration; Hybrid RHODODENDRONS, OTAHEITE ORANGES, and other GREENHOUSE PLANTS, from Ghent; first-class Standard and Dwarf ROSES, from France; and a consignment of first-class BULBS from Holland.

On view morning of Sale, and Catalogues had.

Thursday Next.

ODONTOGLOSSUM EDWARDI.

MR. J. C. STEVENS has received instructions from Mr. F. Sander, to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, November 23, a very splendid importation of this rare and exceedingly fine ODONTOGLOT, also a very fine importation of ONCIDIUM MACRANTHUM, VANDA SANDERIANA, PHALÆNOPSIS SANDERIANA and STUARTIANA, two PHALÆNOPSIS, probably new, ODONTOGLOSSUM ALEXANDRÆ, and other ORCHIDS.

On view morning of Sale, and Catalogues had.

7000 Lilium auratum from Japan

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on FRIDAY, November 24, at half-past 12 o'Clock precisely, an importation of 7000 LILIUM AURATUM just received from Japan in fine condition; a variety of choice home-grown LILIES, including L. giganteum, L. album Krætzeri, L. neilgherrense; a consignment of the rare L. CARNIOLICUM, and L. Washingtonianum; good roots of the charming CHIONODOXA LUCILIÆ; also SEEDS, including Araucaria excelsa, Arecas, and Kentias; HYACINTHS, TULIPS, CROCUSES, and other BULBS from Holland.

On view morning of Sale, and Catalogues had.

Dutch Bulbs.—Sales every Monday.

MESSRS. PROTHEROE AND MORRIS will SELL at the Mart, Tokenhouse Yard, City, E.C., every MONDAY, at half-past 11 o'Clock precisely, over 800 lots of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, SNOWDROPS, and other ROOTS, from Holland; in lots to suit all buyers.

Catalogues at the Mart, and 8, New Broad Street, E.C.

Sunbury, Middlesex.

By order of the Executors of the late Mr. R. A. Osborn.

THIRD and FINAL PORTION of the exceptionally WELL GROWN STOCK in TRADE.

MESSRS. PROTHEROE AND MORRIS beg to announce that they have received instructions from the Executors to SELL by AUCTION, on the Premises, Osborn's Nursery, Sunbury, on TUESDAY, December 5 and two following days, the third and final portion of the extremely well grown NURSERY STOCK, Roses, &c.

Catalogues may be had when ready at the Auctioneers' Offices, 8, New Broad Street, E.C.

Isleworth, Middlesex.

Five minutes' walk from the Station.

THREE DAYS' SALE of NURSERY STOCK and ORNAMENTAL TREES.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. C. Lee & Son, who require the land for other purposes, to SELL by AUCTION, on the Premises, the Arboretum and Wood Lane Nurseries, Isleworth, W., on TUESDAY, November 21, and following days, at 12 o'Clock precisely each day, several Acres of valuable NURSERY STOCK, which has been carefully prepared for removal, including about 15,000 splendidly grown Ornamental Trees from Messrs. Lee's well-known collections, 1000 Purple Beech, 1000 Limes, 8000 Euonymus of sorts, 2000 Ivies in pots, 3500 Clematis of sorts in pots, 5000 Gooseberries and Currants, specimen Coniferæ and Evergreens, 8000 Seedling Briers, 18,000 small Coniferæ for growing on; also 2000 Camellia Stocks, 1000 double white Camellias, Heaths in flower in 6-inch pots, and other stock.

May be viewed. Catalogues had on the Premises, and at Messrs. LEE'S Hammersmith Nurseries, or of the Auctioneers and Valuers, 8, New Broad Street, E.C.

N.B. There will also be a SALE of a portion of the remarkably well-grown specimen CONIFERÆ and OTHER STOCK at Messrs. Lee's Nursery, Feltham, on TUESDAY, November 28.

Catalogues may be had as above.

Feltham, Middlesex.

Ten minutes' walk from the Station.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nursery, Feltham, by order of Messrs. Lee & Son, on TUESDAY, November 28, at 12 o'Clock precisely, a large quantity of surplus NURSERY STOCK, including beautifully grown and handsome specimen Coniferæ, fine specimen Golden Hollies and Yews, symmetrically grown; a large assortment of Ornamental and Border Shrubs, and other Stock, the whole of which are in the best possible condition, and have been carefully prepared for removal.

May be viewed. Catalogues had on the Premises, at Messrs. Lee's Nursery, Hammersmith; and of the Auctioneers and Valuers, 8, New Broad Street, E.C.; and Leytonstone, E.

Richmond, S.W.—Without Reserve.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Richmond Gas Field and Common Nurseries, Richmond, by order of Messrs. G. & W. Steel, on WEDNESDAY, November 29, at 12 o'Clock, a large quantity of well-grown NURSERY STOCK, including 10,000 bushy Euonymus of sorts, 4000 Green Hollies, 5 to 8 feet, a grand lot; 300 standard Golden Hollies, handsome plants, seldom to be met with; 2000 well feathered Lombardy Poplars, 10 to 12 feet; fine ornamental Trees, Standard and Pyramid Fruit Trees, large specimen Coniferæ, and other stock.

May be viewed. Catalogues had on the Premises, and of the Auctioneers and Valuers, 8, New Broad Street, E.C., and Leytonstone, E.

Turnham Green, Back Common.

Adjoining the Bedford Park Estate.

TO NURSERYMEN, FLORISTS, PRODUCERS, AND OTHERS.

EXPIRATION OF LEASE.

IMPORTANT SALE of PINE-HOUSES, PITS, and Effects.

MR. WOODS begs to announce that he has received instructions from Mr. A. Peacock, Jun., to SELL by AUCTION, on the Premises, as above, on WEDNESDAY, November 22, at 1 o'Clock, the materials of eight Brick-built PINE and OTHER PRODUCING HOUSES, With all the well-made Glazed Lights and Framing; also the whole of the iron Heating Pipe to ditto, about 1350 feet, together with the five Saddle-back Boilers, Furnaces, and Fittings; the temporary erection of Tool Shed, Cart Shed, &c.; also two very heavy cast-iron Pumps, with long lengths of Lead Pipe to Wells, and useful effects.

May be viewed, and Catalogues had at the "Windmill" Inn, Turnham Green; on the Premises; and of Mr. WOODS, Auctioneer, Hounslow.

West-side, Clapham Common, S.W.,

near Clapham Junction.

The valuable MATERIALS and FITTINGS, &c., of the palatial Mansion, Outbuildings, and Grounds, of 19 acres, to clear the site for Building Purposes, comprising about 45 tons of Lead, quantity of Copper, several tons of Iron Gutters, Railings, Hot-water Pipes, &c., over 1,000,000 Bricks, 70 squares of Westmoreland and other Slates, stout Timber of several Roofs, 160 squares of Board and Timber Floors, 85 Doors and Frames, 75 Sashes and Frames, 4 costly stained-glass Windows, 20 Statuary Marble Chimney Pieces and Stoves, the ornamental Iron and Copper Verandah, 6 stone Gate Piers and massive Gates, iron Conservatory with semicircular glass roof of noble proportions, and other extensive erections of Vineries and Greenhouses, about 1000 yards of extra stout Iron Hurdles, 1000 ft. of Oak and other Fencing, 90 squares of Paving, 1500 ft. of Portland Stone Coping. The whole of the growing timber, comprising 230 Trees, 7000 Evergreens, and other Shrubs and Fruit Trees, 14 acres of Lawn and Field Turf, and a large quantity of other materials.

MR. DOUGLAS YOUNG will SELL by AUCTION, on the Premises, as above, on TUESDAY, November 28, and following days, commencing at 12 o'Clock each day precisely.

The Premises may be viewed three days before the sale, and Catalogues obtained of W. N. DUNN, Esq., Architect, 1 and 2, Bucklersbury, E.C.; and of the Auctioneer, 213A, Clapham Road, S.W.

London, West End.

Occupying a prominent position in an important thoroughfare.

TO BE DISPOSED OF, in consequence of the failing health of the proprietor, an old-established FLORIST'S BUSINESS, with Dwelling House, Double-fronted Shop, and several Greenhouses. Lease twenty-five years unexpired. Ground Rent only £25.

Messrs. PROTHEROE AND MORRIS, 8, New Broad Street, E.C.

DOUBLE PINK BOUVARDIA, "PRESIDENT GARFIELD," a handsome and beautiful variety. Good plants, price 5s., 10s. 6d., 15s., and 21s. each, from JAMES CARTER AND CO. Trade price per dozen on application, with sample plants.

237 and 238, High Holborn, London, W.C.

VIOLET, NEW DOUBLE MAZARINE BLUE.—This variety is very robust in habit, the flowers are large and perfectly formed, very fragrant, and freely produced. It is the finest Ultramarine-Blue Double Violet in cultivation. Price, each, 2s. 6d.; per dozen, 24s.

CARTERS', The Queen's Seedsmen, 237 and 238, High Holborn, London, W.C.

FOR SALE, Cheap, 100,000 extra strong 4-yr. transplanted THORN QUICKS.—Sample and price on application.

SHERRATT AND POINTON, Knypersley Nursery, Congleton.

To the Trade.

SEED POTATOS.

H. and F. SHARPE'S Wholesale LIST of SEED POTATOS is now ready, and will be forwarded on application. It comprises the best varieties in cultivation, of the finest quality, free from disease, and selected specially for seed purposes. The prices will be found exceptionally low.

Seed-Growing Establishment, Wisbech.

SURPLUS STOCK.

AZALEA MOLLIS, Seedlings, twice transplanted, 4 to 6 inches high, six to nine shoots, from the three following varieties, each kept distinct, viz., Comte de Gomer, Consul Pêcher, and Isabelle Van Houtte, in equal quantities of each, 25s. per 100. £10 per 1000.

LILIUM AURATUM, fine home-grown flowering bulbs, from our own saved seed, first size, 9s.; second size, 6s per doz.

RHODODENDRONS.—We have still 50,000 Hybrid Seedlings, raised from varieties which have been hybridised to obtain brilliant colours. Price List of these and other plants, now offered cheap to clear ground, forwarded on application.

ISAAC DAVIES AND SON, Nurserymen, Ormskirk, Lancashire.

LARCH, extra fine, clean, 2½ to 3½ feet, 25s. per 1000. SCOTCH FIR, 1 to 2 feet, 15s. per 1000. AUSTRIAN PINE, 1 to 2 feet, 25s. per 1000, all well rooted.

W. JACKSON, Blakedown, near Kidderminster.

POTATOS—POTATOS.—Best and cheapest house in Berkshire for all kinds of eating Potatos. Price LIST upon application to

C. J. FIDLER, Potato Grower, Reading.

To Fruiterers and Others.

PINE-APPLES.—For sale, a few fine English-grown. State price. Apply,

W. R., Staindrop, Darlington.

DICKSONS AND CO., 1, Waterloo Place, Edinburgh, beg to announce that their TRADE NURSERY LIST is now published, and can be had on application.

Gardenia intermedia.

CLEAN HEALTHY PLANTS, in 5-inch pots, to flower this winter, 2s. each, 18s. per dozen; nice plants in 60's, 9d each, 6s. per dozen. A few large plants, about 4 feet, which will be full of flowers this winter; price on application. CATALOGUE free.

W. M. CROWE, Boleyn Nursery, Upton, Essex.

TO THE TRADE.—We can offer a large quantity of fine sound POTATO ONIONS, grown on upland. Price on application to

HOGG AND ROBERTSON, Seedsmen, 22, Mary St., Dublin.

DOUBLE WHITE BOUVARDIA, "ALFRED NEUNER."—First-class Certificate Royal Horticultural Society. Price, strong established plants, 1s. each, 9s. per dozen, from JAMES CARTER AND CO. Trade price per 100 on application, with sample plants.

237 and 238, High Holborn, London, W.C.

FRANCIS BELL, NURSERYMAN, Easingwold, offers:—

2,000,000 SCOTCH LARCH, 1½ to 2 feet, 2 to 3 feet, 3 to 4 feet.

200,000 SCOTCH FIR, 1 to 1½ foot, 1½ to 2 feet.

200,000 QUICKWOOD, 2 to 3 feet.

The above are recently transplanted, with good leads and roots. For particulars apply as above.

EIGHTY THOUSAND CLEMATIS, in Pots, of all the finest double and single varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants.

Descriptive LIST on application.

RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

R. AND G. NEAL, NURSERYMEN, SEEDSMEN, and CONTRACTORS, Wandsworth Common, S.W., respectfully invite an inspection of the large and varied Stock of SHRUBS, FOREST, ORNAMENTAL, FRUIT and ROSE TREES grown at their Nurseries, which are now in fine condition for transplanting. All plants delivered free by own vans, within 6 miles of the Nursery. Builders supplied at Trade Prices. CATALOGUES on application.

The Nurseries are within 1 mile of the Clapham Junction and Wandsworth Common Stations.

4000 Azaleas, Camellias, Ericas, and Epacris. 4000

AZALEA INDICA, in best varieties, for forcing, including Whites, well set with buds, 24s., 30s., and 42s. per dozen, £8 to £15 per 100.

AZALEA MOLLIS, good bushy stuff of these invaluable plants for early forcing, in all shades of colour, 21s., 30s., and 40s. per dozen, £8 to £15 per 100.

HEATHS and EPACRIS, best varieties, well set with flower, 18s and 24s. per dozen.

CAMELLIAS, in best varieties, including Whites, 25s., 30s., and 42s. per dozen, £9 to £15 per 100.

CATALOGUE free.

W. M. CROWE, Boleyn Nursery, Upton, Essex.

MULBERRIES.

Splendid Trees, 4, 5, to 6 feet stems, with fine heads, from 5s. to 42s. each.

Further particulars on application.

Also COB NUTS, all sizes, in quantity.

JAS. IVERY & SON,

THE NURSERIES, DORKING, SURREY.

NEW ROSES of 1882, in pots.—Vendors' Selection, 30s. per dozen; Purchaser's, 36s. per dozen. The above comprise all the best English and French-raised Hybrid Perpetuals, Perpetual Polyantha, Teas, Hybrid Teas, and Perpetual Moss.

ROSES of 1881, of above-named classes, 18s. to 24s. per dozen, in pots.

CHOICE ROSES. — Tea-scented, Hybrid Tea, Noisette, China, and Bourbon, 18s. to 24s. per dozen, strong plants in pots.
Descriptive LIST on application.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

SPIRÆA PALMATA:
The largest stock for forcing in the world.
LAURUS CAUCASICA:
The finest Laurel ever introduced.
RHODODENDRONS:
All kinds and all sizes.
STANDARD RHODODENDRONS:
You may select from thousands.
HARDY TREES, SHRUBS, ROSES, &c.
For general planting, acre after acre.
Intending planters are invited to come down and see the stock. The Nursery is ten minutes from Sunningdale Station, S.-W. Railway.
CHARLES NOBLE, Bagshot.

ASPARAGUS. — We are Booking Orders now for strong healthy 2-yr. and 3-yr. old Plants of the true Reading Giant and Connover's Colossal Asparagus.
BRINKWORTH AND SONS, Reading

Special Offer.

CEDRUS DEODARA, fine plants.
3 to 4 feet, 15s. for 12, 60s. for 50, 110s. for 100.
4 to 5 feet, 18s. for 12, 70s. for 50, 130s. for 100.
THOMAS PERKINS AND SONS, 34, Drapery, Northampton.

THE NURSERIES, DUMFRIES.
(Established 1787.)
Our Stock, which is one of the largest in Scotland, comprises FOREST, FRUIT, and ORNAMENTAL TREES, DECIDUOUS and EVERGREEN SHRUBS, ROSES, GREENHOUSE PLANTS, &c.; also a very large and splendid Stock of THORN QUICKS, for Hedging and for Filling up Gaps.
The Trees and Shrubs are of all ages and sizes, and are well adapted for extensive planting or giving immediate effect in the formation and improving of Ornamental Parks, Pleasure Grounds, &c. Prices on application.
THOMAS KENNEDY AND CO., Seed and Nursery Establishment, Dumfries.

New Seedling Apple, The Queen.
FIRST-CLASS CERTIFICATE.

SALTMARSH AND SON are now supplying strong maiden trees of this excellent variety, without which no collection, however small, will be complete, at 3s. 6d. each; also a few strong 2-yr. pyramids, on Crab and Paradise stocks, at 5s. to 7s. 6d. each. Price to the Trade on application.
The Nurseries, Chelmsford, Essex.

ROSES, well rooted, many-shooted, truly named, of matured growth, and of the best kinds.
DWARFS, R. S. & Co.'s selection, 8s. per dozen, 60s. per 100.
STANDARDS, 21s. per dozen.
Descriptive LIST on application.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

WILLIAM BARRON AND SON'S new CATALOGUE of Coniferæ and Hardy Ornamental Trees, Forest Trees, Rhododendrons, Fruit Trees, Roses, &c., is now ready, and will be sent post-free on application.
Elvaston Nurseries, Borrowash, near Derby.

Planting Season.

ANTHONY WATERER begs to invite attention to the following well-grown and properly rooted NURSERY STOCK:—
AUCUBA JAPONICA, 1½, 2, and 3 feet. Thousands.
BOX, Green and Variegated, 2, 3, 4, 5, 6, and 7 feet. Thousands.
YEWS, English, 2, 3, 4, 5, 6, 8 to 10 feet. Thousands.
„ Golden, all heights up to 10 feet, and various shapes—Globes, Pyramids, &c. Thousands.
„ Irish, 5, 6, 7, to 10 feet.
JUNIPERS, Chinese, 5, 6, 7, to 10 feet.
PICEA PINSAPO, 5, 6, 7, to 10 feet.
„ NORDMANNIANA, 5, 6, 7, to 10 feet.
SPRUCE FIRS, well furnished, 3, 4, 5, 6, and 7 feet. Many thousands.
„ Black, 3, 4, and 5 feet.
SPRUCE, Hemlock, 4, 5, and 6 feet.
WEARE'S ARBOR-VITÆ, 4, 5, 6, and 7 feet.
HOLLIES, common Green, of all heights, up to 10 feet. Thousands.
„ Green, of sorts, such as LAURIFOLIA, MYRTIFOLIA, HODGINS', ALTACLARENSE, Yellow-berried, &c. An enormous Stock.
„ Variegated, from 3 to 5, 6, 7, 8, and 10 feet.
„ Waterer's, beautiful Specimens.
„ Golden Queen, up to 10 feet. Hundreds.
„ Silver Queen, up to 10 feet. Hundreds.
„ Perry's Weeping Standards and Pyramids.
„ Golden Weeping Standards and Pyramids.
The Stock of Hollies of various kinds comprises many thousands, and affords a choice quite unequalled.
CUPRESSUS LAWSONIANA ERECTA VIRIDIS, 3, 4, 5, 6, 7, and 8 feet. Thousands.
„ „ GRACILIS, 3 and 5 feet.
„ „ ARGENTEA, 3 and 5 feet.
„ „ LUTEA, hundreds of fine plants, 3, 4, and 5 feet high.
RETINOSPORA PLUMOSA AUREA, 3, 4, and 5 feet.
„ OBTUSA AUREA, 4, 5, 6, and 7 feet.
„ PISIFERA AUREA, 3 and 4 feet.
THUIOPSIS DOLABRATA, 3, 4, 5, and 6 feet. Hundreds.
BEECH, Purple, 6 to 10 and 12 feet Thousands.
LIMES, 10, 12, 14, 15, and 16 feet. Thousands.
PLANES, 10 to 20 feet.
MAPLE, Norway, 10 to 15 feet.
CHESTNUT, Horse, 10 to 16 feet.
„ Scarlet, 10 to 16 feet.
POPLAR, CANADENSIS NOVA, 10 to 16 feet. Thousands.
OAKS, Scarlet American, 10 to 12 feet.
ACER DASYCARPUM, 10 to 16 feet.
„ SCHWEDLERII, 10 to 12 feet.
And a vast and Miscellaneous Stock of Flowering DECIDUOUS SHRUBS and EVERGREENS, which intending purchasers are respectfully invited to come and see.
Knap Hill Nursery, Woking, Surrey.

GRAPE VINES and ORCHARD HOUSE TREES in POTS. — GRAPE VINES, extra strong, short-jointed and well ripened; Planting Canes, 3s. 6d. to 5s. each; extra strong Fruiting Canes, 7s. 6d. to 10s. ORCHARD-HOUSE TREES, fruiting in pots, consisting of Peaches, Nectarines, Apricots, Plums, Cherries, Pears, Apples, and Figs. Descriptive Price LIST for 1d. stamp.—RICHARD SMITH AND CO., Nurserymen and Seedsmen, Worcester.

HAMPTON COURT BLACK HAMBURGH VINES. — Extra strong Fruiting Canes of the above from 10s. 6d.; also fine Planting Canes from 3s. 6d. each.
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STRAWBERRIES.—Strong roots for present planting and for fruiting next year, 4s. per 100. Descriptive LIST and price for plants in pots for forcing on application. — RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Special Cheap Offer.

ISAAC MATTHEWS AND SON are prepared to make a special offer to the Trade and Large Buyers. Samples and Price List on application:—
ASH, Common, 3 to 4 feet, 4 to 5 feet.
„ Mountain, 3 to 4 feet, 4 to 5 feet, 5 to 6 feet, 7 to 8 feet, 8 to 9 feet.
OAK, English, 1½ to 2 feet.
POPLAR, Black Italian, 3 to 4 feet, 4 to 5 feet, 5 to 6 feet.
SYCAMORES, 2 to 3 feet.
CHESTNUTS, Horse, 9 to 10 feet, 10 to 12 feet.
ELDER, Golden, 2 to 3 feet.
THORN QUICK, strong, 3-yr., 4-yr., strong.
HOLLIES, Hodgins', maderensis, Golden Queen, Silver Queen, Old Silver, myrtifolia, ovata, Shephardii, common Green, in all sizes.
LAURELS, Common, 12 to 18 inches, 1½ to 2 feet, 2 to 2½ feet, fine.
CUPRESSUS, in variety, from 1½ to 7 feet.
RETINOSPORA PLUMOSA, 1 foot, bushy.
YEWS, English, 18 to 24 inches, 2 feet, 2½ feet, 2½ to 3 feet.
AZALEA Pontica, 4 to 6 inches.
RHODODENDRONS, Hybrid and Pontica, 3 to 4 inches, 4 to 6 inches, 6 to 9 inches, 9 to 12 inches, 12 to 15 inches, 15 to 18 inches, 1½ to 2 feet, 2 feet; ditto, choice named sorts, bushy, in 100 varieties.
„ CUNNINGHAM'S WHITE, 9 to 12 inches, 12 to 15 inches, 15 to 18 inches.
„ CAUCASICUM PICTUM, 9 to 12 inches, 12 to 15 inches, 15 to 18 inches.
RHODODENDRON STOCKS, strong.
PANSIES, in 100 varieties.
IVY, Irish, 4-yr., strong.
The Nurseries, Milton, Stoke-on-Trent.

PLANTS FOR POTTING AND FORCING:—
AZALEA MOLLIS, with from 10 to 30 buds
„ a selection of the best hardy kinds, including PONTICA, NARCISSIFLORA, and GRAF VON MERAN, well budded.
KALMIA LATIFOLIA, nicely grown plants with flower-buds on wellnigh every shoot.
RHODODENDRONS, well budded and the best varieties for the purpose.
DEUTZIA CANDIDISSIMA, fl.-pl., established in pots.
HYDRANGEA PANICULATA GRANDIFLORA, very strong.
ANDROMEDA PULVERULENTA or SPECIOSA.
These can be obtained in satisfactory plants and at fair prices from
ANTHONY WATERER, Knap Hill Nursery, Woking, Surrey.

FERNS, &c., in SMALL POTS.

	Per dozen.—s. d.
ADIANTUM CUNEATUM	21s. per 100 3 0
„ CONCINNUM	3 6
„ „ LATUM	3 6
„ EXCISUM	3 6
HEMIONITIS PALMATA	4 0
GYMNOGRAMMA LAUCHEANA vars.	21s. per 100 3 0
„ DECOMPOSITA	3 0
PTERIS MAGNIFICA	18s. per 100 2 6
„ CRETICA	20s. per 100 3 0
„ PALMATA	4 0
BRAINEA INSIGNIS	6 0
LYGODIUM SCANDENS	21s. per 100 3 6
DRACÆNA VEITCHII and AUSTRALIS, PANDANUS UTILIS, LATANIA BORBONICA, CHAMÆROPS HUMILIS, C. EXCELSA ..	3 0
ARALIA SIEBOLDII, GREVILLEA ROBUSTA ..	2 6
ALLAMANDA GRANDIFLORA	15 0
CLEMATIS INDIVISA LOBATA	15 0
CHOISYA TERNATA	6 0
DIPLADENIA BREARLEYANA	15 0
„ of sorts	6s., 9s., and 12 0
ALLAMANDAS, CLERODENDRONS, and BOUGAINVILLEAS of sorts	6s., 9s., and 12 0
STOVE PLANTS in great variety	per 100 50 0
GREENHOUSE PLANTS	„ 50 0

As good varieties and plants as generally sold at treble the prices. Catalogues free.
WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

Catalogues for the Season.

CHARLES TURNER'S Descriptive LISTS of the following can be had free on application:—
DUTCH and OTHER BULBS,
CARNATIONS, PICOTEES, and PINKS,
STRAWBERRIES, &c.
The Royal Nurseries, Slough.

To the Trade.

SEAKALE, extra strong, selected for forcing; also POTATO ONIONS, SHALLOTS, and GARLIC. Prices on application.
W. TAIT AND CO., Seed Merchants, Dublin.

Lovely Rare Water Lily.

NYMPHÆA ODORATA MINOR.—A miniature of our native Water Lily. Flowers only 2 inches across; white, varying to rich rose. Strong roots, at the remarkably low price of 5s. each.
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KENTISH FRUIT TREES.— Standard, Pyramid, and Trained CHERRIES, APPLES, PEARS, and PLUMS, in all the most profitable varieties for Market Growers, at 20 per cent. under usual prices for cash.
T. EVES, Nurseryman and Fruit Grower, Gravesend Nurseries. Established 1810.

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Great Reduction in Price for Cash Payments, viz.,
15 per Cent. for Cash before delivery.
10 per Cent. for Cash within One Month of date of invoice.
5 per Cent. for Cash within Three Months of date of invoice.
After Three Months no discount can be allowed.

We shall be pleased to quote prices for the following in small or large quantities:—

Standard and Half-Standard H.P. Roses.
STANDARD, HALF-STANDARD, and DWARF MARÉCHAL NIEL ROSES.
TEA and NOISETTE ROSES in Pots.
PURPLE BEECH, best selected dark, broad-leaved variety, of all heights up to 8 feet.
BEECH, Cut-leaved, Fern-leaved, Crested-leaved, and Weeping.
KENTISH COB and other best kinds of NUTS and FILBERTS.
POPLARS, Black Italian, small or large.
POPLARS and WILLOWS of many choice kinds, in variety.
Scarlet-flowered and Common HORSE CHESTNUTS, large or small.

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Indoor Plants.	Per dozen.—s. d.
HERBACEOUS CALCEOLARIAS, out of pots ..	1 6
„ „ in pots	2 6
CINERARIAS, in 5-inch pots	6 0
SOLANUMS, full of berries, in 5-inch pots	6s. and 9 0
CYCLAMENS, very fine, in 5-inch pots ..	6s., 9s, and 12 0
BOUVARDIAS, for early blooming, in 5-inch pots,	6s., 9s., and 12 0
AZALEA INDICA, Ghent or Mollis, with buds,	21s., 24s., and 30 0
HYACINTHS to name	5s. and 6 0
„ Roman	per 100, 22s. 3 0
TULIPS, to name .. per 100, 6s. and 8s.	1s. and 1 6
HARDY HEATHS, to name	4 0
LEDUMS, KALMIAS, GAULTHERIAS	6 0
CONIFERS for Pots, Window-boxes, and Winter Bedding	per 100, 40s. 6 0
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POTENTILLAS, PYRETHRUMS, to name ..	5 0
PHLOXES, to name	per 100, 20s. 3 0

All the above Florists' Flowers of the finest varieties, many new. Herbaceous Plants, many thousands of the most showy kinds—12 sorts, 3s.; 50 sorts, 11s.; 100 sorts, 20s.
Spring-blooming Plants, such as POLYANTHUS, Seedling PRIMROSES (all colours), WALLFLOWERS, CANTERBURY BELLS, ARABIS, AUBRIETIAS, DAISIES (Red, White, or Rose), MYOSOTIS, SILENE COMPACTA, 4s. per 100, 35s. per 1000.
TULIPS, for Bedding, to name, 5s. per 100.
CROCUS, 2s. per 100.
SNOWDROPS, 2s. 6d. per 100.
PRIMROSES, Double White, Sulphur, and Lilac, 24s. per 100, 3s. 6d. per dozen.
HEPATICAS, Double Red and Single Blue, 24s. per 100, 3s. 6d. per dozen.
SWEET VIOLETS, in good Clumps, for Forcing, 30s. per 100, 4s. per dozen; ditto, ditto, in small plants, 15s. per 100, 2s. per dozen.
New CATALOGUE post-free.
WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

Planting Season.—Established 1822.

R. AND A. MORRISON, The Nurseries, Elgin, N.B., beg to direct the attention of Planters to their extensive stock of FOREST and ORNAMENTAL TREES and SHRUBS, which are all in a healthy and vigorous condition. They make the growing of Scotch Fir and Larch a speciality, and guarantee them as True Native, being the produce of seed collected by them in the forests in the north of Scotland. Their stock of Scotch Fir is especially fine. They have several millions of 1-yr. and 2-yr. seedlings to offer, which they are prepared to quote at very cheap rates. They have also upwards of 1,000,000 of Scotch Fir, from 12 to 18 inches, which they guarantee as twice transplanted, and are in consequence very suitable for English plantations. In Larch (true native), they have a very large stock. Their 1-yr. and 2-yr. Larch, of which they have upwards of 10,000,000, are the finest in Scotland, and will be quoted at the lowest possible prices. They have also an extensive stock of Transplanted Larch, in sizes from 12 inches to 4 feet. R. & A. M. also grow extensively SPRUCE, PINUS AUSTRIACA, LARICIO, MONTANA, SILVER FIR, in all sizes; RHODODENDRONS, PONTICUM and HYBRIDS, in great variety; Gold and Silver Queen HOLLIES, grafted, by the thousand; and all kinds of ORNAMENTAL TREES and SHRUBS.
Samples and prices on application.

Special Offer to the Trade of

LEICESTER SEEDS, which may be had on application to
HARRISON AND SONS, Seed Growers, &c., Leicester.

NEW APPLE, SCHOOLMASTER.
First-class Certificate, R.H.S.
The best Apple introduced for some years.
A large and handsome fruit, of splendid quality, either for cooking or dessert, and suitable for the most exposed situations. See *Florist and Pomologist* and *Herefordshire Pomona* for illustrations. Strong Maidens, 7s. 6d. each, of the principal Nurserymen. Liberal Trade terms. Coloured plate, price 6d.
Particulars post-free from
THOMAS LAXTON, Bedford.

SPECIAL OFFER OF NURSERY STOCK.
Small Transplanted Evergreens.
CUPRESSUS LAWSONIANA, 9 to 12 in., 12s. 6d. per 100.
" 1-yr., 1-yr., 15s. per 100.
RETINOSPORA PLUMOSA ARGENTEA, 4-yr., 25s. per 100.
THUIA LOBBII, 1 to 1½ ft., 16s. per 100.
" OCCIDENTALIS, (American Arbor-vitæ), twice transplanted, 6s. per 100, 50s. per 1000.
" ORIENTALIS (Chinese), twice transplanted, 6s. per 100, 50s. per 1000.
" " AUREA, 9 to 12 in., bushy, 50s. per 100.
BERBERIS AQUIFOLIA, twice transplanted, 6s. per 100, 50s. per 1000.
" DARWINII, twice transplanted, 6s. per 100, 50s. per 1000.
" " 1 to 1½ ft., 12s. 6d. per 100.
HOLLIES, common, 1-yr., 2-yr., fine, 4s. per 100, 30s. per 1000.
" common, twice transplanted, 6s. per 100, 50s. per 1000.
BROOM, common yellow, 1-yr., transplanted, 6s. per 100, 40s. per 1000.
" white Portugal, 1-yr., transplanted, 10s. per 100, 80s. per 1000.
SPIRÆA JAPONICA, strong crowns for forcing, 12s. per 100.
" PALMATA, strong crowns for forcing, 6s. per dozen.
APPLES, Standards, strong, 4-yr., 12 per dozen, 80s. per 100.
" Standards, strong, 3-yr., branched, 9s. per dozen, 63s. per 100.
In quantity, Blenheim Orange, Cox's Orange, Lord Suffield, Wellington, Warner's King, &c.
PEARS, Standards, strong, 4-yr., 9s. per dozen, 70s. per 100.
" Standards, strong, 3-yr., branched, 6s. per dozen, 30s. to 40s. per 100.
Including all of the leading kinds.
HOLLIES, common, bushy, 1 to 1½ ft., 15 to 24 in., 2 to 3 up to 6 to 7 ft.
LAURELS, common, 1½ to 2 and 2 to 2½ ft.
" Portugal, 1½ to 2, 2 to 2½, 2½ to 3 ft.
YEWS, English, 1½ to 2, 3 to 3¼, 3½ to 4 ft.
AUCUBAS, bushy, 1¼ to 2, 2 to 2½ ft.
PRIVET, oval-leaved, 1½ to 2, 2¼ to 3½ ft.
COTONEASTER SIMMONDSII, 4 to 4½ ft.
RHODODENDRON PONTICUM, bushy, 12 to 15 in., 1 to 1½ ft., 1½ to 2 ft., and larger.
SPRUCE FIR, extra transplanted, 15 to 21 in., 2 to 2½ ft.
CEDRUS DEODARA, 2, 3, 4, to 5 ft.
CUPRESSUS LAWSONIANA, 6 to 7 ft.
" " ERECTA VIRIDIS, 2 to 2½ ft.
" " GRACILIS, 3 to 3½ ft.
PINUS AUSTRIACA, 3 to 4 ft. [planted.
CHESTNUTS, Horse, 6 to 8 and 10 to 16 ft., stout, transLIMES, 8, 9, 10, to 13 ft., stout, transplanted.
POPULUS CANADENSIS NOVA, 8, 9, 10, to 16 ft., stout, transplanted.
THORNS, flowering, Standards, of sorts.
Prices of above on application, also Price LISTS of General ock.
W. C. SLOCOCK, Goldworth Old Nursery, Woking, Surrey.

Tea Roses.

THE LIVERPOOL HORTICULTURAL COMPANY (JOHN COWAN), Limited, The Vineyard and Nurseries, Garston, near Liverpool, have a splendid stock of TEA ROSES in all the leading varieties.
LIST free. Price to the Trade on application.
Also a large stock of GRAPE VINES.

LAPAGERIA ALBA, well-rooted plants, 10s. 6d., 15s. and 21s. A few extra specimens, size and price on application.
LAPAGERIA RUBRA, superb, 7s. 6d., 10s. 6d. and 15s. A few extra-sized specimens, size and prices on application.
W. HOWARD, Southgate, N.

TWO HUNDRED THOUSAND HERBACEOUS and ALPINE PLANTS for Borders, Rockwork, &c. See Descriptive LIST, giving colour, height, time of flowering, &c., free by post for 1d. stamp.
Selection of 100 good showy varieties for 25s.
R. SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

APPLE TREES with MISTLETO growing on them. Price from 7s. 6d. to 21s. each.
RICHARD SMITH AND CO., Nurserymen, Worcester.

FLOWERING SHRUBS, in great variety, such as Hydrangeas, Lilacs, Deutzias, Spiræas, Cytisus, Broom, Pyrus, Berberis, Double Cherry, Scarlet Hawthorns, Gueldres Rose, &c., 8s. per dozen, 50s. per 100.
Descriptive LIST on application.
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ROSES — Carriage Paid — ROSES.
(To any Railway Station in England.)
Twelve distinct varieties, Perpetuals, 1st Prize flowers, 10s. 6d.
100 in fifty varieties, 1st Prize flowers, 65s.
The plants are very fine, stout, and well-rooted. Terms cash.
Usual Trade Discount.
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HORIZONTAL TRAINED FRUIT TREES.—For extra sized Horizontal Trained Pears, which will cover bare walls, and come into bearing at once.
PYRAMID APPLES and PEARS and ESPALIER APPLES, extra transplanted, and in fruiting condition.
AUCUBA JAPONICA, beautifully coloured and very fine.
AUCUBA VERA, thickly set with berries.
Through trucks to any part of the United Kingdom. Plants and trees added to compensate for freight. Apply to
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ALBERT AND EDWIN BATH, Colgates Farm, Sevenoaks, Kent.

Special Offer.
CEDRUS DEODARA.
CRYTOMERIA ELEGANS.
VARIEGATED YEWS.
H. LANE AND SON, having many thousands of the above, well transplanted, can offer them very cheap; also many other TREES and SHRUBS.
The Nurseries, Berkhampstead, Herts.

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SEVENTY-FOUR ACRES of FRUIT TREES.—Apples, Pears, Plums, Cherries, Peaches, Nectarines, Apricots, and other Fruit Trees, as Standards, Dwarfs, Pyramids, Bushes, Cordon and Trained Trees in great variety, all full of vigour, and warranted true to name. Descriptive Price LIST, containing a sketch of the various forms of Trees, with Directions for Cultivation, Soil, Drainage, Manure, Pruning, Lifting, Cropping, Treatment under Glass; also their Synonyms, Quality, Size, Form, Skin, Colour, Flesh, Flavour, Use, Growth, Duration, Season, Price, &c., for 1d. stamp.

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SEAKALE—SEAKALE.

VERY LARGE.
ANY QUANTITY.

Apply to the Grower for Particulars.

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MILLSHOT FARM, FULHAM, S.W.

FLOWER ROOTS, &c.

BEST QUALITY. CARRIAGE FREE.

DICKSON & ROBINSON,

SEED MERCHANTS and BULB IMPORTERS,
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D. & R.'s COLLECTIONS of SELECT FLOWERING BULBS for the Decoration of the Conservatory or Greenhouse, and for Outdoor Flowering in Spring:
10s. 6d., £1 1s., £2 2s., and £3 3s. each.
For Contents of these Collections see our
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AZALEA MOLLIS, strong bushes, well set with flower-buds.
DEUTZIA GRACILIS, extra strong plants.
DIELYTRA SPECTABILIS, extra strong roots.
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LILY OF THE VALLEY, imported extra strong clumps.
LILY OF THE VALLEY, imported extra strong single crowns.
SPIRÆA (Hoteia) JAPONICA, imported extra strong clumps.
SPIRÆA PALMATA, bright crimson flowers, strong clumps.

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LAURUSTINUS, bushy and well-rooted plants, 1 to 3 feet, 50s. to 100s. per 100. Sample dozen forwarded on receipt of 10s
HOLLIES, Gold and Silver, from 3 to 7 feet, well-rooted plants, 42s. to 90s. per dozen.
" Green, 1½ to 3 feet, 50s. and 75s. per 100.
Chad Valley Nurseries, Edgbaston, Birmingham.

R. H. VERTEGANS' New Double CINERARIAS (now ready), the finest in cultivation. The set of 12 distinct varieties will be sent, packing and carriage free, on receipt of Post-office Order for 31s. 6d.
VORTIGERN, the finest double crimson, 3 plants showing flower free for 10s. 6d., 1 for 5s
Chad Valley Nurseries, Edgbaston, Birmingham.

Apples—Apples—Apples.
DWARF-TRAINED for ESPALIERS.
WOOD AND INGRAM have the finest stock of the above (including all the leading varieties) in the Trade. Price 30s. per dozen, package free. N.B.—Also other fruits. Trade price on application.
The Nurseries, Huntingdon.

STANDARD and HALF-STANDARD ROSES, fine stuff of the leading kinds. Price on application.
E. J. BATCHELOR, Harlow Heath Nursery, Harrogate.

CHRISTMAS ROSES (Helleborus niger), fine imported crowns, also English-grown, 1 yr. from above.
CHIONODOXA LUCILIÆ (The Glory of the Snow), intense blue with white; charming spring bloomer.
IXIA CRATEROIDES, deep crimson.
GLADIOLUS BRENCHLEYENSIS.
" COLVILLII ALBA (The Bride).
" " RUBRA.
Low Prices and CATALOGUE of all Dutch, English and French Bulbs on application.
WATKINS AND SIMPSON, Exeter Street, Strand, W.C.

SEAKALE, exceptionally fine Roots for Forcing, 2s. 6d. per dozen, 16s. per 100.
ASPARAGUS, strong, for Forcing, 12s. per 100; specially selected ditto, 16s. per 100.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Special Culture of
FRUIT TREES and ROSES.—A large and select stock is now offered for sale. The Illustrated and Descriptive CATALOGUE of Fruits, post-free for threepence. The Descriptive CATALOGUE of Roses post-free.
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WEBB'S PRIZE COB and other FILBERT TREES, Calcot Gardens, near Reading.
Apply to Mr. COOPER, F.R.H.S., Calcot Gardens, near Reading, Berks.

JOHN SCOTT, The Royal Nurseries, Merriott, Somerset, offers:—
PICEA NORDMANNIANA, in large or small quantities. This noble Pine is one of the handsomest and hardiest of the Fir tribe. On the Crimean and other mountains it attains a height of 100 to 150 feet, clothed with lovely dense green branches to the ground. J. S. offers the following sizes:—500, 18 inches high by 18 inches in diameter, at £5 per 100; 500, 2½ feet by 2½ feet, at £10 per 100; 300, 3 feet by 3 feet, at £15 per 100; 400, 4 feet by 4 feet, at £25 per 100; and a few fine specimens, 8 feet high by 6 feet. All the above are densely feathered to the ground.
J. S. also offers BIOTA SIEBOLDI, 6 feet high by 8 feet; and fine healthy collections of all the best EVERGREENS, from 1½ foot to 2, 2½, 3, 3½ and 4 to 8 and 12 feet, all transplanted during the last six months, at 12s. to 40s. per dozen DECIDUOUS and FOREST TREES by the 1000, and FRUIT TREES in large numbers at low prices. For sorts see Scott's *Orchardist*.

BRIERS, Standard, Half-standard and Dwarf, at 9s., 7s. 6d., and 5s. 6d. per 100. CYCLAMEN PERSICUM, strong Flowering Plants, Covent Garden Strain, 8s. per dozen, 55s. per 100. Nett cash against invoice.
A. GODWIN AND SONS, Ashborne, Derby.

VIOLETS continue BLOOMING until next March. We have an acre of all the best in cultivation, in splendid vigour, and full of buds. For full particulars send for a CATALOGUE.
NEAPOLITAN, large clumps for cold frames, 20s. per 100; fine plants in 5-in. pots, in flower, 8s. per doz., £2 10s. per 100.
MARIE LOUISE, large clumps ditto, 25s. per 100; splendid plants in 5-in. pots, full of flower, 9s. per doz., £3 per 100.
BLOOMS of SWANLEY WHITE (Double) sent to any address for 8 stamps.
H. CANNELL AND SONS, Home for Flowers, Swanley, Kent.

Large Quantity of
FIRST-RATE NURSERY STOCK, all transplanted within 2 years, to be cleared at nominal prices. Send for LISTS to
F. W. AND H. STANSFIELD, The Nurseries, Pontefract, Yorkshire.

CEDRUS DEODARA. — "The Indian Cedar."—Beautiful specimen trees, frequently transplanted and well-rooted, offered at the undermentioned low prices, to effect a clearance:—

5 to 6 feet, 48s. per dozen	7 to 8 feet, 72s. per dozen
6 to 7 feet, 60s. per dozen	8 to 10 feet, 84s. per dozen

ABIES DOUGLASII.—One of the most noble trees grown, well-rooted specimens:—
6 to 7 feet, 3s. 6d., each; 36s. per dozen
7 to 8 feet, 4s. 0d. each; 42s. per dozen
8 to 9 feet, 5s. 0d. each; 60s. per dozen
The above-named trees are highly suitable for Avenues, Lawns, Shrubberies, or Woods, and the opportunity of purchasing on such terms rarely occurs.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Gardenias.
MESSRS. JOHN STANDISH AND CO.'S Stock of GARDENIAS was never so extensive or good as it is this season. They have thousands of plants to select from, in all sizes, from fine specimens in 18-inch pots to small plants in 60's. All clean and healthy, and to a large extent well set with buds for winter-flowering. VERY REASONABLE Prices will be quoted on application.
Royal Nurseries, Ascot, Berks.

THE EARLIEST OF ALL POTATOS.



SHARPE'S VICTOR.

Sharpe's Victor is a seedling raised from the Alma Kidney and the old early short-top round Potato. It is earlier than any present variety, and having a very short top is especially suitable for frame cultivation; its precocity is such that it has been fit for the table in nine weeks from the time of planting, and the raiser assures us that at this date, October 17, he is now growing his fifth successive crop this year, the first being lifted in January. Thus there is no difficulty in **securing new Potatos for the Table every day in the year.** Victor is a flattened roundish oval in shape, with a beautiful clear skin and extremely shallow eyes, being one of the handsomest as well as the heaviest cropper of any variety adapted for Frame-work, or for a first early crop outdoors. It is dry and mealy when cooked, and the flavour and quality of the flesh are superior to nearly every other variety at present in use.

As an instance of the precocity of this New Potato we give an extract from the note-book of the Raiser, detailing his successive crops during the last twelve months :—

Planted in pots,	under glass,	Nov. 11, 1880,	lifted,	Jan. 13, 1881.
,,	frame ,,	Jan. 27, 1881,	,,	Mar. 19, ,,
,,	open air ,,	April 5, ,,	,,	June 7, ,,
,,	,, ,,	June 22, ,,	,,	Aug. 18, ,,
,,	,, ,,	Sept. 2, ,,	,,	Nov. 7, ,,

Thus five generations were brought to maturity in 300 days, so that six might have been grown in less than twelve months, which has never yet been accomplished with any other Potato yet introduced.

Sprouted Sets now ready for Planting in Frames or Pots.

Price, 1s. per Pound.

CHARLES SHARPE & CO., SLEAFORD.

VANDA SANDERIANA.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY, November 21, at half-past 12 o'Clock precisely, by order of Messrs. HUGH LOW & Co.,

Every Plant that comes to hand alive of a Large Importation of

VANDA SANDERIANA,

collected by Mr. Richard Curnow, who sends dried flowers which will be on view, and writes that they are about 15 inches in circumference, and that one small plant with three growths, two of them about 15 inches high, the third about 6 inches, had on it no less than seventy-eight fully expanded flowers. This grand novelty is fully described by Professor Reichenbach in the *Gardeners' Chronicle* May 6, 1882, page 588. At the same time will be offered PHALÆNOPSIS STUARTIANA, P. SANDERIANA, two probably new PHALÆNOPSIS from Malayan India, ODONTOGLOSSUMS from the vicinity of Bogota, CATTLEYA AMETHYSTOGLOSSA, C. TRIANÆ, and other choice ORCHIDS.

On view morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

SEEDLING DRACÆNAS, very nice Plants for Table Decoration. Price, 24s. and 36s. per dozen.

CROTONS in fine variety, 18s. and 24s. per dozen. NOTE.—These are not small rooted Cuttings, but Established Plants.

237 and 238, High Holborn, London, W.C.

The Largest Rose Gardens in England.

CRANSTON'S NURSERIES
(ESTABLISHED 1785).

ROSES ON OWN ROOTS.

A large quantity of very fine plants of Hybrid Perpetuals, Bourbons, Hybrid Chinas, &c. List of varieties, with prices, on application.

CRANSTON'S NURSERY and SEED CO.
(LIMITED),
KING'S ACRE, HEREFORD.

NEW LETTUCE,



COOLING'S LEVIATHAN COS.

Quite an acquisition, and a decided improvement on the Bath Cos, being much broader in the leaf, and of larger size. The finest Winter and Spring Lettuce ever offered.

For full description and Testimonials see advertisement in last week's *Gardeners' Chronicle.*

Retail Price, in Sealed Packets, 1s.

Trade Price on application.

GEO. COOLING & SON,
SEEDSMEN, BATH.

TUESDAY NEXT.

PHALÆNOPSIS SPECIOSA, Rchb. f. (True). One plant. See *Gardeners' Chronicle,* April 30, 1881. This beautiful sweet-scented Phalænopsis is now offered for the first time in England.

AËRIDES EMERICI, Rchb. f. (True). One plant, with fourteen leaves, well-established. See *Gardeners' Chronicle,* November 4, 1882.
One ditto, with thirteen leaves.

THRIXSPERMUM BERKELEYI, Rchb. f. (True). One plant, with seven leaves. See *Gardeners' Chronicle,* April 29, 1882. The most beautiful of the species! Professor Reichenbach says: "*I love this chaste beauty, and he who loves an Aërides must become attached to this plant.*"

D. FORMOSUM BERKELEYI, Rchb. f. Recently named and not yet described. One fine plant, in flower, and two others (all True).

All the above plants were collected by Lieut.-Col. Berkeley, the original discoverer.

Also two plants of PHALÆNOPSIS TETRASPIS.

These will be included in H. Low & Co.'s SALE at Messrs. STEVENS' AUCTION ROOMS, 38, King Street, Covent Garden, W.C., on TUESDAY NEXT, November 21.

GEORGE  JACKMAN

WOKING NURSERY,

ESTABLISHED 1810. & SON, SURREY.

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Select List of the Best Varieties of Roses. Dwarfs, Standards, and in pots.

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The Largest Stock of Black Currants. A lucrative market crop.

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The Stock of Garden, Wall, Pyramidal, and Trained Fruit Trees is equally extensive.

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New Descriptive List free by post.

Remarkably fine H.P.'s and Teas, Standards, Half-Standards, and Dwarfs.

Evergreens, Hollies, Coniferæ, Forest Stuff —many acres—are in finest order.

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FRUIT TREE and ROSE GROWERS,
GENERAL NURSERYMEN, FLORISTS & SEEDSMEN,
MAIDSTONE, KENT.

N.B.—Frequent Trains from London by North Kent or London, Chatham and Dover Line.

B U L B S.

Illustrative Descriptive List free on application.

SPECIMEN TESTIMONIAL (UNSOLICITED):—

"*March* 10, 1882.—Crocus, &c, in borders, purchased and planted last autumn, are making a fine show, and giving every satisfaction. Hyacinths in pots have been very fine and much praised, having spikes of bloom 9 *inches in length and so close that they appeared to be solid.* Tulips have been very fine and highly praised. Hyacinths in border now showing very strong bloom."

RICHARD SMITH & CO.,
SEED MERCHANTS and NURSERYMEN,
WORCESTER.

HURST & SON'S NEW PEAS FOR 1883.

ROBERT FENN.

This splendid main-crop variety is the result of a cross between "Multum in Parvo" and "Premier," and was awarded a "FIRST-CLASS CERTIFICATE" by the Royal Horticultural Society in 1881. It is very prolific, growing about 2½ feet high, bearing a heavy crop of broad, straight pods, each containing 8 or 9 fine Peas. 5*s. per Quart.*

DEAN'S DWARF MARROW.

Similar to "Advancer" in habit, but very superior to that favourite variety, being much more compact and wonderfully productive. The haulm is about 2 feet high, of a dark green colour, and covered with pods. The flavour is very fine. 5*s. per Quart.*

UNCLE TOM.

A very large seeded wrinkled Pea, coming into use a little earlier than "Veitch's Perfection." It is about 3 feet in height, very productive and of fine flavour. One of the best main-crop Peas in cultivation. 3*s.* 6*d. per Quart.*

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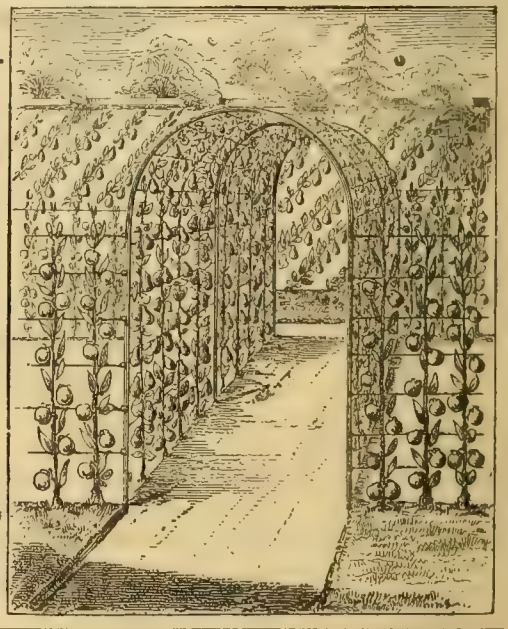
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RESPECTFULLY INVITE ORDERS FOR

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The Stock of Roses this year at this ancestral home of the Rose is very fine; plants are strong, vigorous, healthy, and abundant, and prices are reasonable.

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JAMES DICKSON & SONS

Have much pleasure in recommending the following plants as

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NEW CUPRESSUS LAWSONIANA, Var. "SILVER QUEEN" (Dickson).

The finest silver variety, of free growth and compact habit.

Awarded a First-class Certificate of Merit at the International Exhibition, Carlisle, 1877.

"The most distinct variety of its class we have ever seen." *Gardeners' Magazine.*

"The spray has an attractive appearance, and is certainly not defective in vigour." *Journal of Horticulture.*

"A distinct and beautiful addition to the variegated forms, of the same character as the variety known as Allo-spica, but more diffusely variegated and of brighter colour." *Gardeners' Chronicle.*

Price, 3s. 6d., 5s., and 7s. 6d. each; Large Specimens, 10s. 6d. to 21s. each.
Per dozen, 36s., 48s., and 72s.

NEW HARDY EUONYMUS RADICANS, "SILVER GEM" (Dickson).

An exceedingly beautiful and greatly improved form of the well-known variegated E. radicans, with broad, rich, silver-banded leaves. The variegation is of purer white than any of the other Euonymus, and it has the further advantage of being perfectly hardy. For Winter Gardens it is unequalled.

"The leaves are larger, bolder, and the variegation clearer and more defined than in the common form. We saw it both under glass and in the open air, and were struck with its distinctness." *Gardeners' Chronicle*, Sept. 30, 1882.

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WHITE CLOVE CARNATION, "DUCHESS OF WESTMINSTER."

A splendid variety, with vigorous constitution, extremely floriferous. The flowers are of the purest white, medium sized, not too full, with smooth even petals of unusual substance, while the buds remain unsplit to the last.

"Spotless purity, smoothness and substance of petal, with excellence of form, are combined in its flowers before us. We have never seen any white Carnations more charmingly beautiful, and the flowers are also highly perfumed." *Journal of Horticulture*, Aug. 31, 1882.

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New CATALOGUE (No. 280) of FOREST TREES, EVERGREENS, ORNAMENTAL TREES, FRUIT TREES, ROSES, and HARDY PLANTS, is now published, and will be forwarded, FREE, *on application.*

JAMES DICKSON & SONS,
"NEWTON" NURSERIES, CHESTER.

TO THE TRADE ONLY.

TEA ROSES—TEA ROSES.

40,000 splendidly grown, extra strong and healthy TEA ROSES, of all the leading kinds, still left, in 4½-inch pots.

Purchasers' Selection .. £3 3s. per 100 | Purchasers' Selection .. .. £30 per 1000
My own Selection .. £2 16s. per 100.

DOUBLE WHITE PRIMULAS.

Strong Plants, in 4½-inch pots, to bloom this Winter, 10*s.* per dozen, 70*s.* per 100.

The above Prices are subject to 10 *per Cent. Discount for Cash.* *CATALOGUES free.*

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AUTUMN PLANTING.

THE LAWSON SEED AND NURSERY COMPANY (LIMITED),
EDINBURGH,

Respectfully invite the attention of intending Planters to their large Stocks of

SEEDLING and TRANSPLANTED FOREST TREES,

ORNAMENTAL TREES and SHRUBS, FRUIT TREES, ROSES, &c.;

And will be glad to submit Special Offers upon application.

THE

Gardeners' Chronicle.

SATURDAY, NOVEMBER 18, 1882.

WINCHENDON.

UNTIL its demolition by the Duke of Marlborough in 1760 the noblest seat in Bucks was that of the Whartons at Winchendon. The two best known members of this family were respectively known as Philip the Good and Philip the Bad, and some account of their careers may be admitted in this column perhaps. Their gardens were glorious in their day, and cost a mint of money in construction; but the Whartons are mentioned here for the sake of the examples offered by father and son respectively of how noble families may rise and fall—and their gardens with them. A garden is not a mere arrangement of beds and borders, nor a park a mere stretch of timbered greensward. They are scenes of meditation and repose, where the virtues that produce them and the vices that destroy them, blighting the flowers and uprooting the timber, may fitly form subjects of contemplation.

The story of the Whartons may commence with an eminent dandy of the reign of Charles II. None of the exquisites of his time, not Buckingham himself, of Cliveden, in this same county, could dress so well as the fourth Lord Wharton, or show such a handsome pair of legs. Not until extreme old age, as in the case of the elder Disraeli, the scholar and recluse of Bradenham, did they lose their shape. And then, when past the age of eighty, he would stretch out his shrunken limbs before his friends, "These, my friends," he used to say, "were my legs—my incomparable legs. *Vanitas vanitatum!*"

As a prototype of Beau Brummel this harmless member of the Wharton family may be, to some extent, admired. He destroyed no gardens, if he formed none. An extraordinary originality of mind, which only required a garden for its display, was exhibited by the noble lord at the time of the restoration of Charles II., when he and the rest of the nobility gave the King a splendid reception. Most unluckily, Lady Wharton had just died, and his lordship was in mourning, and, of course, compelled to appear in black: but notwithstanding this depressing drawback, he sparkled so brilliantly in diamond buttons that Philip Wharton, as all agreed, shone at Court beyond all others. This distinguished member of the Wharton family died at the age of eighty-three, famed among his compeers for wit, buttons, and incomparable legs.

The greatest of the Whartons was the son of the above, and he is worthy of special notice as a man of great merit, who enjoyed immense local influence and excited the highest public interest from an early age. During many years, in the lifetime of his shining sire, Mr. Wharton was the leading public man in Bucks. All his elections, as knight of the shire, were carried with surprising adroitness and *éclat*. At one of them he was opposed by the noted Lord Chief Justice Jefferies, who resided at that time at Bulstrode, the present seat of the Duke of Somerset. The Chief Justice adjourned the poll from Aylesbury to Newport Pagnell, at five minutes' warning, on his own authority.

On Mr. Wharton's arrival he found Jefferies'

candidate in possession of the town and of every bed and beershop within it. He was compelled to encamp in the fields with his adherents, and was placed in a very disadvantageous position; but by the full exertion of the double gifts of expenditure and popularity, he carried the election. On one occasion the popular Mr. Wharton was challenged at Quarter Sessions by Mr. Cheyne, the head of an ancient Buckinghamshire family, of Chenies, now the property of the Duke of Bedford and the burial place of the Russells. The sessions were held at Chesham and Mr. Cheyne immediately adjourned to the Town Field where the disputes that occurred in the neighbourhood were, at that time, usually settled with sword or fist. His challenge had been formally accepted, and Mr. Cheyne waited in the Town Field in a state of fury from jealousy and high resentment, till the arrival of his elegant opponent, when he soon found himself disarmed, his sword upon the grass and himself at the mercy of the accomplished Mr. Wharton. This was not Mr. Wharton's only duel. He fought several times through love or politics, and never deviated from his principle of neither sending a challenge nor refusing one.

During an election a rival candidate watched this experienced and versatile gentleman canvassing at High Wycombe, wishing to discover the secret sources of his popularity and, if possible, to master his occult art. He observed him enter a shop and carry on a conversation in which there was evidently no employment of art at all, for he spoke to the tradesmen and his lady in simple, cheerful phrase, without undue familiarity, without the cant of obsequious persuasion, and without the slightest effort of artifice. The rival was amazed and following the future Earl into other houses he found him sitting down in the back parlour perfectly at home, and inquiring after the children with real interest and a perfect knowledge of the names and peculiarities of all of them. He relinquished the contest in despair.

In 1706 this admirable man and politician, the Earl of Wharton, went to Ireland as Lord-Lieutenant, with Addison as his Secretary. Royalty was perhaps never represented by a Viceroy with manners more fascinating or a Court more splendid. Losing his Lord-Lieutenancy he retired to Winchendon, and passed away his time, much to his satisfaction, gardening and breeding racehorses and greyhounds, securing excellence in his management of the dogs by breeding many and hanging many, vigorously carrying out the principle of selection. His greyhounds were the fleetest in the world; his favourite horse, Careless, was never beaten. Much might be said, if this were the place, of his sporting tastes and his successes, of his training course, which he formed before his windows, and his friendship for the Duke of Monmouth, patron of the first pack of foxhounds in England, kept at Charlton, Sussex.

His zeal for the Hanoverian succession won for the Earl the title of Marquis, and he lived in honour and in almost regal state at his seats in Bucks, at one of which—Woburn, near High Wycombe—William III. had honoured him with a visit. He is said to have spent £100,000 upon his house and gardens. This illustrious member of the family of Wharton therefore points my moral, so far as the creation of gardens is concerned. He died in Dover Street, London, and was borne to Winchendon, the funeral procession being compelled to halt on the road by a total eclipse of the sun.

> "Untimely darkness gathering round the skies,
> Blackens the morn, to grace his obsequies.
> Darkness and horror reign o'er earth and skies,
> And Nature for a while with Wharton dies."

Such were the verses which admiration of a popular hero produced. Of his son and successor, the second Marquis and subsequently Duke of Wharton, Pope wrote:—

> "Wharton, the scorn and wonder of our days,
> Whose ruling passion was the lust of praise;
> Born with whate'er could win it from the wise,
> Women and fools must like him, or he dies."

The talents of the second Marquis were undoubted. It is unnecessary to trace his career, which was one of such great folly and extravagance that at his death, an exile, at the age of thirty-two, the last of his race, his estates passed to the hands of creditors, and both his great houses in Bucks were levelled to the ground. The vast ranges of buildings erected at Woburn have shrunk to a dovecote. A fishpond, some Poplars, and a stately Plane tree remain. As for the gardens, if the ghost of the improvident lord flits that way, it might say of them what the fourth lord said of his legs, "These, my friends, were my gardens, my incomparable gardens. *Vanitas vanitatum.*" The traces of some terraces alone remain. *H. E.*

New Garden Plants.

STAPELIA NAMAQUENSIS, *N. E. Brown, n. sp.*

AMONG the numerous new Stapelias sent to Kew a few years back by Sir Henry Barkly is a group of forms from Namaqualand, belonging to the Orbea section of the genus Stapelia; these consist of four drawings, a nice series of specimens in spirits, and some living plants, one of which is that here described. If colour, size, and ciliation be alone taken note of, the whole of these may easily be separated into four forms, but structurally I can find nothing to separate them, as they all possess the following characters in common, viz., short, thick, procumbent stems—corolla lobes very scabrid on the face—a large well-developed solid-looking annulus—and the segments of the inner corona (rostra) only very slightly gibbous on the shoulder, not developed into the subulate dorsal process (ala) present in nearly all other known species of the section. These structural characters being of more importance than colour, size, and ciliation (in colour and size Stapelias are very variable, different flowers on the same plant sometimes exhibiting great differences, I am disposed to consider them all to be forms of one variable species, for which I propose the name Stapelia (Orbea) namaquensis, taking No. 64 of Sir Henry Barkly as the type, and giving varietal names to the other forms. Taking this view the four forms may be thus tabulated:—

* Corolla-lobes destitute of a fringe, lobes of outer corona lanceolate acute, entire.
  Corolla more than 3½ inches in diameter, the spots on the lobes as large as those on the annulus .. .. .. — S. NAMAQUENSIS (Sir H. Barkly, No. 64 !)
  Corolla about 3 inches in diameter, the spots on the lobes smaller than those on the annulus .. — S. NAMAQUENSIS var. MINOR (Sir H. Barkly, No. 64 *bis* !)

** Corolla lobes fringed with short, simple, white and dark purple hairs.
  Lobes of outer corona lanceolate - attenuate, acute, entire .. .. — S. NAMAQUENSIS var. CILIOLATA (Sir H. Barkly, No. 38 !)
  Lobes of outer corona linear, truncate, and shortly three-toothed .. — S. NAMAQUENSIS var. TRIDENTATA

Of these four forms only two reached England in a living state, although Sir H. Barkly sent them all; these two were the typical S. namaquensis, and the var. tridentata, of which latter Sir H. Barkly sent neither drawing nor specimen beyond the living plant. S. namaquensis (including its varieties) is certainly the finest and handsomest of the section yet described; the plant itself, when well grown and fully exposed to the sun and air, is really handsome, which is saying a great deal for a Stapelia plant, the short and very thick stems becoming dark green and beautifully striped and mottled with purple in a manner that I have seen with no other species. The variety here described first flowered at Kew in November, 1877; the flowers only remain open three or four days.

S. NAMAQUENSIS, VAR. TRIDENTATA, *N. E. Br.*

Plant 1½—2½ inches high, laxly cæspitose; stems glabrous, procumbent, 1½—2 inches long, ¾ inch thick (not including the teeth), obtusely 4-angled, angles with very stout, sharp, conical teeth, 2⅛—3½ lin. long; when fully exposed to sun and air the green stems become most beautifully marked with purple irregular stripes; floriferous about the middle of the younger stems. Peduncle subobsolete, or very short (1—3 lin.) and stout, progressively 1—4 (or more) flowered. Pedicels 1¼—1½ inch long, 2 lin. thick, purplish, striped with darker purple-red, glabrous. Calyx lobes 3 lin. long, 1½ lin. broad, ovate acuminate, glabrous. Buds pentagonal, depressed, with a very acuminate apex. Corolla 3 inches in diameter; lobes broadly ovate, very acuminate, recurving, 9-nerved, five more prominent than the rest; annulus with the margin so much recurved as to give the appearance of a thick solid fleshy ring, something like a miniature curtain ring; back of corolla glabrous, smooth, purplish where exposed to the sun, the nerves darker; face of corolla extremely rugose on the lobes, the rugosities formed of crowded transverse papillate ridges; the annulus is very much less rugose, being minutely tuberculate rugose; lobes pale greenish-yellow, covered with rather crowded very dark purple-brown irregular marks, which more or less anastomose, and towards the tips often form rings, margins fringed with very short white hairs, mixed with a few dark purple-brown ones; annulus rather brighter yellow, with broader more distinctly outlined spots, and confluent marks of the same dark purple-brown, which are more and more crowded together in the short tube formed by the annulus; the bottom of this tube is entirely dark purple-brown, and densely covered with short erect stiff hairs of the same colour.

Lobes of outer corona 3½ lin. long, ¾ lin. broad, ascending, linear, apex truncate and shortly 3-toothed; above dull yellowish, densely covered with small confluent dark purple-brown spots, except the base, which is paler and sparsely spotted; beneath pale yellowish, with dark purple-brown margins, and a blotch just below the middle composed of small dots of same colour. Stipes or column entirely dark purple-brown, Rostra 1½ lin. long, subulate, apex clavate, recurved, shoulder slightly gibbous, very pale whitish-yellow, or whitish dotted with dark purple-brown.

Namaqualand, Sir H. Barkly, introduced in 1876. *N. E. Brown, Kew.*

DAVALLIA TENUIFOLIA VEITCHIANA, *n. var.*

Fronds broadly ovate, quadripinnate, the ultimate lobes cuneate, simple or bifid; habit spreading and plumy.

The chief peculiarity of this variety of D. tenuifolia, which was brought from China by Dr. Veitch, is its feathery plume-like habit. It is not a particularly large growing form, but the fronds are broader in proportion, and are more spreading and gracefully drooping, than in the ordinary cultivated forms of the species: hence it will be preferred as an ornamental plant. It is cultivated in the Royal Exotic Nursery of Messrs. Veitch & Sons, of Chelsea, and was shown by them at the exhibition of the Royal Botanic Society in July last, when a Certificate of Merit was awarded to it. The Floral Committee also awarded it a First-class Certificate of the Royal Horticultural Society at its meeting on July 11. *T. Moore.*

PERNETTYAS.

"DOWN South," as far as any one can go without leaving the mainland of South America, grows a group of low-growing evergreen shrubs hardy as they can well be, with neat leathery, shining green leaves, sharply pointed at the tips, and with clusters of white, waxy, bell-shaped flowers, succeeded in due time by globular berries usually of a crimson colour. These are Pernettyas, of which the one best known is P. mucronata. Recently Mr. L. T. Davis, of Ogle's Grove, co. Down, showed at one of the meetings of the Royal Horticultural Society an interesting selection of seedling varieties remarkable for the beauty of colouring of their berries, which ranged from white to maroon—almost black. Our figure fig. (113) represents a form which we met with recently in the nursery of Messrs. F. & A. Dickson, of Chester, under the name of P. floribunda. The leaves and flowers are smaller than those of P. mucronata; in habit we are assured that it is more free flowering, and the crimson berries are larger.

CHRYSANTHEMUMS AS MARKET FLOWERS.

Were Chrysanthemums grown only for the production of exhibition specimen plants and show blooms, it is very obvious that the culture of this fine race of autumn flowers would be very restricted. The autumn exhibitions, at which the Chrysanthemum is the chief feature, are, as compared with summer shows, comparatively few, the greater portion relatively being found only in the neighbourhood of the metropolis and in large towns. Still farther, these particular exhibitions extend over a very limited period of time, at the most perhaps a couple of weeks, and just at the present moment we are in the midst of the season. A week ago it began, in another week it will end, and the growers of show Chrysanthemums will retire again for another year into seclusion, till the short but active time of the show period brings them into public notice again. But only the few grow our queen of autumn flowers for exhibition, and the many cultivate her for various decorative purposes. Visits just now to nurseries, or to many private gardens, not omitting the famous gardens of the Templars, and our public parks, show how the Chrysanthemum displays varied and beautiful decorative qualities, nay in almost every garden, be it ever so small, we see the favoured autumn flower doing its best to lend beauty when most other flowers have for the season passed away.

But it is in the market-growing establishments, literally huge manufactories of flowers, that we see the Chrysanthemum in bulk. Here it is grown by tens of thousands, and too often under conditions such as would stagger the humdrum cultivator who has ample glass room at his disposal, and knows nothing of those emergencies which are as familiar to the trade as shifts and privations are to the hungry. We looked in the other day at the Royal Nursery, Feltham, where Mr. Roberts has truly enormous numbers of plants growing under every possible and almost impossible condition. Every inch of space is utilised, whether it be on stage or beneath stage, by the side of walks narrowed now almost to obliteration, and in any and every position there are found Chrysanthemums both in and out of pots, giving up their beautiful flowers in vast quantities to satisfy the demands of the great flower-loving British public. Of course we look in vain here for show flowers. One or two growers have devoted houses to their production, not for exhibition, but growing them as show flowers are grown, for sale in the market. That it is not a very remunerative aspect of Chrysanthemum culture is evident from the fact that few care to embark in their production, but without doubt in favourable seasons plants grown naturally to produce naturally developed flowers do pay very well, because the Chrysanthemum is singularly amenable to rough-and-ready treatment when that most critical period of its culture, the blooming period, arrives.

But the market grower has the advantage of being able to extend the blooming season far beyond the capacities of the show cultivators. The new late summer or true autumn-blooming race of Chrysanthemums open the season in the month of August, and bring it on to the end of October. Then the older strain of what may properly be termed winter-blooming kinds begin their season of flower, which is by them carried on right up to the end of the year; so that we have a period of five months, the last months of the year, over which Chrysanthemums florally reign more or less supreme. Owing no doubt to those market traditions which always favour decided colours in flowers (whether the public is or is not consulted in this matter we know not), we find in this huge collection of Chrysanthemums that whites, yellows, and crimsons predominate. Thus the season opens with early struck plants of the soft white and compact-habited nanum and the clear yellow Hendersoni; whilst a handsome addition is being made in Madame Destrange, a near likeness of the most popular Elaine, but it is dwarf and early, and under glass very pure and beautiful. Then come the wonderfully floriferous Aigle d'Or, so productive of clear yellow trusses of bloom; a huge patch of this pushed on early in the open ground is there cleared without the necessity of taking any under glass. Elaine is, of course, most abundant. It is seen not only in pot plants trained low to make pretty little specimens, but in thousands of big ones lifted from the open ground and blocked into every available space, and then overflowing into sheds and between the houses, so that all possible shelter may be utilised. It is found that Elaine is in November hardier than in the month of October, when the buds are small and the wood young and sappy. Even 10° of frost has not done so much harm in the open to the buds at this time of the year as 4° would do a month earlier. Elaine is now the white market flower *par excellence* in the esteem of the grower. It is very free, robust, does well, the flowers are of good size, exceedingly pure, and generally elegantly formed, presenting, indeed, a very marked contrast to the formal rotund blooms of Mrs. George Rundle, a variety that, once so favoured, has now been relegated to the background, and which has sinned beyond pardon in giving origin to yellow and sulphur coloured duplicates which with their white mamma are yet unpleasantly prominent at exhibitions.

Perhaps next to Elaine in popularity comes the pretty though very full flowered Mdlle. Marthe, because its trusses are so neat and even, and when well developed the flowers are so pure. It is a capital pot variety, as the immense number found in the regu-



Fig. 113.—Pernettya floribunda: flowers white, berries crimson. (see p. 648.)

lation 48's show. Of the Anemone-flowered section (for these have their admirers) one of the most pleasing of whites is Lady Margaret, the finest blooms of which will come of great size; and where that is the case they are sold individually, whilst in all other cases the blooms are sold in big bunches at prices varying from 9*s.* to 12*s.* per dozen. Of all white kinds grown for market, or, indeed, for any purpose, probably none excel in elegance and rare beauty the pretty feather-edged Marabout. This is a true reflexed or tasselled flower, of the finest form, rather small than otherwise, and becoming pure white as it ages, though in its developing stage tinted with pink. Marabout is not a free kind, and its habit is not of the best; but its striking and lovely flowers compensate for other defects. Of yellow later kinds the most favoured ones are Jardin des Plantes, rich, free, and robust; Chevalier Domage, bright golden-yellow; Peter the Great, pale straw-yellow; and Mrs. Dixon, though the latter is mostly grown in pots. Golden Cedo Nulli is also largely grown for the same purpose, as indeed is its older white form because so dwarf and free.

The bronze section, a hue of colour so abundant in the Chrysanthemum, is not largely in request. A few sell well at times, and the most favoured kinds are Barbara and Antonelli. Then of crimson hues none excel Julia Lagravère, which is seen everywhere, and is so striking in its rich crimson colouring. Cut in large qualities for bunching it then becomes wondrously effective, whilst in the gaslight its brilliant hue is intensified. Dr. Sharpe, too, is a very useful and striking kind, though not nearly so free. Of all the intermediate hues few are more pleasing than is the rosy-lilac Adèle Presette, a variety that has a neat dwarf habit, and produces compact trusses of flowers admirably suited for bunching. Of course late kinds make just now little display. The very latest is the pure white Fleur de Marie, for though so dwarf and full of growth the flower-buds are but just forming, and may be expected to expand about Christmas. Another good late sort is Princess Teck, so well known as a Christmas decorative kind. It is in the production of late or true winter bloomers to which raisers should direct their attention. Kinds that will help to extend the blooming period through the gloomy month of January will indeed prove invaluable not only to the general grower, but specially to the producer for market.

A TRIAL OF TOMATOS.

IT was a happy thought that suggested to Messrs. Sutton & Sons that they should attempt during the past summer a trial of Tomatos at their Portland Road nursery at Reading. There was much need for some such attempt, for new Tomatos have increased with remarkable rapidity of late, and not only in this country, but new additions are constantly being received from America. The seeds of thirty reputed varieties were sown on February 17, and they represented novelties from the Continent, America, and those produced at home, in addition to staple sorts. The plants so raised were duly potted off, and simultaneously planted out in May. A more fitting or suitable spot on which to carry out a successful trial could scarcely be conceived. A border 175 feet in length, facing south, with a wall 5 to 6 feet in height behind it, was selected for the purpose, the border being 9 feet in width. Five plants of each variety were planted out, one against the wall; and a line of four plants in front and at a right angle with the wall. The border had been carefully prepared, with a view of giving the plants every opportunity of doing their best under the trial.

The wet weather which prevailed, during August especially, caused a vigorous growth, but all the plants were kept clean, healthy, and free from disease. There was constant necessity for thinning out laterals and disbudding, but it was done with a view of securing good crops of well ripened and fully developed fruit. The varieties were planted out without any particular attempt of classification or grouping of types, the sole aim being to see which of the sorts were best adapted for ordinary wall and border culture. Commencing with

Conqueror, an American variety recently distributed by Messrs. B. K. Bliss & Son, New York, it may be described as a fine form of the Large Red Tomato, not so much ribbed, strong growing, and a very free bearer, producing a good crop of even-sized fruit.

Acme is a very free bearing variety, of reddish or rosy-crimson colour, but not of a colour that looks so nice as a good red skin. It is handsome and of good size.

Powell's Early, a variety sent out by Mr. C. Turner many years ago, is an excellent variety because such a free and continuous bearer, and one of those sorts of which it may be said you can cut and come again. The fruit is much ribbed, but in the eyes of growers who want large quantities of fruit this is not a matter of great importance. It is admirable to plant out for culture against stakes when a wall or any suitable fence cannot be set apart for the purpose. Freedom in bearing is one of its great characteristics.

President Garfield has been well termed "mammoth in size." It is a very large, flattish, and much ribbed fruit; the growth very strong, and the crop good compared with the size, but it is scarcely likely to find favour among growers, because it is much too large for general purposes, and it is not nearly handsome enough to make a good exhibition variety.

General Grant is another American variety, very like Conqueror; scarcely so good in shape, but very free.

Hathaway's Excelsior was very fine and handsome against the wall, but not so good in the open border; it is an excellent variety for house work, being of good size, very handsome, and a large cropper.

Paragon (Vicks) crops well on a wall, but though large and of good shape, is not so handsome as Excelsior.

Key's Prolific was a very prolific bearer in the open border; very large, but not handsome; it is, however, wonderfully free-bearing right to the top of the plants.

Glamorgan is a variety raised by Mr. Crossling, and recently distributed by Messrs. Osborn & Son, and is represented by a very fine and prolific Tomato; very large, a strong grower, the fruit somewhat ribbed; crops freely, alike in the open and against a wall.

Stamfordian was represented by a variety bearing large and coarse-looking fruit, but there was reason to think it was not true to name; the form of it grown here grew strongly, and was not at all free in bearing.

Trophy is a very large and free-growing American variety; but very late, and, therefore, does much best on a wall: it is a very strong grower.

Vick's Criterion is a large and very fine-flavoured variety, rather ribbed, very free and productive, and a good sort for market purposes.

Queen of Tomatos is a small Pear-shaped variety, marvellously free, orange-red in colour, and highly ornamental; the fruit produced in large long clusters.

Victoria is a variety of the small Pear-shaped section, but the actual shape of the fruit is rather that of a Damson than a Pear; similar in colour to the preceding; a wonderful cropper on a wall, the fruit borne in very large clusters.

Sutton's Royal Cluster is a novel and distinct variety, producing enormous bunches of fruit in clusters; the fruit round and very handsome, excellent flavour, and wonderfully free. There is a peculiarly piquant flavour about this variety, and as there are many persons who are fond of eating Tomatos in a raw state this one will be found agreeable to the palate.

The Currant Tomato is not nearly so large or so brightly red in colour as the preceding; clusters of fruit smaller and more compact; very free.

Sims' Mammoth Cluster is a very coarse and large American variety.

The Valentia Cluster is no better; it is of a large, coarse-ribbed type.

The Red Cherry Tomato appears to be quite identical with the Red Currant.

Sims' Mammoth Cherry Tomato bears very large fruit, much lobed; it is very late, a great cropper both on the wall and in the open, but it is by no means Cherry-shaped, in the ordinary sense of the word.

The Orangefield Tomato is also a very large variety, with fruit much ribbed; it is both a strong grower and a good cropper.

The Pear-shaped variety has fruit of pyriform shape; it is a very shy bearer, and of little or no practical value. The colour of the fruit is orange-red.

Reading Perfection is a very fine and handsome new Tomato, not yet distributed. This variety is remarkable for its foliage, having leaves of a very vigorous appearance and very large size. This is the most robust grower of all, and yet it does not go wholly to foliage as some do, but produces a great abundance of large and handsome fruit. It is worthy of notice that when the young seedling plants unfold their leaves they bear a great resemblance to those of the Ashleaf Kidney Potato. This crops very freely both on the wall and in the open, and it is a very fine variety for exhibition purposes.

Sutton's Earliest of All, another novelty, bears medium-sized orange-red fruit, larger than those of Criterion and flatter in shape—it might be said flattish-round—and it is very early, for in the open it was ready to gather on August 12, and was eight days before any other variety. It is a good variety both for a wall or the open, and is free growing and bears very freely.

There were also examples of the ordinary large red, and also the large yellow Tomatos. Of yellow-skinned Tomatos,

Carter's Green Gage is decidedly the best, the fruit being small, handsome, and freely produced. There seems to be a kind of prejudice against yellow Tomatos, and it is quite certain the red varieties are preferred to the yellow ones. The Green Gage is very distinct in character, but it needs a sunny wall to do it justice.

The Yellow Cherry Tomato is similar to the Red Cherry in size and character, but differs only in the colour of the skin.

In addition to the information obtained of the various varieties of Tomatos by means of this trial, the experience gained served to illustrate one or two points of importance relating to the culture of this plant. One is, that Tomatos should be grown in a light soil not too highly manured, as the plants will otherwise go too much to top, and they do not fruit until they have made a certain amount of growth, and have become well established. Another point is that when Tomatos are grown in the open air trained to stakes, a yard in height will be found sufficiently tall for the plants to develope and mature their fruit, and while it is necessary to disbud freely and thin out the laterals, the tops of the plants should not be removed until the crop of fruit is set, and when this has happened the plants need to be thoroughly thinned that sun and air may be admitted to assist in the ripening of the fruit.

A very large amount of Tomato seed is required for sale: a great deal is obtained from America, but very large quantities of Tomatos are grown in Italy to supply seeds for this country. The crop, it is thought, will this season be comparatively light, owing to the prevalence of floods in the Tomato growing districts, which have destroyed many of the plants. A great quantity of Tomato seed is sent to India, not so much in varieties as in mixtures of all sorts. Indian growers appear to give preference to a variety of sorts over individual quality. *R. D.*

TABLE DECORATION.

NO subject connected with the garden is surrounded with the same degree of interest at this season as that of house or table decoration, for practically the one is but a branch of the other. We can say from experience that there is often more interest manifested in the decoration of a dinner-table for a large dinner-party than is shown in the case of planting a flower garden or laying it out. The reason is not far to seek. The laying-out of a garden is merely the result of a foregone conclusion—a piece of work executed from a design upon paper—and the principle of planting a garden is almost as clearly understood. But there are no designs and no definite rules laid down for arranging plants and flowers upon a table, and even if there were, they would be of little or no service, because material and circumstances are seldom alike in any two cases, and individual tastes differ in a still greater degree. It is, therefore, impossible for any one to give satisfaction in this particular branch who is following the vague outline of some theory upon paper, or who is merely copying at a long distance off the work of some successful hand who had, perhaps, been provided with totally different material in flowers and plants. Instances might be given of failure in the art of furnishing, not through lack of ability, but from want of judgment. The first duty of a gardener is to ascertain the style of decoration that is most approved in the establishment where he is employed. Gardeners have great opportunities of becoming proficient in the art of decorating, through

coming so frequently into contact with ladies of refined tastes and ideas.

A group of ladies discussing the subject will let fall many a hint that may be profitable in practice, although to them the ideas are ideas only in the region of their imagination; but one who is not quite a "finished man" by an instinctive sense of the line that he should follow will succeed where others fail. There are times, however, when this line must not be adhered to too strictly. Table decorations are much criticised, and the decorator's look-out should be to secure the unanimous vote of the company in his favour. We have said that no pen-and-ink sketch is of much service in decorating, but there are certain fundamental principles that have a vital bearing upon the work. It is possible to be possessed of choice material, and to arrange it ineffectively, perhaps foolishly. It wants method to begin with. Say you have to provide decorations every night for a week, you make a quiet show the first night, and keep on improving—a complete change every night—but retaining the choicest plants and flowers for the principal event.

It is always safe to make a good show upon the side-table where the company enter the room. A first impression goes a long way. Then as to plants and flowers for the centre of the table: as long as there are plenty of flowers the plants may be sparingly used. Dark foliage plants, such as Dracænas, look best in conjunction with silver-plate, green-leaved plants of graceful habit are available at any time. *A propos* of dark-leaved plants it is a mistake to eulogise Aralias as handsome objects for the dinner-table. As room plants, where there is light, and the walls are not too heavily draped with red or crimson, or colours approaching to these shades, they are very effective—in fact, they are admittedly handsome in any position where their beautiful habit can be seen. But how many yards off can you appreciate the full beauty of Aralia Veitchii by candle-light? In the country, especially in mansions where gas is objected to, the best effect is obtained from bold leaved plants, such as Curculigo recurvata, Pandanus Veitchii, and Dracæna congesta, one of the best plants in cultivation for a dinner-table where space is an object. You get height and beauty of habit in a plant that occupies but a trifling space, and that may be used at any time and under any circumstances. Drooping Ferns like Nephrolepis davalloides furcans, and Palms, of which there is such great choice, now leave no excuse for using insignificant looking plants of any kind upon a dinner-table. But there is another and a very important point to be considered. A plant may be either too large or too small for its position. To put the matter in another way, you may have a plant that would be a striking ornament in the plant stove looking very seedy upon the dinner-table. The company seated at dinner may have but a naked stem to gaze at because the plant is too high, and its leaves, which are intended to ornament the table, in reality block the view, and are an impediment to conversation. Subjects suitable for this purpose are so cheap at the present day that no one need trouble themselves with overgrown plants which are, as far as effect is concerned, worse than no plants at all. But given a fairly balanced table from the centre to both ends, with plants of corresponding proportions to the other ornaments, and selected with due regard to colour and form, and the floral arrangements are then simply conceived to fall in in harmony with the plants.

Without going into details as regards the arrangement of flowers, it is important to notice that distinct colours should be freely intermixed (not necessarily in the same glass, but alternately) with the duller shades. The groundwork (the tablecloth) being of the purest white, we know that scarlet, crimson, or red are good colours by candle or gas light; so also is white when it is brought into contact with contrasting shades; while yellow, lilac, and mixed shades contribute little to the general effect, unless when they are brought close under the eye, as at the margin of the table. It should be mentioned that the class of flowers—say, everything in season—that is admissible at a public banquet, where the tables are narrow and there is a medley arrangement of ornaments, without the heavy surroundings that are characteristic of most private mansions, is not suitable for a select private occasion. For this purpose the aim should be to execute a free and natural arrangement, composed of distinct and striking colours, with plenty of green. By-the-way, has any one noticed how a device (a mass or ground-work of green) looks by gas-light enlivened with a few showy flowers? Here we have the cue, the base upon which our arrangements should be worked out. It is unfortunate—it detracts from the value of what otherwise would be sound and useful instruction—that rare flowers are so often mentioned in connection with table decoration. Rare and valuable Orchids, such as Phalænopsis Schilleriana, Lælias, Cattleyas, Gardenias, &c., are spoken of as being suitable flowers for the dinner-table. Their beauty—their suitability—is not disputed, but how many possess them in quantity?

It should also be remembered that when large supplies of cut flowers are wanted for the dinner-table the choicest are claimed for the boudoir, the library, and the drawing-room. Thus, if we do not wish to soar upon the wings of imagination beyond our means, it were better to keep within the bounds of reason, and, in speaking of flowers for the dinner-table, keep to Lilies of the Valley, Eucharis amazonica, Roman Hyacinths, Poinsettias, Scutellarias, Eschynanthus grandiflora, Eranthemum Andersoni, Jasminum gracillimum, Centropogon Lucyanus, Calanthes, and Chrysanthemums. These are seasonable flowers nearly everywhere, and as Chrysanthemums are plentiful at present they may be used unsparingly, and the choicer flowers kept by themselves as already indicated. Small glasses for the margin of a table are very effective, and are easily filled with a single Eucharis bloom, a spray or two of white or red Bouvardia, a red or white Camellia, or a bunch of Lilies of the Valley, or Violets, which are now abundant, and which besides being fragrant are very pleasant to the eye against any of the white flowers above-mentioned. There is no green more suitable to go with a Rose or a Camellia than one or more of their own leaves; but flowers that Nature has not supplied with such rich foliage of their own must be touched up with Fern fronds, which contribute as much to the effect of an arrangement as the flowers themselves.

ORCHID CULTURE IN THE SOUTH.

It is now some little time since I had an opportunity of looking into the principal collections of Orchids in and about the neighbourhood of London, and it may be interesting matter for your pages to have the opinion of one who used to grow them in large quantities, and who has seen the ups and downs of Orchid culture for a third of a century.

At the outset it must be admitted that their cultural importance was never better understood, better appreciated, or better cared for, than at present. This evidently arises from their growing importance as an article of commerce, irrespective altogether of the admiration we all have for the best favoured of them. There are some lean kine among them, like Pharaoh's cattle of old, but there never were so many beautiful objects, and at no time in their history or culture were there the same number of connoisseurs ready to outbid or outvie each other in securing them.

The great mart of the world is now unquestionably Stevens' Rooms, and if anything very choice be advertised there, let it be "established" or "imported" Orchids, and prices rule as high in proportion as in the case of a fine painting at Christie & Manson's. Twice within these last seven years I have seen an imported plant knocked down at 100 guineas—the one a Dendrobium Wardianum, which would scarcely fetch as many shillings now; the other the true Vanda insignis; and the buyer, whom I buttonholed or "interviewed," had—or said he had—more than one client anxious to secure it. This competition arises without doubt from the increasing constituency of Orchid lovers throughout the country, and in the interest of horticulture we may hope or wish that such a progressive state of matters may continue.

The increasing value of the best of Orchids has stimulated possessors to provide the best accommodation for them possible or practicable; and so, instead of nondescript houses insufficiently heated, ill-provided for in the way of ventilation, worse, far worse, in the way of accommodating the plants to atmospheric moisture, to say nothing of light and room for each individual, there are places where no expense is spared to secure the best of all these things. Notably Sir Trevor Lawrence took the lead some ten years ago, and we have now Baron Schrœder and Mr. Lee, of Downside, rivalling, if not eclipsing, Sir Trevor in many little details. Orchid culture, the more I see of it, is not wholly a question of art; to reach its heights science must be called into play. The mere potting of a plant and fixing it for its roots to run at random, with so much heat and the usual routine of damping down, syringing, and so forth, does not constitute the be-all and end-all of good Orchid culture. There is the consolidation of tissue to ensure and perpetuate health and develope flowering tendency, without which no collection can be considered under skilled culture. One may grow an East Indian distichous plant as green as Couch-grass in June, but if care be not taken to ripen, harden, or consolidate the leaf-tissue, a species of gangrene or spot will supervene, and farewell to a sightly or cultivated plant. In all collections of first importance, both private and public, I was glad to see something like a system of science and art combined to grapple with the difficulties which confront every one in dealing with an artificial climate.

The great curse in all the collections I have seen, and there was not one perfectly free from the scourge, was the indefatigable little iron-grey coated thrips, which plays sad havoc among Cattleyas and Lælias, *et hoc genus omne*, and leaves its ironmoulded marks in indefinite lines on this beautiful genus of plants. No one seems fully able to cope with it. Its attacks are so insidious that it is quite invisible in the sheaths of many of the pseudobulbs. Nothing but careful and repeated fumigations will keep under this dires of all the dire enemies of Orchids under glass. The young growers, at least many of them, do not know it, but young or old should statedly fumigate, on the principle that prevention is better than cure. There is a time when Cattleyas want a drier atmosphere to finish up growth, and at that very time this little insect, which multiplies by the thousand in a dry heated atmosphere, in a few days will destroy a plantation of Cattleyas. East Indian distichous Orchids are subject, too, to the inroads of this pest, but the collections, as a rule, show much greater improvement—indeed, it is pleasant to see how Phalænopsids are grown in the three chief collections of rare and beautiful Orchids already named above. I never saw so complete a lot of Moth Orchids as Baron Schrœder possesses; but, in fact, until now to rival such a lot was impossible.

The cool Orchids, particularly Odontoglossums, of every name and form, are grown generally about as well, and present nearly as uniformly healthful an appearance as those groups of Hyemalis Heath, which the market growers about London turn out every year. There is a marked improvement in the cultivation of cool Orchids within the last three years. It is difficult to find a badly-grown lot of them. Thousands upon thousands greet one's eyes, in the pink of health, and many bearing some remarkable blossoms. Candidly, I must say I have seen none yet for variety and general good culture that can outrival those grown at Trentham. Mr. Stevens considers that Chesterton's earlier collections are the best that have yet been introduced into this country. Certainly he is entitled to speak with authority, for at no place, either public or private, did I see so many fine racemes of Alexandræs—some of the sorts, both of the spotted segments and also of the pure spotless forms, being of as fine quality as any one could wish to see. There would be quite a hundred racemes, which presented a gorgeous sight in the quiet month for Orchid flowers—October. But he is not alone in the excellence of cultivation. At Burford Lodge, at Downside, at Mr. Bockett's, Mr. Winn's, Mr. Chamberlain's, at Mr. Thomson's, of Stone, and I believe at Mr. Warner's, the legion of them show how popular a species this is; but Pescatorei is coming more and more to the front, as I predicted would be the case ten years ago. There are only a very few places where Masdevallias are thoroughly well cultivated. Unquestionably the palm of excellence must be given to Sir Trevor Lawrence, who has specimens grown from single plants, not equalled in this country. Many of the plants I saw in general collections were disfigured with spot, which is clearly traceable to want of air and want of coldness throughout the season. If there is an alpine Orchid in existence, the most of the more beautiful species delight in treatment such as all alpines require. What adds immensely to the attractions of a cool-house is the agreeable Madeiran temperature. Any one can go and inspect not only the racemes of flowers, but the plants themselves, for almost any length of time with impunity. The East Indian houses are different; but when, as in most large establishments now, there are houses for transferring the

flowering plants, so that they can be examined without any undue pressure of heat, any discomfort to an invalid is removed. *James Anderson, Meadow Bank.*

COLONIAL NOTES.

THE FIRST SPRING SHOW OF THE VICTORIA HORTICULTURAL IMPROVEMENT SOCIETY was held on August 30 and 31, at the Society's Hall, Melbourne, and was certainly a very creditable display. Camellias, cut and in pots, were the chief attraction. Mr. Alex. Elliott, of the University Gardens, took the 1st prize, for a class of nine Camellias in pots, the following being the varieties exhibited :—Reine des Fleurs, Rafias, Harriet Beecher, Henri Favre, Princess Mary of Cambridge, Storyei, Baron de Vriese, Borromiana and Comte Botourbin. A prize of two guineas, offered by the proprietors of the *Argus* and *Australasian* newspapers for the best four Camellias, was won by Mr. John Harris, of St. Kilda. I missed an old favourite of mine, Lady Hume's Blush, a splendid specimen of which used to occupy a large wall space in the late Duke of Devonshire's conservatory at Chiswick, but I digress. A good show of Cyclamens attracted crowds of admirers, Cinerarias and Primulas were also well represented. In foliage plants, of which there were a good many, Asparagus plumosus, Croton Mortii, and Dracæna Benthamiana, occupied prominent positions. Three good and well flowered specimens of Dendrobium speciosum, D. nobile, and Cypripedium insigne, gained 1st prize in the class for three in Orchids. The competition in epergnes and bouquets was poor in quantity, but very choice in quality ; a bridal bouquet from the hands of Miss Stoddart, of Prahran, was greatly admired. Each ticket-holder on the second day was entitled to a prize, or rather a gift, in the shape of a small pot plant, or a small selection of seeds. *C. Edmonds, Melbourne.*

HONG KONG.—The following is a tabulated return of planting operations in the island during the year 1881, furnished by Mr. Charles Ford :—

Pinus sinensis, one-year-old	97,695
,, ,, three-year-old, 3 to 5 feet high	3,776
,, ,, *in situ*	649,587
,, Thunbergii, *in situ*	7,000
Eucalypti	4,347
Stillingia sebifera (Tallow Tree), *in situ*	6,000
Quercus salicina and Q. Harlandi	2,115
,, Japanese species	2,240
Rhus succedanea (Wax Tree), *in situ*	1,800
Melia Azederach (Pride of India), *in situ*	1,110
Bamboos	654
Syncarpia laurifolia	344
Castanea (Chestnut), *in situ*	300
Albizzia Lebbek	319
Cocos nucifera (Cocoa-nut)	196
Aleurites triloba (Candleberry Tree)	180
Ficus retusa ("Banian")	71
Dammara robusta	61
Aleurites sp.	26
Miscellaneous	93
	777,914

JAMAICA.—Mr. Morris' report of the public gardens for the year 1881 has reached us. Mr. Morris evidently loses no opportunity of promoting the welfare of the garden, whose chief objects are defined to be of a scientific and industrial character, viz., "to assist and foster in every possible manner the introduction of new economic plants into the colony, to propagate and distribute such plants throughout the island, supplying at the same time whatever scientific and practical information may be desired respecting their successful utilisation and culture." Mr. Nock has been promoted to Ceylon, and leaves with the esteem of all with whom he came in contact. Mr. Hart succeeds Mr. Nock as Superintendent of the Cinchona plantations. Mr. Syme's management of the Castleton Gardens is spoken of in high terms. Numerous plants of the several varieties of Cinchona have been grown and distributed, and the most precious of all known species, C. Ledgeriana, has been successfully introduced, and on a large scale. Mr. Howard reports very favourably on the chemical composition of Jamaica-grown bark, and the sales in the London market have been so encouraging that Jamaica planters are commencing to do of their own private enterprise what previously has been done by Government. Meteorological observations are now being taken by Mr. Maxwell Hall at the Cinchona plantations at a height of 4900 feet.

THE *New Zealand and Country Journal*, in addition to articles on sport, natural history, and agricultural matters, contains a classified list of New Zealand Ferns.

THE PARSNIP SEED MOTH.

ON July 20 last I received, through the kindness of Miss E. A. Ormerod, some heads of seeds or umbels of the Parsnip, each fastened into a mass with fine silken threads by caterpillars of a dirty greenish-grey colour, gradually shaded to orange on the underside of the body, and marked above with black tubercles. The head is black and shining, with a white transverse line at the base of the clypeus or upper lip ; the following or second segment bears a large semi-lunate black patch, divided in the middle by a slender longitudinal pale line ; the following segments are each marked with a row of six black tubercles across the anterior part, each producing a slender bristle, and followed by four other similar tubercles, two being placed just above the legs, the anterior of which latter are black, and the ventral feet yellowish ; the terminal segment forms a yellowish plate. When stretched to its full length the caterpillar is three-quarters of an inch long, and rather slender. When disturbed in its abode it leaves it, wriggling about with great activity, and letting itself fall by a

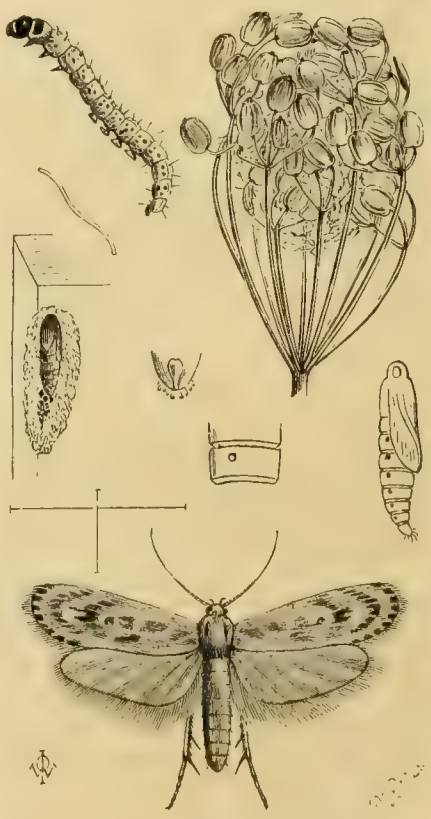


FIG. 114.—THE PARSNIP SEED MOTH.

slender web spun from the mouth. It left the Parsnip seed at the beginning of August, and spun a slender white silken cocoon in the angle of the box in which it was kept. The chrysalis is represented magnified to about twice the natural length in the accompanying woodcut (fig. 114). It is of the usual form, but the abdominal segments are constricted at the base of each, and they are not furnished with any of the rows of minute recurved points, seen in some chrysalids, as in that of the Grape Vine moth (Tortrix angustiorana). The extremity of the body is entire, with about eight very slender short bristles slightly knobbed and bent at the apex of each. It is chestnut-brown and shining, with the front of the body darker coloured. The moth made its appearance from the chrysalis on August 24 last. It measures 1 inch in the expanse of the fore wings ; it is entirely of a pale drab or greyish-ochre colour, the fore wings marked with a number of short darker dashes, forming a series of darker curves upon the pale ground of the wings : the two largest of these dashes occur in the middle of these wings, just beyond the centre, and following close upon a small round whitish dot ; along, and just within the apical margin of the wing, is a row of small dusky spots ; the hind wings, and the fringe of all the wings and the body, are silvery pale ochreous-grey.

The moth is the Depressaria Heracliana of De Geer, Haworth, and other authors, and is described, and the larva figured, by Bruand in the *Annales* of the French Entomological Society for 1844, under the name of Hœmylis Pastinacella, since, although the Heracleum Sphondylium is its most constant food, it frequently occurs on Pastinaca sativa. Mr. Stainton has given an excellent figure of the moth and its larva in the sixth volume of his *Natural History of the Tineina*, plate iii., fig. 2, with the following account of its mode of life:—"The egg of this species is no doubt deposited in the spring on the undeveloped umbels of the Heracleum by the hybernated female. The larva feeds on the buds and flowers, which it spins together by means of silk, and so forms a concealed gallery, within which it works its way across the surface of the umbel. The feeding larvæ may be found in the months of June and July ; those which are the later developed do not suffer, because the period of the flowering of the plant is passed, as the seeds are equally to their taste, and it seems a matter of perfect indifference to them whether the plant is in blossom or in fruit. The larva is moderately gregarious, there being generally several specimens on one plant. When the larva is full-fed it bores into the stem of the plant, generally entering at an axil of the leaf. When inside the stem it spins a slight white cocoon, and then assumes the pupa state. In three or four weeks the perfect insect makes its appearance, but its habits are very retired, and it is seldom seen on the wing till after hybernation ; stragglers are not unfrequently found in houses during the winter months."

Another species of Depressaria (D. Daucella) also feeds on the Parsnip, as well as upon the flowers and seeds of the Carrot, sometimes destroying the entire crop ; when the latter were attacked, M. Bouché, the gardener of Berlin, planted seeds of Parsnip in his Carrot beds or fields, the Depressaria moths being attracted to the Parsnips in preference to the Carrots. *I. O. Westwood.*

THE WEST RIVER, CHINA.

THE West River proper is not reached until about 20 miles have been traversed from Canton, by way of Fatshan, along one of the water-ways of the great delta. For this distance and the next 15 miles of the West River, *i.e.*, as far as the Shui Hing Pass, the land on both sides of the river is alluvial soil well cultivated. The first part has extensive tracts of Rice fields surrounded with banks on which are grown Litchi, Longan, and Peach trees, with, at the base of the banks, the Water Cedar, Glyptostrobus heterophyllus. On approaching Fatshan the Mulberry tree is met with in fields, where it is grown for silkworm feeding. After passing Fatshan the Rice fields are replaced with Mulberry trees and Bamboos, the land being higher than the river and incapable of irrigation. On rising ground near the villages there are magnificent patches of arborescent vegetation, consisting of Ficus retusa, F. Whitiana, Fraxinus chinensis, Bombax malabathrum, and Bamboos. The Soy Bean (Soja hispida), Hemp, and the Ground Nut (Arachis hypogæa), are cultivated on dry sandy soil. At 40 miles from Canton the hills approach the river and form the Shui Hing Pass. A few miles to the east of this Pass are the Ting U Shan woods, which contain some splendid trees, probably upwards of 150 feet high ; amongst them we noticed Bischoffia javanica, Cinnamomum parthenoxylon, Sterculia lanceolata, and Pinus sinensis. These woods surround a fine monastery, and are protected by the priests.

The frutescent vegetation here consists of well known plants, that are common in South China. After passing the Shui Hing Pass, the hills again recede and leave a large plain, on which, in addition to those plants mentioned as cultivated on the alluvial soil the other side of the Pass, Indian corn—Zea Mays—is grown in summer, and Wheat in winter and spring. Euryale ferox is also grown for the sake of its seeds, which are used as food by the natives. After leaving this plain the hills approach the river, and leave only a narrow strip on each side for cultivation. On the steep hills are some large patches of Gardenia florida cultivated for its capsules, which furnish a dye used for dying silk. Near to the Gardenia plantations are also some of Machilus velutina, Champ, grown for the sake of its bark, which contains a glutinous substance used in the manufacture of joss sticks. Camellia oleifera is grown on barren hills in the vicinity of some villages

to supply the growers with oil for cooking purposes and for anointing their heads; it is not grown in sufficient quantities to sell.

A little above a town called Fung Chun, over 100 miles from Canton, the narrow strip of land on the south bank of the river is planted with a forest of the Chan Ko Chuk Bamboo, which is extensively used for boat poles and scaffolding. These plantations continued, with but slight interruptions, for about the next 100 miles.

On both sides of the river the country is very mountainous, the hills rising from 300 to 2000 feet, and, with the exception of the level strips bordering the river, and a few patches on the hills of Gardenia, Machilus, Tea plants, upland Rice, and Pumpkins, are entirely destitute of cultivation. There is very little grass on the hills, but Ferns—Gleichenia dichotoma—abound and cover the ground in every direction. The Fern is cut and dried and used extensively for fuel, even the limestone in the limekilns, which are numerous, is burnt with this fuel only.

No forests are seen anywhere, but the Chinese are very careful to keep up, by annual sowing and planting, a stock of firewood, which, however, is confined to the common Pine (Pinus sinensis); and the trees of this, instead of presenting the appearance of plantations well filled with handsome trees, are planted irregularly and thinly over the hills, and have in most cases but a miserable, stunted appearance, in consequence of the custom of continually cutting off the branches as they are required for fuel. Far up the river the Cunninghamia sinensis is found sparingly mixed with the Pines, but this, also, never seems to attain a great size in the parts visited. Cunninghamia, however, I was told, exists in forests farther north, and this report seemed confirmed by the enormous rafts of China Fir logs which were being floated down the river. The indigenous tree and shrub vegetation is continually destroyed as it attempts to grow, by the deplorable custom of the Chinese in cutting down every branch and sapling for firewood, the Pinus sinensis being the only tree which they attempt to renew by planting. Round the villages and temples the trees are protected, and these examples, especially the Ting U Shan woods, demonstrate the possibility of the Chinese mountainous districts producing splendid forests of a great variety of trees if they were properly conserved.

Fruit trees are only grown in small numbers dotted about near the houses, except the Jujube (Zizyphus jujuba), of which a great many orchards were seen; they were on the level ground near the river, and the trees were planted at distances of about 20 feet apart. In addition to these one orchard of Litchis on a hillside was seen. *Charles Ford, Hong Kong.*



Fig. 115.—CROSSANDRA INFUNDIBULIFORMIS.

The Arboretum.

Trees Planted by Distinguished Persons.—On the lawn-tennis ground at Penrhyn Castle are some unusually fine specimens of different trees, planted by Royalty and other distinguished personages. The following notes on the measurements of these will not only show the approximate rate of growth of different trees on the same soil in a given space of time, but also serve as a record in future years by way of reference and comparison. The height of each tree when planted was about 6 feet, and the soil sandy loam incumbent on shaly rock.

Sequoia (*Wellingtonia*) *gigantea*, planted on October 17, 1859, by Her Majesty the Queen. Present height, 37 feet; girth of stem at 1 foot up, 7 feet 3 inches; girth of stem at 5 feet, 5 feet 8 inches; diameter of spread of branches, 18 feet.

Quercus Cerris (Turkey Oak), planted by Her Majesty on the same date, is now 30 feet in height. Girth of stem at 1 foot up, 2 feet 11 inches; girth of stem at 5 feet, 2 feet 4½ inches; diameter of spread of branches, 22 feet.

Quercus Robur (English Oak), planted by His Royal Highness the Duke of Connaught, on October 17, 1859. Present height, 23 feet; girth of stem at 1 foot up, 19 inches; girth of stem at 5 feet, 14½ inches; diameter of spread of branches, 14 feet.

Abies Nordmanniana, planted in 1857, by Sir James McGarel Hogg. Height, 45 feet; girth of stem at 1 foot up, 5 feet 5 inches; girth of stem at 5 feet, 3 feet 6 inches; diameter of spread of branches, 21 feet. This tree is a model of symmetry, and densely clothed with bright, healthy foliage.

Sequoia (*Wellingtonia*) *gigantea*, planted in 1857 by Lady Hogg. Present height, 55 feet; girth of stem at 1 foot up, 9 feet 8 inches; girth of stem at 5 feet, 6 feet 11 inches; diameter of spread of branches, 18 feet. This is an exceedingly handsome specimen, with a robust stem, plentifully and regularly furnished with branches.

Taxodium sempervirens, planted in 1857 by the Lady Penrhyn. Height, 44 feet; girth of stem at 1 foot up, 7 feet 1 inch; girth of stem at 5 feet 5 inches; diameter of spread of branches, 28 feet. Through loss of leader this tree has acquired rather an ill-proportioned top, otherwise it is of elegant appearance.

Cedar of Lebanon, seed from the Hon. G. S. Douglas Pennant, February 6, 1859. Height, 23 feet 6 inches; girth of stem at 1 foot up, 3 feet 3 inches; girth of stem at 5 feet, 2 feet 2½ inches; diameter of spread of branches, 21 feet.

Seedling British Oak, from the Hon. Miss Eleanor D. Pennant, 1862. Height, 25 feet; girth of stem at 1 foot up, 15 inches; girth of stem at 5 feet, 12½ inches; diameter of spread of branches, 9 feet.

English Oak, planted by Miss Kathleen Douglas Pennant, on March 23, 1875. Present height, 11 feet; diameter of spread of branches, 7 feet. *A. D. Webster, Penrhyn Castle, North Wales, Oct.* 17.

CROSSANDRA INFUNDIBULIFORMIS.

What has become of those beautiful winter-flowering Acanthads which were introduced in such variety to Kew a few years since? There they are still, or some of them, but for some reason or other gardeners do not seem to know them. Is it because they do not or cannot visit the gardens so often as might be desirable? or is it because no means are taken of exhibiting at the several exhibitions where gardeners and plant-lovers most do congregate, the rarities that are produced in our botanic gardens? Whatever be the reason, we are glad to avail ourselves of the present opportunity afforded us by Mr. Bull, of figuring one of these beautiful plants catalogued by him for the first time this year (fig. 115). It is a stove shrub, native of the peninsula of India, with irregular salver-shaped flowers of an orange colour, densely packed in spikes at the ends of the branches. There is no special difficulty that we know of in the cultivation of this class of plants, but some of them seem to possess special attractions to the mealy-bug, but gardeners know how to deal with that pest.

Notices of Books.

On Artificial Manures; *their Chemical Selection and Scientific Application to Agriculture.* By M. Georges Ville; translated by William Crookes, F.R.S. Second edition. (Longmans.)

This is a fascinating book, and one that, with its graphic illustrations, must be attractive to farmers. The more, then, is the pity that its statements are by no means universally accepted by competent agricultural chemists on this side of the Channel. Physiologists, in the face of the conclusive experiments of Messrs. Lawes and Gilbert, will hardly agree with M. Ville as to the absorption of free nitrogen by plants, and as to the difference he draws between Wheat, which absorbs its nitrogen in the form of ammonia; Beetroot, which takes it as nitrates; and leguminous plants, which absorb it in the form of free gas, the verdict will be not proven. M. Ville advocates the use of what he terms a normal manure, comprising nitrogenous matter, calcic phosphate, potash, and lime; not that these constitute all that is necessary for plant-food, but the other ingredients are already in sufficient proportion in most soils. For practical and comparative purposes careful experiments with various manures on the growing plants themselves are more serviceable than analyses of soil, or of the plant itself. To rely exclusively on published analyses, either of manures, of soils, or of plants, is to grope in the dark, because so little is yet known of the changes that go on in the plant itself. But by experimenting in the way indicated, if we do not throw light on the method of operation we yet gain results that are intelligible to all and beyond dispute.

—— *Flora Orientalis.*—The first part of the fifth volume of M. Boissier's valuable publication has just been issued. It comprises the Monocotyledons, and those of our readers who have to refer to the Crocuses, Tulips, Irises, Squills, and other plants of the Levant and adjacent territories will learn to appreciate the clear, well-defined, descriptive characters of M. Boissier. In dealing with the Crocuses the author follows the arrangement originally detailed in these columns by Mr. Maw, while Mr. Baker's arrangement of Irises, also published in these pages, is likewise adopted. Twenty-four species of Tulip are enumerated, but by reason of the absence of sharply defined characters it is, says the author, very difficult to distinguish them. Unfortunately, as Mr. Elwes tells us, cultivation is no guide, for under cultivation the plants almost immediately undergo such changes as to be almost unrecognisable. Shall we, then, abandon their culture? Certainly not; the very variableness is all in favour of the florist, while it affords a most promising field of research for the botanist, taking M. Boissier's descriptions as his base of operations. No fewer than 139 species of Allium are described. Is there not one of them whose delicacy of flavour may redeem the general character of the genus to those to whom Onions are an abomination? Of the difficult genus Muscari thirty-eight species are recorded. The common Hyacinth is given as a native of the mountains of Cilicia, it being an introduced plant only along the European shores of the Mediterranean. This work, as will be seen, nearly approaches to completion. Sir Joseph Hooker's *Flora of British India* is well advanced, though its progress is not so rapid as students could wish. When the two are complete the vegetation of a very large area of the world's surface will be recorded in a way to admit of easy reference. Complete Floras of Australia, New Zealand, and various islands we have; the Atlantic States of North America and California are well provided for; Japan is fairly represented; the Cape Flora remains as Harvey left it, the tropical African Flora is unfortunately also in abeyance. Europe needs a general Flora, though of course well provided so far as separate countries go; Brazil needs something less cumbrous and costly than the magnificent *Flora Brasiliensis*. China in one hemisphere, New Grenada, and Ecuador, Chili and Bolivia in the other, have only been dealt with fragmentarily, and Peru not at all. May the example of Bentham and Boissier speedily be followed by other competent botanists, so that ere the century is out we may have a complete catalogue of the world's vegetation.

Orchid Notes and Gleanings.

WORK IN THE HOUSES.—In the East Indian-house just now it is interesting to watch the development of the spikes on the Phalænopsis. A two or three-branched spike makes a nice display, but one with six or seven branches may be said to be a good return for the labour and care spent on the plants. Anything likely to give a check to the plants must be carefully guarded against, otherwise the spikes may prove abortions. Endeavour to maintain a steady temperature of 68° during the day, with a gradual fall to 63° at night. The latter temperature will keep these plants in perfect health, but it should not be allowed to sink below this figure for any length of time. The prevalence of easterly or north-easterly winds is always trying for all kinds of Orchids, Phalænopsis in particular. The bad influence of cold winds can to some extent be counteracted during the night by adopting some kind of covering over the house. We use stout sailcloth for covering the roofs of all our houses during windy and frosty weather, and a treble thickness of mats tacked on to skeleton wood frames for protecting the fronts of the houses. This prevents the plants from getting robbed of the moisture to anything like the extent they would be with the glass all exposed during cold nights. Angræcum eburneum, Saccolabium giganteum, and S. Harrisonianum should be carefully cleaned now that their flowers are past their best. The latter is one of the sweetest-scented Orchids in existence. Where yellow thrips are troublesome among the Aërides and Vandas, the present is a good time to give the plants a thorough cleaning. In cleaning the early flowering Aërides some care is necessary in working down into the axils of the leaves, so as not to destroy any incipient spikes. This species of thrip is an insidious little pest, and no trouble should be considered too great to get rid of it. A good plan to keep it in check is to fumigate the plants lightly every three weeks or so. This I have always found keeps it in check sufficiently to prevent it doing much mischief. Attention should also be devoted to the destruction of cockroaches at this season, as they are generally very numerous and more ravenous and destructive to the roots of the plants than at any other season of the year. The Calanthes will now be getting in their best condition, and may be arranged through the warm houses, which they will keep gay for a couple of months. Any from which the spikes are cut should be placed in a warm temperature, gradually withholding water, so as to ensure them going perfectly to rest. Another valuable plant for supplying cut flowers at this season is Pilumna fragrans. This will thrive at the cool end of the Cattleya-house, and should always be kept moderately moist at the root. A compost of equal parts fibry peat and sphagnum moss will grow it well. The autumn and winter blooming Lælias are now fast developing their spikes. The best of these are L. albida, L. anceps, L. anceps Dawsoni, L. autumnalis, and L. autumnalis rubens. These, with Cymbidium Mastersi, C. Lowianum, Dendrobium heterocarpum, Cattleya chocoensis, and several species of Cypripedium, will help to pass over the dull season of flowering. With these plants in bloom, and some of theearly summer flowering Cattleyas, such as C. Mossiæ and C. Mendelii, at rest in the same house, will render it necessary to be cautious during dull weather in not overloading the Cattleya-house with moisture. *J. Roberts, Gunnersbury.*

ORCHIDS AT RENDLESHAM.—It is needless to say that the last months in the year are the reverse of being the brightest, so far as bloom is concerned amongst Orchids, but in a well managed collection like that at Rendlesham there is always something attractive. Amongst a number of things in bloom or fast approaching this stage are some forty plants of Lælia autumnalis in beautiful condition, the number and size of the spikes, as well as the flowers individually, are quite unusual. The plants stand together at one end of a low light span-roofed house, and Mr. Mill, I understand, never shades them in the least, they being all through the summer fully exposed to the sun, which results in the bulbs attaining a size and strength much above the average. L. anceps Dawsoni was coming into bloom. With these are a number of examples of Masdevallia tovarensis bristling with bloom-spikes just beginning to open, a good many of the spikes carrying three flowers each, a sufficient indication of the condition they are in. A perfect contrast to the Masdevallia in the colour of the flowers is Sophronites grandiflora, of which there are four rows of large plants in shallow pans suspended from the roof of a small house, full of bloom, bright and large; some of the growths they are now making are the biggest I have seen. Among these are several imported in the autumn of 1881, with full-sized bright crimson flowers, very distinct from the ordinary forms. There are numerous varieties of Oncidium tigrinum in bloom, several remarkable for the depth of colour they possess. O. zebrinum grows here like the most vigorous of weeds; one plant with four leads from 4 to 5 feet high is branching out in all directions at the bottom, and is a complete thicket of roots; it stands at the end of a house supported with stout stakes, and has nearly reached the roof. Dendrobium bigibbum thrives well; numbers of plants were in bloom, affording a pleasing contrast between the dark and light-coloured forms. Amongst cool Odontoglots are several grand forms of O. Alexandræ and O. Pescatorei; some plants of the latter species in the country only twelve months have made bulbs nearly as large as the imported ones. Of O. pulchellum majus there are several masses of extraordinary size. In another house several examples of the beautiful Maxillaria grandiflora, which sometimes gets the character of being a shy bloomer, are flowering as freely as Lycaste Skinneri usually does; one plant in a small pot was bearing eleven of its beautiful, pure-coloured flowers. *T. B.*

MR. PILGRIM'S ORCHIDS.—The result of the sale of Mr. Pilgrim's Orchids at Stevens' Rooms, on November 9, cannot fail to have a cheering effect on Orchid collectors generally, as it points plainly to the fact that Orchids are things of real value. Mr. Pilgrim's ill-health, the sudden death of his Orchid-grower, and other untoward circumstances, brought his plants to the hammer under the most disadvantageous conditions. Notwithstanding all that could be fairly done for the collection by those who got it ready for sale, not even the most sanguine orchidist would have guessed, on looking over the lots, that it would realise about £1200; as, although the bulk of the plants were sound, but few of them were large, and many of them exhibited signs that they missed their guardian's care. The general tone of the sale was no doubt maintained by a few Cheltenham buyers, who knew the plants, and also by two or three others new to the rooms; but the greater part of the high-priced things were bought by the usual large collectors one always sees at King Street when good things are advertised. The Vandas were not good, but seem to be going up in price. A decent plant of V. tricolor realised 10 gs.; Cattleya Skinneri, 24 gs.; Saccolabium guttatum Holfordianum, 30 gs.; a smaller plant, 14 gs.; Masdevallia Harryana Denisoniana, 19 gs.; M. Chelsoni, 17 gs.; Cattleya Trianæ alba, 15 gs.; C. exoniensis, 23 gs.; Odontoglossum citrosmum, 10 gs.; Cattleya Trianæ Morgani, 26 gs.; another C. exoniensis, 11 gs.; Aërides Schröderi, 22 gs.; Cattleya Warneri, 12½ gs.; Cattleya labiata, autumn flowering, 32 gs.; Lælia anceps Dawsoni, 12 gs.; Odontoglossum polyxanthum, 11 gs. Although rare things fetched good prices, plenty of good showy ones were, as usual, acquired by small growers at very easy prices.

The Flower Garden.

THE operations in the flower-garden at this dull season (and rendered more dull by the prevailing inclemency of the weather) are reduced to a minimum as regards any showy results, and when on the lawn the worm-casts are kept well rolled, and the grass and gravel walks well rolled, the attention may well be turned to those often unseen and unappreciated operations upon the proper attention to which the power of carrying out the needful work of spring and summer mainly depends. It is all very well to give a set of rules for sowing seeds and planting out, but we have to bear in mind that there are many other things upon which an abundant floral display depends, and we are taught by experience that earth which is con-

stantly occupied by plants requiring nourishment will in time become exhausted of those elements which contribute to their healthy development, and therefore it is necessary to provide beforehand, so as to be ready when wanted for use, a sufficient supply of what may be called unexhausted composts; and as the preparation of these composts is a work of time, often of years, I have ventured to call attention to it at this comparatively leisure time in this department. Foremost seems to me to come—

The Storing of Tree Leaves.—There can be no doubt but that decayed vegetable matter, which may be considered the most natural fertiliser provided for plants in a wild state, is also the best fertiliser we can provide for them in what may be called an artificial state, where, whatever help they would get under natural conditions, through the natural decay of *débris*, we through the operations on which a high state of keeping depends deprive them of a chance of assimilating, and it thus becomes imperative to provide the best substitute we can. As the trees are now commencing to shed their leaves in earnest, those which were stored last year should be at once turned over into the place previously occupied by that which has been shifted to the soil-ground in readiness for use, and the space (which should be ample) filled with a fresh supply as they are accumulated. To carry out this matter a large space should be set apart in a sheltered out-of-the-way corner, one half of which should be filled with fresh leaves every year, to be turned over to undergo another year's decomposition, after which it will be sufficiently friable for use.

Charred Rubbish.—Another very useful fertiliser is formed from the *débris* collected during the season from lawns, flower-beds, and borders. Wherever there is a practicability of subjecting the whole of it to the action of fire from time to time, and, thrown into a heap, it becomes a valuable material for renovating exhausted beds and borders.

Decomposed Manures. — It is oftentimes necessary to apply more stimulating material than the above, for which a due provision should be made. Thoroughly decayed manure from the cow-yard will be found the best stimulant to apply to hot and dry soils, but well-fed horse-manure is best suited to the generality of soils, and for the purposes of the flower garden there should be an ample store put by every year. It should be frequently turned over for aëration and decomposition, as it is best for use after at least two years' submission to the action of the atmosphere.

Loam.—This material is such an obvious necessity in the flower garden that I scarcely need remind the operator to take advantage of any leisure opportunity to secure a good supply. I prefer a good loam from off the chalk. *John Cox, Redleaf.*

Grapes and Vineries.

The earliest vinery, if started as advised in my last Calendar, can be kept at a night temperature of 50°, with a rise of 10° by day, and if the present mild weather continues, a few degrees warmer. Turn over the fermenting material on the inside border every morning, and add fresh dung and leaves as the heat declines. Give a little air by the back ventilators when the temperature reaches 65°, and close early in the afternoon, with plenty of atmospheric moisture. Syringe the rods with tepid water several times daily, but not after closing time. If the border was thoroughly watered when started, it will be sufficiently wet for some time yet; examine the fermenting material on the outside border, and add fresh dung and leaves when required to keep the heat steady. Continue to prune succession-houses as the Grapes are cut and the leaves fall off; after pruning, if the borders are dry, give them a good soaking of clear water, and keep the houses as cool as possible. Late Hamburghs will require great care to keep them well this moist mild weather, and the outside borders must be covered to throw off the rain; our latest Hamburghs have nearly all the roots inside, and I find they keep very well. Look over the bunches several times weekly for decayed berries, and keep the atmosphere light and dry; give air freely when the weather is bright and fine in the middle of the day, and close early in the afternoon, while the outside atmosphere is dry. On wet days very little air must be given, and sufficient fire-heat used to keep the internal atmosphere light and dry. Muscats can still be kept at a night temperature of 50° to 55° while this mild weather lasts, but if cold frosty nights come on let the temperature fall lower rather than use too much fire-heat, or the berries will begin to shrivel and lose weight. If the borders are thoroughly drained sometimes they will take water, but it must be given with great care not to saturate the border. Choose a fine bright day for the operation, and give a little extra heat and air to dry up the surface moisture, for a few hours in the middle of the day, but turn it off again before the house is closed in the afternoon. Give air through the back ventilators on all favourable occasions, but front air must be admitted with caution, only for a few hours on the brightest days. Keep a sharp look-out for decayed berries, or they will soon spoil the bunches; and go over all the corners of the house weekly with a hair broom to dislodge the spiders, for if this is neglected they will travel all over the bunches and spoil their appearance. The earliest pot Vines must be kept at a night temperature of 50°, with a rise of 10° by day, or a few degrees higher if the weather is mild; if they are plunged in fermenting material, it is a good plan to stand them on pots and put the material round them, then fresh dung and leaves can be added as the heat declines, without disturbing them. When plunging them, make the hole in the bottom of the pot larger, as it will let the water pass off more freely, and the roots will derive benefit from the decayed material when they are finishing; syringe the Vines with tepid water several times daily, and close early in the afternoon, when the temperature is high with sun-heat. *Joshua Atkins, Lockinge Gardens, Wantage.*

The Hardy Fruit Garden.

Continued wet weather during October and the beginning of this month having prevented any commencement being made with the pruning of trees on walls, all work of this description will have to be done this season during the very shortest days, when least progress can be made, and when probably the temperature may be too low to do the work with comfort. Every endeavour should, therefore, be made to get abreast of all work of this description by proceeding with it at the earliest possible date. The fierce gales have torn off much of the foliage that promised to hang long on fruit walls, and assistance in the way of removal with brooms, &c., will not be required; for any leaves now remaining on Plums or Peaches are of so green a description as to leave no hope of ripening and falling, but must now remain until destroyed by sharp frosts, or until the immature shoots on which they hang are removed in pruning. Morello Cherries can have their growths laid in somewhat more closely than other fruit trees, but avoid any approach to crowding. Remove in all the thicker parts of the tree the terminal shoots that have borne fruit, retaining the next lower growth to take its place. All extensions that have reached their allotted limits and have had their summer growth stopped can be likewise cut out if their retention would crowd that part of the wall; but they may be kept to form spurs—or, rather, short twiggy growths that will prove very fruitful if required. Little further pruning will be necessary than the above thinning-out, as it is well to avoid shortening back the growths, and to depend upon the removal of some of the longest bare shoots, and the laying-in of younger ones for the efficient furnishing of the treee; but if any very bare places occur it may be necessary to cut back to induce the emission of more growths. Cover as much as possible of the old wood with young shoots to avoid the bareness so often seen about the main branches of old trees of the Morello. See to the removal of all ties that are likely to become too tight and to injure the branch before the time for the next general overhaul comes around. If nails are used for securing the trees to the wall see that none press against the branches, or are in such close proximity as to endanger those that may be expected to swell rapidly at an early date. Much less use of the knife should be required at this time on walls devoted to sweet Cherries than is needed on the Morello wall, if the former have been duly attended to during the summer. If there is the least appearance of scale, let all shreds or old ties be removed, and the trees be cleaned as effectually as possible by scraping any affected part with some blunt instrument, particularly attending to portions near to the wall, or between large branches where the inconspicuous pests are not easily seen. After having removed all that can be observed, let all the adjacent parts be carefully dressed with an insecticide before re-nailing. Where the black aphis has been troublesome it will be equally necessary to remove all old fastening material, and to cleanse as thoroughly as possible, and it will be likewise well to fill in all old nail-holes and other crevices with a thick wash composed of a mixture in which clay can be made the stopping agent, with the addition of soft-soap and tobacco-water to destroy any lurking embryo or adult black-fly that may be present.

Work recommended to be done in a previous Calendar in the way of root lifting where necessary, cannot have been carried out in most districts on account of the saturated state of the ground, and it is to be feared in some cases that such needed work will have to remain over for another season on account of the press of work in this department, crowded out of course by the impossibility of getting upon the land for some time past. Whatever planting or lifting is being done cannot be too carefully timed as to the state of the weather, to avoid surrounding the replanted roots with a mass of soil of mortar-like consistency, in which the trees may be expected to grow worse than before. Finish off the surface of the ground as the work proceeds, and avoid the unsightliness of mounds of earth and trimmings of roots littering the fruit borders until a more convenient season.

The trenching of ground for fresh plantations of bush or other fruits, or for the removal of exhausted lines or individual stations, must also be speedily proceeded with as opportunity offers. Use as much fresh soil as is procurable, and work-in at the same time sufficient stable manure, on any sites previously occupied with fruit trees, to thoroughly enrich the ground; but where the land has been under general routine cropping the soil will usually be found to be sufficiently rich for planting in without the addition of futher manure, which might only tend to the production of rank and unfruitful growths. It is well to remember in preparing for such work that proper stocks, shallow and firm planting, with the soil sufficiently dry to allow of the latter requisite being effectually performed, are surer factors in the production of satisfactory fruit crops than undue enrichment of the proposed stations. *Ralph Crossling, Penarth Nurseries.*

The Pine Stove.

As winter is now at hand and cold nights are prevailing, night temperatures should be carefully regulated. Keep fruiting-houses at about 70° at 10 P.M., which may be allowed to fall to 65° by 6 A.M. The day temperatures may rise to 80°, or even 85°, in mild weather, with the aid of a little solar heat. Keep the bottom-heat for fruiting plants in all stages steady at from 85° to 90°. Keep succession plants about 65° at night, with a rise of 10° by day, so that they are kept gently growing until they show signs of fruiting. If the growth is well developed and matured they will readily show fruit at the proper time. Keep the bottom-heat for plants in succession stages steady at about 80°. Keep rooted suckers in different sizes and sorts from 60° to 65° at night, with a rise of 5° to 10° by day, according to the state of the weather, and the bottom-heat at about 75°. Our practice is to keep them in a light structure close to the glass with a direct south aspect, and under these conditions they are kept gently growing throughout the winter. The reprehensible practice of allowing rooted suckers to become weakly and drawn or pot-bound during winter cannot be too strongly condemned. Cover over the glass at night to keep up the temperatures with a minimum amount of fire-heat. Plants that are just showing fruit, such as Smooth Cayennes and Charlotte Rothschilds, should be carefully nursed, as they will ripen at a time when Pines are scarce, and when the fruits will be appreciated. The early batch of succession plants will now be completing their growth, and it will soon be noticed that they close in their centres—an almost sure indication that the plants will show fruit soon. All plants approaching this stage should be carefully selected and placed in a division or compartment to themselves; these will form the early starters for January and February, and succeed those above referred to. Water fruiting plants approaching their last stage of swelling, or those that are colouring, cautiously; for if over-watered at this stage the fruit will turn black in the centre before it is perfectly ripe. Continue to water all Pines carefully, and on the safe side. Keep the soil and balls uniformly moist—neither too wet nor too dry. Attend to the linings of pits and frames, and where bottom-heat is entirely supplied by fermenting materials see that the heat does not decline before fresh materials are added. *D. Wilson, Castle Hill, Devon.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Nov. 20	Sale of Dutch Bulbs, at Stevens' Rooms; and at the Auction Mart, by Protheroe & Morris.
TUESDAY,	Nov. 21	Chrysanthemum Shows at Oxford, Manchester, Liverpool (two days); and Brighton (three days). Great Sale of Nursery Stock, &c., at Lee's Nursery, Isleworth, by Protheroe & Morris (three days). Sale of Imported Orchids, at Stevens' Rooms.
WEDNESDAY,	Nov. 22	Chrysanthemum Shows at Northampton, Wimbledon, and Birmingham (two days). Sale of Plants and Bulbs, at Stevens' Rooms.
THURSDAY,	Nov. 23	Chrysanthemum Shows at Staines and Aylesbury. Sale of Imported Orchids, at Stevens' Rooms.
FRIDAY,	Nov. 24	Sale of Lilium auratum Bulbs, at Stevens' Rooms.
SATURDAY,	Nov. 25	Chrysanthemum Shows at Cheetham Hill and South Shields. Sale of Plants and Bulbs, at Stevens' Rooms.

TO go in wet is to go in well for growing used to be a maxim among planters: Bad for the men, good for the trees, was another old saw, pointing the same truth. It is obvious, however, that an excess of wet may prevent planting. It is impossible to plant to any firm or successful purpose in water, as not a few early planters have found to their cost who essayed to plant towards the end of October. A rainfall ranging from 300 to 400 tons per acre within a single month must needs convert the solid earth into a semi-swamp.

Neither are the ill effects of the rain confined solely to the ground; the trees are also flooded with watery sap to such an extent as to prevent their ceasing to grow, or maturing the growth already made. Instead of autumnal tints denoting semi or perfect maturation the leaves are, in some cases, as green as Leeks, and the branchlets full of watery sap. These are but a sorry preparation for planting, and will furnish a wretched defence against the frost that mostly comes with unwonted severity on the heels of abnormally wet autumns. Left undisturbed much of the current year's wood is likely to become food for frost—transplanted in such succulent condition it is almost sure to be dried up or blighted by the fast drying winds.

And yet this wonderful downpour is not an unmixed evil to the planter. It reveals to him how land is affected by water, and measures at sight its true state in regard to drainage. Any land may indeed be flooded by such abnormal rainfalls, but well drained lands are quickly relieved of their watery burdens, and by noting the time and manner of their drying it is easy to read off, as it were, their need of drainage or otherwise. Should the land need draining this ought to be at once attended to. By carefully noting the mode of subsidence and removal of water from drowned or saturated land many useful hints may be gleaned as to the direction and fall of drains. Sometimes it may happen that one deep open ditch or drain may drain an entire side of a field that it may be intended to convert into a wood. In no case should plantations be made on land with sour or stagnant water or mud for its base. Alders, Willows or Poplars may thrive on such soils, but hardly any other trees will live or thrive to any profitable purpose under such circumstances; hence the importance of draining before planting, and ditches and drains may be cut most rapidly through moist soils. Much labour may also be saved by proceeding with the making of the holes so soon as the earth works freely and cleanly after the water has subsided. Moist earth is soft and easily moved, and soon crumbles after exposure to drying winds or ameliorating frosts. The sooner therefore the holes can be made the better; and thus, while the root-runs are being sweetened and prepared by exposure, the trees will also be getting more matured and better fitted for removal. Owing to the exceptional lateness and wetness of the season, it will hardly be desirable to plant so early this season as usual. The immature shoots are easily shrivelled up and injured, and the green leaves fail to excite or maintain any root action in their new spheres. On the contrary any action that takes place is one of depletion. Even the roots of many plants at this season are almost too active and full of growth to be removed with safety as early as usual. The best condition for the replanting of trees is probably just shortly before root activity ceases; growth is still going on, but has well-nigh stopped, and the root-growth made has sufficient firmness and solidity to excite and sustain sufficient new growth to re-establish the tree or plant in its new position so soon as possible. No sooner is this done than the risk involved in removal has passed away, and the plant may be pronounced safe; provided always, however, that it is securely fixed at once in its new home, for fixity of tenure and position of the most determined sort is one of the most essential conditions of its future prosperity. In so far, however, as the recent rains have washed the summer heat out of the ground, they will prove hindrances to growth, for the warmth of the earth is one of the most powerful means of exciting the roots to immediate action. But provided the present mild and dripping weather lasts a little longer, newly planted trees will be kept fresh until root-growth begins, while the check incident to transplantation may probably so far drain them of sap as to enable them to bear severe cold better than those that have not been disturbed. The transplantation of some hardy plants before winter as a means of making them more hardy has not yet received the attention that it deserves from cultivators, though it seems to have been proved from frequent experience that transplanted plants pass through severe cold better than those that have not been moved. Two examples from the widely opposite families of Rosa and the Brassica are more or less familiar to all. Hence Broccoli are looked over or replanted, and it was seriously proposed by a large rosarian the other day that probably the most efficient protection for Roses against the expected severities of the coming winter was to transplant them at once or lay them in by the heels till next spring.

—— APPLE LANE'S PRINCE ALBERT.—We have so fully and so recently alluded to the merits of this fine kitchen Apple that we need not now again describe it, especially as its outward characteristics are so well pourtrayed in the annexed illustration (fig. 116). For the many reasons mentioned in our number for September 30, p. 435, "Lane's Prince Albert may claim a place among the very few first-class kitchen Apples," and as such we take pleasure in bringing it again under the notice of our readers.

—— VAN HOUTTE MEMORIAL PRIZE. — At a meeting of the committee held on Tuesday last it was decided to offer at the approaching quinquennial exhibition at Ghent, for competition among Belgian exhibitors only, two prizes each of about the value of £12, one for six stove and greenhouse plants in flower remarkable for their fine cultivation (Orchids excepted); the other for eight plants of Imantophyllum [different varieties?] in flower.

—— THE COFFEE LEAF DISEASE. — Owing to the prevalence of this disease the importation of Coffee plants and berries into Réunion, from Mauritius, India, Ceylon, Java, Sumatra, and the Fiji Islands, is prohibited.

—— NERINE CAMI×.—This is a beautiful hybrid raised by Dr. CAM, of Hereford, between N. curvifolia as the pollen parent and N. undulata as the seed-bearer. It possesses the valuable property of producing its flowers at the same time as the leaves. The umbel consists of about ten flattened flower-stalks emerging from within two broadly lanceolate pink bracts. The individual flowers are about 1¼ inch long, bell-shaped, the segments linear-oblong acute, the outer ones apiculate, wavy at the edges, all rosy-pink, distinctly flushed with blue. Three of the stamens are longer than the other three, but the anthers of each set seem to open about the same time, and to be in advance of the stigma, so that the intervention of insects or some other mode of fertilisation is requisite.

—— ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA.—Dr. MASTERS has been elected a correspondent of this Academy.

—— M. ED. ANDRÉ.—The Editor-in-Chief of the *Revue Horticole* and the well-known landscape gardener announces that his address is now 30, Rue Chaptal, Paris.

—— HORTICULTURAL APPLIANCES. — It is announced that an exhibition of horticultural appliances, and every requisite in connection with the garden, will be held at the Agricultural Hall, London, from March 15 to 24, 1883, inclusive.

—— LAPAGERIA ROSEA VAR.—There are several forms of both the white and the red Lapageria in cultivation. Of the red sort especially there are a good many, varying considerably, not only in the size and form of the flowers, but more so in their depth of colour. Planted out in one of the houses at Sudborne Hall there is a medium-sized specimen, the flowers of which are of the most intense brilliant crimson, much more vivid than the form usually designated by the name of rosea splendens. It is as much superior to the ordinary varieties of L. rosea as anything in its way could be.

—— SINGLE DAHLIA PARAGON.—With reference to this fine old variety, Mr. GEORGE WILLERS, The Nurseries, Trumpington Road, Cambridge, informs us that it was grown for more than forty years by the late Mr. JOSEPH STEAD, gardener to the Master and Fellows of Trinity College, Cambridge, under its original name of Beauty of Thetford. Mr. WILLERS himself has grown it also under this name for twenty years, and for some years has propagated and sold it, but not under the name of Paragon. By whom and when Beauty of Thetford *alias* Paragon was raised is still an open question, but the mention of its original name may enable some one to trace it out.

—— MARIE LOUISE VIOLETS. — Mr. GILMAN sends us from Ingestrie Gardens, Stafford, a fine bunch of Marie Louise Violets, of which he has been picking good supplies during the summer and autumn from a nine-light frame, and still has an abundance. From a stock of four dozen plants, which Mr. GILMAN had two years ago, he has raised the number to 900, and being all full of bloom, he may well add "it is a grand thing."

—— COMPAGNIE CONTINENTALE D'HORTICULTURE.—We are informed that this company intends opening in their nursery, coincident with the great international horticultural exhibition to be held in Ghent next April, a special exhibition of their own private cultures. In a few weeks, when the new conservatory and greenhouses which are in course of construction will be finished, the company's nursery will contain more than 100,000 square feet of glass-houses, not counting the frame-surface, heated by over 8 kilometres (5 miles) of piping. A new entrance by the Boulevard de la Coupure will put the establishment in almost immediate communication with the Casino, where the international show will be held.

—— CAMBRIDGE BOTANIC GARDEN. — Mr. LYNCH informs us that the number of kinds now growing in the herbaceous and alpine collection of this garden is 2788, without Ferns, which is rather more than twice the number he found there three years ago.

—— ROOTS AND LEAVES.—It is convenient to maintain the separate existence of axis and appendage (caulome and phyllome), but it is very questionable whether there is really any absolute fundamental difference between the two. To the numerous cases of parts intermediate in character between stem and leaf M. CLOS now adds others intermediate between leaf and root, citing in support of his proposition what he calls the "phyllorhizes" of Trapa natans, Salvinia, Azolla, Limnophila, Myriophyllum, Elatine, Utricularia. The curious pouches of the latter are considered as independent organs, not distinctly referable to leaf, stem, or root.

—— Salvias at Sudbourne Hall.—With a good selection of sorts and the plants well managed, there are few things in autumn so effective as Salvias. At Sudbourne they are remarkably well grown, and produce a mass of flowers unequalled by anything that can be had during the late months of the year, not even excepting the favourite Chrysanthemums, affording as they do colours not found in the last-named plants. The sorts Mr. Bethell cultivates are S. splendens Bruanti, much superior in every way to the well-known S. splendens, better in habit, larger spikes, fully as vivid in colour, and yielding a much greater sheet of bloom; S. Pitcheri, unequalled as a blue variety, alike desirable for its lovely shade of colour and the quantity of flowers it makes; S. Bethelli, the bright rosy flowers of this kind produced in such profusion as to almost hide the foliage, and lasting long on the plant, or in a cut state, constitute it one of the most reliable blooming plants for autumn decoration. Yet with the naturally free-flowering disposition of the Salvias, blooming as they will under indifferent cultivation, there is a wide difference between the results obtainable, as they are often seen, and where managed as they are at Sudborne. In addition to the conservatory, where, along with Chrysanthemums, Bouvardias, perpetual flowering Carnations, zonal Pelargoniums, Primulas, autumn flowering Heaths, Azaleas, and Camellias, they collectively fill the house with a sheet of bloom; there was a large house competely filled with them. Mr. Bethell plants them out in the open ground in spring, giving plenty of room to keep them bushy, lifting and potting them before they come into flower. they run about 2½ feet high by as much through, bushy, and well furnished down to the pots. Figures of all the principal varieties were given in our columns in 1880-81, vols. xiv., xv.

—— Root and Branch.—At the annual meeting of the Scottish Arboricultural Society Mr. McCorquodale related the result of an experiment made to show the relation between root and branch. A friend having maintained that the destruction of a branch produced a corresponding destruction of the roots, Mr. McCorquodale reared from seed a plant of Pinus Douglasii, and allowed it to grow for four years from the terminal bud only, suppressing the side-buds as soon as they were visible. When, after four years, the plant was uprooted, the roots were found as fully developed as if the branches had been allowed to grow.

—— The Floral Committee.—Now that the time is approaching when new arrangements must be made it may be fitting to call attention to the manner in which First-class Certificates are too frequently awarded at the committee meetings of the Royal Horticultural Society. For the reputation of the Society it behoves the committee to be much more chary in the award of these documents to florists' flowers and plants whose chief interest is of a merely commercial or ephemeral nature. The awards of such certificates to Pelargoniums, Dahlias, and the like are out of all proportion to those given to plants of higher rank in the floral hierarchy, but which are not, and cannot be, the objects of commercial enterprise excep



Fig. 116.—Lane's Prince Albert Apple. (see p. 656.)

to a limited extent, and they are also out of all due proportion to the awards of the Fruit Committee. To award a First-class Certificate to a new Chrysanthemum, we will say, differing very slightly if at all from scores and hundreds of others, and then only in degree, while no higher award is made to a new plant of great beauty or interest, to a newly raised hybrid, or to a plant forming the beginning of a new "break," is absurd, little calculated to educate gardeners and the public, or to raise the repute of the Society. The evil arises partly from the large number of members. It may often happen that only three or four out of twenty or thirty present vote in a particular case, and those, it may be, are not the most competent to vote in that particular case; and a certificate is thus gained or lost by a majority of one or two out of half-a-dozen in a full committee. In other cases men vote as the Scotch laird swore, "at large," without due consideration as to the value of their vote. The conscientious vote of an expert is one thing, the haphazard vote of one who votes for voting sake is another. Still, when a vote is given unanimously or by a large majority of those present it is certain that the plant is amply worth the award. This suggests the desirability of publicly recording all those cases where the vote is unanimous. It is evident that such an award is of far greater value than one made by the votes of a majority of two or three out of half a dozen. It may, however, and indeed frequently does happen, that the subject to be voted upon demands not only general knowledge but the special judgment of experts, not more than two or three of whom may be present at the committee on a particular occasion. In such case the experts should report their decision to the chairman, for ratification or otherwise by the committee at large. To some extent this is already done, but the plan might with advantage be more systematically carried out. Another alteration we have frequently advocated would be the formation of a Plant Committee, in addition to the existing Floral and Fruit Committees. The Plant Committee should take cognisance of all newly introduced plants, all the ordinary stove, greenhouse, or hardy plants, leaving the countless florists' flowers, the Azaleas, the Camellias, the Roses, the *varieties* of Orchids, the bedding-out and "furnishing" plants, to be adjudicated upon by the Floral Committee. Other reforms, to which we may hereafter refer, might advantageously be introduced.

—— A FUNGUS CLUB was inaugurated in Edinburgh on Wednesday, the 8th inst., Mr. JOHN SADLER being elected President.

—— THE HORTICULTURAL GARDENS AND THE FISHERIES EXHIBITION.—Regular attendants at the Royal Horticultural Society's meetings must have been much struck on Tuesday last with the transformation that has taken place in the gardens since the last meeting by the great progress that has been made with the spacious buildings in course of erection for use in connection with the great International Fisheries Exhibition to be opened in May next. Although it is not quite agreeable to one's feelings to see a garden so much cut up, or to think of the wreck that will follow the demolition of the new buildings, it is satisfactory to observe that the sites of the different structures have been selected with a due regard to the preservation of the trees in *statu quo*, and that although the alterations involve the removal of a number of shrubs, these are to find a temporary home in the garden of the French annexe. The main features of the general arrangement, so far as they at present can be seen, consist of several large detached blocks of buildings to be connected with one another by covered ways. There are six of these blocks in the centre of the garden, with a long one on each side running parallel with the permanent corridors, and connected therewith; and the largest of all covering the broad walk from the Council-room to a distance of 60 feet beyond the fountain which forms the terminal end of the central walk down the gardens. The buildings are 50 feet broad and 35 feet high, top lighted, and with arched roofs, similar to the entrance vestibule leading from the Exhibition Road to the Council-room, and which is to form the principal entrance to the Fisheries Exhibition. The Council-room, in which the committee meetings have for so long been held, is also to be used in connection with the exhibition, and the meetings of the Society are to be held in the meantime in a building to be erected near the show ground in the south-west corner of the garden. The present permanent buildings are to be utilised as much as possible, and, in conjunction with the space provided for in the new structures, make up a total area of some 220,300 square feet. The Society still retains the conservatory, in which the spring shows will be held as usual, and the show ground at the bottom of the gardens, which will also be used as heretofore. The western arcade is, we believe, to be used as an aquarium, and the large central pond, as well as the long open tanks on each side of the garden, are to be utilised for exhibiting various kinds of salt and fresh water fish. From a purely horticultural point of view, inasmuch as the ground occupied has hitherto been utilised mainly for purposes of lawn-tennis, or other use only very indirectly connected with the professed objects of the Society, we cannot regret the change, but the residents in the neighbourhood who have looked on the garden simply as a recreation ground for their children, cannot be expected to be so complacent. In any case, the active sympathy of horticulturists will be more than ever needed.

—— MESSRS. LITTLE & BALLANTYNE have, we hear, lately removed from their old premises to a new and extensive block of buildings which have been erected for them on the Viaduct, near the western approach to the Citadel Station at Carlisle. The new building, which is of red sandstone, is seven storeys in height, and has a frontage to the railway of about 100 feet, and half that distance to the Viaduct. The bottom storey is occupied by machinery for cleaning agricultural and garden seeds. Floor No. 2 is occupied by stores of grass seeds, while the floor above, where Clover seed is warehoused, is intended as a despatch floor. The fourth floor, which is on the level of the Viaduct, is fitted up as a spacious shop, the walls of which are lined with hundreds of drawers, labelled and numbered. At the rear of the shop are situate the manager's and clerks' offices, and a sample-room, lighted by a large window built out from the building to secure a direct ray of light upon an ebonised "examining" table for the different seeds. On this floor are speaking-tubes communicating with all parts of the building, and a telephone connecting the office with the Knowefield Nurseries, 1½ mile away.

—— ROUGH COCK'S-FOOT GRASS *versus* CRESTED DOG'S-TAIL.—At a recent meeting of agriculturists and others, held at Appledore, near to the well-known Romney Marshes, in Kent, it was contended that, seeing the low prices fetched by English-grown corn, and the high prices obtained for live-stock, the farmers should turn their attention to the production of stock rather than to the growth of Wheat. It was stated that in the Romney Marshes, which is one of the finest sheep-grazing grounds in the country, two grasses are mainly cultivated, viz., the Rough Cock's-foot (Dactylis glomerata) and the Crested Dog's-tail (Cynosurus cristatus). Some scientific men, said one of the speakers, contended that the Crested Dog's-tail was not a nutritious grass. The Cock's-foot was recommended to be grown in its stead; but the Crested Dog's-tail grass should be preferred to the other, seeing that the stock liked it better, that it was more nutritious, and that it grew thicker than the other. The Crested Dog's-tail is a valuable fine short grass, and it invariably constitutes a considerable portion of the herbage of sheep-walks and deer-parks. It has been described by an eminent authority as forming "a dense turf of grateful nutritive herbage, and is little affected by extremes of weather. It is a grass included in all the best permanent pasture mixtures. It is particularly recommended for inclusion with other grasses in sheep pastures on the beneficial ground that sheep fed on such pastures are less liable to foot-rot than when fed on pastures composed of the more soft-leaved varieties of grasses." Another agriculturist, having a close acquaintance with the locality, preferred Cock's-foot to Crested Dog's-tail on the ground of the enormous quantity of produce it yields; that it shoots forth again quickly after being eaten or cut; that it grows much more thickly than any other grass; and that the stock relish it much better. It is also claimed for the Cock's-foot grass that it will stand drought well, makes excellent hay, and succeeds on almost any soil, especially in moist shady places, under trees, &c. As so much can be said on behalf of either grass it is wise to include them both in laying down land for sheep pasture. Cock's-foot grass is always included in mixtures for laying down grass-lands for short terms of years under alternate husbandry, but Crested Dog's-tail rarely, if ever.

—— NATIONAL AURICULA AND CARNATION AND PICOTEE SOCIETIES.—The annual meeting of these Societies (Southern Section) was held, by permission of the Council, in the Council-room of the Royal Horticultural Society on the 14th inst., John T. D. LLEWELYN, Esq., in the chair. The United committee reported "a continued and an increasing development in the operations and influence of the Societies," the exhibitions having brought forward a larger number of growers of the plants, whilst the interest of the general public, "keen from the first," had been largely extended. The balance-sheets showed for the Auricula an income of £91 0*s.* 10*d.*, and an expenditure of £81 2*s.* 6*d.*, leaving a balance in the Treasurer's hands of £9 18*s.* 4*d.*; for the Carnation and Picotee—receipts, £154*s.* 6*s.* 8*d.*; expenditure, £129 3*s.* 6*d.*, leaving £25 3*s.* 2*d.* in the Treasurer's hands. The larger receipts and expenditure of the Carnation and Picotee Society were due to the supplementary exhibition held at Oxford on August 2, for which special contributions were made; and the Chairman, in moving the adoption of the report and balance-sheet, remarked upon this satisfactory development of the operations of the Society, in the fact that attention was thus possibly drawn to the beauty of the flowers in a locality where, for some years, it might be said they were scarcely known. The report of the committee was unanimously adopted, and with the balance-sheet ordered to be printed for distribution to the subscribers. The President, Vice-President, committee, and Honorary Secretary, were re-elected. The schedule of prizes, slightly varied from those of 1882, were ordered to be printed, and the dates of exhibition, subject to the approval of the Council of the Royal Horticultural Society, were fixed for Tuesday, April 24, and Tuesday, July 24, 1883. The meeting closed with a cordial vote of thanks to the Chairman and Honorary Secretary.

—— THE WEATHER.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending Nov. 13, issued by the Meteorological Office, London:—The weather has again been unsettled, cloudy, and rainy, in all places. A sharp thunderstorm was experienced at some of our north-western stations on the 7th, and another, accompanied by heavy hail showers, over central England on the following day. The temperature has been about equal to the mean in "England, S.," but has ranged from 1° to 4° below in all other districts. The thermometer was generally highest during the earlier part of the period, but the highest maximum reading for the week (58° at Plymouth) was registered on the 10th. The minima, which occurred either on the 12th or 13th, were much lower than those of last week, and varied from 30° in "England, S.W.," to 25° in "England, S.," and 23° in "Ireland, N." Rainfall shows a slight deficit in the east of England and south of Ireland, but in all other districts the fall was rather in excess of the mean. Bright sunshine has been more prevalent than during last week in all distrcts, except "Scotland, E." The percentage of possible duration varied from 47 in "England, E.," and 43 in "England, S.," to 28 in "Scotland, W.," and 25 in "Scotland, E." Depressions observed:—During the greater part of this period depressions have again travelled over our islands in a south-easterly or north-easterly direction, bringing strong winds or gales from between south and west or north-west to all our coasts. By the morning of the 12th, however, the conditions had undergone a decided change. The barometer had risen briskly at all our more northern stations, while it showed a tendency to fall in the south-west and over France. On the following day pressure continued to increase over our northern counties, while a depression, which had approached the north-west of France from the south-west, moved in an easterly direction, and caused easterly gales or strong winds on our south and south-east coasts, and moderate easterly breezes elsewhere.

—— GARDENING APPOINTMENTS.—Mr. JOHN PENSON, lately Foreman at Knowsley Hall, as Gardener to Lord FORESTER at Willey Hall, Shropshire.—Mr. MATTHEW BLACKLOCK, late Gardener to W. GORDON, Esq., Theareave Castle, Castle Douglas, as Gardener to W. H. SCOTT, Esq., Nunfield House, Dumfries.

Florists' Flowers.

The Proposed Pink Show is abandoned for the present because there appears no reasonable prospect of a satisfactory competition, the cultivators of the flowers being so few in number and so widely separated. To obtain the needful funds would be but a trifling task compared with that of obtaining the flowers. But the proposal has stimulated many to enter on the cultivation of Pinks, and what appears an unsafe step for 1883 may be safe and desirable for the year following. The state of the case revealed by a conference of friends at South Kensington on Tuesday last demonstrates the need for a Pink Show to save this sweet flower from annihilation. *Shirley Hibberd.*

Perpetual Flowering Carnations.—Those who are accustomed to look upon a few straggling plants of this, the most useful and most charming class of flowering plants in cultivation, should see a whole houseful of them in flower in Mr. C. Turner's nursery at Slough, where one is apt to forget for the moment that it is within a few weeks of Christmas. Without going as far as to say that many people might grow them as well as Mr. Turner, it is not going beyond the mark to say that a great many do not even try to grow them at all. We are now writing of general usefulness, and not merely from any one particular point of view. There is no room—or, rather, there is no time—to spend upon what are called "fads" in most gardens now-a-days. Utility, production, is the order of the day. Flowers are wanted, and these Carnations are the cream of them in winter—almost at any time. In a cut state we hardly know another flower that will last as long and look as well. Nor do we know of a single practical purpose for which they may not be used with the most satisfactory effect. What lady would not be charmed with those lovely rose-pink shades for a bouquet, or, better still, for her hair upon special occasions? It perhaps does not occur to people that there are special flowers and special shades of colour that are much esteemed by ladies for particular occasions. A lady wants a flower that will stand the atmosphere of a ball room and look fresh and bright for a night. A gentleman wants the same for a button-hole bouquet, and they must be hard to please who cannot satisfy themselves in all their hearts long for, from a moderate collection of these plants. Again, for grouping purposes they come in as usefully and equally effectively. In a group of plants you want neutral, striking shades of colour at this season. Plants that will bear from one to two dozen bright scarlet, crimson, or pink flowers in a 6-inch pot are just the thing for touching up a collection. Say there is a slight vacuum between two Palms or Ferns, and you drop in one of these plants between them, you change the effect as if by a magic wand. Or bring them into contact with a well-grown Richardia, or a dwarf white Chrysanthemum, and you have an effect equally good. Reverting for a moment to Mr. Turner's collection, it is surprising to find how varieties that were considered fine a short time ago are not to be compared with many of the new kinds. A variety called Mrs. Llewellyn, rosy-pink, not yet in commerce, is one of the most striking flowers we have ever seen; the flowers are large, and their bright appearance indicates unusual vigour and substance. The plant is of dwarf habit. Rosy Morn is another variety of the same colour, a taller grower, and the flowers scarcely so large, but very handsome. Rufus is a bright scarlet and a dwarf grower; and Hermit is scarlet shaded with dark edges. Enchantress, another pink, striped, is a splendid variety, having from twelve to eighteen buds on little plants that you might almost put in your pocket! These are the sort of plants that the million want for supplying cut flowers, or for other decorative purposes. Conqueror, a fancy, crimson striped, is a real beauty; as also Whipper-in, a scarlet with maroon stripes, producing flowers in bunches and quantities of buds. A very striking new variety, recently christened Egyptian, is a fine flower of the same shade of colour as the old Clove, and will make a welcome addition to the winter-flowering section. The Queen is a very pure white, and beautifully scented. Rubens, a true tree Carnation, is of dwarf habit, and the flowers are dark and finely formed; and Reverse (scarlet), and Rosalind (orange) are also very pleasing colours. The former is a very free flowerer. Worthington G. Smith is the finest scarlet in cultivation; the flowers are large and full, and the variety is a profuse bloomer. Cardinal is the next best scarlet; and others that appear to be distinct and striking in habit, size of flower, and colour, are Nimrod, Phœnix, and Mrs. Maclaren. The latter is a crimson bizarre, producing the most exquisitely formed flowers in great profusion. We have only mentioned a few of the newer kinds that are most conspicuous in point of merit, but the whole collection presents a forcible illustration of the beauty and value of such plants for flowering throughout the winter.

Zonal Pelargoniums in Winter.—Could anything have been much finer than the splendid examples of single trusses of zonal Pelargoniums Messrs. H. Cannell & Sons, of Swanley, set up at the meeting of the Royal Horticultural Society on Tuesday last? It was not only the size of the individual trusses, but the splendid development of the pips and their rich colours, which attracted so much attention. The names of a few of the leading varieties can be given as follows:—Crimson and scarlet shades: Metis, very fine shape and substance; J. C. Musters, rich crimson, very fine; Mrs. Gordon, a fine glow of rich pale scarlet (awarded a First-class Certificate of Merit); Royalty, rich crimson; Rose, bright soft scarlet, very fine. Purple: Dorothea, purplish-rose, very fine; Eurydice, deep lilac, very pretty. Lilac and pink: Mrs. Strutt; Constance, pale lilac, very fine. Salmon: Mrs. Gibson, Madame Colson, President McMahon. White: Eureka, pure and good. Scarcely less beautiful were the double varieties, but they were shown in bunches of four and five trusses; the leading varieties being Représentant Baudin, very deep crimson; Grand Chancellor Faidherbe, very fine; Charles Darwin, crimson-purple; Colonel Flatters, deep crimson; Paul Chamborner, bright scarlet; Serjeant Stoff, orange-scarlet; Mons. G. Lowagie, bright pale scarlet; Lord Mayor, purple, very fine; Mdlle. Marthe, pale purple; Jules Simon, pink; Crœsus, delicate pink; Mdlle. L. Dalloy, pale blue; Heroine, La Quintinie, and Boule de Neige. A large and finely flowered plant of the double zonal Aglaia was shown by Mr. Henry Little, and this appears to be in every respect a model zonal Pelargonium. The plant is of a close compact habit of growth, and the fine and bold trusses of large, full, and striking purplish-crimson flowers are produced with remarkable freedom. In unheated structures zonal Pelargoniums have gone on flowering right up to the present time, but with the assistance of a little heat and a requisite amount of attention, zonal Pelargoniums can be had in flower all the winter.

New Japanese Chrysanthemums.—A large number of these put in an appearance at the meeting of the Royal Horticultural Society on Tuesday last, and it was noticeable how numerous these were, while of the incurved type there was but one representative, and that a fine bronzy sport from the well-known lilac Prince Alfred, shown by Mr. Orchard, and deservedly awarded a First-class Certificate. This promises to take high rank as an exhibition variety. With new Japanese varieties Messrs. T. Jackson & Sons, Kingston, obtained three First-class Certificates: for Mons. Desbraux, orange-bronze, fully double, with plenty of narrow petals, large, but certainly not very distinct from some already in cultivation; Madame Brun, delicate pink, quilled petals flattened at the points, very pretty and soft in colour; and F. A. Davis, deep rich crimson shaded with dark maroon, with long thick thread-like petals, fine and striking, and promising to make a very acceptable exhibition variety. Other good flowers were Safrano, creamy-blush, with pale golden centre and an exterior circle of long spreading florets, large, full, fine, and distinct, and well deserving a Certificate; Perle des Blanches, in the way of Fair Maid of Guernsey, with broad, white petals; and La Japonaise, pale lilac-purple, the exterior pink, slight golden centre. Messrs. S. Dixon & Co., Amhurst Road Nursery, Hackney, had several blooms of Crimson King, a full compact shaped reflexed bright chestnut-crimson coloured flower, full substance and good shape, awarded a First-class Certificate of Merit. Also the following:—Agréments de la Nature, formed of a mass of bright gold small thread-like florets, very distinct, and of an extremely pleasing character; Japan Fleuré, maroon-crimson, with roundish florets; and Etoile Fovel, gold and reddish-bronze, large and full. Messrs. J. Veitch & Sons, Chelsea, staged a group of new Chrysanthemums raised by Mr. Alfred Salter, including Cornet, crimson and gold; Lucifer, deep cinnamon-red, the reverse of the petals gold; Duchess of Albany, white, slightly tinted with blush, in the style of Elaine, very promising; Lord Beaconsfield, reddish-cerise; Rex Rubrorum, crimson-maroon; and Mary Mayor, pure white. Two hybrid Pompons of a promising character were also present, viz., Ringleader, pale lilac, large, full flowers, quilled petals; and Eclipse, gold and cinnamon, both likely to be useful for decorative purposes. One might reasonably complain of too much similarity of character among these new types; still, some good and distinct forms are coming to the fore.

FRUIT NOTES.

The Stanwick Nectarine.—Before condemning an old healthy tree I am anxious to know whether any one has been successful in fruiting this fine-flavoured Nectarine without cracking. I never grew this variety before. The produce, without exception, this year cracked, and this has been no exception to the rule, for I understand every year it has done the same. One hesitates to do away with an old tree well established and apparently in a most suitable position under glass, and artificially heated into the bargain. It has made excellent wood this year, and well ripened, showing that its roots are all right, for it was partially lifted last autumn, with the view to improving its condition, which was then not so satisfactory as this autumn. It has made, however, no difference in its cracking propensities, though I may say it had not a third of a crop on it, and possibly with a full crop it may not crack so much another year if I retain it. But in the meantime I shall be glad of any hint that may tend to mend matters—the experience of any one who has grown it fairly successfully. It is such a high-flavoured Nectarine, and naturally one is sorry to part with it just because one may be in ignorance as to its proper treatment. *Chevalier.*

Belle de Fontenay Raspberry.—This is an autumn bearing Raspberry, not so well known as its merits unquestionably entitle it to be. It is a robust grower and prolific bearer, producing fruit of a dark red colour, and of great size, which possesses a very pleasant and agreeable flavour. In every respect it supersedes that good old variety, Merveille de Quatre Saisons Rouge. We are still (the end of October) gathering good dishes of excellent fruit four or five times a week, and the canes are still studded with fruit in various stages of development, which, with the protection of glass, and the aid of a few hot-water pipes, would yield a good supply of ripe fruit during the next two or three months, and perhaps for even a longer period. Raspberries, like everything else worthy of being cultivated, pay well for liberal treatment. The present is a good time to make a plantation, and the stronger the canes are when planted the better will be the results the following year; for although the canes now planted will have to be cut down to within an inch or two of the ground in February or March next, the young canes subsequently proceeding from these "stools," and which will yield fruit during the autumn, will, in proportion to the strength of the latter, be more or less strong. Where the best possible results are aimed at the canes should be planted in ground deeply trenched and liberally manured, and occupying a warm situation in rows 4 feet apart and about a foot between the plants in the row; but should the number of canes in the possession of the planter be insufficient to plant the number of rows intended by the latter they can be planted wider apart in the rows—say, 18 inches or 2 feet, and next summer a sufficient number of the strongest young canes selected and trained to the wires or string 6 inches apart. When planted the canes should be tied either to a couple of wires strained to a couple of neat posts or strings fastened to sticks—the former being the neater and better mode of training—and then have a mulching 3 or 4 inches thick of half-rotten dung between the rows. It will be seen by the foregoing remarks that the autumn-bearing Raspberries, unlike the summer-bearing varieties, bear fruit on the current year's shoots, those of the preceding year's growth being, as already stated, cut away in early spring; therefore all superfluous growths in the shape of suckers must be persistently cut away during the summer months,

otherwise success, although all other cultural details may have been duly attended to, will not be attained. *H. W. W.*

ABERCAIRNY SEEDLING GRAPE.—Among cuttings of many other varieties of Vines kindly sent me by Mr. R. Gilbert, of Burghley Gardens, in January, 1881, were a few eyes of the subject of this communication, and which, with the other varieties, were rooted, and in due time (April 28) planted in a new Vine border, inside. There were two sets of Vines planted—permanent ones with supernumeraries between — the latter (thirty-two in number) were fruited this season, and amongst them Abercairny Seedling. The latter, however, has not fared any better than the other varieties, which have all done splendidly; but seeing that it is a Grape not half so well known as it deserves to be, and that it is worthy of a place in every gardening establishment where Grapes—especially late ones—are extensively cultivated, I take this opportunity of bringing it under the notice of your readers. Before proceeding any further with these remarks, however, I may as well state that I do not consider it in a more favourable light than I do Black Alicante; but being a Grape that will compare favourably with the latter, which it resembles in every particular excepting the foliage, it might, if only for the sake of variety, be advantageously grown in the same house with that excellent variety. The rod of Abercairny Seedling referred to above, and which is nearly 3 inches in circumference, is bearing five bunches, which would average from 2½ to 3 lb. each, and having berries as black as Sloes. *H. W. Ward, Longford Castle.*

THE APPLE CROP AT BURGHLEY is much above the average for the season; although far behind that of last year for quantity it considerably exceeds that of 1879 and 1880. The fruits have also grown clean and good, but at present they do not promise to keep well. The following varieties have succeeded the best this season:—Reinette du Canada, Warner's King, Golden Noble (dwarf), Lord Grosvenor (young standards, first year of fruiting), Wellington, Barnack Beauty (dwarf), Keswick Codlin, Ribston Pippin (cankers badly), Blenheim Pippin, Dutch Mignonne, Yorkshire Greening, Cat's-head, Hoary Morning (dwarf), Claygate Pearmain (dwarf), Costard, King of Pippins, London Pippin (dwarf), Maltster, Winter Striped Pearmain (dwarf), White Juneating, Round Winter Nonsuch, Court of Wick, Cox's Pomona (dwarf), Norfolk Beefing (cankers badly), Manx Codlin, Scarlet Pearmain, Kerry Pippin, Worcester Pearmain (young grafts on an old tree of Alfriston, very handsome), Fearn's Pippin (dwarf). Cockle Pippin and Lady Lennox, which are considered two of the surest bearers here, have quite failed this season, but it is only fair to state that they bore extraordinarily heavy crops last year. The following have been a complete failure this season, or nearly so:—Sturmer Pippin, Margil (dwarf), Lord Suffield, Old Nonsuch, Peasgood's Nonsuch (dwarf), Seacliffe Hawthornden (dwarf), Scarlet Nonpareil, Old Nonpareil (dwarf), Cox's Orange Pippin (dwarf), Mannington Pearmain (dwarf), Quatford Aromatic (dwarf), Bess Pool (dwarf), Hollandbury, Striped Beefing, Lord Burghley (dwarf), Ord's Apple. The following have borne a partial crop:—Cellini, Caldwell, Downton, Old Hawthornden, Wykin Pippin, Pearson's Plate, Kiddleston Pippin, Frogmore Prolific, Old Royal Russet, Kirke's Lord Nelson, Kirke's Alexander, Devonshire Quarrenden, Gooseberry Apple, Cluster Golden Pippin. All the above are standard trees except where otherwise mentioned. Taking all points into consideration the best for kitchen use here are Keswick Codlin, Golden Noble, Reinette du Canada, Wellington, Lady Lennox, Yorkshire Greening, Barnack Beauty; and for dessert Maltster, King of Pippins, Wyken Pippin, Margil, Claygate Pearmain, Cockle Pippin, and Dutch Mignonne. The soil here is deep loam resting on red sand, situation high, but very flat. *W. H. Divers, Burghley.*

DR. HOGG PEACH.—For the information of "A. S.," p. 566, I have much pleasure in stating that we grow the above variety outside in the gardens here, on a west wall, and that we have this year had a fair crop of fruit which has given us the greatest satisfaction. That it is really a high-class Peach when well done few persons who have grown it will attempt to gainsay; but, on the other hand, I feel bound to say that we ourselves could do nothing with it on a south wall. The fruit itself is of good quality and large size, has quite a handsome and taking appearance, being deeply coloured next the sun, and dotted with crimson on the shaded side. When approaching ripeness, however, it is somewhat soft to the touch, and consequently a bad one to travel if not gathered from the tree in good time; ripens towards the end of August. The largest Peach — 23¾ oz.— in all probability ever seen, was of this variety, and was grown by Mr. Goodwin, of Maidstone, who recorded the fact in your columns last year, and who, together with myself, was engaged in a little bit of "fencing" over the matter. *J. Horsefield, Heyteshury, Wilts.*

HOME CORRESPONDENCE.

The Divining Rod.—Having a great regard for Mr. Ingram as a cultivator of hardy plants, especially if he is the same Mr. Ingram with whom I used forty years ago, when a boy at Eton, to collect butterflies in Windsor Park, when he lived at Cumberland Lodge, I should like to convert him from the belief that a forked twig held in the hands can indicate underground water. In my native county, Derbyshire, it was formerly, and is still by some persons, believed that this divining-rod will discover not only water but veins of metal, and buried treasures of gold and silver; all are equally probable, but we will confine ourselves to the finding of water. In the first place it shall be granted that the rod turns up or down without the consciousness of the holder that he is exercising any force upon it. Supposing, as Mr. Ingram does, that the force which turns it is electrical, can he suggest any reasonable explanation—1st. Why in the hands of some operators the point of the rod turns upwards, but in the hands of others downwards? 2d. Why, if a man is charged with electricity by means of an electrical-machine and a glass stool, though it may make his hair stand on end, it will have no perceptible tendency to turn either upwards or downwards the point of a divining-rod held in his hands, even though the point of the rod may be made to emit a visible stream of electricity? 3d. Why, if the operator be effectually blindfolded, and led about by a circuitous route, the divining-rod will give quite different indications from those which it gave when he had his eyes open? 4th. How many places are there in England, especially in clay formations, where water will not be found if only you dig deep enough? Of the movements of the divining-rod, as of table turning, there can be only one rational explanation, namely that force, whether consciously or unconsciously, is exerted by the operator. Dr. Carpenter in his *Mental Physiology* classes both amongst "phenomena of expectant attention," of which he gives many interesting illustrations. He estimates the proportion of persons who possess the power of "working the rod" at about one in forty. It may be that the muscles of the hands of these persons act in sympathy with the mind, without any exercise of the will, so that when they think the rod ought to turn it does turn. Supposing the muscles to have a retractile power, so as to move the inner surface of the fingers slightly downwards towards the wrist, it is clear that if the branches of the rod are gripped with firmness sufficient to prevent their slipping, and if their circumference is half an inch, a movement of an eighth of an inch in the surface of the fingers would be sufficient to turn the point of the rod a quarter of a revolution, or from a horizontal to a perpendicular position. Now there are two ways of grasping the branches of the rod—in both ways the palms of the hands are turned upwards; in one way the little fingers are against the junction of the branches, in the other, in which the hands are reversed, they are towards the tips of the branches: the same movement of the same muscles would in the former case turn the point of the rod downwards, and in the latter upwards. With regard to the alleged success of these operators with the divining rod, in some cases it may be due to accident, but in others no doubt they have had the benefit of long experience, and judge from superficial indications. A neighbour of mine who has the power of working the rod, and believes in it, tried to persuade me to share the expense of getting a man from Wiltshire to find water by the rod for one or two farms which are badly supplied. I asked him why he did not trust his own workings?—he replied that he had no doubt that water would be found by them, but that expert operators could tell at what depth and in what quantity it would be found by the manner in which the rod moved! Mr. Ingram says that this mode of finding water has been "employed in all ages." I am anxious to know what authority he has for saying this. I cannot recollect any reference to the practice either in the Bible or in Greek or Latin classics. Cicero, in his admirable treatise on *Divination*, enumerates and explains the fallacies of all the modes of divination in use in ancient times, but he says nothing of this use of the divining-rod. He does, it is true, speak of a divining-rod, which he calls "lituus," and which he describes as "a small wand, slightly bent." This, he tells us, was employed by Romulus in marking out the districts of the city of Rome, and that it was miraculously preserved through the great conflagration when Rome was burnt by the Gauls, and was kept to his day amongst the sacred relics in the care of the College of Augurs. *C. Wolley Dod, Edge Hall, Nov.* 13.

Rosa rugosa.—This beautiful plant ought to find a place in every garden where there is sufficient space for evergreen shrubs. At the present time its lovely clusters of coral-red fruit are quite a feature in the shrubbery borders here, set off as they are by its deep glossy green foliage, which is retained throughout the winter, and which is pretty enough in itself, to say nothing of the profusion of crimson-carmine flowers it produces throughout the summer. It appears to succeed best in a north aspect, throwing up numerous suckers from which it is easily increased. It was a great favourite of the late Mr. Wilson Saunders, who did much to introduce it to the various gardens in this locality. He had a fine specimen, which is now in the garden of Mr. Gaisford, of Offington, where it flowers and fruits abundantly. The fruit I believe is eaten in Japan, and when ripe in this country has the flavour of the Medlar, and is of the same shape, the larger fruit not unfrequently measuring 1¼ inch in diameter. The white variety has not the robust habit of rugosa, but planted side by side you have a very pleasing contrast. *P. Conway, Muntham Gardens, Worthing.*

Jerusalem Artichoke.—I am surprised that there should be any doubt as to the origin of the epithet "Jerusalem." We may take it as sure that it is a corruption of the Italian name *Girasole Articiocco*, Sunflower Artichoke. The plant was first brought to Italy, and was from thence spread through Europe two or three centuries ago. *W. O. M.*

—— Referring to the note on this name (see p. 598) by Canon Ellacombe, I was under the same impression as he seems to be, that popular usage, originating, perhaps, in the time of the Crusaders, formerly gave the title of "Jerusalem" to plants and things of unknown foreign origin. At present, however, I can only recal two other plants which have this title—the Lungwort (Pulmonaria), popularly known as Jerusalem Cowslip, and Phlomis fruticosa, called Jerusalem Sage. For the latter name, however, I can find no old authority. But Parkinson, who describes three species of Pulmonaria, calls them all "Cowslips of Jerusalem," without giving any reason for the name; for he tells us that "they grow naturally in the woods of Germany," and that they are also called "Sage of Jerusalem," and "Sage of Bethlehem," and are "of the greatest use for the pot." It may, therefore, have been introduced from the Continent by the Crusaders, the principal travellers of the early mediæval times. On turning to that marvel of laborious research, Littré's *French Lexicon*, the best authority I know for comparative philology, I find that "Sage of Jerusalem" is in France a name applied to the common Lungwort (Pulmonaria), whilst Phlomis fruticosa is called "Tree Sage." In no book I have consulted can I find any reference to the title of "Jerusalem" as being used in any general indefinite sense. Littré tells us that the name "Jerusalem Artichoke" is applied in France to a species of Gourd ("Courge"), whilst the Sunflower known in England under this name is called in French "Topinambour," or winter Artichoke (Artichaut d'hiver), the former name being derived from "Topinambour," the name of a Brazilian tribe of Indians, in whose country the plant is native. The word "Artichaut" seems to have been thoroughly domesticated in the French language at an early date; besides the three applications of the name (1, the common Artichoke; 2, Artichaut de Jerusalem, a kind of Gourd; 3, Artichaut d'hiver, the root of Helianthus tuberosus) we have "Artichaut des Indes" applied to the Potato, and "Artichaut des toits" to the House Leek. At the same time the English word, probably derived direct from the Italian "Articiocco," follows more closely the original etymology, which is, according to Littré, two Arabic words, "ardhi," earth; "schoki," thorn. I am writing to a correspondent in France to inquire what is the species of Gourd known there as "Artichaut de Jerusalem," and if it should prove to be a native of Palestine Jerusalem may mean what it seems to do after all. *C. Wolley Dod, Edge Hall, Nov.* 8.

The Propagation of Evergreens. — Except among nurserymen and growers for sale, few people are aware how very easily most evergreens may be propagated, and although the process is slow with some it is rapid with others, the first and quickest of increase being Laurels and Aucubas, both of which may be raised either from seed, cuttings, or layers. With the uninitiated the latter mode is the simplest and safest, as it requires little or no practice to carry it out pro-

perly, and it is almost impossible to fail. All that is necessary is to make choice of the best situated of the lower branches, and to bring them down to the ground, and when there to peg them securely to keep them where placed, so that they cannot spring up or move; but before doing this a few inches of the top soil should be scraped away for the purpose of using again to cover them up. Before putting this on, however, it is as well to give a good sprinkling of sand or road scrapings, which not only encourages the formation of roots, but makes it easy to lift the young plants with good balls when they are ready for taking off from the parent stems for transplanting. The time before they are fit for this depends very much on the season, whether wet or dry, or the way they have been treated with regard to being watered, as moisture either way expedites their rooting; but it generally takes at least a year from the date of layering, and longer than that if the bark and wood are mature and hard. When this is the case it is a good plan to make a cut just below a joint in each shoot, or abrade the bark a little, as then Nature, in her effort to rectify an injury, causes a callus to form, from which callus young fibrils are quickly emitted. Among evergreens that are slowest to root are Rhododendrons, and the choice sorts are therefore propagated by grafting, but as the stocks are often a bother through sending up suckers, it is much better to get them from layers. As the branches are stiff and stubborn to bend, the best way to do this is to dig a large hole and drop in the plant to be operated on, by doing which the top may be brought so low as to only be seen just above-ground, when by filling in among the shoots firmly with a mixture of peat and sharp sand a great number of young ones may be raised. To get Rhododendrons to root freely they must be well supplied with water during the summer, and if cared for in this way the layers will be ready to take off at the end of two years. Although most Coniferæ may be increased in the same manner, it is best to propagate them by cuttings, as they grow with more regular heads, and make finer and more symmetrical plants. Some sorts do very well put in in the open, but for the more choice kinds it is better to use either hand-lights or frames. These should be placed in a situation naturally shaded and sheltered, like that of a border under a wall or building, where, if the cuttings are made properly, and inserted in sharp sandy soil, great numbers will root. To get them to do this however, they must be taken off about half ripe, and be put in early in the autumn, as it takes a long while for them to heal over and grow. The most easy to manage are the Retinosporas, Thuias, and Cupressus, all of which strike readily, and do quite as well as those raised from seed. In striking such things as Laurel, Aucubas, Euonymus, and other evergreens of that class, one of the chief things to be particular about is that the cuttings are put in where they can have perfect shelter, and I have found no place better than bare open positions among shrubs where they are well shut in from winds, which, when cold and searching, dry all the sap out of the leaves if exposed. Spots like those mentioned are perfect, and any one putting cuttings into such places may always make sure of success. The best kind of wood to make the cuttings of is the ends of the young shoots, which should be firm, and taken off about 9 inches or a foot long, and after being trimmed by having the lower leaves removed, cut straight through with a sharp knife just below the joint. Having been prepared in this way, they will be ready for putting into the ground, which may either be done by the aid of a dibble or using a line and cutting out a shallow trench alongside with a spade, the latter being best, as the base of the cuttings are then sure to touch the soil, which may be pushed up against them and made firm with the foot. The depth at which cuttings of evergreens ought to be inserted is about half their length, as beyond having sufficient leaves above-ground, the less of them there is exposed the better, and the more readily they root. To keep out frost I have always found it a good plan to scatter some sifted leaf-mould over the bed, which not only protects the cuttings from hard weather but maintains a more equable condition of moisture, and thus favours their striking. Now that we have male Aucubas, and, in consequence, plenty of berries, a great variety of sorts may be raised by sowing the seeds, which should be done in sharp sandy soil, and the same with Hollies, Laurels, and Arbutus, the latter of which are full of fruit this year, and very ornamental to look on. *J. Sheppard.*

Rhododendron Sir Garnet Wolseley.—The annexed illustration (fig. 117) is a single flower of one of the finest of the fine race of hybrid Rhododendrons raised by Messrs. James Veitch & Sons, and to which the Floral Committee awarded a First-class Certificate at the meeting held on October 10. It produces large full trusses of flowers, the latter measuring on an average 3 inches in diameter, and of a deep orange tint of colour, of good substance, and very pleasing in its general *contour*. The Messrs. Veitch have now a great number of fine things in this way, and which will be valuable to gardeners when they grow them into a size large enough to warrant them in using them as cut flowers.



Fig. 117.—Rhododendron Sir Garnet Wolseley: flowers orange coloured.

Gishurst Compound.—With the numerous new inventions and suggestions for avoiding and getting rid of blight and other gardeners' plagues it is satisfactory to see that the old-fashioned remedy—Gishurst Compound—keeps in the front rank in the colonies, as well as at home. The writer of the note from which the enclosed extract is taken was President of the Horticultural Society of Victoria, and is a great authority in the horticultural world of Melbourne. *The Inventor of Gishurst.*

"Melbourne, Sept. 19, 1882.

"Please say to Mr. —— that when in Sydney two weeks ago I went up to Paramatta, and spent a day with an old friend—Alderman Pye. He was one of the first to plant Oranges on a large scale. When I first saw his orchard—twenty years ago this month—I found his largest trees a mass of scale and smut, so suggested to him the use of Gishurst Compound, which at that time was not much known in this country, as I had to send to my London agents to get it for me. Mr. Pye acted on my suggestion, and now these trees that he planted upwards of sixty years ago are bright and clean, covered with fine fruit, have been lately figured in the *Town and Country Newspaper*, an illustrated Sydney paper. I tried all I could to get a copy, but could not. The trees are now said to be 35 feet high, standing erect. I could not get my hands to meet round one. Mr. Pye said he had tried everything against scale, &c., but found Gishurst best of all."

CHRYSANTHEMUM SHOWS.

Stoke Newington.—The annual exhibition of the Stoke Newington Chrysanthemum Society, which took place at the Assembly Rooms, Church Street, on Monday and Tuesday last, was one of the best ever held under the auspices of the Society. As years roll on the history of this Society grows the more interesting. It boasts of being the oldest in England, and growers from a distance—and a long distance too—are found ready to take their chance in competition with the old *habitués*, no doubt owing to the *prestige* attaching to the name and early traditions of the Society. Mr. Udale, of Shirecliffe Hall, Sheffield, was among the sucessful exhibitors at this exhibition for twenty-four cut blooms, incurved varieties, but had to be satisfied with 2d place, good as his flowers were. A little fresh blood from a distance has a wonderful effect upon local exhibitors, and infuses fresh life and vigour into a society. It creates fresh interest, diffuses knowledge, and leads to an interchange of opinions that is useful to all. The exhibition was many degrees ahead of last year's. The plants in the winning collections were very fine, and tastefully arranged. Indeed the plants were so compactly grouped on both sides of the building as to render the show a charmingly attractive one on a dull November morning. The cut blooms were arranged upon both sides of a long table in the centre of the building, separated by a line of choice plants, suitable or table or room decoration. Foliage plants and Palms were a conspicuous feature at the top end of the building, in front of which were some choice wreaths and bouquets, samples of fruit and salading exhibited "not for competition," by Mr. W. J. Smith, High Street, Stoke Newington. Such in brief were the main features of the exhibition, as they struck us at the time. But we should mention that exhibitors of specimen plants do not appear to make the best choice of varieties for coming in fresh and bright at this season. They are behind Liverpool and Bristol in this respect, although their plants are upon the whole better grown. There seems to be a run upon such varieties as Mrs. George Rundle, George Glenny, and Mrs. Dixon, no doubt owing to their being good growers, but they are usually past their best in the South before the middle of November. Prince Alfred, Mr. Gladstone, Hero of Stoke Newington, and Princess Teck, would come in about right, and they make very good trained plants. The chief prize among the plants is for ten Chrysanthemums in pots not to exceed 12 inches—presumably in diameter—quality and general effect to be taken into consideration by the judges. The first prize is a silver cup value £7, and Mr. W. Monk, gr. to W. Fowler, Esq., Forest House, Leytonstone, secured the coveted trophy with splendid specimens of Mrs. George Rundle (rather past its best), George Glenny, a standard, a fine pyramidal grown plant of Venus, Lord Stanley, Antonelli, Peter the Great, Julia Lagravère, Sœur Melanie, Fanny, and Golden George Rundle. The 2d prize was well won by Mr. Payne, gr. to C. C. Payne, Esq., Cedar House, Stamford Hill, with excellent specimens of Prince of Wales (as a pyramid), Prince Alfred (as a standard), Marie Stuart (a pretty Anemone variety), Bob, Mr. Wyness, Mrs. Dixon, Mdlle. Marthe, Calliope, a very striking variety, and a profuse bloomer; Lilac Cedo Nulli, and Sœur Melanie. Mr. Langford, gr. to J. Bornet, Esq., Coleraine House, Stamford Hill, obtained the 3d prize with plants very little inferior to the last mentioned, indeed some of his plants were among the finest specimens in the exhibition. Mr. Howes, gr. to Mrs. Bennet, Tulse Hill, Brixton, also staged a good collection in this class. In the class for four large flowering varieties, Mr. Wells, gr. to W. A. Smee, Esq., The Limes, Woodberry Down, was 1st with specimens of George Glenny, Prince of Wales, Mrs. Dixon, and Mrs. G. Rundle; Mr. Gilbey, gr. to B. Booth, Esq., The Cazenoves, Upper Clapton, was 2d; and Mr. Payne 3d. For four standards Mr. Monk was again 1st, Mr. Wells 2d, and Mr. Payne 3d. Class 5 brought out two competitors, the stipulated kinds being Pompons in pots, not to exceed 12 inches in diameter. Mr. Wells secured the 1st prize in this class with samples of Prince Victor, White Cedo Nulli, Golden Cedo Nulli, Lilac Cedo Nulli, Fanny and Sœur Melanie; Mr. Payne was 2d.—Four Pompons: 1st, Mr. Wells.—Four standards (Pompons): 1st, Mr. Payne; 2d, Mr. Wells; 3d, Mr. Langford, gr. to J. Bornet, Esq., Coleraine House, Stamford Hill. The fine foliage plants, as already remarked, were a striking feature, Mr. Archer, gr. to J. J. Griffiths, Esq., having the 1st prize for six, consisting of Latania borbonica, Dicksonia antarctica, Pandanus Veitchii, Alsophila excelsa, and Sea-

forthia Cunninghami ; Mr. Payne was 2d, showing good examples of Davallia Mooreana, Palms, and Dracænas ; and Mr. Challis, gr. to G. Dore, Esq., Stoke Newington, 3d, with smaller and less valuable plants, but very well grown. The prizes for six decorative plants for the dinner-table were well contested. Mr. Jones, gr. to W. Percy Reynolds, Esq., Stamford Hill, was 1st, his plants being Pandanus Veitchii, Croton Earl of Derby, Areca lutescens, Croton Johannis, Geonoma gracilis, and Dracæna Cooperi. Mr. Payne gained the 2d prize with some rather choice plants, the best of which were Dracæna Goldieana, Cocos Weddelliana, and Dracæna Bella. Mr. Gilbey was a good 3d. The array of cut blooms came in for the lion's share of admiration, and well they deserved it, for although none of the stands exhibited were as perfect as we have seen them, their general merit was unquestionable. For twenty-four incurved blooms Mr. W. S. Gilbey, won the 1st prize, and the Silver Cup awarded for the best twenty-four cut blooms in the exhibition. The sorts were Queen of England, Emily Dale, Hero of Stoke Newington, Guernsey Nugget, Lady Hardinge, Cherub, Mrs. Heale, Jardin des Plantes, Golden Eagle, Mrs. Haliburton, Antonelli, Princess Teck, John Salter, Golden Empress of India, Prince Alfred, White Globe, Rev. J. Dix, Isabella Bott, Barbara, and Refulgence. Mr. Martin, gr. to H. Matthews, Esq., The Cedars, Woodberry Down, was 2d ; and Mr. Payne 3d.—For twelve incurved blooms Mr. Payne was 1st, Mr. Martin 2d, and Mr. Hawke, gr. to Miss Allen, Bethune Road, Stoke Newington, 3d. Six incurved blooms.—1st, Mr. Payne ; 2d, Mr. Chalkley, gr. to J. R. Droop, Esq., Stamford Hill ; 3d, Mr. Hammond, York Lodge, Stamford Hill. The prizes given in the three last-named classes were for nurserymen and gardeners residing in the boroughs of Hackney or Finsbury only. For amateurs who do not keep a permanent gardener, residing in the same neighbourhood, prizes were given for twelve and six blooms respectively (incurved varieties), and Mr. W. Goldsmith, Mr. John Caldwell, and Mr. R. W. Wright were the successful competitors. In the open class for twenty-four incurved blooms Mr. W. Monk obtained the 1st prize from Mr. James Udale, The Gardens, Shirecliffe Hall, Sheffield, who was a very close 2d, the varieties staged being mostly a repetition of those already mentioned. Twelve incurved blooms.—1st, Mr. Monk ; 2d, Mr. Wells ; 3d, Mr. Langford. Six incurved blooms.—1st, Mr. Wells ; 2d, Mr. W. Monk ; 3d, Mr. Young, gr. to G. Thompson, Esq., Stamford Hill. In class 18 prizes were given for six blooms, distinct varieties, open to those who have never taken a prize for cut flowers before, and Mr. Langford, Mr. Jones, and Mr. Fell obtained the prizes with very good flowers. Twelve blooms of Japanese, distinct varieties.—1st, Mr. W. Monk, who showed fine flowers of Fair Maid of Guernsey, Yellow Dragon, Comte de Germiny, Peter the Great, Gloire de Toulouse, Cry Kang, and Triomphe du Nord ; 2d, Mr. Langford ; 3d, Mr. Gilbey. Mr. Monk also won the 1st prize for six Japanese. Among the miscellaneous exhibits we noticed a fine stand of twenty-four cut blooms (incurved varieties) from Mr. Cochrane, superintendent, Finsbury Park ; and a collection of Primulas from an exhibitor whose name did not transpire.

BOROUGH OF LAMBETH.—The members of this enterprising Chrysanthemum Society, which was established eight years ago, held their annual show in the Lecture Hall, Lambeth, on Monday last, and the exhibition was in every respect a success. This exhibition is always looked forward to with more than usual interest in consequence of the members being entirely composed of amateurs, who, it must be admitted, manage their affairs with great strictness and exactitude. A very important and stringent rule of the Society is that all flowers shall be shown as grown, and it speaks well for the members that this rule has never been broken except in one instance since the Society was established—at least not as far as the members are aware. The plants and flowers were better arranged than last year, and the exhibition as a whole was a decided improvement, owing to an influx of new members, whose plants and flowers filled the whole available space in the building. Messrs. John Laing & Co., of Stanstead Park, Forest Hill, sent a collection of choice Palms and other fine-foliage plants and flowers, which had a good effect upon the platform, and were much admired. For six standard Chrysanthemums, Mr. Tracy was 1st, with very good plants, and Mr. Williams was a close 2d. In the next class the competition was not considered what it should have been, and a 3d prize only was awarded. This is a sound and practical way of inculcating into the minds of the members that only an average standard of merit will be recognised, and will, no doubt, lead to good results. In class 5 the prize was given for a group of plants not exceeding twelve in number, and Mr. Ball won the 1st prize with, among others, capital plants of Prince of Wales, Guernsey Nugget, and lilac and white Cedo Nulli ; Mr. Clarke was 2d, his best plants being James Salter and Elaine ; and Mr. Tozer was 3d, with Mrs. George Rundle, Mr. Gladstone, Barbara, and John Salter as his best samples. This was a very satisfactory class indeed, and the plants were a long way better than those exhibited last year. For twelve plants, single stems, Mr. Howett was 1st, with Empress of India, Venus, Guernsey Nugget, and Peter the Great, admirably grown ; Mr. M. Williams coming 2d, with Christine, Nil Desperandum, and White Venus as his best plants ; and Mr. Tracy 3d, also showing a good collection, in which Golden Empress of India and George Glenny were the best. For six plants, single stems, Mr. Tracy and Mr. M. Williams were 1st and 2d respectively. In class 8 the prize was for six untrained bush Pompons (single stems), and Mr. Davidson, in addition to securing the money prize, was also awarded a silver teapot for his collection. Mr. Childs was 2d, and Mr. Howett 3d. For three pyramid Pompons Mr. Tracy was awarded a 1st prize, and the same exhibitor also staged several other trained plants "not for competition." For six standard Pompons Mr. Tracy was 1st, and Mr. Williams 2d, both exhibitors showing very good plants. In the cut flower classes the competition was brisk, both the incurved and the Japanese flowers being wonderfully fine, considering the conditions under which they were grown. Mr. Ball carried off the 1st prize for twelve incurved blooms, the best of which were White Globe, Venus, White Beverley, Prince of Wales, and Golden George Glenny. Mr. Towzer was 2d, showing, among his best flowers, Venus, Princess Teck, Guernsey Nugget, and Golden Eagle. Mr. Childs was 3d, showing a stand in which Barbara, Lady Slade, and Jardin des Plantes were of good size, well formed and coloured. Six cut blooms.—Mr. Towzer 1st, Mr. Williams 2d, and Mr. Howett 3d. Mr. Crisp showed a capital stand in this class, as an honorary member. For six incurved blooms of one variety Mr. Williams was 1st, with Prince of Wales ; and Mr. Addison 2d, with George Glenny. In class 20, for six Anemone flowers, one variety, Mr. Crisp again showed an excellent stand of Gluck, as an honorary member. Six reflexed flowers, dissimilar.—1st, Mr. Addison ; 2d, Mr. Clarke. Six reflexed flowers, one variety.—Mr. Williams 1st, with fine flowers of Christine. Twelve Japanese flowers, not less than eight sorts.—1st, Mr. Childs ; 2d, Mr. Tracy ; 3d, Mr. Williams. This was a good class, but Mr. Crisp's stand of twelve flowers were the best, though not eligible for competition. These consisted of James Salter, Gloire de Toulouse, The Cossack, Fulgore, Bouquet Fait, Royal Soleil, and Hero of Magdala. In the remaining classes honours were about equally shared by Mr. Childs, Mr. Ball, Mr. Tracy, and Mr. Williams. Mr. Clarke staged a nice stand of Anemone-flowered varieties, which, however, was disqualified, owing to two of the bunches not being Anemone varieties. The exhibitor, who had only committed an error of judgment, was awarded an extra prize. Mr. Ball had a Silver Cup awarded to him, besides the 1st prize, for his group of twelve plants ; and Mr. Howett a handsome album, in addition to the 1st prize, for his collection of plants grown upon single stems. A Society that does so much to encourage its members deserves continued support, which will no doubt be generously accorded to it under the energetic management of Mr. Crisp, the Secretary.

PUTNEY AND DISTRICT.—The members of this Society held their fifth annual exhibition in the Assembly Rooms, High Street, Putney, on the 14th, under circumstances which should give the committee continued and increased claims upon public support. The Society as at present constituted appears to possess life enough to be capable of any amount of development, and if only a larger place could be found to hold the exhibition, it would apparently soon grow into one of the leading shows of its kind about the metropolis. As it was, we have seldom seen as much good stuff packed into the same space with the same amount of taste, and we quite agreed with a gentleman who exclaimed it was "a grand little show." For the best collection of Chrysanthemums, not less than twenty varieties, quality and general effect to be the leading features (space not to exceed 40 feet super), Messrs. S. Mahood & Son, nurserymen, Lower Richmond Road, Putney, were 1st, with a really magnificent collection, but the space was too small to show off the plants and flowers to advantage. The flowers were of large size, well formed, considering the way in which they were grown, and the colours were as well blended as it was possible to do in the allotted space. The most striking flowers in the collection were Empress of India, Lady Hardinge, Prince Alfred, Hero of Stoke Newington, Golden Empress, John Salter, Mrs. Haliburton, Mr. Gladstone ; and of Japanese, Guillaume Delaux, Meg Merrilies, Striatum, and Madame Clemence. For this collection Messrs. Mahood were awarded the Society's Silver Cup. Mr. Stevens, St. John's Nursery, Putney, was 2d, with a collection of nearly equal merit, in which all the finest varieties were represented. Mr. Tyte, gr. to Mrs. Reid, Heath Croft, Putney Heath, was 3d. For four large-flowered Chrysanthemums, single stems, Mr. Bentley, gr. to Sir Thomas Gabriel, Wimbledon Park, was 1st, with excellent specimens of Mrs. George Rundle, John Salter, and Dr. Sharpe, very fine ; 2d, Mr. Stevens, with specimens of Peter the Great, Barbara, and Mrs. G. Rundle. Two large-flowered Chrysanthemums, distinct, single stem (trained), pots not to exceed 12 inches in diameter.—1st, Mr. Stacy, gr. to E. Nickley, Esq., Meaburne House, Richmond ; 2d, Mr. Stevens ; 3d, Mr. Tyte. In the single specimen (large-flowered) class Messrs. S. Mahood & Son were 1st, with a fine pyramid of Mrs. G. Rundle ; Mr. Stevens 2d, with Barbara ; and Mr. Hoskins, The Laurels, Putney, 3d. Single specimen Japanese.—1st, Messrs. Mahood & Son, who had a grand plant of Madame Berthie Rendatler ; 2d, Mr. Stephens, who showed a fine plant of Triomphe du Nord ; 3d, Mr. Stacy. For a large-flowered standard Chrysanthemum Mr. Tyte was 1st and Mr. Hoskins 2d. Six Pompons (distinct), single stem, pots not to exceed 8½ inches in diameter.—Mr. Tyte 1st, Mr. Hoskins 2d, and Mr. Stevens 3d. For three pompons, distinct, Mr. Stevens 1st, Mr. Hoskins 2d, and Mr. Stacy 3d. Single Pompon.—Mr. Stacy 1st, with President ; Mr. Stevens 2d, with Mdlle. Marthe ; and Mr. Hoskins 3d. Single specimen standard pompon.—1st, Mr. Tyte ; 2d, Mr. Bentley ; 3d, Mr. Hoskins. For the best seedling Chrysanthemum raised in 1882 Mr. Stephens obtained the 1st prize for a variety that appeared to be a kind of compromise between a reflexed flower and a Japanese. The cut blooms were very good ; some of the growers must have been astonished at their own success within the short period of twelve months. For twenty-four incurved varieties, distinct, Mr. Harding was 1st, with Golden Empress, Nil Desperandum, Prince of Wales, Venus, Lady Hardinge, Mr. Gladstone, and other good show kinds. This stand contained the premier incurved bloom of the exhibition—a good flower of Queen of England. Mr. E. Berry, gr. to the Countess of Leven and Melville, Roehampton House, Roehampton, 2d ; and Mr. W. Green, gr. to H. Russel, Esq., Beechwood, Clapham Common, 3d. Twelve incurved blooms.—1st, Mr. Berry ; 2d, Mr. E. Coombs, gr. to F. A. Brown, Esq., Teddington ; 3d, Mr. C. Bentley. Six incurved flowers.—1st, Mr. Berry ; 2d, Mr. J. Bentley ; 3d, Mr. Woodhams, gr. to R. Davies, Esq., Wandsworth. For six Anemone flowers.—1st, Mr. E. Berry ; 2d, Mr. C. Bentley ; 3d, Mr. Tyte. Twelve Japanese blooms,—1st, Mr. E. Berry ; 2d, Mr. E. Coombs ; 3d, Mr. J. Bentley. The flowers in this class were very fine. The premier Japanese bloom in the show was a fine one of Comtesse de Beauregard in the 2d prize collection of Mr. Coombs. Six Japanese blooms.—1st, Mr. Bentley ; 2d, Mr. E. Berry ; 3d, Mr. Ansell, gr. to G. Reid, Esq., Belvedere Road. Twelve Pompons, distinct, three stems as cut to form a bunch.—1st, Mr. Moore, Richmond Nursery, who also had the award for the premier bunch, for a good one of Golden Mdlle. Marthe ; 2d, Mr. C. Haines ; 3d, Mr. Stevens. In the class for four stove or greenhouse plants, distinct, there were only two competitors, Mr. Stephens being 1st, and Mr. C. Woodhams 2d. In the class for four Ferns, distinct, the competition was better, and the plants very good. Mr. Stevens secured the 1st prize, Mr. C. Woodhams 2d, and Mr. C. Bentley 3d. There was a good show of table plants, and for these Mr. Hoskins was 1st, Mr. J. Bentley 2d, and Mr. Ware, gr. to C. F. Williams, Esq., Munster House, Fulham, 3d. Primulas and zonal Pelargoniums were well shown, and the fruit classes were fairly good throughout. For three dishes of Pears, distinct, Mr. J. Coombes, gr. to Sir H. Meux, Sheen House, Mortlake, was 1st ; Mr. Haines 2d, and Mr. Woodhams 3d. Three dishes of kitchen Apples.—1st, Mr. Haines, gr. to Mrs. Jones, Clock House, Putney ; 2d, Mr. C. Bentley ; 3d, Mr. Coombes. In the following class, for three dishes of dessert Apples, the 1st prize was won by Mr. Coombes ; 2d, Mr. C. Haines ; 3d, Mr. C. Bentley. For three bunches of black Grapes Mr. R. Holmes had the 1st prize for three bunches of Black Alicante ; 2d, Mr. R. Bradford, gr. to S. Howard, Esq., St. Mary's Road, Wimbledon ; 3d, — Hudson, Esq., Springfield, Putney. The 1st prize for white Grapes was awarded to Mr. J. Bentley, and prizes for capital collections of vegetables were awarded to Mr. Coombes, Mr. Tigwell, and Mr. C. Woodhams. An important feature of the show was the competition for the special prizes offered by G. H. Pitt, Esq., for the best group of mixed plants arranged for effect, space not to exceed 30 feet super, and for which there were four competitors, Mr. Hoskins and Mr. C. Bentley, gr. to T. C. Baring, Esq., M.P., being the prize winners. There were several other special prizes offered, for all of which there was good competition, and the classes for amateurs who do not employ a gardener regularly were also fairly well represented.

WALTON, WEYBRIDGE, &C.—The eighth annual exhibition of this flourishing Society, which was opened at the Public Hall, Walton, on Tuesday last, and remained open the following day, was considered the best the Society has yet held. The trained plants formed an imposing bank upon the platform, and presented a glowing appearance from the entrance to the Hall. Two tables in the centre were well filled with plants for the dinner-table, for which there were special prizes offered, and cut blooms which of themselves made an attractive dis-

play. The standard trained plants and other miscellaneous subjects were arranged upon both sides of the building, in groups, but forming a harmonious whole to the eye that made a visit to the show thoroughly enjoyable. The principal prize given for plants was a watch, value £4 4s., for six trained specimens, large flowering varieties, and Mr. Burns, gr. to H. A. Rigg, Esq., Hersham, succeeded in winning it with very fine plants grown to a day of George Glenny, Venus (a remarkable specimen), Mrs. G. Rundle, Mrs. Shipman, Mrs. Haliburton, and Mrs. Dixon. Mr. Cornhill, gr. to E. Petitt, Esq., won the 2d prize with specimens of Baron Beust, Mrs. Haliburton, Lady Talfourd, Mrs. Dixon, Prince of Wales, and George Glenny. Mr. Millican, gr. to Mrs. Cobbett, Walton, was 3d, his best specimens being of St. Patrick, Mrs. Forsyth, and Baron Beust. It is noteworthy that the early flowering varieties exhibited in this class were fresh and well coloured without exception, and the foliage as good as could be desired. For four large flowering varieties Mr. Reynolds, gr. to Mrs. Allen, Weybridge, obtained the 1st prize. In the class for four standards, distinct varieties, size of pot not to exceed 11½ inches in diameter, Mr. Millican was 1st with good plants of Prince of Wales and Prince Alfred, his other plants not being so well flowered, though bearing excellent foliage; Mr. Reynolds was 2d, and Mr. Reid, gr. to C. A. Ledward, Esq., Weybridge, 3d. For two standards Mr. Burns was 1st, with specimens of Mrs. George Rundle and Mrs. Dixon. Two pyramids, distinct varieties.—1st, Mr. Millican; 2d, Mr. Cornhill; 3d, Mr. Boxall, gr. to T. A. Hickley, Esq. For a single specimen, dwarf-trained, Mr. Burns was 1st, with a plant of Mrs. George Rundle; Mr. Millican 2d, with Mrs. Dixon, and Mr. Reynolds 3d, also showing a specimen of Mrs. Dixon. There were five competitors in this class. In the class for six plants, pompon varieties, dwarf-trained, distinct sorts, Mr. Cornhill won the 1st prize easily, Mr. Millican being 2d. Four pompons, distinct kinds.—1st, Mr. Reynolds; 2d, Mr. Reid. For standards, distinct sorts.—1st, Mr. Millican, with beautifully grown samples of President, Mddle. Marthe, Marie Stuart, and Marguerite du Croix; Mr. Reynolds, 2d. Two standards.—1st, Mr. Reid. Two pyramids, distinct varieties.—1st, Mr. Millican; 2d, Mr. Boxall. The best single specimen, dwarf-trained, size of pot unlimited, came from Mr. Cornhill, a grand specimen of Mdlle. Marthe; 2d, Mr. Millican, with a fine plant of Mr. Astie, a deep yellow Anemone variety. The cut blooms were the finest ever seen at Walton, those exhibited in the open class for twenty-four incurved flowers by Mr. Strong, gr. to H. Sweet, Esq., Weybridge, being very large and finely formed throughout; his best flowers were Alfred Salter (very good for that variety), Prince Alfred, Golden Empress, Queen of England, Golden Queen of England, Empress of India, Prince of Wales, Lord Derby, and Cherub. Mr. Hill, gr. to A. Savory, Esq., Chertsey, was 2d, with much smaller blooms; and Mr. Burns 3d. In the next class, for twenty-four incurved flowers, distinct kinds (not open), Mr. Burns took the 1st prize with very good blooms of Golden Empress, Empress of India, Lady Slade, and Virgin Queen; Mr. Reynolds 2d, and Mr. Cornhill 3d. For twelve incurved flowers Mr. Strong was again 1st, with splendid flowers, the best stand in the show, the varieties exhibited being duplicates of those already mentioned; Mr. Plowman, gr. to C. Lane Smith, Esq., came in 2d; and Mr. Boxall 3d. Twelve reflexed flowers.—1st, Mr. Reynolds; 2d, Mr. Plowman; 3d, Mr. Cornhill. Japanese flowers were in strong force, the best twenty-four coming from Mr. Burns, who had among his best flowers Baron de Prailly, Boule d'Or, The Sultan, Peter the Great, Père Delaux, and Apollo; 2d, Mr. Cornhill; 3d, Mr. Reynolds. Twelve Japanese blooms.—1st, Mr. Strong, gr. to H. Sweet, Esq., Weybridge, who showed The Sultan, Boule d'Or, Père Delaux, Fair Maid of Guernsey, Oracle, Sarnia, and Soleil Levant, very fine; 2d, Mr. Millican; equal 3d, Mr. Boxall and Mr. Plowman. For twelve large-flowering Anemone Chrysanthemums, not less than nine distinct varieties, Mr. Reynolds was 1st, Mr. Cornhill 2d, and Mr. Millican 3d. Twelve pompons, not less than nine distinct varieties, three blooms to form a truss, to be shown with foliage.—1st, Mr. Reynolds; 2d, Mr. Lavay, gr. to Mrs. Wilson, Walton; 3d, Mr. Cornhill. Twelve Anemone pompons.—1st, Mr. Cornhill; 2d, Mr. Reynolds; 3d, Mr. Plowman. A number of special prizes were offered for amateurs and cottagers, who showed both plants and cut flowers wonderfully well, and the prizes offered for floral ornaments and bouquets to consist of Chrysanthemum flowers and Ferns only, seemed to excite a good deal of interest, especially as there were several lady competitors, who, as usual, were very successful, but the flowers were too closely packed together in all the stands. Mr. Plowman, Mr. Millican, and Miss Hickley were successful in the gardeners' class, and Mrs. Cobbett and Mrs. C. Lavers Smith in the class set apart for lady competitors only.

Borough of Hackney.—The members of this Society held their annual exhibition at the Royal Aquarium, Westminster, on Wednesday last, and being favoured with dry weather the attendance early in the afternoon was large and the exhibition in all its departments may be pronounced a great success. The entries were numerous in nearly all the classes for cut blooms, and the flowers were the largest yet seen at the Westminster Aquarium. The special prizes offered by the Society in class 34 brought out some very fine stands of blooms, the 1st prize, of £10, being won by Mr. C. Gibson, gr. to A. J. Wormald, Esq., Morden Park, Mitcham, whose flowers, both incurved and Japanese, were of unusual size, and very well finished. The show of fruit and vegetables was also extensive, and indeed, to do justice to this department alone a very lengthy report might be written. There was a good show of Apples and Pears of excellent size and quality, but the Grapes, with two or three exceptions, were badly coloured. In the open class for the best group of Chrysanthemums, to be arranged in a space not exceeding 100 square feet, general effect to be the leading feature, the Royal Aquarium Company offered a Silver Cup, value £5, which was well won by Messrs. S. Mahood & Son, of Putney, with a fine collection, in which the flowers were large and fine, but the plants were rather crowded in the space; Mr. G. Stevens, St. John's Nursery, Putney, was 2d, also showing a good group; and Mr. Butcher, gr. to R. A. Glover, Esq., The Priory, Barnet, 3d. For six plants, large flowering varieties, the 1st prize was won by Messrs. Drain, Southgate Nursery; 2d, Mr. G. Stevens; 3d, Mr. F. W. Griffin, Gothic Lodge, Sydenham. Four standards.—1st, Mr. F. Wells, Finsbury Park; 2d, Mr. R. Payne, Cedar House, Stamford Hill; 3d, Mr. Biggs, The Nursery, Lewisham. For six plants pompon varieties, Mr. F. Wells was again 1st with very good plants, and Mr. M. Butcher, the Priory, Barnet, 3d. In class 5 the prize was for six foliage plants, and Mr. W. Wilson, Bowes Manor Gardens, Southgate, Mr. R. Payne, and Mr. G. Stevens were the winners with moderate collections. In the open class for twenty-four cut blooms incurved varieties, Mr. C. Langdon, gr. to Drs. Monroe and Morris, Brook Lane, Upper Clapton, was 1st, Mr. E. Berry 2d, and Mr. J. Wildman, Peckham Grove, 3d. Eighteen cut blooms (incurved).—1st, Mr. E. Berry; 2d, Mr. F. W. Griffin; 3d, W. Jupp, Esq., Torfield, Eastbourne, Sussx; 4th, Mr. J. Mayor. For twelve incurved blooms, Mr. J. Ridout, gr. to J. B. Haywood, Esq., Reigate, was 1st; Mr. Herrin, gr. to J. N. Hibbert, Esq., Chalfont Park, Slough, a good 2d; and Mr. E. Berry 3d. Six incurved blooms.—1st, Mr. G. H. Langford, Coleraine House, Stamford Hill; 2d, Mr. W. Marshall; 3d, W. Jupp, Esq. Twelve large Anemone flowers.—1st, Mr. C. Gibson; 2d, Mr. E. Berry; 3d, Mr. G. Noel, gr. to P. Southby, Esq., Bampton, Oxon. Twelve Anemone pompons.—1st, Mr. M. Butcher; 2d, Mr. C. Hantley, Ealing; 3d, Mr. C. Gibson. For twenty-four Japanese blooms, not less than eighteen varieties, or more than two blooms of one variety, the 1st prize was cleverly won by Mr. Herrin with a splendid stand of flowers; 2d, Mr. Gibson; 3d, Mr. J. Garaway, of the Durdham Down Nursery, Bristol. Twelve Japanese.—1st, Mr. E. Berry; 2d, R. Starling, Esq., The Chestnuts, Gunnersbury; 3d, W. Jupp, Esq. In class 16 the competitors were restricted to the boroughs of Hackney and Finsbury; the prize was for ten plants of Chrysanthemums grown in 12-inch pots—a Silver Cup, value £5, offered by the Royal Aquarium Company, which was won by Mr. C. Payne. For the best group of Chrysanthemums to be arranged in a space not exceeding 75 square feet, Mr. Gilbey, gr. to B. Booth, Esq., The Cazenoves, Upper Clapton, was 1st; and Mr. J. Wells was awarded a 1st prize for four plants grown in pots not exceeding 12 inches in diameter. Mr. Wells was again 1st for four pompons. The cut flowers exhibited in the classes for local exhibitors were very good. For twenty-four cut blooms, not less than eighteen varieties or more than two blooms of one variety, Mr. W. Holmes, Frampton Park Nursery, Hackney, was 1st; Mr. S. Gilbey 2d, and Mr. R. Payne 3d. Twelve incurved blooms, distinct kinds.—1st, Mr. J. Holmes, gr. to J. Hicks, Esq.; 2d, Mr. R. Payne; 3d, Mr. Nicholls, gr. to W. G. Ogden, Esq., Clapton. Six incurved blooms,—1st, Mr. J. Holmes; 2d, Mr. O. Gilbey. Mr. H. Langford won the 1st prize for twelve Japanese blooms, and his flowers were very fine; 2d, Mr. Gilbey; 3d, Mr. W. Holmes. Among the cut flowers, however, the great interest of the day was centred in the special class for forty-eight blooms, twenty-four to be incurved, in not less than eighteen varieties, or more than two blooms of a sort, and twenty-four Japanese to be shown under the same conditions. The 1st prize of £10 was won by Mr. C. Gibson, who had very large blooms of Empress of India, Golden Empress, Alfred Salter, Cherub, and other well known show kinds. His Japanese flowers were also fine. Mr. Herrin was 2d; and Mr. W. Mease, Wyncotte, Allerton, Liverpool, 3d. The last-named exhibitor showed good incurved flowers, but his Japanese blooms fell short in size and quality. The special prizes offered for six specimen plants of Japanese varieties were won by Mr. H. Langford and Mr. F. W. Griffin. The Silver Cup offered by Messrs. S. Dixon & Co., Hackney, for twelve Japanese blooms, was won by J. R. Starling, Esq., The Chestnuts, Gunnersbury; and the Silver-plated Tea and Coffee Service (value five guineas), offered by Mr. N. Davis, Camberwell, for eighteen distinct varieties of pompons, three blooms of each, was awarded to Mr. M. Butcher, Hadley Green, Barnet. Prizes were also offered for cut blooms in several amateur classes.

Fruit and Vegetables (open classes).—Grapes were not numerous, but hardy fruits were well shown and in quantity. For three bunches of Alicante Mr. R. Holmes, gr. to T. Wallis, Esq., Clapham Common, was 1st, showing good bunches, well coloured; Mr. J. Ridout 2d, and Mr. Goodacre, Elvaston Castle, Derby, 3d. Three bunches Gros Colmar Grapes.—1st, Mr. S. Lyon, Sundridge Park Garden, Bromley, Kent; 2d, Mr. Castle, West Lynn, Norfolk. For three bunches of Muscat of Alexandria Mr. A. Smith, gr. to W. H. Lewell, Esq., Warren Hill, Loughton, was 1st; Mr. Austen, Ashton Court, Bristol, 2d; and Mr. C. Herrin 3d, Three bunches any other variety.—1st, Mr. G. Summers, gr. to the Earl of Scarborough, Sandbeck Park; 2d, Mr. Herrin, who had good bunches of Mrs. Pince's Black Muscat; 3d, Mr. J. Ridout. Six dishes dessert Apples.—1st, Mr. Austen; 2d, Mr. A. Waterman; 3d, J. Omer Coope, Esq., Calcot, Reading. Six dishes culinary Apples.—1st, Mr. W. Fowle, gr. to Sir H. Mildmay, Bart; 2d, Mr. C. Ross, Welford Park; 3d, Mr. Austen. For six dishes dessert Pears Mr. Ross was 1st, Mr. J. H. Goodacre 2d, and Mr. E. Spirey, gr. to S. A. Houlton, Esq., 3d. For a collection of fruit Mr. Waterman was 1st. For a collection of twelve dishes of Potatos Mr. W. Ellington was successful, Mr. R. Dean being a close 2d. Six dishes Potatos.—1st, Mr. R. Dean, with splendid samples of the finest show sorts, in which quality was highly conspicuous. The special prizes offered by Messrs. Webb & Son, Wordsley, Stourbridge, for six distinct kinds of vegetables, were won by Mr. Austen, Mr. W. Finlay, and Mr. J. May. Messrs. Hooper's prizes for the heaviest tuber of Queen of the Valley Potato was won by Mr. W. Ellington, with a specimen weighing 30 oz.; 2d, R. Philips, Esq.; and for the best nine tubers of the same variety the same exhibitor was again 1st, and Mr. C. W. Howard 3d. For twelve dishes of Potatos Messrs. Carter offered good prizes, the 1st going to Mr. R. Dean; 2d, Mr. C. Osman; 3d, R. Philips, Esq.; 4th, Mr. T. H. Hill. The Messrs. Sutton offered prizes in eight classes for Potatos, and the following exhibitors obtained the 1st prizes, viz., Mr. W. Ellington, Mr. P. Cornish, Mr. C. Ross, and Mr. F. Miller. The Messrs. Sutton had a fine display of Potatos "not for competition;" and Messrs. Cannell & Son, of Swanley, had a highly attractive display of cut flowers, Primulas in pots, &c. The cut blooms of zonal Pelargoniums and Salvias were the most admired feature of the show, being quite distinct from anything else, and of such striking colours.

Kingston-on-Thames.—This exhibition, which was held on Thursday and Friday, was the best ever held here both as regards the quality of plants and cut blooms. The Champion Challenge Vase was won by Mr. G. Harding, gr. to T. Galpin, Esq., Putney Heath; Mr. Tunnington, gr. to C. MacIver, Esq., Liverpool, being 2d; and F. R. Leyland, Esq., of Liverpool, who staged the blooms grown by his late gardener, Mr. Faulkner, 3d. Mr. Harding's flowers were very large, but the incurved blooms were rather loose. His Japanese blooms were, however, both large and of fine quality. Mr. Tunnington's stands included highly finished incurved blooms, and good Japanese flowers; the Woolton Hall blooms were also very fine. The Second Challenge Vase was taken by Mr. Molyneux, gr. to W. H. Myers, Esq., Swanmore Park, Bishop's Waltham, Hants, whose flowers were even and fresh, and good in size and quality. Mr. Gibson, gr. to J. Wormald, Esq., Morden Park, Mitcham, who was 2d, had larger blooms, but not so even as those from Swanmore; and Mr. Jellicoe, Camp Hill, Woolton, Liverpool, was 3d.

The timepiece offered for twenty-four incurved flowers was won by F. Leyland, Esq., Mr. Harding being 2d, and Mr. Tunnington 3d.

A full report of the show will be given in our next ssue.

Reports of Societies.

Royal Horticultural: *Nov.* 14.—Colonel Trevor Clarke in the chair. The Rev. G. Henslow took the Chrysanthemum as the subject of his lecture on this occasion. This plant is referable to two distinct species—C. indicum, L., and C. sinense, Sab., though until Mr. Sabine so determined them in 1823 they were confounded. The former appears to have been in the Chelsea Gardens in 1764, but was lost; the latter was first introduced into England in 1790, though called and figured (*Bot. Mag.*, 327) as C. indicum, is supposed to have been only an enlarged cultivated variety. The first-named species is, with very little doubt, the origin of all the "pompons." It was reintroduced by Mr. Fortune in 1846 as the "Chusan Daisy," or Minimum, and now numbers probably more than a hundred varieties. With regard to the large kind, or C. sinense, the first notice of its cultivation in Europe was by Breynius, who mentions six kinds in Holland in 1688; but it is strange that they all disappeared and were only reintroduced a hundred years afterwards into Europe by M. Blan-

chard in 1789. Many varieties have been long cultivated in China and Japan, as Kæmpfer in 1712 observes; while Rumphius in his *Hort. Amboin.* notices that they were grown in 1745 in India, having been brought from China. The reintroduction of this common large Chrysanthemum into Europe was by M. Blanchard into Marseilles, thence it passed to Paris and England. From this a purple kind, the sport called the "changeable white," was soon obtained. Sir A. Hume introduced several new colours between 1798 and 1808. Many others soon followed, so that in 1827 forty varieties were in cultivation. In 1865 they had risen, Mr. Salter tells us, to 700. In 1830 seed was obtained for the first time from France. Previously, besides forms introduced, the Chrysanthemum being particularly liable to sport, cuttings alone had been propagated; but seedlings caused a vast influx of new forms of both species. In 1862 Mr. Fortune introduced the new Japanese races; some with long petals and curious mouths to the corollas, suggesting the title of "Dragons." It appears, however, on the authority of Mr. Crawford, Consul of Oporto, that the Japanese forms had long been cultivated there before their introduction into England. The origin of the different forms of the flowers lies mainly in the changes undergone by the corollas of the disc or eye-florets. In the wild form the ray-florets have strap-shaped, the disc-florets regularly 5-toothed, tubes to their corollas. The principal changes may be thus enumerated :— I. To strap-shaped, becoming flattened from base to lip—(1), rolled inwards; (2), rolled outwards; (3), loose and spreading; (4), do., but much attenuated, pointed or bifurcating. II. The tube retained—(1), short, with five slightly enlarged teeth (Anemone); (2), teeth much enlarged and multiplied (Dragon); (3), tube elongated, with no teeth (quilled); (4), quilled, but open or spoon-shaped at end (as in Emperor of China).

SCIENTIFIC COMMITTEE. — Dr. Maxwell T. Masters, F.R.S., in the chair.

Magnolia Campbellii. — Mr. Mangles gave the measurements of some fine trees of this species growing in the grounds of W. H. Crawfurd, Esq., Lakelands, near Cork. The finest, believed to be the largest in Europe, is 33 feet in height, the stem being 33 inches in girth. Hitherto the trees have not flowered. It was suggested that the plant might be grafted on various Magnolias experimentally, in order to induce it to flower.

Carlina acaulis.—Dr. Lowe showed flower-heads of this or an allied species (see figure in *Gardeners' Chronicle*, June 5, 1880).

Vitis gongylodes.—Mr. Lynch showed tuber-bearing branches and flowers of this fine species, from the Cambridge Botanic Garden.

Proliferous and Monstrous Flowers, &c.—The Rev. G. Henslow exhibited the following specimens :—(1.) Proliferous states—Rhododendron balsamiflorum aureum (from Messrs. Veitch), with flowers proceeding from the centre of the pistil. The latter organ had dehisced longitudinally and a cluster of malformed orange-coloured petals protruded from the orifice. Mr. Henslow observed that every flower on one bush in his garden of a common pink kind had, during the last season, formed a blossom within the pistil, though in the latter instance the flowers so formed had perfect as well as petaloid stamens. In every case the flower sprang from the base of the ovary. Carnation. —A blossom with a secondary flower proceeding from within the calyx (received from Miss Owen, Gorey). Bluebell.—In the specimen shown each flower was borne on a pedicel of about 2 inches in length, and produced a secondary flower from the axil of a perianth leaf. In the place of one flower a complete raceme had grown. Solomon's Seal.— Leafy racemes occupied the positions of the normal flowers. (2.) Monstrous flowers: Pistillody of Calyx. —Violets in which the organs were in part or entirely virescent and malformed, with the sepals abortively ovuliferous, and the petals often laciniated. The sepals bore papilliform structures on the margins and midribs, resembling rudimentary ovules. The only recorded instance of ovuliferous sepals was that of a common garden Pea, figured and described by Dr. Masters in the *Gardeners' Chronicle*, 1866, p. 897, from specimens sent by Mr. Laxton. Pistillody of Stamens.—He exhibited drawings illustrating various stages of ovuliferous stamens in the alpine Poppy (received from Miss Owen). Syngenesism in Diplotaxis tenuifolia.—In this case the anthers of every flower cohered laterally, so that the pollen could not escape; the consequence being that in no case did a flower set seed, the siliqua remaining small and abortive (received from Mr. Marshall, of Ely). Placental Protrusion in Begonias.—In these flowers the placentas bearing many ovules had protruded from the summit of the ovary, apparently from an hypertrophied condition of the former parts (from Miss Owen).

Miscellaneous Objects.—Movement in the pedicels of Meconopsis nepalensis. Specimens received from Miss Owen, illustrative of observations recorded in the *Gardeners' Chronicle*, June 10, 1882, p. 767. Mr. Henslow suggested that this prevented the seeds from being dropped close to the parent plant, as the fruit dehisced at the base of the style, as in Poppies, below the radiating stigmas. In both cases the pod is held erect, but when a capsule is pendulous, as that of Campanula, the pores are at the base, so that in every case the plant is enabled to scatter its seed as the stem is swayed to and fro by the wind. Fasciated Stems.—A remarkable example of Carduus lanceolatus, some 3 feet in length and 6 inches broad, a peculiarity of which was, that it had appeared for four years successively in this condition (it was received from Mr. Marshall). Another specimen of Lilium auratum in a fasciated condition was received from Mrs. Brightwen, of Stanmore. "Enations" from Yucca Leaves.—Leaves of Y. filamentosa, with peculiar horn-like protuberances of about half-an-inch long, probably caused by some insect (from Miss Owen). Mr. Boscawen sent flowers of Babiana rubro-cyanea and Freesia refracta alba.

Agave Victoria Regina.—Dr. Masters showed photographs of flowering plants of the species, grown in the Cambridge, U.S., Botanic Garden, from Dr. Engelmann.

The Winter of 1880-81.—Some discussion then ensued as to the report drawn up by Mr. Henslow on this subject. The report was of an exhaustive nature, and the committee ultimately adopted a resolution calling the attention of the Council to the matter, and urging the desirability of its speedy publication.

FLORAL COMMITTEE.—G. F. Wilson, Esq., F.R.S., in the chair. With a fine lot of Odontoglossums from Trentham, glowing Pelargoniums from Messrs. Cannell & Sons and Mr. Henry Little, Cyclamens from Mr. Clarke, and Chrysanthemums, plants and cut blooms, from various exhibitors, the Council-room had a very gay and cheerful appearance for a cold November day. The well-flowered lot of zonal Pelargoniums shown by Mr. Little (Mr. Wiggins, gr.), the brilliant display of cut blooms of both single and double varieties contributed by Messrs. Cannell & Sons, and the various new Chrysanthemums exhibited, are more fully alluded to in another page; but the groups of well-flowered plants of zonal Pelargoniums, Salmon Vesuvius Surprise, and Henry Jacoby, and stands of cut blooms of Salvias Pitcheri, angustifolia, rutilans, splendens Bruanti, and the scarlet and white Mons. Isanchon, shown by the Messrs. Cannell, demand a passing word here of honourable mention. Mr. Clarke's fine bank of Cyclamens was also much admired, but perhaps more popular still were the dozen or so specimens of Odontoglossum crispum var. shown by Mr. Z. Stevens, and which were remarkable for their fine spikes of chastely beautiful blossoms. Two of them received First-class Certificates, and were identified respectively by the varietal names of The Duchess and Wilsoni, the former having broad sepals and petals of great substance and purity, the only blotch on the flower being a bold, irregular-shaped one on the lip. The Wilsoni variety is of a delicate pink ground colour, with one or two brown spots on the upper and two lower sepals, with a large blotch and two or three spots of the same colour on the lip. Another grand variety of O. crispum, named Dormanianum was also certificated; this came from Mr. Coningsby, gr. to C. Dorman, Esq., Sydenham, and was remarkable for its bold, heavy spotting of chestnut-brown. The opposite to this as regards spotting was another certificated variety, named virginale, which had only two or three minute ones on the lip, which came from Mr. B. S. Williams. Pleione præcox, a charming species, with rosy-purple blossoms, also came from Mr. Williams, who also had an interesting plant in Nepenthes ampullaria vittata, a specimen with small pitchers produced on the surface of the pot, after the manner of a Sarracenia, the stem pitchers not being developed. Mr. Green, gr. to Sir Geo. Macleay, brought up cut specimens of Amicia zygomeris with yellow papilionaceous flowers; Cestrum aurantiacum majus, a fine old plant now seldom seen; and the still more rare old Fuchsia arborescens, a charming species, having profusely flowered terminal panicles of small deep rosy-pink blossoms. Messrs. Veitch & Sons showed a number of unnamed seedling hybrid Rhododendrons, and in Begonia Autumn Rose, a very interesting seedling between the new species, B. socotrana, and the old B. insignis, as the seed-bearing parent, a hybrid of an intermediate character, which at one time it was thought could not have been obtained. Tachiadenus carinatus, a dwarf deep blue-flowered Gentian-like plant, also came from the Chelsea firm. Mr. Anthony Waterer, of Knap Hill, exhibited a number of seedling Golden Yews, and several handsome plants, from 3 to 4 feet high, of the golden variety of Cupressus Lawsoniana, one of the finest of variegated Conifers, and which possesses the great merit of not being browned by winter frosts or burned by the summer sun.

The awards made were :—

First-class Certificates.

To Mr. B. S. Williams, for Odontoglossum crispum var. virginale.

To Mr. B. S. Williams, for Pleione præcox.

To Mr. Z. Stevens, for Odontoglossum crispum var. The Duchess.

To Mr. Z. Stevens, for Odontoglossum crispum var. Wilsoni.

To Mr. Coningsby, for Odontoglossum crispum var. Dormanianum.

To Messrs. Cannell & Sons, for zonal Pelargonium Mrs. Gordon.

To Messrs. Cannell & Sons, for Salvia Hoveyi.

To Messrs. T. Jackson & Son, for Japanese Chrysanthemums F. A. Davis, M. Desbraux, and Madame Brun.

To Messrs. Dixon & Co., for Japanese Crysanthemum Crimson King.

To Mr. Orchard, for Chrysanthemum (incurved) Lord Wolseley.

To Mr. H. Little, for double zonal Pelargonium Aglaia.

To Mr. H. Little, for Ivy-leaved Pelargonium Albert Crousse.

FRUIT COMMITTEE.—H. J. Veitch, Esq., in the chair. The labours of this body were of a somewhat more onerous character than usual, on this occasion. From a cultural point of view the most important contribution consisted of four very handsome Smooth Cayenne Pines of the aggregate weight of 29 lb. 4 oz., which were shown by Mr. Ross, gr. to C. Eyre, Esq., Welford Park, Newbury, and which gained for their grower a Bronze Medal. On the ground of novelty, the most interesting exhibit was a bunch of the John Downie Grape sent by Messrs. Downie & Laird, and which the committee thought very highly of. As stated in our report of the Edinburgh Show, where it attracted much notice in the seedling Grape class, it bears a close resemblance to Gros Colmar in the shape of the bunch and size of the berries, but it is quite distinct in flavour and texture, which more nearly resembles that of the Black Hamburgh. It was generally considered an improvement in point of flavour on Gros Colmar, and will undoubtedly be an acquisition if it will hang as long as that variety. The committee asked to see it again later on. Messrs. Geo. Bunyard & Co. and Messrs. Saltmarsh and Son, exhibited handsome examples of the new Queen Apple certificated last year; and a fine dish of Stone's Apple, or Loddington Seedling, came from Mr. R. Gandy, of Boughton Monchelsea, Maidstone. Seedling Apples were shown by Messrs. Harrison & Son, Leicester, and Mr. R. Warner, Bloomfield Lodge, Chelmsford; and some seedling Pears by Mr. Laxton, Bedford. A good strain of curled Parsley, Dean's Superb, came from Mr. R. Dean, of Ealing; and Mr. Miles, Wycombe Abbey Gardens, showed very fine examples of a new Scotch raised Leek, named The Lyon, which we understand is to be sent out next year. Naseby Mammoth Onions came from Mr. Horley, Toddington; and Giant Red Shallots from Mr. E. Pond, of Jersey. From Chiswick Mr. Barron brought up a collection of Shallots, and Messrs. James Veitch & Sons showed a collection of curled Greens and several varieties of Endive.

In the entrance lobby there was an excellent display of vegetables shown in competition for liberal prizes offered by Messrs. Sutton & Sons, Reading. In the main class, which was for twelve sorts, the competition was very strong, and the bulk of the produce staged of excellent character. The 1st prize was taken by Mr. Austen, gr., Ashton Court, Bristol, who had a handsome brace of Telegraph Cucumbers, Leicester Red Celery, White Stone Turnips, Improved Reading Onions, James' Intermediate Carrots, Brussels Sprouts, Veitch's Autumn Giant Cauliflowers, Hathaway's Excelsior Tomatos, Canadian Wonder Beans, Dell's Crimson Beet, Hollow-crowned Parsnips, and Lapstone Kidney Potatos, all of admirable quality, and well set up. Mr. Miller, gr. to W. H. Long, Esq., M.P., Rood Ashton, came in 2d; Mr. Haines, gr. to Lord Radnor, Coleshill, 3d; Mr. Phillips, gr., The Deodars, Meopham, 4th; and Mr. G. Summers, gr. to the Earl of Scarborough, Sandbeck Park, Rotherham, 5th. Another class was for single dishes of Reading Onions, and a grand lot of bulbs were staged; a second included Reading Russet and Fiftyfold Potatos; a third, the varieties Woodstock Kidney and Reading Hero; and a fourth, Magnum Bonum and First and Best—all varieties sent out by the Reading firm. There was a good display in each class, and the 1st prize winners are Mr. Haines, Mr. Ross, Mr. Finlay, Wroxton Abbey Gardens; Mr. Miller, gr., Northdown, Margate; and Mr. G. Donaldson, Keith Hall Gardens, Inverurie, N.B.; while other prizes were secured by Mr. H. W. Ward, Mr. C. Osman, Mr. Austen, Mr. Miller, and Mr. A. Emson. The Messrs. Sutton also exhibited a very fine collection of Winter Greens, Potatos, and other vegetables, the Potatos alone made an excellent display in themselves, the collection consisting of clean, well-grown samples of about 100 varieties! A Silver Medal was awarded to the firm. Messrs.

Edward Webb & Sons, Wordsley, also offered three prizes for the best single dishes of Webb's Improved Schoolmaster Potato, and in a good class the awards went to Mr. C. W. Howard, Canterbury; Mr. C. Osman, and Mr. R. Dean.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, NOV. 15, 1882.

Month and Day.	Barometer. Mean Reading Reduced to 32° Fahr.	Barometer. Departure from Average of 18 years.	Temperature of the Air. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years	Hygrometrical Deductions from Glaisher's Tables 6th Edition. Dew Point.	Degree of Humidity. Sat = 100.	Wind. Average Direction.	Rainfall.
Nov.	In.	In.	°	°	°	°	°	°			In.
9	29.25	—0.55	50.7	40.0	10.7	44.8	+ 0.9	35.7	70	W.; W.N.W	0.00
10	29.43	—0.38	50.0	37.0	13.0	43.6	+ 0.1	37.7	79	W	0.01
11	29.65	—0.15	45.0	38.0	7	0 41.4	— 1.8	33.8	75	W.; W.N.W	0.00
12	29.88	+0.09	42.3	30.6	11.7	36.7	— 6.2	34 1	88	E.N.E.	0.00
13	29.78	0.00	44.2	37.0	7.2	40.8	— 1.9	34.9	80	E.	0.13
14	29.71	—0.06	41.3	37.0	4 3	39.0	— 3 5	32.2	78	N.E.; N.N.E.	0.02
15	29.43	—0.33	41.0	36.0	5.0	38.0	— 4.3	33.5	84	N.N.W	0.00
Mean	29.59	—0.20	44.9	36.5	8.4	40 6	— 2.4	34.6	79	W.	0.14

Nov. 9.—Very fine bright day; cloudless, cold night.
— 10.—Fine bright day till 3 P.M. Dull night, slight rain.
— 11.—Fine bright day. Fine night, slightly misty.
— 12.—Dense fog till 10.30 A.M., ice on ponds, and very cold. Clear, cold night.
— 13.—A dull, overcast day; fine, but windy. Cloudy night, windy.
— 14.—A dull, overcast day and night, windy.
— 15.—A dull, overcast day, few gleams of sunshine at times, slightly foggy. Cold, damp, cloudy night; sleet fell at 10 P.M.

LONDON: *Atmospheric Pressure.*—During the week ending November 11, the reading of the barometer at the level of the sea decreased from 29.99 inches at the beginning of the week to 28.86 inches by 3 P.M. on the 5th, increased to 30.15 inches by 9 A.M., and decreased to 29.74 inches by midnight on the 6th, increased to 29.86 inches by 9 A.M. on the 7th, decreased to 29.55 inches by midnight on the same day, increased to 29.57 inches by 9 A.M. on the 8th, decreased to 29.27 inches by 9 A.M. on the 9th, increased to 29.69 inches by 9 A.M., and decreased to 29.49 inches by midnight on the 10th, and was 30.02 inches at the end of the week.

The mean reading for the week at the level of the sea was 29.72 inches, being 0.10 inch lower than last week, and 0.26 inch below the average of the week.

Temperature.—The highest temperature in the week was 60°, on the 5th; on the 11th the highest temperature was 45°. The mean of the seven high day temperatures was 51°.4.

The lowest temperature in the shade in the week was 37°, on the 10th; on the 5th the lowest temperature was 46°.8. The mean of the seven lowest temperatures was 41°.5.

The greatest range of temperature in one day was 13°.2, on the 5th; the smallest was 4°.5, on the 7th. The mean of the seven daily ranges was 9°.9.

The mean temperatures were—on the 5th, 54°; on the 6th, 50°.1; on the 7th, 45°.9; on the 8th, 45°.2; on the 9th, 44°.8; on the 10th, 43°.6; and on the 11th, 41°.4; of these the first six were above their averages by 8°.6, 5°, 1°.2, 0°.9, 0°.9, and 0°.1 respectively, and the last one was below its average by 1°.8.

The mean temperature was 46°.4, being 3°.1 lower than last week, and 2°.1 above the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun, was 105°.5, on the 6th. The mean of the seven readings was 92°.6.

The lowest reading of a minimum thermometer with its bulb placed on grass was 30°, on the 11th. The mean of the seven readings was 35°.2.

Rain.—Rain fell to the amount of 0.70 inch during the week.

ENGLAND: *Temperature.*—During the week ending November 11 the highest temperatures were 63°.2 at Cambridge, and 60°.1 at Bristol and Nottingham, the highest temperature at Bolton 55°.7, at Bradford 56°.2, and at Wolverhampton 57°.8. The general mean was 59°.1.

The lowest temperatures in the week were 31°.2 at Wolverhampton, and 32° at Bolton and Sunderland; the lowest temperature at Plymouth was 39°.7, at Bradford 37°.2, and at Truro, Bristol, Blackheath, Bolton, and Sunderland 37°. The general mean was 35°.3.

The greatest ranges of temperature in the week were 28° at Cambridge, 27°.1 at Nottingham, and 27° at Sunderland; the least ranges were 19° at Bradford, 20°.3 at Plymouth, and 22° at Truro and Leeds. The general mean was 23°.8.

The mean of the seven high day temperatures was highest at Plymouth, at Truro 54°.6, and at Brighton 53°.4; and was lowest at, Bolton, 46°.9, at Sheffield 48°.6, and at Liverpool 48°.8. The general mean was 51°.

The mean of the seven lowest night temperatures was highest at Truro, 43°.7, at Plymouth 42°.9, and at Blackheath 41°.5; and was lowest at Wolverhampton, 35°.9, at Bolton 36°.3, and at Nottingham 36°.9. The general mean was 39°.3.

The mean daily range was greatest at Sunderland, 13°.7, at Wolverhampton 13°.6, and at Nottingham 13°.4; and was least at Sheffield, 9°.4, at Bradford and at Blackheath 9°.9. The general mean was 11°.7.

The mean temperature of the week was highest at Truro, 48°.6, at Plymouth 48°.5, and at Brighton 46°.9; and was lowest at Bolton, 41°.1, at Wolverhampton 42°.2, and at Nottingham 43°. The general mean was 44°.8.

Rain.—The largest falls were 2.16 inches at Bolton, 2.15 inches at Bristol, and 1.71 inch at Truro. The smallest falls were 0.60 inch at Brighton, 0.70 inch at Blackheath, and 0.77 inch at Cambridge. The general mean fall was 1.27 inch.

SCOTLAND: *Temperature.*—During the week ending November 11, the highest temperature was 57°.5, at Glasgow. The highest temperature at Dundee was 48°. The general mean was 42°.3.

The lowest temperature in the week was 26°, at Perth; at Greenock the lowest temperature was 33°. The general mean was 30°.

The mean temperature was highest at Paisley, 42°.1, and was lowest at Perth, 37°.3. The general mean was 40°.6.

Rain.—The largest fall was 2.58 inch, at Greenock; the smallest fall was 0.80 inch at Dundee. The general mean fall was 1.62 inch.

JAMES GLAISHER, F.R.S.

Obituary.

ON the 14th inst., at his residence in College Street, Bury St. Edmund's, in the seventy-second year of his age, died Mr. JAMES CLARKE, one of the oldest members of the Bury and West Suffolk Horticultural Society. From his early boyhood he was inspired with an ardent love for flowers and horticultural pursuits, and he was a very successful amateur cultivator of various families of decorative plants, more especially the Pink, of which he succeeded in originating many beautiful and well-known varieties, including Lord Lyons, Derby Day, Duchess, and many others. His garden, though small, may be said to have been almost unique, as it contained a little of almost everything. If he had any pride it was certainly in his garden, and in showing its productions to his many friends. He was a genial and kind-hearted man, and delighted in the society of horticulturists, and was greatly esteemed and respected by his fellow townsmen.

—— We have also to record the death last week, at an advanced age, of Mr. EDWARD MEEHAN, who for more than half a century had been gardener at St. Clare's, Ryde, Isle of Wight, the residence of the late Col. F. Vernon Harcourt, and at present of E. Vernon Harcourt, Esq. Mr. Meehan was a man of a scientific turn of mind, and was much esteemed by all who knew him. His son, Professor Thomas Meehan, is the well known nurseryman of Philadelphia, U.S.A., Editor of the American *Gardeners' Monthly*, and Professor of Botany in the Academy of Natural Sciences at Philadelphia.

—— The death is also announced of Mrs. REEVES, relict of the late J. Russell Reeves, Esq., of Woodhays, Wimbledon, who will be remembered by many old Fellows of the Royal Horticultural Society as a former member of the Council, and a regular attendant for some years at the Society's meetings. Mrs. Reeves died on the 13th inst., aged 73.

Answers to Correspondents.

DAMSON STAIN: *X.* The Farleigh Prolific Damson is a true staining variety. The fruit is taken rather unripe, and sent to the cotton districts for dyeing purposes.

DISEASES OF PLANTS: *C. T.* The best series of articles by far is that of the Rev. M. J. Berkeley, but unfortunately they have never been reprinted. For German works see Dr. Frank, *Die Krankheiten der Pflanzen* (Breslau, 1880); Sorauer, *Handbuch der Pflanzen-Krankheiten* (Berlin, 1874); Hartig, *Lehrbuch der Baum-Krankheiten* (Berlin, 1872). Of course you know Sir James Paget's lecture on the subject.

GREENHOUSE: *G. C.* For the welfare of the plants you should endeavour to get them nearer to the glass; you should not water them so often as you mention at this season; and should not use soot-water at all unless it is very weak. A temperature ranging from 45° to 55° is quite high enough during the dull months. The Pelargoniums will do better if kept on the dry side, so that you should stop the damping down.

INSECTS: *G. Pymm, Jun.* The "strange insect" is a green grasshopper, a Brazilian species of Conocephalus, probably imported in the egg state with some plant or other. — *T. W.* The small excrescences on the bulbs of your Mangel Wurzels are certainly not galls caused by the punctures of insects for the deposition of their eggs, having no trace of insects within them. They are in some cases accompanied by a great number of minute filamentous rootlets, amongst which we detected two or three minute white larvæ of some midge usually found in such situations. *J. O. W.*

IVY: *J. H. H.* The Ivy, no doubt, will grow against a wall when it becomes established in the soil, but there are many more suitable varieties for the purpose which we should have selected instead.

NAMES OF PLANTS: *S., Bournemouth.* Dahlia imperialis, a native of Mexico. (See *Bot. Mag.*, t. 5813, and *Gard. Chron.*, p. 459, 1870.)—*H. F.* Brachypodium pinnatum.—*Dido.* Chrysanthemum segetum.—*A. O. Walker.* It may be a form of Achillea ageratum, but the foliage being nearly all broken off renders the determination unsatisfactory. Send it again next year with good foliage.

SIZE OF POTS: *J. M.* Where pots of a particular size are specially mentioned it is understood that plants must not be shown in those of a larger size, but we know of no reason why you should not drop a 48-pot into a 32 for the purpose of exhibition if 32-sized pots are stipulated for. If you can grow plants in 48's as well as your competitors can do them in 32's, so much the more creditable to you. It would be morally wrong to grow them in 32's and transfer them to 48's for show purposes, but not *vice versâ*, if 32's are allowed.

CATALOGUES RECEIVED.

JAMES DICKSON & SONS, Newton Nurseries, Chester—Forest and other Trees, Shrubs, Fruit Trees, &c.
HOWDEN & CO., Inverness—Hardy Trees and Shrubs, Herbaceous Plants, &c.
W. DRUMMOND & SONS, Stirling—Forest, Ornamental, and Fruit Trees, &c.
H. CANNELL & SONS, Swanley, Kent—Roses and Chrysanthemums.
WOOD & INGRAM, Huntingdon — General Nursery Stock.
JAMES COCKER & SONS, Aberdeen—Select Roses and General Nursery Stock.
LITTLE & BALLANTYNE, Carlisle—Hardy Trees and Shrubs, Fruit Trees, Roses, &c.

COMMUNICATIONS RECEIVED—J. Walker.—New Plant and Bulb Co.—F. H. — W. C.—Price's Patent Candle Co. (Gishurstine, with best thanks).—M. Saul.—J. Blayney.—R. Buckingham (you should first address the firm in question).—R. McIntosh.—W. B. H.—W. E.—H. L.—A. T.—E. S. B.—D. T. F.—J. Hornby.—J. Addison.—D. M.—J. G. B.—C. Baltet, Troyes.—G. H., Philadelphia.—G. D.—J. T. B.—J. D. D.—Prof. Babington.—F. S. W.—R. C.—A. W.—D. W.—C. M. O.—H. J. C.

Markets.

COVENT GARDEN, November 16.

TRADE quiet, with no alterations to quote. Some fine samples of Nova Scotian Apples have reached us this week, making top prices, and completely eclipsing those sent from the United States. *James Webber, Wholesale Apple Market.*

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe, per doz.	3 0– 6 0	Garlic, per lb.	1 0– ..
— Jerusalem, doz.	4 0– ..	Herbs, per bunch	0 2– 0 4
Asparagus (Sprue), per bundle	1 6– ..	Horse Radish, bund.	4 0– ..
Beans, French, English grown, p. lb.	0 8– ..	Lettuces, Cabbage, per score	1 6– ..
Beet, per doz.	1 0– ..	Mint, green, bunch	0 4– ..
Bruss. Sprouts, bush.	3 0– 4 0	Mushrooms, p. baskt.	1 0– 2 0
Cabbages, per doz.	1 0– 2 0	Onions, per bushel	3 0– ..
Carrots, per bunch	0 4– 0 6	— Spring, per bun.	0 6– ..
Cauliflowers, English, dozen	2 0– 4 0	Parsley, per bunch	0 4– ..
Celery, per head, per bundle	0 4– .. 1 0– ..	Radishes, per doz.	1 6– ..
Cucumbers, each	0 6– 1 0	Seakale, per punnet	2 0– ..
Endive, per score	1 0– ..	Small salading, pun.	0 4– ..
		Spinach, per bushel	2 0– ..
		Tomatos, per doz.	2 0– ..
		Vegt. Marrows, doz.	3 0– ..

POTATOS:—Magnum Bonums, 100s. to 120s.; Regents, 90s. to 110s. per ton.

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	2 0	2 6	Lemons, per 100	6 0	10 0
Aubergines, per doz.	4 0	..	Melons, each	2 0	4 0
Cobs, 100 lb.	45 0	50 0	Pears, per dozen	1 0	2 0
Figs, per dozen	0 6	1 0	Pine-apples, Eng., lb.	2 0	2 6
Grapes, per lb.	1 0	2 6			

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldii, doz.	12 0	24 0	Ferns, in var., dozen	4 0	18 0
Arbor-vitæ (golden), per dozen	6 0	18 0	Ficus elastica, each	1 6	7 0
— (common), dozen	6 0	12 0	Foliage Plants, various, each	2 0	10 6
Begonias, per doz.	6 0	12 0	Fuchsias, per dozen	4 0	9 0
Bouvardia, doz.	10 0	18 0	Genista, per doz.	8 0	12 0
Chrysanthems., doz.	6 0	18 0	Hyacin. (Rom.), per pot	1 6	2 0
Coleus, per dozen	4 0	6 0	Marguerite Daisy, per dozen	6 0	12 0
Cyclamen, doz.	9 0	24 0	Myrtles, per doz.	6 0	12 0
Cyperus, per dozen	6 0	12 0	Palms in variety, each	2 6	21 0
Dracæna terminalis	30 0	60 0	Pelargoniums, scarlet, per doz.	2 6	6 0
— viridis, per doz.	12 0	24 0	Solanums, per doz.	9 0	12 0
Epiphyllum, dozen	18 0	30 0			
Euonymus, various, per dozen	6 0	18 0			
Evergreens, in var., per dozen	6 0	24 0			

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 blooms	0 2	0 4	Lilac (French), bun.	8 0	9 0
Arum Lilies, per doz.	6 0	8 0	Lilium various, per 12 blooms	3 0	6 0
Azalea, 12 sprays	1 0	2 0	Marguerites, 12 bun.	6 0	9 0
Bouvardias, per bun.	0 6	1 0	Mignonette, 12 bun.	1 6	4 0
Camellias per dozen	2 0	4 0	Narcissus, 12 sprays	2 6	3 0
Carnations, 12 blms.	1 0	3 0	—(paper-white), Fr., per bunch	0 9	1 3
Chrysanth., 12 bun.	4 0	9 0	Pansies, 12 bunches	1 0	3 0
— (Fr) per bunch	0 6	1 6	Pelargoniums, 12 spr.	0 9	1 0
— (best white), bun.	1 0	3 0	— zonal, 12 sprays	0 3	0 6
— 12 blooms	1 0	2 6	Primula, double, per bunch	1 0	1 6
Cornflower, 12 bun.	2 0	4 0	Roses (indoor), doz.	1 0	3 0
Cyclamen, 12 blooms	0 3	0 6	— (outdoor), doz.	0 6	1 0
Epiphyllum, 12 blms.	0 9	1 0	— Coloured, doz.	1 0	2 0
Eucharis, per doz.	3 0	6 0	Stephanotis, 12 spr.	6 0	8 0
Fuchsias, 12 bunches	6 0	8 0	Tropæolum, 12 bun.	1 0	2 0
Gardenias, 12 blms.	4 0	6 0	Violets, 12 bunches	1 0	1 3
Gladioli, 12 sprays	1 6	3 0	— French Czar, bun.	1 0	2 0
Heliotropes, 12 sp.	0 6	1 0	— Parme (Fr.), bun.	3 6	4 6
Hyacinths (Roman), 12 sprays	2 0	3 0	White Jasmine, bun.	0 9	1 0
Lapageria, white, 12 blooms	2 0	4 0			
— red, 12 blooms	1 0	3 0			

SEEDS.

LONDON: *Nov.* 15.—Messrs. John Shaw & Sons, of 37, Mark Lane, report that red Clover seed remains unchanged, but bad accounts of this year's crop continue to come to hand. There has been a smart rise in Alsike, and very little fine seed is obtainable. Choice Trefoil is scarce and advancing. Foreign Italian, with small offerings, is dearer. More money is also asked for Rape seed. Mustard is firmly held. The new French white Millet for birds finds considerable favour. Sowing orders for winter Tares still arrive. Blue Peas are firm. Canary tends upwards. Linseed dull and lower.

CORN.

At Mark Lane on Monday no quotable advance was established, and only a moderate business was concluded, chiefly at the full rates of Monday se'nnight. Flour was dull, and except for prime qualities the tendency was against holders. Beans and Peas were very firm, and Lentils rather steadier. Oats, of which arrivals were moderate, showed 3*d.* to 6*d.* advance on the prices of the previous Monday. Barley realised slightly better prices for grinding descriptions; malting qualities were quiet and unchanged. On Wednesday trade, whilst firm, was very slow. Flour remained unaltered; Barley, Beans, and Peas tended against buyers; Maize was quiet, and Oats the turn dearer.—Average prices of corn for the week ending Nov. 11:—Wheat, 40*s.* 11*d.*; Barley, 34*s.* 1*d.*; Oats, 20*s.* 7*d.* For the corresponding period last year:—Wheat, 46*s.*; Barley, 34*s.* 9*d.*; Oats, 20*s.* 7*d.*

CATTLE.

At Copenhagen Fields on Monday in the beast market trade was rather slow, but prime qualities continued dear, though not up to late extreme quotations for Scots. For sheep prices were firm, and prime dearer. Calves sold at fully late rates.—Quotations:—Beasts, 4*s.* 4*d.* to 5*s.* 4*d.*, and 5*s.* 6*d.* to 6*s.* 2*d.*; calves, 5*s.* 6*d.* to 6*s.* 4*d.*; sheep, 6*s.* to 6*s.* 8*d.*, and 7*s.* to 7*s.* 8*d.*—Thursday's cattle trade, though quiet, ruled firm. Fully Monday's prices were realised for both beasts and sheep, and calves and pigs were quite as dear.

HAY.

Tuesday's Whitechapel Market report states that the supplies were good and the market firm for best qualities. Straw was rather dull. Quotations:—Prime Clover, 115*s.* to 125*s.*; inferior, 75*s.* to 80*s.*; prime meadow hay, 95*s.* to 100*s.*; inferior, 36*s.* to 60*s.*; and straw, 30*s.* to 45*s.* per load. — Cumberland Market quotations: — Superior meadow hay, 95*s.* to 108*s.*; inferior, 70*s.* to 86*s.*; superior Clover, 115*s.* to 128*s.*; inferior, 70*s.* to 95*s.*; and straw, 38*s.* to 45*s.* per load.

POTATOS.

The Borough and Spitalfields Markets reports state that supplies are fair with a good demand at the following quotations:—Regents, 90*s.* to 100*s.*; Champions, 80*s.* to 90*s.*; Magnum Bonums, 100*s.* to 110*s.* per ton; German reds, 4*s.* 9*d.* per bag.—The arrivals into London last week were as follows:—6888 bags from Hamburg, 411 Boulogne, 6 barrels from New York, 652 bags Harlingen, 24 sacks Bordeaux, 4 bags Terneuzen, 50 sacks Brussels, 60 bags Ghent, 16 bags Antwerp, and 80 sacks from Rouen.

NEW RASPBERRY, "BAUMFORTH'S SEEDLING."

The Best Raspberry in the Kingdom.

DESCRIPTION.—The Fruit is of an immense size and fine quality, in shape large and round, of a dark crimson colour, and the seed pips largely developed and prominent. It is of vigorous growth, with large dark green foliage, and from its strong and prolific constitution frequently throws out a second crop from the season's young wood.

EDMUND PHILIP DIXON,

Having grown a fine stock of this splendid Raspberry, begs to offer them this season at the following prices:—

CANES, 5s. per dozen, 35s. per 100; a few extra strong, 7s. 6d. per dozen.

Many hundred Testimonials have been received this autumn, too numerous to publish. Several have been printed—copies of which may be had post-free on application, with a beautifully Coloured Drawing, and a CATALOGUE of Roses, Fruit, Forest and Ornamental Trees, Shrubs, &c.

THE YORKSHIRE SEED ESTABLISHMENT, HULL.

WALKER'S PERPETUAL BEARER PEA.

NUTTING & SONS

Again have the pleasure to offer this valuable New Pea, which has fully maintained all that was said of its character as being the most prolific and longest-bearing Pea yet introduced.

It has again taken the 1st Prizes at the Royal Oxfordshire Horticultural Show, on August 2 and September 8, 1882, having previously received a First-class Certificate from the same Society, in August, 1881. Also 1st and 2d Prizes at the Thame Show, on September 14, 1882.

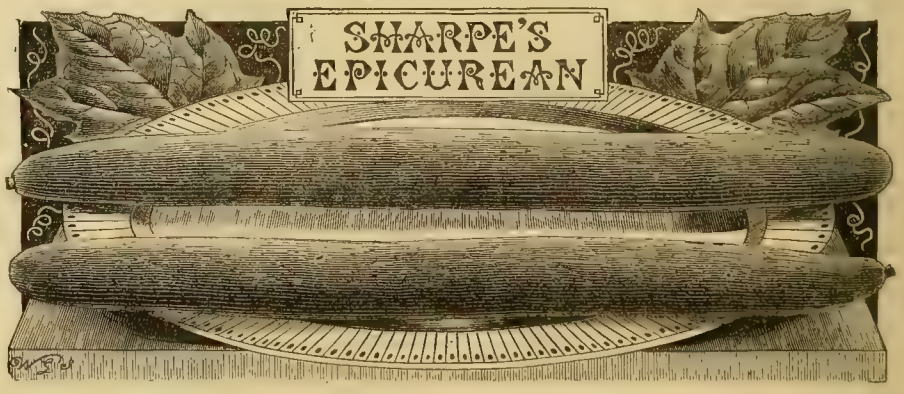
It was awarded a First-class Certificate, last year, by the Royal Horticultural Society.

Price, in Sealed Pints, 3s. 6d.

Trade Price and Testimonials, also LIST of other VEGETABLE and FLOWER SEED NOVELTIES, free on application.

NUTTING & SONS,

SEED WAREHOUSES, 60, BARBICAN, LONDON, E.C.



This, the perfection of Frame Cucumbers, is a cross between Telegraph and Tender and True; in form it has a resemblance to Telegraph, but is of a darker green and much longer—fruit 31 inches in length having been cut from it. In flavour it is superior to Tender and True, but its chief recommendation is its marvellous productiveness, in which it excels everything that has come under our notice, as many as 300 and 400 fruit having been cut from twelve plants, in a 3-light pit, three-quarter span.

For succession it is unequalled, bearing as abundantly at Christmas as Midsummer—and in addition to its handsome form and lovely colour, it is a variety that seldom produces seeds, not one in a hundred containing a trace. This peculiarity has delayed sending out the stock for a year or two, and at one time it was so nearly lost that only by striking cuttings could it be preserved.

Retail price, per Packet, 2s. 6d.

CHARLES SHARPE & CO., SLEAFORD.

Now ready, a Revised Edition of the

COTTAGER'S CALENDAR

OF GARDEN OPERATIONS.

ORIGINALLY COMPILED BY THE LATE SIR JOSEPH PAXTON, M.P.

Price 3d., Post Free 3½d.

W. RICHARDS, 41, WELLINGTON STREET, STRAND, LONDON, W.C.

To the Trade.

HOME-GROWN VEGETABLE and FIELD SEEDS.

H. AND F. SHARPE will be pleased to make special offers of their fine selected stock of SEEDS, raised this season with the utmost care and attention. The quality is very fine, and the prices will be found unusually low

Seed-Growing Establishment, Wisbech.

ANEMONE JAPONICA ALBA and ROSEA.—We offer a splendid stock of these beautiful late summer and autumn-flowering plants. They should be in every garden. Price, 6*d.* each; per dozen, 7*s.* 6*d.*

CARTERS', The Queen's Seedsmen, 237 and 238, High Holborn, London, W.C.

CASH *versus* CREDIT.—100,000 Dwarf ROSES, on Manetti, fine, 30*s.* per 100, £7 per 500, £12 10*s.* per 1000, £22 per 2000. 10 000,000 ASPARAGUS PLANTS, 2-yr. Connover's Colossal, 20*s.* per 1000, 1-yr. 7*s.* per 10 0; 2-yr. Grayson's Giant, 15*s.* per 1000; 1-yr. 5*s.* per 1000 Good planting SEAKALE, 30*s.* per 1000. 5000 White CHRYSANTHEMUM BLOOMS, fine, under glass—sorts, Elaine and G. Rundle—1*s.* 6*d.* and 2*s* per dozen, 11*s.* and 15*s.* per 100 blooms, fine. Only for Nett Cash against invoice.

R. LOCKE, Royal Nurseries and Rose Farms, Redhill, Surrey.

To Planters.

JAMES BIRD offers the undermentioned Forest stuff, price on application:—

SCOTCH FIR, 1½ to 2 feet, and 2 to 3 feet.
SPRUCE FIR, 1½ to 2 feet, and 2 to 3 feet.
PINUS AUSTRIACA, 1½ to 2 feet.
HAZEL, 3 to 4 feet.

The Nurseries, Downham.

SPECIAL OFFER TO THE TRADE.

RED CURRANTS, 10*s.* per 100, 80*s.* per 1000.
WHITE CURRANTS, 12*s.* per 100, 80*s.* per 1000.
BLACK CURRANTS, 10*s.* per 100, 80*s.* per 1000.

All strong transplanted.

JOHN PERKINS AND SON, 52, Market Square, Northampton.

Novelties in Rhododendrons.

ISAAC DAVIES AND SON beg to call attention to their new and beautiful RHODODENDRONS, viz:—

RHODODENDRON DAVIESII (orange-scarlet), which received first-class Certificates at London and Manchester last year Plants can now be supplied at 7*s.* 6*d.* each, and upwards.

RHODODENDRON ROSY BELL (rosy-pink), flowering plants, 3*s.* 6*d.* each; extra large, covered with buds, 10*s.* 6*d.* each

RHODODENDRON ISAAC DAVIES (dark crimson), quite hardy, has an extraordinary conical truss, full and compact. Nice bushes, 15*s.* each.

These and other choice varieties (including our fine sweet-scented Rhododendrons) are fully described in our LIST of Novelties, which will be forwarded to any address on application. Brook Lane Nursery, Ormskirk.

For Sale.

BLACK CURRANT TREES, Naples, first-rate strong trees and well rooted and warranted true to name. Put on rail at Paddock Wood Station for the low sum of £3 10*s.* per 1000. Can have sample on application. Cash with order.

A. UNDERDOWN,
The Acorn Coffee Tavern, Paddock Wood.

SPECIAL OFFER to the TRADE.—2000 extra strong plants of PRINCE ALBERT RHUBARB, for forcing or stock. No reasonable offers refused.

W. SMITH, Fruit Grower and Florist, Crockenhill, St. Mary's Cray, Kent.

J. VANDER SWAELMEN will be glad to send, post-free, a special LIST (No. 22) of very interesting BULBS and ROOTS from KABYLIA, at really liberal prices The Lily Nursery, Ghent, Belgium.

WELLINGTONIAS, 2 feet, £5 per 100; 2½ to 3 feet, 18*s.* per dozen Transplanted last spring SPRUCE FIRS for Christmas Trees, 7 feet, 18*s.* per dozen. Half-standard ROSES, good varieties, 75*s.* per 100.

W. AND J. BROWN, Stamford.

SEAKALE.—A fine stock of good strong forcing SEAKALE. Price on application.

D. S. THOMSON, The Nurseries, Wimbledon.

ORCHIDS.—For Sale, cheap, twenty specimens, CŒLOGYNE CRISTATA, fine well-established plants of AERIDES FIELDINGII, CATTLEYA LABIATA, C. ELDORADO SPLENDENS, C. PERCIVALLIANA, LÆLIA HARPOPHYLLA, &c; also two large plants of IMANTOPHYLLUM MINIATUM. Prices and particulars on application

SHERRATT AND POINTON, Knypersley Nursery, Congleton.

ROSES—ROSES—ROSES.—50,000 to select from, in all the leading sorts, in fine strong plants, including both Standards and Dwarfs; also extra strong Marechal Niel, Climbing Devoniensis, Cheshunt Hybrid, Madame Berard, Reine Marie Henriette, from 12 to 15 feet long, in pots, and other Teas in pots, fine for forcing.

Price and LISTS post-free.

THOMAS HORSMAN, Rose Mount Nursery, Ilkley, Leeds.

DEUTZIA GRACILIS, and strong QUICK for Hedging. Prices and samples on application to WILLIAM FLETCHER, Ottershaw Nurseries, Chertsey.

Transplanted Larch.

W. JACKSON AND CO., Nurseries, Bedale, Yorkshire, beg to offer an extra fine lot of well transplanted FOREST TREES, of all the usual sizes, at very moderate prices on application.

ASPARAGUS PLANTS.—Strong 1-yr. Connover's Colossal, from imported seed, 2*s.* per 100, 17*s.* 6*d.* per 1000.

2-yr. do. do, 2*s.* 6*d.* per 100, 22*s.* per 1000.
3-yr. do. do., 3*s.* per 100, 26*s.* per 1000.
Giant, 2-yr., 2*s.* per 100, 17*s.* 6*d.* per 1000.

Package gratis. Cash with order. Trade price on application.

E. QUINCEY, Fulney, Spalding.

LARCH.—LARCH.—LARCH.

1½ to 2 feet.
2 to 3 feet.
3 to 4 feet.

Very stiff, and twice transplanted. For samples and price, apply to

SAMUEL BALE, Westacott Nursery, Barnstaple.

To the Trade.

CHRISTMAS ROSES.—Splendid quality, well set with buds, per 100, 30*s.*, 40*s.*, and 50*s.*

DEUTZIA GRACILIS, fine forcing plants; SPIRÆA JAPONICA, LILY of the VALLEY crowns, LILIUM LANCIFOLIUM, LILIUM AURATUM, GLADIOLUS BRENCHLEYENSIS, extraordinary fine, and low in price.

SANDER AND CO., St. Albans.

To the Trade.

FERNS—FERNS—FERNS.—The following are all good stuff, in 60-pots:—Lomaria gibba, Pteris serrulata, P. cretica alba lineata, Polystichum plumosum, Doodia media, 20*s.* per 100, £9 per 1000; A. cuneatum, 25*s.* per 100; Lastrea aristata variegata (new), 30*s.* per 100; Cheilanthes elegans (the Lace Fern), 35*s.* per 100. Prices of 48's stuff on application.

W. M. CROWE, Boleyn Nursery, Upton, Essex.

AQUILEGEA GLANDULOSA (true).—Strong flowering plants 6*s.* to 9*s.* per dozen. Seed of above, 2*s.* 6*d.* and 5*s.* per packet

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THOMAS METHVEN AND SONS beg to offer their special strain of EAST LOTHIAN INTERMEDIATE STOCK, Scarlet, Purple, and White, in packets, 1*s.*, 2*s.* 6*d.*, and 5*s.* each colour. Price to the Trade on application. 15, Princes Street, Edinburgh.

FOR SALE, eighty QUEEN PINE-APPLES; will stock new house, fruiting next year.

Address, No. 84, *Gardeners' Chronicle* Office, 41, Wellington Street, W.C.

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VICTORIA PLUMS.—Strong Dwarf-trained, 18*s.* per dozen.

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THE LYON LEEK (Novelty). The finest for Exhibition.

EAST LOTHIAN INTERMEDIATE STOCK. true.

ANTIRRHINUM, extra choice, saved from the finest varieties.

INTERNATIONAL PRIZE GLOBE QUILLED ASTER, mixed

GLASGOW PRIZE COCKSCOMB, the finest strain existing.

VICTORIA BRUSSELS SPROUTS, the hardiest and best variety.

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Prices on application.

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ROSES.—Strong, healthy, well-rooted, best named show varieties, 7*s.* 6 . per doz., 27*s.* for 50, £2 10*s.* per 100. Standards, 18*s.* per doz

SWEET VIOLETS, full of bud. New York, the best double, 2*s.* 6*d.* per doz.; De Parme, Double Red Russian, Belle de Chatenay, Odoratissima, 3*s.* 6*d* per doz.

LIST of Roses, and twenty-six varieties of Violets, with directions for cultivation, 1½*d.* Address

Mr. R. W. BEACHEY, Fluder, Kingskerswell, Devonshire.

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110 SPECIMENS OF CHOICE NEW ZEALAND FERNS,

Artistically Mounted and Correctly Named.

Messrs. PARTRIDGE & COOPER

Have received a Consignment of these unique Collections from New Zealand, and have them on View, for Sale, at

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THEY SHOULD BE SEEN BY ALL LOVERS OF FERNS.

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150 Bulbs for 5s.

J. L. WATSON'S "AMATEUR'S" COLLECTION consists of 6 Mixed HYACINTHS, 6 Double TULIPS, 6 Single TULIPS, 25 Yellow CROCUSES, 25 Blue, 25 White, and 25 Striped; 5 NARCISSUS POETICUS, 5 NARCISSUS INCOMPARABILE, 6 RANUNCULUS, 6 ANEMONES, and 10 SNOWDROPS, for Post-office Order payable to

J. L. WATSON, Manor Road Nursery, Gravesend.

Reduced Price LIST of Bulbs free on application.

FOREST TREE SEEDLINGS.

One of the largest and finest stocks to choose from, including over three millions of two Seedling LARCH, with sound leaders—a splendid lot. Samples and prices post-free on application to

PETER S. ROBERTSON & CO.,
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GENERAL NURSERY STOCK,

IN SPLENDID CONDITION FOR REMOVAL.

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Evergreens, Ornamental Trees and Shrubs,
HARDY CLIMBERS, ROSES, &c.,

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THE NURSERIES, HUNTINGDON.
A BRANCH AT ST. NEOTS.

CRANSTON'S NURSERIES

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NOW READY,

Descriptive and Priced Catalogue of ROSES

For Autumn 1882 and Spring 1883.

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Ferns a Speciality.

The largest stock in the greatest number of varieties of

EXOTIC AND BRITISH FERNS

In the Trade, suitable for STOVE and GREENHOUSE cultivation, for Outdoor Ferneries, and other purposes. Special LIST free on application. Illustrated CATALOGUE 6*d.*

W. AND J. BIRKENHEAD, Fern Nursery, Sale, near Manchester.

ESTABLISHED 1826.

SEEDLING and TRANSPLANTED FOREST TREES.

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THE NURSERIES, FORRES, N.B.,

Are prepared to supply large quantities of the above at moderate rates.

The Stock, which is large and particularly fine, comprises many millions of the TRUE NATIVE HIGHLAND SCOTCH PINE, in all sizes, suitable for safe removal to Forest or Home Nursery.

INSPECTION INVITED. SAMPLES AND PRICE LISTS ON APPLICATION.

Rare and Cheap Lilies.

WM. GORDON, of 10, Cullum Street, London, E.C., is still the largest Importer of JAPANESE LILIES, LILIUM AURATUM, and other LILIES, at reduced prices. CATALOGUE free on application.

5000 **Cyclamen persicum.** 5000

ALL from the finest procurable strains, good plants in 60-pots, 3s. 6d. and 5s. per dozen, large, 10s. per dozen; for early flowering.
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STANDARD ROSES. — W. FROMOW AND SONS have a splendid stock of Standard, Dwarf, and Climbing ROSES, also FRUIT TREES, ORNAMENTAL TREES, SHRUBS, and other NURSERY STOCK of every description.
LISTS on application.
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SURPLUS NURSERY STOCK. — The Subscriber can supply the undernoted articles in quantity. Strong, healthy, well rooted stock. Prices on application.
ASH, Common, about 3 to 4 feet, clean grown.
BEECH, 1½ to 2½ feet, and 2½ to 3½ feet.
ELMS, Wych, 2 to 3½ feet.
MAPLE, Norway, 2 to 3 feet.
POPLAR, Black Italian, 2 to 3 feet, and 5 to 6 feet.
WILLOW, Huntingdon, 2 to 3 feet, and 4 to 6 feet.
HORNBEAM, 2 to 3 feet.
HAZEL, 3 to 4 feet.
LARCH FIR, 1½ to 2½ feet, and 2 to 2½ feet.
SCOTCH FIR, 2-yr. Seedling, Native, 12 to 18 inches, and 18 to 24 inches, quartered.
SPRUCE FIR, 12 to 18 inches, and 15 to 24 inches.
PINE, Austrian, 12 to 15 inches, and 15 to 24 inches.
PINUS LARICIO, 9 to 15 inches.
QUICK THORNS, strong.
JOHN DYKES, The Nurseries, Kilmarnock, N.B.

SPECIAL OFFER.
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ARBOR-VITÆ, Siberian, 3 to 4 ft., 65s. per 100. ASH and ELMS, Weeping, 20s. per dozen. AUCUBA JAPONICA, 12 to 15 in., 20s. per 100. CHESTNUT, Horse, 8 to 10 ft., 8s. per dozen. ELMS, broad-leaved, 10 to 12 ft., 9s. per dozen, 60s. per 100s., 12 to 14 ft., 12s. per doz. LABURNUMS, 8 to 10 ft., 50s. per 100. PRIVET OVALIFOLIUM, 3 to 4 ft., 10s. per 100. ASPARAGUS, 2-yr. Connover's Colossal, 18s. per 1000. ARTICHOKE, Globe, 2-yr. and 3-yr., 16s. per 100. WELLINGTONIA GIGANTEA, 3 to 4 ft., 25s. per dozen. ROSES, Standards of leading varieties, 100s per 100.
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TWELVE WELL-ROOTED PLANTS, in six best varieties, by post, 4s.; larger, in 54's, 6s. per dozen, 42s. per 100; in 48's, 15s. and 18s. per dozen, £5 and £6 10s. per 100 See CATALOGUE.
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STEPHANOTIS FLORIBUNDA. — Good plants in 48's, 2s. each, 18s. per dozen, £7 per 100. Prices of larger on application.
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GARDEN REQUISITES.
COCOA-NUT FIBRE REFUSE.
4d. per bushel: 100 for 25s.; truck (loose, about 2 tons), 40s.; 4-bushel bags, 4d each.
LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack; 5 sacks, 25s; sacks, 4d. each.
BLACK FIBROUS PEAT, 5s. per sack, 5 sacks 22s.; sacks, 4d. each.
COARSE SILVER SAND, 1s. 9d. per bushel; 15s. per half ton, 26s. per ton; in 2 bushel bags, 4d. each.
YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1s. per bushel.
SPHAGNUM MOSS, 8s. 6d. per sack.
Manures, Garden Sticks, Virgin Cork, Tobacco Cloth, Russia Mats, &c. Write for Free PRICE LIST.
H. G. SMYTH,
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PEAT.—Excellent for Rhododendrons and common purposes. Delivered at Nine Elms Station, at 21s. per ton: sample bag (1 cwt.) on Rail Ringwood, 2s
GATERELL AND SON, Peat Merchants, Bisterne, Ringwood.

12-oz. Sample Packets, free by post, 12 stamps.

FIBROUS PEAT for ORCHIDS, &c.—BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6s. per truck. BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, 15s. per ton per truck. Sample bag, 5s.; 5 bags, 22s. 6d.; 10 bags, 45s. Bags included. Fresh SPHAGNUM, 10s. 6d. per bag.
SILVER SAND, Coarse or Fine, 52s. per truck of 4 tons. Red Sandstone ROCKWORK, £5 per truck of 4 tons. GRAVEL, good colour, 25s. per truck of 6 tons.
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COCOA-NUT FIBRE REFUSE, best and pure only, 4 bushel bag, 1s. 4d.; 15 bags, 14s.; 30 bags, 25s.; sent to all parts. Truckloads 33s., free to rail.
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GARDEN REQUISITES as supplied to the Royal Gardens. Cocoa-Nut Fibre Refuse, 1s. 6d. per sack; 10 for 13s.; 15 for 18s.; 30 for 30s.; all sacks included. Trucks (loose), 40s. Selected Brown Fibrous Peat, 5s. per sack; 5 for 22s. 6d. Black Fibrous Peat, 4s. 6d. per sack; 5 for 20s.; sacks 4d. each. Coarse Silver-Sand, 1s. 6d. per bushel. Yellow Fibrous Loam, Leaf-Mould, and Peat-Mould, each at 1s. per bushel. Manures of all kinds. Fresh Sphagnum. Garden Sticks and Labels. Russia Mats, &c. Tobacco Cloth and Paper, best in the market; Cloth, 8d. per lb.; Specialité Paper, imported solely by us, 10d. per lb., 28 lbs. 21s. Write for Price LIST.—W. HERBERT AND CO., Horticultural Stores, 19, New Broad Street, E.C. (turning by Gow's, Fishmonger), one minute from Broad Street Railway Station.

COCOA-NUT FIBRE REFUSE, by Chubb's Patent Process, as supplied to all the Royal Gardens and principal Nurseries of Europe; useful at all seasons. Invaluable for Potting, Plunging, Forcing, Ferneries, Strawberries, Bedding-out Plants, &c.; Destroys all Slugs and Insects.
JULY 1, 1882.—In consequence of the great scarcity of husks and enormous Continental demand for our "Refuse," we are compelled from this date to advance prices as follows, and only orders accompanied by remittance will receive attention (in rotation). We also find it necessary to caution purchasers to beware of spurious imitations and buy the genuine "Refuse" direct. Sacks, 1s. 6d. each; 10 Sacks, 13s.; 15 Sacks, 18s.; 20 Sacks, 23s.; 30 Sacks, 30s. (all Sacks included); Truck-load, free on rail, £2. Limited quantities of P M. *Special Quality*, granulated, in sacks only, 2s. 6d. each (2 prize medals), valuable for potting and use in conservatory. Terms strictly cash with order.—To obtain the genuine article, buy direct from the Manufacturers, CHUBB, ROUND AND CO., Fibre Works, West Ferry Road, Millwall, London, E.

COCOA-NUT FIBRE REFUSE, newly made, as supplied to the Royal Horticultural Society and principal Nurserymen in England, in sacks at 1s. 3d. each, or 15 sacks, 15s.; 30 sacks, £1 5s., sacks included. Truck load, loose, 33s.; fifteen bags or more and truck-load free on to rail. Post-office order or cheque with all orders. Established 1872.—J. STEVENS AND CO., "Greyhound" Yard, and 132, High Street, Battersea, S.W.

SUSSEX DOWN TURF, of finest quality for price, on rail at Portslade Station (4 miles from Brighton) in large or small quantities. Special quotation to the Trade. Apply,
W. MILES, West Brighton Nurseries, West Brighton, Sussex.

LOAM, splendid Yellow Fibrous, 15s. 6d. per ton. Useful Brown PEAT, 22s. per ton, free to Bricklayers' Arms, S. E. R. Fine ORCHID PEAT, as supplied to the principal Orchid Growers. Prices on application.
A. FOULON, 32, St. Mary Axe, E.C.

Thomson's Vine and Plant Manure.

Manufactured and Sold by
THE LIVERPOOL HORTICULTURAL COMPANY
(JOHN COWAN), LIMITED.

This is the Manure used to produce the splendid Grapes grown at the Tweed Vineyard, Clovenfords.

Full particulars on application. The Trade supplied.

All Letters to be addressed to THE MANAGER, The Vineyard and Nursery, Garston, near Liverpool.

ROLL TOBACCO PAPER, CLOTH and CORD, of excellent quality, supplied on the very best of terms by
RICHARDSON AND CO., Wholesale Tobacconists, Leith.
An AGENT WANTED for London.

GISHURST COMPOUND.—Used by many of the leading Gardeners, since 1859, against Red-spider, Mildew, Thrips, Greenfly, and other Blight, in solutions of from 1 to 2 oz. to the gallon of soft water, and of from 4 to 16 oz. as a winter dressing for Vines and Fruit Trees. Has outlived many preparations intended to supersede it. In Boxes, 1s., 3s., & 10s. 6d.

AMERICAN BLIGHT on APPLE TREES CURED by rubbing a wet hard Painter's brush on Gishurst Compound, and working the lather into the infected part.

GISHURSTINE keeps feet dry, softens hard boots, preserves leather, takes a polish. In boxes, 6d. and 1s. each.—Wholesale by PRICE'S PATENT CANDLE COMPANY (Limited). Retail by Seedsmen and Oilmen. Complaints are made of difficulty in getting Gishurstine. Some leading Nurserymen have put it on their lists, others are requested to do so.

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Horticultural and all kinds of Glass having so much advanced, we are compelled to withdraw our prices, but on receipt of application the prices will be forwarded, but will be only from day to day until the market is in a more settled state. We have some bargains in 21-ounce, from 9×7 to 14×10 and upwards; sizes sent if required. Propagating Glasses, Hand Frames, Cucumber and Horticultural Glass, genuine White Lead, best Linseed Oil Putty, Paints, Oils, and Colours.

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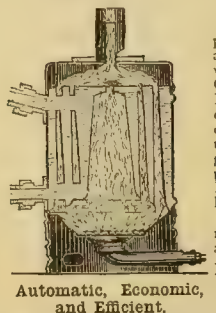
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Will maintain a uniform temperature of from 12 to 15 hours, and often from 15 to 20 hours, with one small charge of common Gas Coke of the cheapest kind. For economy and efficiency in combination with cleanliness and comfort these Boilers are, beyond the possibility of a doubt, the greatest boon ever offered for the purpose of Heating Conservatories, Halls, and other Buildings, where little attention is required
Every particular, with most reliable testimonials, given on application to
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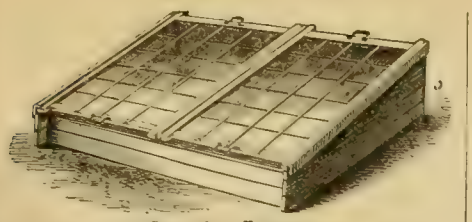
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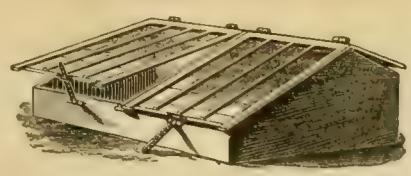
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2-light frame, 8 feet by 6 feet	Packing Cases free.	3	10	0
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The glass is nailed and puttied in. Lights and framing for brick pits at proportionately low prices.

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Suitable for Villas, Small Country Houses.
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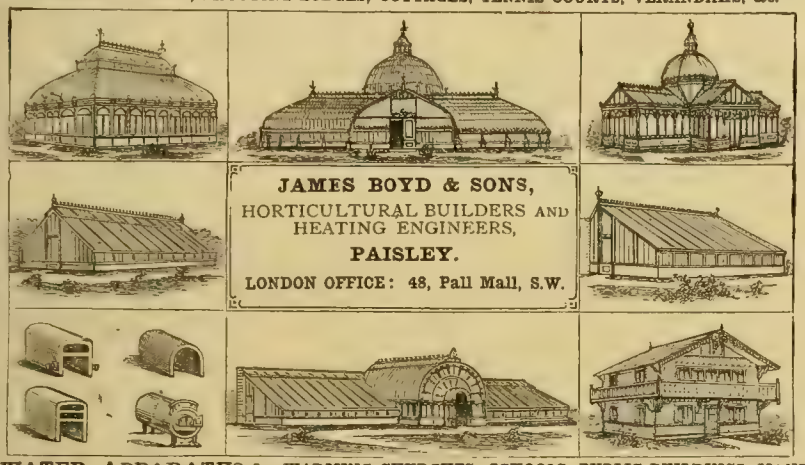
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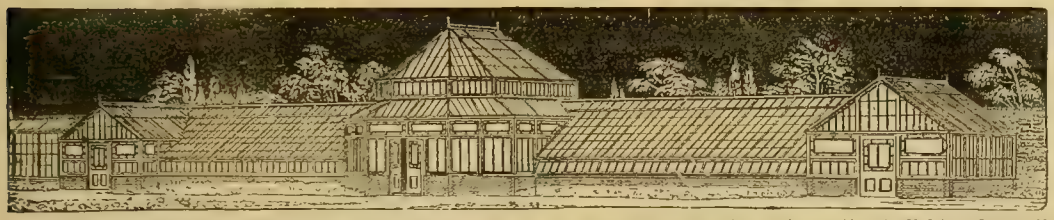
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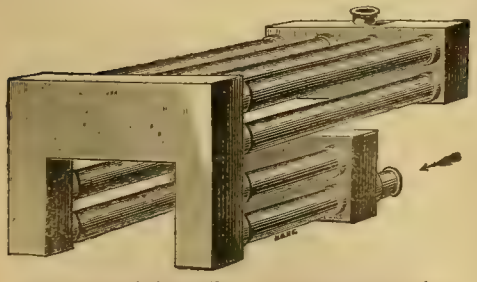
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9	,,	..	..	0	5	6	20 ,,	..	..	0	11	0
10	,,	..	..	0	6	0	21 ,,	..	..	0	11	6
11	,,	..	..	0	6	6	22 ,,	..	..	0	12	0
12	,,	..	..	0	7	0	23 ,,	..	..	0	12	6
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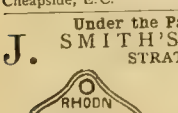


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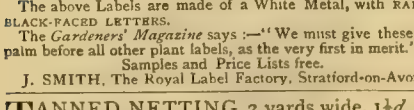
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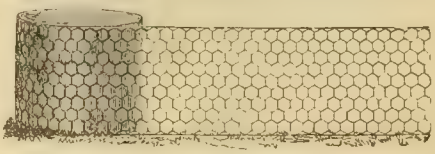
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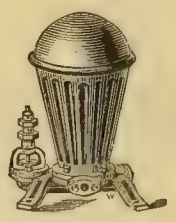
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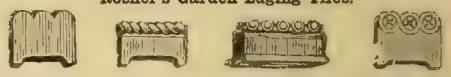
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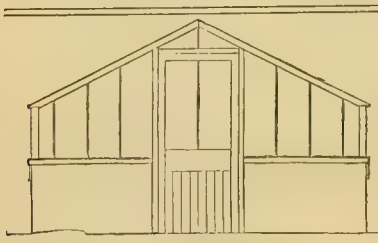
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All thoroughly prepared for lifting. Special prices and samples on application to

HOGG AND WOOD, Nurserymen, Coldstream, N.B.

SPECIAL OFFER.

GLOBE ARTICHOKES, strong, 3s. per dozen.

CURRANTS, White, strong, 8s. per 100.

SPRUCE FIR, 2-yr. 2-yr., 7s. per 1000.

CHESTNUTS, Scarlet, fine Standards, 6 feet stems, 8s. per dozen, 55s. per 100.

THOMAS PERKINS AND SONS, 34, Drapery, Northampton.

Pansy and Stock Seeds.

DOWNIE AND LAIRD can offer Show and Fancy PANSY SEEDS. Also East Lothian STOCK SEEDS. Prices on application.

DOWNIE AND LAIRD, Seedsmen and Nurserymen, 17, Frederick Street, Edinburgh.

To the Trade Only.

TEA ROSES, on own roots, extra strong, out of 4½-inch pots, £2 per 100, or cash.

MAIRIS AND CO., Weston-in-Gordano, Bristol.

WANTED, 500 CRESTED MOSS ROSE, 100 WHITE MOSS ROSE; QUERCUS CERRIS, for potting for stocks; RHODODENDRON stocks. Price, &c., to

HUGH LOW AND CO., Clapton Nursery, E.

Floral Commission Agency.

WANTED, Consignments of Maréchal Niel ROSES, English Neapolitan VIOLETS, EUCHARIS, STEPHANOTIS, and CHOICE FRUIT.

W. CALE, Floral Commission Agent, 4, Tavistock Row, Covent Garden, W.C.

WANTED, 1000 GENERAL JACQUEMINOT, and 500 LA FRANCE, good strong dwarf plants. Sample and price to

CHAS. LEE AND SON, Nurseries, Ealing.

WANTED, MANETTI STOCKS and Seedling BRIERS for planting, also Irish Ivy, 1-yr. Samples and price to

H. B. MAY, Dyson's Lane Nursery, Edmonton.

WANTED, 9 to 12 feet, PINUS AUSTRIACA, STROBUS, CEMBRA, PICEA NORDMANNIANA, NOBILIS, and LIRIODENDRON TULIPIFERA, 12 to 14 feet—good specimens, lately removed.

Quote price per dozen, on rail.

GEO. P. DARBY, Hertfordshire Seed and Plant Establishment, Watford.

WANTED, SPRUCE FIRS for Christmas Trees, from 3 to 10 feet, must be well furnished. State particulars to

THOMAS HORSMAN, Nurseries, Ilkley, Leeds.

WANTED, transplanted SCOTCH ELM, 4 feet, stout: also HAZEL, 4 feet. State price to

JOHN LAMONT AND SON, Nurserymen and Seedsmen, 2, Hope Street, Edinburgh.

WANTED TO PURCHASE, Standard and Dwarf-trained APPLES, PEARS, PLUMS, and CHERRIES. Must be clean, well-grown, and rooted, &c. —Apply to

W. W. JOHNSON AND SON, Nurserymen, Boston.

WANTED, Standard GOOSEBERRY and CURRANT BUSHES on 1½ or 2 feet stems. State sorts and lowest price per 100 for cash.

ISAAC BRUNNING AND CO., Great Yarmouth Nurseries.

WANTED, PLUM STOCKS, Mussel or Brussels, fit for working. Sample and prices to

PETER S. ROBERTSON AND CO., Nurserymen, Edinburgh.

WANTED, Albert and Victoria RHUBARB Roots for Planting and Forcing. State quantity and lowest cash price to

P. M., *Gardeners' Chronicle* Office, 41, Wellington Street, W.C.

Notice to Senders.

WANTED, TOMATOS, CUCUMBERS, GRAPES, QUINCES, APPLES, and PEARS (good sorts). Also STEPHANOTIS, ROSES, ODONTOGLOSSUM, VANDA CŒRULEA, and other good varieties of ORCHIDS, GARDENIAS, TUBEROSES, EUCHARIS, CHRYSANTHEMUMS (in quantity), &c.

WISE AND RIDES, Fruit and Flower Salesmen, Covent Garden, W.C.

R. H. VERTEGANS' New Double CINERARIAS, the finest in cultivation. The set of 12 distinct varieties will be sent, packing and carriage free, on receipt of Post-office Order for 31s. 6d.

VORTIGERN, the finest double crimson, 3 plants showing flower free for 10s. 6d., 1 for 5s.

Chad Valley Nurseries, Edgbaston, Birmingham.

CHRYSANTHEMUMS.—Chrysanthemums. —Cuttings now ready of several hundred varieties, our selection, 1s. 6d. per dozen, 8s. per 100. The collection comprises all the new and old sorts worth growing, English or Continental.

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

To the Trade.

HYBRID GLADIOLI

Lowest prices extant. LIST on application to

HOOPER AND CO., Covent Garden, London, W.C.

R. AND A. MORRISON, The Nurseries, Elgin, N.B., offer :—

ABIES DOUGLASII, 1-yr., very fine, from Scotch seed.

SCOTCH FIR SEED, guaranteed true native, our own collecting, and taken out of cone on our own kilns.

Samples and prices on application.

To the Trade.

LEICESTER SEEDS are the best that can be obtained. Testimonials arrive here daily. Write for LISTS to

HARRISON AND SONS, Seed Growers, Leicester.

LARGE STOCK of HELLEBORUS NIGER (Christmas Rose). For prices apply to

JULES DE COCK, Nurseryman, Ghent, Belgium.

CHESTNUT (Spanish), Hazel, Ash, Larch, Scotch, Birch, Alder, Willow, and Thorn Quick.—Stout, well-rooted, transplanted. A large quantity to be sold.

GEO. CHORLEY, Coaster's Nursery, Midhurst.

SAXIFRAGA DIVERSIFOLIA.—New Seed of this most distinct Himalayan yellow-flowered species is now offered in 2s. 6d. and 3s. 6d. packets

RODGER, McCLELLAND AND CO., Nurserymen, &c., Newry.

Autumn List.

JOHN LAING AND CO.'S New CATALOGUE of Dutch Bulbs, Roses, Fruit Trees, &c.; also Revised LIST of Tuberous Begonias, has been issued to all Customers. Copies gratis on application. Goods all first quality at moderate rates. Address

JOHN LAING AND CO., Nurseries, Forest Hill, S E.

LILIUM AURATUM.—Good, plump, sound bulbs, 4s., 6s., 9s., 12s., 18s. and 24s. per dozen; extra strong, 30s. and 42s. per dozen. All other good LILIES at equally low prices.

Mr. WILLIAM BULL'S Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

STRONG QUICK, for Hedging, from 25s. to 50s. per 1000.

RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

PETER VAN VELSEN AND SONS, Overveen, near Haarlem, beg to offer :—

GLADIOLUS BRENCHLEYENSIS, 2s. 2d. per 100, 20s. per 1000.

HYACINTHUS CANDICANS, 10s. per 100, 90s. per 1000.

HELLEBORUS NIGER, 25s. per 100, 200s. per 1000.

A Lot of 5000

SPIRÆA JAPONICA, strong clumps, are still disposable at £5 10s. per 1000. Cash with order from unknown persons. Apply to

JULES DE COCK, Nurseryman, Ghent, Belgium.

To Rose Growers.

LA GRIFFERAIE ROSE CUTTINGS for Stocks, 1s. per 100, 7s. 6d. per 1000, cash.

DWARF H.P. ROSES, all the leading varieties, 8s. per doz., 50s. and 60s. per 100.

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

CABBAGE, CAULIFLOWER, LETTUCE PLANTS, &c., Autumn sown, best varieties, in any quantities. LIST, and printed copy of many recent (1882) Testimonials, on application. Prices moderate, no charge for packages.—EDWARD LEIGH, Dunsfold, near Godalming.

Vines.—Vines.—Vines.

B. S. WILLIAMS has much pleasure in intimating that his stock of VINES is unusually fine this year, the Canes being very strong and well ripened. For List of Prices see B. S. W.'s BULB CATALOGUE for 1882.

Victoria and Paradise Nurseries, Upper Holloway, London, N.

6000 Grape Vines.

THE LIVERPOOL HORTICULTURAL COMPANY (JOHN COWAN), Limited, The Vineyard and Nurseries, Garston, near Liverpool, have a splendid stock of VINES, grown from eyes this year, suitable for present planting.

CATALOGUE free. The Trade supplied.

Also a large stock of TEA ROSES.

Order from your Seedsman

LAXTON'S SANDY PRIZE ONION, AND OTHER NOVELTIES.

Particulars in previous Advertisement, or post-free from THOMAS LAXTON, Bedford.

SALES BY AUCTION.

Dutch Bulbs.—Sales Nov. 27 and Dec. 4.

MESSRS. PROTHEROE AND MORRIS will SELL, at the Mart, Tokenhouse Yard, City, E.C., on MONDAYS, November 27 and December 4, at half-past 12 o'Clock precisely, 900 lots of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, SNOWDROPS, and other ROOTS from Holland, in lots to suit all buyers.
Catalogues at the Mart, and 8, New Broad Street, E.C.

Feltham, Middlesex, near the Station.
To Gentlemen and Others about to Plant.
IMPORTANT SALE of SPECIMEN SHRUBS, CONIFERS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, Lee's Nursery, Feltham, by order of Messrs. Lee & Son, on TUESDAY NEXT, November 28, at 12 o'Clock precisely, a large quantity of magnificently grown Border SHRUBS and specimen CONIFERÆ, consisting of large ornamental EVERGREENS of various kinds and sizes, PICEA LASIOCARPA, P. MAGNIFICA, P. PINSAPO, P. NOBILIS, P. AMABILIS, ABIES POLITA, Gold YEWS, Gold and Silver HOLLIES, &c; 1500 choice named RHODODENDRONS, 1 to 3 feet; hardy Ghent AZALEAS, full of buds, and other stock.
May be viewed. Catalogues had on the Premises, and of the Auctioneers, 8, New Broad Street, E.C., and Leytonstone.

Consignment from Ghent for Absolute Sale.
IMPORTANT SALE of about 300 choice double CAMELLIAS and AZALEA INDICA, compact plants, 1½ to 3 feet, beautifully set with bloom buds; 400 handsome Standard and Dwarf ROSES, selected FRUIT TREES, hardy CONIFERÆ, SHRUBS, AMERICAN PLANTS, with some ERICAS, PRIMULAS, CYCLAMENS, DUTCH BULBS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION the above, at the City Auction Rooms, 38 and 39, Gracechurch Street, E.C., on TUESDAY, November 28, at 12 o'Cclock precisely.
On view the morning of Sale. Catalogues had at the Rooms, and of the Auctioneers, 8, New Broad Street, E.C.

Richmond, S W.—Without Reserve.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Richmond Gas Field and Common Nurseries, Richmond, by order of Messrs. G. & W. Steel, on WEDNESDAY, November 29, at 12 o'Clock, a large quantity of well-grown NURSERY STOCK, including 10,000 bushy Euonymus of sorts, 4000 Green Hollies, 5 to 8 feet, a grand lot; 300 standard Golden Hollies, handsome plants, seldom to be met with; 2000 well feathered Lombardy Poplars, 10 to 12 feet; fine ornamental Trees, Standard and Pyramid Fruit Trees, large specimen Coniferæ, and other stock.
May be viewed. Catalogues had on the Premises, and of the Auctioneers and Valuers, 8, New Broad Street, E.C., and Leytonstone, E.

Friday Next.
An unusually large consignment of 10,000 very fine BULBS of LILIUM AURATUM from Japan, 1000 LILIUM LANCIFOLIUM RUBRUM, a splendid assortment of hardy English-grown LILIES and BULBS, and 150 lots of HYACINTHS, TULIPS, CROCUS, and other ROOTS from Holland; fine BERLIN CROWNS of LILY of the VALLEY.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at the Mart, Tokenhouse Yard, City, E.C., on FRIDAY NEXT, December 1, at 12 o'Clock precisely.
Catalogues at The Mart, and 8, New Broad Street, E.C.

Sunbury, Middlesex.
By order of the Executors of the late Mr. R. A. Osborn.
HIGHLY IMPORTANT UNRESERVED SALE of the third and final portion of the unusually well grown NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, Osborn's Nursery, Sunbury, within ten minutes' walk of the Station, L. & S.-W. Railway, on TUESDAY, December 5, and following days, at 12 o'Clock punctually each day, the third and final portion of the exceptionally well grown NURSERY STOCK, the whole of which is in the best possible condition for removal, including a large portion of handsome specimen Coniferæ, also several thousands of Ornamental Coniferæ and Evergreen Shrubs, including 5000 Gold and Silver Hollies, very fine plants in various sizes; 2000 Green Hollies, 15,000 Ornamental Trees, including 1000 Purple Beech, Limes, Planes, Scarlet and other Thorns, 10,000 Fruit Trees, consisting of Maiden and Trained Apples, Cherries, Nectarines, Plums, &c.; 5000 Standard and Dwarf Roses, beautifully grown, including all the finest varieties, Manetti Stocks, thousands of small Coniferæ for planting-out, also the remaining stock of Vines, Figs, and Tea Roses, in pots. FLOWER POTS, PIT LIGHTS, FRAMES, and Patent TREE LIFTER, Four-wheel spring VAN, heavy spring CART, light spring CART, TRUCK, CHAFF-CUTTING MACHINE, hand BARROWS, useful CART HORSE, and numerous other effects.
May be viewed prior to the Sale. Catalogues had on the Premises, of Messrs. Walker, Belward & Whitfield, Solicitors, 5, Southampton Street, Bloomsbury, W.C.; and of the Auctioneers and Valuers, 8, New Broad Street, E.C.; and Leytonstone.

Hyacinths, Tulips, Crocuses, Narcissus, Iris, Scillas, Snowdrops, and other Flower Roots from Holland.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY during November, at half-past 12 o'Clock precisely each day, CONSIGNMENTS of DUTCH BULBS, arriving weekly from well-known farms in Holland, in large and small lots, to suit all buyers.
On view morning of Sale, and Catalogues had.

Wednesday Next.
PLANTS and BULBS

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, November 29, at half past 12 o'Clock precisely, first-class Standard, Half-Standard, and Dwarf ROSES, including all the leading varieties from well-known English and French Nurseries; FRUIT TREES, variegated HOLLIES, RHODODENDRONS, hardy CONIFERS, Ornamental Flowering TREES and SHRUBS, &c.; also a consignment of choice named Double and Single HYACINTHS, TULIPS, CROCUSES, NARCISSUS GLADIOLI, LILIUMS, and other BULBS, from Holland.
On view morning of Sale, and Catalogues had.

Thursday Next.
IMPORTED ORCHIDS, and 5000 LILIUM AURATUM from Japan.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, November 30, at half-past 12 o'Clock precisely, a fine importation of HUNTLEYA VIOLACEA, CATTLEYA SUPERBA, EPIDENDRUM BICORNUTUM, LYCASTE SKINNERI, ODONTOGLOSSUM CRISPUM (Alexandræ), ZYGOPETALUM ROSTRATUM (very rare), and CATTLEYA MOSSIÆ (established, &c.), by order of Messrs. Shuttleworth, Carder & Co.; also an importation of 5000 LILIUM AURATUM, just received from Japan in fine condition, BULBS from Holland, ORCHID BASKETS, &c.
On view morning of Sale, and Catalogues had.

Thursday Next.
ODONTOGLOSSUM ALEXANDRÆ (grand variety).

MR. J. C. STEVENS will include in his Sale on THURSDAY NEXT, November 30, a golden-yellow ODONTOGLOSSUM ALEXANDRÆ, 1 established plant in flower (8 bulbs). This glorious variety is figured in *Williams' Album*, May, 1882, but is hardly so deep a yellow as the specimen offered, and described in the *Garden*, November 4, p. 393, as a beautiful and rare variety, so rare that "those we know of could be counted on one hand."
Auction Rooms and Offices, 38, King Street, Covent Garden, W.C.

West-side, Clapham Common, S.W., near Clapham Junction.
The valuable MATERIALS and FITTINGS, &c., of the palatial Mansion, Outbuildings, and Grounds, of 19 acres, to clear the site for Building Purposes, comprising about 45 tons of Lead, quantity of Copper, several tons of Iron Gutters, Railings, Hot-water Pipes, &c., over 1,000,000 Bricks, 70 squares of Westmoreland and other Slates, stout Timber of several Roofs, 160 squares of Board and Timber Floors, 85 Doors and Frames, 75 Sashes and Frames, 4 costly stained-glass Windows, 20 Statuary Marble Chimney Pieces and Stoves, the ornamental Iron and Copper Verandah, 6 stone Gate Piers and massive Gates, iron Conservatory with semicircular glass roof of noble proportions, and other extensive erections of Vineries and Greenhouses, about 1000 yards of extra stout Iron Hurdles, 1000 ft. of Oak and other Fencing, 90 squares of Paving, 1500 ft. of Portland Stone Coping. The whole of the growing timber, comprising 230 Trees, 7000 Evergreens, and other Shrubs and Fruit Trees, 14 acres of Lawn and Field Turf, and a large quantity of other materials.

MR. DOUGLAS YOUNG will SELL by AUCTION, on the Premises, as above, on TUESDAY, November 28, and following days, commencing at 12 o'Clock each day precisely.
The Premises may be viewed three days before the sale, and Catalogues obtained of W. N. DUNN, Esq., Architect, 1 and 2, Bucklersbury, E.C.; and of the Auctioneer, 213A, Clapham Road, S.W.

To Gardeners and Others.

TO BE SOLD, the Lease, Stock, and Good-will of a NURSERY about 15 miles from London on the main road from Oxford to London. There is a good Dwelling House, with Stables and Outbuildings, 4 Greenhouses and about 4½ acres of good land, most of which is well stocked.
For further particulars address, W. J. WILSHIRE, The Nursery, Denham Road, near Uxbridge.

Park Estate, Barnet, Herts:
The Property of the British Land Company (Limited).
TO NURSERYMEN, SEEDSMEN, FLORISTS, MARKET GARDENERS, and OTHERS.

FOR SALE, by PRIVATE TREATY, Three Enclosures of valuable FREEHOLD LAND, Tithe Free and Land Tax redeemed, situate within a few minutes' walk of Barnet and Oakleigh Park Stations on the main line of the Great Northern Railway, from whence there are frequent trains to Broad Street Station on the North London Railway, and to Moorgate Street, Ludgate Hill, King's Cross, and Victoria, on the London, Chatham, Great Northern, and Metropolitan Railways. Lot A. contains 3a. 3r. 31p.; Lot B. contains 3a. 3r. 10p.; Lot C. contains 3a. 1r. 8p. The property being within easy access of the London Markets, it is well worth the attention of persons desirous of acquiring land for Nursery or Market Garden purposes. There is an excellent stream of water running through the land. The purchase-money may be paid by a deposit of 10 per cent., and the balance by half-yearly instalments—5 per cent. interest being charged on the balance unpaid: but the whole or any part may be paid off at any time without notice. Free Conveyance will be given on the Vendors' Title being accepted.
Plans, Price, and further Particulars, may be had on application to the Auctioneer, at the Offices of the British Land Company (Limited), 25, Moorgate Street, E.C.

To Gardeners and Others.

THE METROPOLITAN BOARD of WORKS are prepared to RECEIVE TENDERS for the GROUND WORK and PLANTING of certain waste Lands in Dalston Lane and Lauriston Road, all in the parish of Hackney.
Persons wishing to Tender may, on applying to the ARCHITECT, at the Office of the Board, Spring Gardens, S.W., between the hours of 9 A.M. and 4 P.M., or on Saturdays between the hours of 9 A.M. and 2 P.M., inspect the Drawings and Specification.
The Tenders are to be addressed to "The Clerk of the Metropolitan Board of Works, Spring Gardens, S.W.," and be marked on the outside "Tender for Planting, &c., Waste Lands, Dalston Lane and Lauriston Road, Hackney."
The Tenders must be delivered at the offices of the Board not later than 4 P.M. on Tuesday, December 6, 1882, after which time no Tender will be received.
The Board do not bind themselves to accept the lowest or any Tender.
J. E. WAKEFIELD, Clerk of the Board.
Spring Gardens, S.W., November 25, 1882.

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 8, New Broad Street, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

CHRYSANTHEMUMS, best and newest only. Cuttings, buyer's selection, 1s. 9d. per dozen, 10s. per 100. For the grand new varieties and Marguerites, see CATALOGUES, 1 stamp.
WM. ETHERINGTON, Manor House, Swanscombe, Kent.

DOUBLE WHITE BOUVARDIA, "ALFRED NEUNER."—First-class Certificate Royal Horticultural Society. Price, strong established plants, 1s. each, 9s. per dozen, from JAMES CARTER AND CO. Trade price per 100 on application, with sample plants.
CARTERS', 237 and 238, High Holborn, London, W.C.

CANNAS, for Parks and Large Gardens.
Special offer of extra strong roots.
Selected, in 10 varieties .. 21s. per 100, 180s. per 1000.
All varieties, mixed .. .. 12s. per 100. 105s. per 1000.
Orders now booked as long as stock lasts.
HOOPER AND CO., Covent Garden, London, W.C.

FRUIT TREES.—Fine Pyramid APPLES and PEARS of the hardiest and best cropping varieties only, 6s., 9s., 12s., and 18s. per dozen. Dwarf trained trees, 24s. and 30s. per dozen, all with solendid fibrous roots.
PLUMS and CHERRIES, Pyramids, 12s., 18s., and 24s. per dozen. Dwarf trained trees, 30s. per dozen.
RED and BLACK CURRANTS, 2s. and 3s. per dozen.
RASPBERRIES, 1s. 6d., and 2s. per doz., 8s. and 10s. per 100.
WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

Pines and Vines.

FOR SALE, 150 Succession SMOOTH CAYENNES, true and clean. 100 VINES in pots, fruiting, and for planting. Apply to
WM. MILLER, Combe Abbey Garden, near Coventry.

RICHARD WALKER, Market Gardens, Biggleswade, Beds., has to offer SEAKALE for forcing, 9s. per 100; Giant ASPARAGUS plants, two and three years old, 18s. per 1000; Best Sovereign RHUBARB roots in cultivation, for forcing, 10s. per dozen; Enfield Market CABBAGE plants, 2s. 6d. per 1000, which will give every satisfaction. Terms cash.

Special Offer.

LARCH FIR PLANTS.—2 to 3 and 3 to 4 feet, fine transplanted stuff. Descriptive priced CATALOGUES of General Nursery Stock are now ready.
EDWIN HOLLAMBY, The Nurseries, Groombridge, Tunbridge Wells.

SEAKALE, exceptionally fine Roots for Forcing, 2s. 6d. per dozen, 16s. per 100.
ASPARAGUS, strong, for Forcing, 12s. per 100; specially selected ditto, 16s. per 100.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

CHEAP OFFER of fresh choice CUT FLOWERS during winter. We quote to-day any quantity of TUBEROSES, 6s. per 100.
TEA ROSES, White, Red, Yellow, 6s. per 100.
VIOLETS, 4s. per 100; and many other ones at the lowest prices. The flowers are packed up most carefully and good arrival warranted. Terms cash or by reimbursement.
A. CREDNER AND CO, Weissenfels, Germany.

Special Offer.

CEDRUS DEODARA, fine plants.
3 to 4 feet, 15s. for 12, 60s. for 50, 110s. for 100.
4 to 5 feet, 18s. for 12, 70s. for 50, 130s. for 100.
THOMAS PERKINS AND SONS, 34, Drapery, Northampton.

Tea Roses.

THE LIVERPOOL HORTICULTURAL COMPANY (JOHN COWAN), Limited, The Vineyard and Nurseries, Garston, near Liverpool, have a splendid stock of TEA ROSES in all the leading varieties.
LIST free. Price to the Trade on application.
Also a large stock of GRAPE VINES.

ASPARAGUS PLANTS.—Strong 1-yr. Connover's Colossal, from imported seed, 2s. per 100, 17s. 6d. per 1000.
2-yr. do. do., 2s. 6d. per 100, 22s. per 1000.
3-yr. do. do., 3s. per 100, 26s. per 1000.
Giant, 2-yr., 2s. per 100, 17s. 6d. per 1000.
Package gratis. Cash with order. Trade price on application.
E. QUINCEY, Fulney, Spalding.

DOUBLE SNOWDROPS.
SPIRÆA JAPONICA clumps, with splendid crowns.
CHIONODOXA LUCILIÆ (The Glory of the Snow), intense blue with white; charming spring bloomer.
GLADIOLUS BRENCHLEYENSIS.
YELLOW CROCUS, very fine.
LILIUM LANCIFOLIUM ROSEUM, rubrum and album
Low Prices and CATALOGUE of all Dutch, English and French Bulbs on application.
WATKINS AND SIMPSON, Exeter Street, Strand, W.C.

ABIES DOUGLASII, 10 to 12 in., transplanted, 16s. per 100.
ABIES DOUGLASII, 3 to 3½ feet, transplanted, 50s. per 100.
,, ,, 4 to 5 feet, 75s. per 100.
ESCALLONIA MACRANTHA, 1 foot, 10s. per 100.
CEDARS Red, 8 to 12 inches, 1-yr. transplanted, 10s. per 100.
CUPRESSUS LAWSONIANA, 2½ feet, 30s. per 100.
PINUS INSIGNIS, 3-inch pots, 7s. per 100.
,, NORDMANNIANA, 6 to 8 inches, 12s per 100.
CEDRUS DEODARA, 4 to 5 feet, 18s. per dozen.
,, ,, 6 to 7 feet, fine, 36s per dozen.
PICEA NOBILIS, 4 feet, 60s. per dozen.
,, ,, 5 feet, 70s per dozen.
THUIA LOBBII, 2½ to 3 feet, 60s. per 100.
,, ,, 4 to 5 feet, 12s. per dozen.
Catalogues free on application.
GARLIES MITCHELL, Nurseryman, Stranraer.

FINEST SEEDLING and TRANSPLANTED TREES.
ALDER, 3 to 4 feet, 18s per 1000.
ASH, 2 to 3 feet, 16s. per 1000.
LARCH, 2-yr., extra, 3s. 6d. and 5s. per 1000.
,, 3 to 4 feet, 26s. per 1000; 4 to 5 feet, 30s. per 1000.
SPRUCE FIR, 2-yr., £7 per 100,000.
,, 1 to 1½ foot, 10s. per 1000; 1½ to 2 feet, 12s per 1000.
SCOTCH FIR, 1 to 1½ foot, 12s. per 1000; 1½ to 2 feet, 15s. per 1000; 2½ to 3½ feet, 18s. per 1000.
PINUS AUSTRIACA, 2-yr., fine, 2s. 6d., per 1000, or £12 per 100,000.
,, LARICIO, 10 to 15 inches, 20s. per 1000; 1½ to 2 feet, 25s per 1000; 2 to 3 feet, 30s. per 1000.
THORNS, 1½ foot, 10s. 6d. per 1000; 2 feet, 12s. per 1000
2 to 3 feet, 13s 6d. per 1000.
CRABS, 1-yr., extra, 3s. per 1000.
PEARS, fine, 1-yr., 5s. per 100.
GARLIES MITCHELL, Stranraer.

SPECIAL OFFER
TO THE TRADE.
RED CURRANTS, 10s. per 100, 80s. per 1000.
WHITE CURRANTS, 12s. per 100, 80s. per 1000.
BLACK CURRANTS, 10s. per 100, 80s. per 1000.
All strong transplanted.
JOHN PERKINS AND SON, 52, Market Square, Northampton.

To Planters.
JAMES BIRD offers the undermentioned
Forest stuff, price on application :—
SCOTCH FIR, 1½ to 2 feet, and 2 to 3 feet.
SPRUCE FIR, 1½ to 2 feet, and 2 to 3 feet.
PINUS AUSTRIACA, 1½ to 2 feet.
HAZEL, 3 to 4 feet.
The Nurseries, Downham.

To the Trade.
HOME-GROWN VEGETABLE and FIELD SEEDS.
H. AND F. SHARPE will be pleased to make special offers of their fine selected stock of SEEDS, raised this season with the utmost care and attention. The quality is very fine, and the prices will be found unusually low.
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5000 Cyclamen persicum. 5000
ALL from the finest procurable strains, good plants in 60-pots, 3s. 6d. and 5s. per dozen, large, 10s. per dozen : for early flowering.
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Lilies and other Bulbous Plants for Autumn PLANTING, ORCHIDS, &c.
THE NEW PLANT AND BULB COMPANY beg respectfully to invite an inspection of their CATALOGUE, No. 60. Post-free on application.
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SPRUCE.—SPRUCE.—SPRUCE.—
A large lot to dispose of; grown expressly for Christmas trees—1½, 2½, 3½ to 4 feet.
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PINE PLANTS.—For Sale, a superb lot, consisting of Smooth Cayennes, Charlotte Rothschilds, Lady Beatrice Lambton and Queens. Warranted clean. For particulars
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Price 9d. each; per dozen, 7s. 6d.
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Spruce Firs for Christmas Trees.
WM. JACKSON AND CO., Nurseries, Bedale, Yorkshire, can supply in large quantities the above, 1½ to 2 feet, 5s. ; 2 to 3 feet, 10s ; 3 to 4 to 5 feet, 12s. 6d. per 100. Quartered wide apart, large, and specimens, prices, and all particulars on application. Now is the time to order. LARCH, strong, in all sizes. GOOSEBERRIES and CURRANTS; Victoria and other PLUM TREES; Lord Suffield and other APPLE TREES, good and cheap.

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GREEN EUONYMUS, good and bushy, 15 inches, 20s. per 100, £9 per 1000, for cash.
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JOHN FRASER, The Nurseries, Lea Bridge Road, Leyton, Essex, has to offer a fine stock of ERICA HYEMALIS, and ERICA GRACILIS. The plants are very good, and the prices, which are very low, may be had on application.

H. LANE AND SON have 130 Acres of NURSERY STOCK to offer, in great variety, including :—
EVERGREEN TREES and SHRUBS.—Cedars, Cupressus, Junipers, Piceas, Retinosporas, Thuias, Wellingtonias, Aucubas, Bays, Berberis, Box, Cotoneasters, Hollies, Laurels, Yews, &c.
DECIDUOUS TREES and SHRUBS.—Acers, Ash, Beech, Birch, Chestnuts, Elms, Hawthorns, Limes, Mountain Ash, Planes, Poplars, Sycamores, Weeping Trees, Deutzias, Elders, Forsythias, Gueldres Rose, Lilacs, Ribes, Spiræas, Weigelas, &c.
FOREST TREES.—Ash, Beech, Chestnut, Larch, Scotch, Spruce, and Austrian Firs, Hazel, Oak, Poplar, Quick, &c.
RHODODENDRONS, ROSES, and FRUIT TREES in great variety of all descriptions.
VINES in pots, &c.
CLIMBERS for Walls, &c.—Clematis, Honeysuckles, Ivies in great variety, Jasmines, Wistarias, Virginian Creepers, &c.
CATALOGUE on application.
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LAPAGERIA ALBA (the best White variety), from 10s. 6d. each ; RUBRA (the best crimson variety), from 7s. 6d. each ; a few extra strong plants, price on application to
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R. H. V.'s pocket CATALOGUE of herbaceous and other hardy plants free on application.

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Fine collection of all leading sorts.
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LAXTON'S NEW PEAS,
EVOLUTION and WILLIAM HURST.
Particulars in previous Advertisement, or post-free from
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8000 Winter-Flowering Carnations. 8000
TWELVE WELL-ROOTED PLANTS, in six best varieties, by post, 4s. ; larger, in 54's, 6s. per dozen, 42s. per 100 : in 48's, 15s. and 18s. per dozen, £5 and £6 10s. per 100. See CATALOGUE.
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STEPHANOTIS FLORIBUNDA.—Good plants in 48's, 2s. each, 18s. per dozen, £7 per 100. Prices of larger on application.
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Ferns a Speciality.
The largest stock in the greatest number of varieties of
EXOTIC AND BRITISH FERNS
In the Trade, suitable for STOVE and GREENHOUSE cultivation, for Outdoor Ferneries, and other purposes. Special LIST free on application. Illustrated CATALOGUE 6d.
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(Established 1785.)
NOW READY,
Descriptive and Priced Catalogue of
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For Autumn 1882 and Spring 1883.
CRANSTON'S NURSERY and SEED CO.
(LIMITED),
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GENERAL NURSERY STOCK,
IN SPLENDID CONDITION FOR REMOVAL.


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GENERAL DESCRIPTIVE
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FRUIT TREES, FOREST TREES,
HARDY CONIFEROUS and TAXACEOUS PLANTS,
Evergreens, Ornamental Trees and Shrubs,
HARDY CLIMBERS, ROSES, &c.,
Is now ready, and will be sent free on application.
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FOREST TREE SEEDLINGS.
One of the largest and finest stocks to choose from, including over three millions of two Seedling LARCH, with sound leaders—a splendid lot. Samples and prices post-free on application to
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110 SPECIMENS OF
CHOICE NEW ZEALAND FERNS,
Artistically Mounted and Correctly Named.
Messrs. PARTRIDGE & COOPER
Have received a Consignment of these unique Collections from New Zealand, and have them on View, for Sale, at
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THEY SHOULD BE SEEN BY ALL LOVERS OF FERNS.
Suitable for Christmas Presents,
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EATON, near NORWICH.
Great Reduction in Price for Cash Payments, viz.,
15 per Cent. for Cash before delivery.
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After Three Months no discount can be allowed.
We shall be pleased to quote prices for the following in small or large quantities :—
Standard and Half-Standard H.P. Roses.
STANDARD, HALF-STANDARD, and DWARF MARÉCHAL NIEL ROSES.
TEA and NOISETTE ROSES in Pots.
PURPLE BEECH, best selected dark, broad-leaved variety, of all heights up to 8 feet.
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POPLARS, Black Italian, small or large.
POPLARS and WILLOWS of many choice kinds, in variety.
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ROSES.—Strong, healthy, well-rooted, best named show varieties, 7s. 6d. per doz., 27s. for 50, £2 10s. per 100. Standards, 18s. per doz.
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EAST LOTHIAN INTERMEDIATE STOCK, true.
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The following are all good stuff, in 60-pots :—Lomaria gibba, Pteris serrulata, P. cretica alba lineata, Polystichum plumosum, Doodia media, 20s. per 100, £9 per 1000 ; A. cuneatum, 25s. per 100 ; Lastrea aristata variegata (new), 30s. per 100 ; Cheilanthes elegans (the Lace Fern), 35s. per 100. Prices of 48's stuff on application.
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CHRISTMAS ROSES.—Splendid quality, well set with buds, per 100, 30s., 40s., and 50s.
DEUTZIA GRACILIS, fine forcing plants ; SPIRÆA JAPONICA, LILY of the VALLEY crowns, LILIUM LANCIFOLIUM, LILIUM AURATUM, GLADIOLUS BRENCHLEYENSIS, extraordinarily fine, and low in price.
SANDER AND CO., St. Albans.

LARCH.—LARCH.—LARCH.
1½ to 2 feet.
2 to 3 feet.
3 to 4 feet.
Very stiff, and twice transplanted. For samples and price apply to
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50,000 to select from, in all the leading sorts, in fine strong plants, including both Standards and Dwarfs ; also extra strong Maréchal Niel, Climbing Devoniensis, Cheshunt Hybrid, Madame Berard, Reine Marie Henriette, from 12 to 15 feet long, in pots, and other Teas in pots, fine for forcing.
Price and LISTS post-free.
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J. VANDER SWAELMEN will be glad to send, post-free, a special LIST (No. 22) of very interesting BULBS and ROOTS from KABYLIA, at really liberal prices. The Lily Nursery, Ghent, Belgium.

Rare and Cheap Lilies.
WM. GORDON, of 10, Cullum Street, London, E.C., is still the largest Importer of JAPANESE LILIES, LILIUM AURATUM, and other LILIES, at reduced prices. CATALOGUE free on application.

CEDRUS DEODARA. — "The Indian Cedar."—Beautiful specimen trees, frequently transplanted and well-rooted, offered at the undermentioned low prices, to effect a clearance :—

5 to 6 feet, 48s. per dozen | 7 to 8 feet, 72s. per dozen
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ABIES DOUGLASII.—One of the most noble trees grown, well-rooted specimens :—

6 to 7 feet, 3s. 6d. each ; 36s. per dozen
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The above-named trees are highly suitable for Avenues, Lawns, Shrubberies, or Woods, and the opportunity of purchasing on such terms rarely occurs.

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FIRST-RATE NURSERY STOCK, all transplanted within 2 years, to be cleared at nominal prices. Send for LISTS to

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CLEMATIS COCCINEA. — Rich coral-red flowers, 1½ inch long and an inch in diameter, perfectly hardy. This is an American variety, which reaches us with a great reputation. Price, 3s. 6d. each. Trade price on application.

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ISAAC MATTHEWS AND SON are prepared to make a special offer to the Trade and Large Buyers. Samples and Price List on application :—

ASH, Common, 3 to 4 feet, 4 to 5 feet.
,, Mountain, 3 to 4 feet, 4 to 5 feet, 5 to 6 feet, 7 to 8 feet, 8 to 9 feet.
OAK, English, 1½ to 2 feet.
POPLAR, Black Italian, 3 to 4 feet, 4 to 5 feet, 5 to 6 feet.
SYCAMORES, 2 to 3 feet.
CHESTNUTS, Horse, 9 to 10 feet, 10 to 12 feet.
ELDER, Golden, 2 to 3 feet.
THORN QUICK, strong, 3-yr., 4-yr., strong.
HOLLIES, Hodgins', maderensis, Golden Queen, Silver Queen, Old Silver, myrtifolia, ovata, Shephardii, common Green, in all sizes.
LAURELS, Common, 12 to 18 inches, 1½ to 2 feet, 2 to 2½ feet, fine.
CUPRESSUS, in variety, from 1½ to 7 feet.
RETINOSPORA PLUMOSA, 1 foot, bushy.
YEWS, English, 18 to 24 inches, 2 feet, 2½ feet, 2½ to 3 feet.
AZALEA Pontica, 4 to 6 inches.
RHODODENDRONS, Hybrid and Pontica, 3 to 4 inches, 4 to 6 inches, 6 to 9 inches, 9 to 12 inches, 12 to 15 inches, 15 to 18 inches, 1½ to 2 feet, 2 feet ; ditto, choice named sorts, bushy, in 100 varieties.
,, CUNNINGHAM'S WHITE, 9 to 12 inches, 12 to 15 inches, 15 to 18 inches.
,, CAUCASICUM PICTUM, 9 to 12 inches, 12 to 15 inches, 15 to 18 inches.
RHODODENDRON STOCKS, strong.
PANSIES, in 100 varieties.
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STANDARD and HALF-STANDARD ROSES, fine stuff of the leading kinds. Price on application.

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Apples—Apples—Apples.
DWARF-TRAINED for ESPALIERS.

WOOD AND INGRAM have the finest stock of the above (including all the leading varieties) in the Trade. Price 30s. per dozen, package free. N.B.—Also other fruits. Trade price on application.

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Special Offer to Nurserymen and Planters.

P. J. PERRY, NURSERYMAN, Banbury, offers :—

ALDER, 4 to 6 feet.
BEECH, 3 to 10 feet.
BROOM, 2 to 6 feet.
CHESTNUTS, Scarlet, 10 to 16 feet ; stems, 1 to 1½ foot in circumference.
HOLLIES, Gold and Silver Variegated, 2 to 4 feet.
,, standards, 5 to 12 feet.
LARCH, 1½ to 5 feet. | ELM, English, 6 to 12 feet.
LIME, 6 to 9 feet, 10 to 12 feet, 12 to 15 feet.
,, Red-twigged, from layers.
PICEA NORDMANNIANA, 2 to 7 feet.
FIR, Scotch, 2 to 3 feet
,, Spruce, 18 inches to 2 feet 6 inches.
THUIA GIGANTEA, 5 to 6 feet.
YEW, common, bushy stuff, 2 to 5 feet.
,, Golden, 1 to 2 feet 6 inches.
,, Irish, 10 to 15 feet ; 4 to 5 feet in diameter at 3 feet from the ground.
LAUREL, Portugal, 2½ to 3½ feet.
ROSES, standard, dwarf and pot ; including most of the leading sorts.
GENISTA FRAGRANS, in 48-pots, 8s. per dozen.
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FERNS, in variety, chiefly Adiantum cuneatum, Pteris cretica, Asplenium in variety, in 48-pots, 15s. per dozen.
PELARGONIUMS, young plants, to pot, 4s. per dozen.
GERANIUMS, Zonal, well-grown, full of bud, in 24-pots, 20s per dozen.
ARALIA SIEBOLDII, in 60-pots, 3s. per dozen.
AZALEA INDICA, full of bud, in various sizes, from 30s. to 36s. per dozen.

Prices and samples on application.

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NEW APPLE, SCHOOLMASTER.
First-class Certificate, R.H.S.
The best Apple introduced for some years.

A large and handsome fruit, of splendid quality, either for cooking or dessert, and suitable for the most exposed situations. See *Florist and Pomologist* and *Herefordshire Pomona* for illustrations. Strong Maidens, 7s. 6d. each, of the principal Nurserymen. Liberal Trade terms. Coloured plate, price 6d. Particulars post-free from

THOMAS LAXTON, Bedford.

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ANTHONY WATERER begs to invite attention to the following well-grown and properly rooted NURSERY STOCK :—

AUCUBA JAPONICA, 1½, 2, and 3 feet. Thousands.
BOX, Green and Variegated, 2, 3, 4, 5, 6, and 7 feet. Thousands.
YEWS, English, 2, 3, 4, 5, 6, 8 to 10 feet. Thousands.
,, Golden, all heights up to 10 feet, and various shapes—Globes, Pyramids, &c. Thousands.
,, Irish, 5, 6, 7, to 10 feet.
JUNIPERS, Chinese, 5, 6, 7, to 10 feet.
PICEA PINSAPO, 5, 6, 7, to 10 feet.
,, NORDMANNIANA, 5, 6, 7, to 10 feet.
SPRUCE FIRS, well furnished, 3, 4, 5, 6, and 7 feet. Many thousands.
,, Black, 3, 4, and 5 feet.
SPRUCE, Hemlock, 4, 5, and 6 feet.
WEARE'S ARBOR-VITÆ, 4, 5, 6, and 7 feet.
HOLLIES, common Green, of all heights, up to 10 feet. Thousands.
,, Green, of sorts, such as LAURIFOLIA, MYRTIFOLIA, HODGINS', ALTACLARENSE, Yellow-berried, &c. An enormous Stock.
,, Variegated, from 3 to 5, 6, 7, 8, and 10 feet.
,, Waterer's, beautiful Specimens.
,, Golden Queen, up to 10 feet. Hundreds.
,, Silver Queen, up to 10 feet. Hundreds.
,, Perry's Weeping Standards and Pyramids.
,, Golden Weeping Standards and Pyramids.

The Stock of Hollies of various kinds comprises many thousands, and affords a choice quite unequalled.

CUPRESSUS LAWSONIANA ERECTA VIRIDIS, 3, 4, 5, 6, 7, and 8 feet. Thousands.
,, ,, GRACILIS, 3 and 5 feet.
,, ,, ARGENTEA, 3 and 5 feet.
,, ,, LUTEA, hundreds of fine plants, 3, 4, and 5 feet high.
RETINOSPORA PLUMOSA AUREA, 3, 4, and 5 feet.
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,, PISIFERA AUREA, 3 and 4 feet.
THUIOPSIS DOLABRATA, 3, 4, 5, and 6 feet. Hundreds.
BEECH, Purple, 6 to 10 and 12 feet. Thousands.
LIMES, 10, 12, 14, 15, and 16 feet. Thousands.
PLANES, 10 to 20 feet.
MAPLE, Norway, 10 to 15 feet.
CHESTNUT, Horse, 10 to 16 feet.
,, Scarlet, 10 to 16 feet.
POPLAR, CANADENSIS NOVA, 10 to 16 feet. Thousands.
OAKS, Scarlet American, 10 to 12 feet.
ACER DASYCARPUM, 10 to 16 feet.
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And a vast and Miscellaneous Stock of Flowering DECIDUOUS SHRUBS and EVERGREENS, which intending purchasers are respectfully invited to come and see.

Knap Hill Nursery, Woking, Surrey.

ROSES, well rooted, many-shooted, truly named, of matured growth, and of the best kinds.

DWARFS, R. S. & Co.'s selection, 8s. per dozen, 60s. per 100.
STANDARDS, 21s. per dozen.

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New Seedling Apple, The Queen.
FIRST-CLASS CERTIFICATE.

SALTMARSH AND SON are now supplying strong maiden trees of this excellent variety, without which no collection, however small, will be complete, at 3s. 6d. each ; also a few strong 2-yr. pyramids, on Crab and Paradise stocks, at 5s. to 7s. 6d. each. Price to the Trade on application.

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THE NURSERIES, DUMFRIES.
(Established 1787.)

Our Stock, which is one of the largest in Scotland, comprises FOREST, FRUIT, and ORNAMENTAL TREES, DECIDUOUS and EVERGREEN SHRUBS, ROSES, GREENHOUSE PLANTS, &c. ; also a very large and splendid Stock of THORN QUICKS, for Hedging and for Filling up Gaps.

The Trees and Shrubs are of all ages and sizes, and are well adapted for extensive planting or giving immediate effect in the formation and improving of Ornamental Parks, Pleasure Grounds, &c. Prices on application.

THOMAS KENNEDY AND CO., Seed and Nursery Establishment, Dumfries.

Fulham Forcing Seakale.

JAMES CARTER AND CO. have again been enabled to secure a quantity of magnificent crowns of this, the finest Kale sent into Covent Garden Market. Trade price and sample hundred on application.

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SPIRÆA PALMATA :
The largest stock for forcing in the world.
LAURUS CAUCASICA :
The finest Laurel ever introduced.
RHODODENDRONS :
All kinds and all sizes.
STANDARD RHODODENDRONS :
You may select from thousands.
HARDY TREES, SHRUBS, ROSES, &c.
For general planting, acre after acre.

Intending planters are invited to come down and see the stock. The Nursery is ten minutes from Sunningdale Station, S.-W. Railway.

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NEW ROSES of 1882, in pots.—Vendors' Selection, 30s. per dozen ; Purchaser's, 36s. per dozen. The above comprise all the best English and French-raised Hybrid Perpetuals, Perpetual Polyantha, Teas, Hybrid Teas, and Perpetual Moss.

ROSES of 1881, of above-named classes, 18s. to 24s. per dozen, in pots.

CHOICE ROSES. — Tea-scented, Hybrid Tea, Noisette, China, and Bourbon, 18s. to 24s. per dozen, strong plants in pots.

Descriptive LIST on application.

RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Special Offer.
CEDRUS DEODARA.
CRYTOMERIA ELEGANS.
VARIEGATED YEWS.

H. LANE AND SON, having many thousands of the above, well transplanted, can offer them very cheap ; also many other TREES and SHRUBS.

The Nurseries, Berkhampstead, Herts.

RASPBERRY CANES. — 500,000 of the celebrated Carter's Prolific (see *Mark Lane Express*, Aug. 1, 1881, p. 1044) to dispose of, at £2 per 1000. Samples of 100, 5s., packing included, free at Railway Offices in London : no CHANGE of rail. Payments to accompany Orders. Postal Orders on Knockholt. Apply to

ALBERT AND EDWIN BATH, Colgates Farm, Sevenoaks, Kent.

HORIZONTAL TRAINED FRUIT TREES.—For extra sized Horizontal Trained Pears, which will cover bare walls, and come into bearing at once.

PYRAMID APPLES and PEARS and ESPALIER APPLES, extra transplanted, and in fruiting condition.

AUCUBA JAPONICA, beautifully coloured and very fine.

AUCUBA VERA, thickly set with berries.

Through trucks to any part of the United Kingdom. Plants and trees added to compensate for freight. Apply to

GEORGE SMITH, The Dell Nursery, Rock Ferry, Cheshire.

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MESSRS. JOHN STANDISH AND CO.'S Stock of GARDENIAS was never so extensive or good as it is this season. They have thousands of plants to select from, in all sizes, from fine specimens in 18-inch pots to small plants in 60's. All clean and healthy, and to a large extent well set with buds for winter-flowering. VERY REASONABLE Prices will be quoted on application.

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FLOWERING SHRUBS, in great variety, such as Hydrangeas, Lilacs, Deutzias, Spiræas, Cytisus, Broom, Pyrus, Berberis, Double Cherry, Scarlet Hawthorns, Gueldres Rose, &c., 8s. per dozen, 50s. per 100.

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APPLE TREES with MISTLETO growing on them. Price from 7s. 6d. to 21s. each.

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TWO HUNDRED THOUSAND HERBACEOUS and ALPINE PLANTS for Borders, Rockwork, &c. See Descriptive LIST, giving colour, height, time of flowering, &c., free by post for 1d. stamp.

Selection of 100 good showy varieties for 25s.

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LAPAGERIA ALBA, well-rooted plants, 10s. 6d., 15s. and 21s. A few extra specimens, size and price on application.

LAPAGERIA RUBRA, superb, 7s. 6d., 10s. 6d. and 15s. A few extra-sized specimens, size and prices on application.

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VIOLET, NEW DOUBLE MAZARINE BLUE.—This variety is very robust in habit, the flowers are large and perfectly formed, very fragrant, and freely produced. It is the finest Ultramarine-Blue Double Violet in cultivation. Price, each, 2s. 6d. ; per dozen, 24s., from

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SPECIAL OFFER OF NURSERY STOCK.
Small Transplanted Evergreens.

CUPRESSUS LAWSONIANA, 9 to 12 in., 12s. 6d. per 100
,, 1-yr., 1-yr., 15s. per 100.
RETINOSPORA PLUMOSA ARGENTEA, 4-yr., 25s. per 100.
THUIA LOBBII, 1 to 1½ ft., 16s. per 100.
,, OCCIDENTALIS, (American Arbor-vitæ), twice transplanted, 6s. per 100, 50s. per 1000.
,, ORIENTALIS (Chinese), twice transplanted, 6s per 100, 50s. per 1000.
,, ,, AUREA, 9 to 12 in., bushy, 50s. per 100.
BERBERIS AQUIFOLIA, twice transplanted, 6s. per 100, 50s. per 1000.
,, DARWINII, twice transplanted, 6s. per 100, 50s. per 1000.
,, ,, 1 to 1½ ft., 12s. 6d. per 100.
HOLLIES, common, 1-yr., 2-yr., fine, 4s. per 100, 30s per 1000.
,, common, twice transplanted, 6s. per 100, 50s. per 1000.
BROOM, common yellow, 1-yr., transplanted, 6s. per 100, 40s. per 1000.
,, white Portugal, 1-yr., transplanted, 10s. per 100, 80s. per 1000.
SPIRÆA PALMATA, strong crowns for forcing, 6s. per dozen.
APPLES, Standards, strong, 4-yr., 12 per dozen, 80s. per 100.
,, Standards, strong, 3-yr., branched, 9s. per dozen, 63s. per 100.

In quantity, Blenheim Orange, Cox's Orange, Lord Suffield, Wellington, Warner's King, &c.

PEARS, Standards, strong, 4-yr., 9s. per dozen, 70s. per 100.
,, strong, 3-yr., branched, 6s. per dozen, 30s. to 40s. per 100.
,, Maiden.

Including all the leading kinds.

APRICOTS, MOORPARK, dwarf Maiden, strong, 9s. per dozen, 70s. per 100.
HOLLIES, common, bushy, 1 to 1½ ft., 15 to 24 in., 2 to 3 up to 6 to 7 ft.
LAURELS, common, 1½ to 2 and 2 to 2½ ft.
,, Portugal, 1½ to 2, 2 to 2½, 2½ to 3 ft.
YEWS, English, 1½ to 2, 3 to 3½, 3½ to 4 ft.
AUCUBAS, bushy, 1½ to 2, 2 to 2½ ft.
PRIVET, oval-leaved, 1½ to 2, 2½ to 3½ ft.
COTONEASTER SIMMONDSII, 4 to 4½ ft.
RHODODENDRON PONTICUM, bushy, 12 to 15 in., 1 to 1½ ft., 1½ to 2 ft., and larger.
SPRUCE FIR, extra transplanted, 15 to 21 in., 2 to 2½ ft.
CEDRUS DEODARA, 2, 3, 4, to 5 ft.
CUPRESSUS LAWSONIANA, 6 to 7 ft.
,, ,, ERECTA VIRIDIS, 2 to 2½ ft.
,, ,, GRACILIS, 3 to 3½ ft.
CHESTNUTS, Horse, 6 to 8 and 10 to 16 ft., stout, transplanted.
LIMES, 8, 9, 10, to 13 ft., stout, transplanted.
POPULUS CANADENSIS NOVA, 8, 9, 10, to 16 ft., stout, transplanted.
THORNS, flowering, Standards, of sorts.

Prices of above on application, also Price LISTS of General Stock.

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WALKER'S PERPETUAL BEARER PEA.

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It has again taken the 1st Prizes at the Royal Oxfordshire Horticultural Show, on August 2 and September 8, 1882, having previously received a First-class Certificate from the same Society, in August, 1881. Also 1st and 2d Prizes at the Thame Show, on September 14, 1882.

It was awarded a First-class Certificate, last year, by the Royal Horticultural Society.

Price, in Sealed Pints, 3s. 6d.

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My own Selection .. £2 16s. per 100.

DOUBLE WHITE PRIMULAS.

Strong Plants, in 4½-inch pots, to bloom this Winter, 10s. per dozen, 70s. per 100.

The above Prices are subject to 10 per Cent. Discount for Cash. CATALOGUES free.

C. WILSON, SUMMERHOW NURSERIES, KENDAL.

THE DESIDERATUM IN POTATOS.

SHARPE'S DUKE OF ALBANY.

The Editor of the *Gardeners' Chronicle*, in the number for September 24, 1881, makes the following remarks in his report of the International Potato Exhibition, held at Manchester :—

"But we want other improvements ; we want more large-cropping, earlier kinds, and of the late sorts considerable disease-resisting powers. First early sorts are rarely affected by the destructive fungus. Their season is short, their haulm-growth usually of a medium character, and, as a rule, they ripen ere the disease becomes dangerous. Large cropping kinds, that will give a big bulk of good tubers capable of carrying on the needful supply for the family, or for the nation till Christmas, yet lifted ripe in August, would be an immense boon ; and these, it is hoped, may come soon, because well-directed efforts, in the shape of cross-fertilization to secure the desired end, are being made. . . . . Although no special prizes are offered for these, there can be no doubt but that the special encouragement given to new sorts will tend to promote that desirable object."

DUKE OF ALBANY so exactly corresponds to the requirements above indicated that had it been written for us as a description, it could not have been more exact.

DUKE OF ALBANY is a white Kidney—a cross between Beauty of Hebron and Early Goodrich—it has a short haulm with a pale flat leaf, is quite as early as Myatt's Prolific, as large in size and as heavy a cropper as Magnum Bonum—than which it is ten weeks earlier. It is ripe early in August, and will keep until spring, being a first-class Potato from the middle of July until the month of March. For flavour, quality of flesh, and good cooking properties, it leaves nothing to be desired.

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NYMPHÆA ODORATA MINOR.—A miniature of our native Water Lily. Flowers only 2 inches across ; white, varying to rich rose. Strong roots, at the remarkably low price of 5s. each.
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AZALEA MOLLIS, with from 10 to 30 buds
" a selection of the best hardy kinds, including PONTICA, NARCISSIFLORA, and GRAF VON MERAN, well budded.
KALMIA LATIFOLIA, nicely grown plants with flower-buds on wellnigh every shoot.
RHODODENDRONS, well budded and the best varieties fo the purpose.
DEUTZIA CANDIDISSIMA, fl.-pl., established in pots.
HYDRANGEA PANICULATA GRANDIFLORA, very strong.
ANDROMEDA PULVERULENTA or SPECIOSA.
These can be obtained in satisfactory plants and at fair prices from
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STRAWBERRIES.—Strong roots for present planting and for fruiting next year, 4s. per 100. Descriptive LIST and price for plants in pots for forcing on application. — RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

HAMPTON COURT BLACK HAMBURGH VINES.—Extra strong Fruiting Canes of the above from 10s. 6d. ; also fine Planting Canes from 3s. 6d. each.
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4000 Azaleas, Camellias, Ericas, and Epacris. 4000

AZALEA INDICA, in best varieties, for forcing, including Whites, well set with buds, 24s., 30s., and 42s. per dozen, £8 to £15 per 100.
AZALEA MOLLIS, good bushy stuff of these invaluable plants for early forcing, in all shades of colour, 21s., 30s., and 40s. per dozen, £8 to £15 per 100.
HEATHS and EPACRIS, best varieties, well set with flower, 18s and 24s. per dozen.
CAMELLIAS, in best varieties, including Whites, 25s., 30s., and 42s. per dozen, £9 to £15 per 100.
CATALOGUE free.
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R. AND G. NEAL, NURSERYMEN, SEEDSMEN, and CONTRACTORS, Wandsworth Common, S.W., respectfully invite an inspection of the large and varied Stock of SHRUBS, FOREST, ORNAMENTAL, FRUIT and ROSE TREES grown at their Nurseries, which are now in fine condition for transplanting. All plants delivered free by own vans, within 6 miles of the Nursery. Builders supplied at Trade Prices. CATALOGUES on application.
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2,000,000 SCOTCH LARCH, 1½ to 2 feet, 2 to 3 feet, 3 to 4 feet.
200,000 SCOTCH FIR, 1 to 1½ foot, 1½ to 2 feet.
200,000 QUICKWOOD, 2 to 3 feet.
The above are recently transplanted, with good leads and roots. For particulars apply as above.

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CLEAN HEALTHY PLANTS, in 5-inch pots, to flower this winter, 2s. each, 18s. per dozen ; nice plants in 60's, 9d each, 6s. per dozen. A few large plants, about 4 feet, which will be full of flowers this winter ; price on application. CATALOGUE free.
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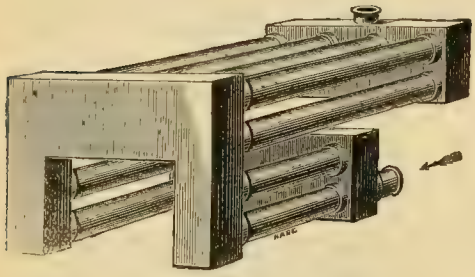
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"KING OF TOMATOS."



First-class Certificate awarded by the Royal Manchester Botanical Society, August, 1880.

First-class Certificate awarded by the Judges at the International Fruit Show, Manchester, August 24, 1881.

The entire stock of this new Tomato has been put into our hands for distribution, and we have very great pleasure in bringing such a desideratum before the public. The taste for Tomatos is increasing rapidly, and we flatter ourselves that we now introduce a variety that will become, when once grown, a favourite. Its size of bunch, fruit, colour, and flavour are all that could be desired, very early, and a free setter. Will answer either for culinary purposes or dessert.

We give the Raiser's description :—"Having grown it for three years I can confidently recommend it as a first-class variety. It is a hybrid from the Queen of Tomatos and Vick's Criterion; from the former it takes its bunch form and productiveness, and the latter its size and shape of fruit, which closely resembles in size an average-sized Apple. It is one of the best Tomatos to my knowledge for its adaptability in a gentleman's garden. The colour (bright scarlet) and flavour are fine, and when grown in an average way, gives a most useful-sized fruit, three to four to the pound, is perfectly smooth, and cuts up without any waste. It is one of the earliest—a grand grower, yielding a heavy crop of useful fruit. The bunches are handsome and regular, taking the attention of any one who has seen them more than any other variety. The average number of fruit on each bunch is from twelve to eighteen, although the certificated bunch contained thirty-four fruit."

Price, 1s. 6d. per Packet.



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We have pleasure in again introducing our "Queen of Tomatos," which has been duly appreciated by a great demand from leading Gardeners. It is of free growth, and compact in habit, and the fruit has a very handsome appearance on the plant. The fruit (average size of a Victoria Plum) hangs on stems 10 to 12 inches in length, numbering ten to fifteen fruit regularly set on each side, Pear-shaped, and of a brilliant red colour; skin smooth and glossy, exquisite in flavour, and very prolific, bearing clusters in abundance.

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This Cauliflower has become a favourite in every garden where it has been cultivated and has given the most unqualified satisfaction. The large increase in its sale is ample testimony of its superior qualities, and the numerous testimonials received are proof that it will take a place second to none in Cauliflowers, either for private gardens or market purposes, the quality, flavour, and size being unequalled. By successional sowings it can be had from August to Christmas.

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For the third season we again submit this Melon to our Customers and the Public as one of the very best Melons grown. This has been amply proved by the opinions of the Horticultural Press and leading Gardeners in the country. It is now unnecessary for us to enlarge upon its merits.

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HOT-WATER ENGINEERS,

who, having been entrusted with the erection of the extensive series of HORTICULTURAL BUILDINGS in the beautiful Grounds of Forest Lodge, have great satisfaction in printing the following letter received from J. FREEMAN, Esq.:—

"FOREST LODGE, FARNBOROUGH, HANTS,
"August 1, 1882.

"DEAR SIRS,

"Now that sufficient time has elapsed since the completion of my Greenhouses built by you, to make me appreciate your System of Glazing, I have much pleasure in stating that I am perfectly satisfied with the whole work done; and, to show how strong the buildings are, they resisted the severe gales we had last autumn and this spring. The Houses, which consist of over *thirty-four thousand* (34,000) square feet of glass, did not have a single pane broken during the gale of October 14, 1881. The Heating has been well carried out, and has given me great satisfaction in its working, which consists of 1¾ mile of 4-inch piping. The Pulsometer you have erected works also well; in fact I am very pleased with the large outlay I have made, and shall be glad to testify to your good workmanship to anybody who may be desirous of giving you an order. You are also at liberty to use the above.

"Yours faithfully,

"J. FREEMAN.

"Messrs. ARTHUR DASHWOOD & CO.,
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Plans and Estimates free on application for Small or Large Greenhouses.

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All recently transplanted.

ABIES DOUGLASII, 2, 3, 4 to 6 feet.
CEDRUS ATLANTICA, 3, 4 to 5 feet.
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ANDROMEDA FLORIBUNDA, 2 feet.
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BUXUS (Tree Box) of sorts, 1, 2, to 3 feet.
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,, ,, VARIEGATUS.
CERASUS (Laurel), Common, 2 to 3 feet, bushy.
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ACER (Maple) NEGUNDO VARIEGATA, 5 to 6 feet.
,, ,, in variety.
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,, ,, LACINIATA.
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CERASUS (Cherry), Double flowering, 5 to 6 feet.
CRATÆGUS (Hawthorn), Double and Single flowering, 4 to 6 feet.
CYTISSUS (Laburnum), Common, 5, 6, and 7 feet.
,, AUTUMNALIS, 5, 6, and 7 feet.
,, AUREUM, 5, 6, and 7 feet.
,, WELDENI, 5, 6, and 7 feet.
FAGUS (Beech), Purple, 4, 5, and 6 feet.
,, Weeping, 4 and feet.
FRAXINUS (Ash) AUCUBÆFOLIA, 7 to 8 feet.
,, AUREA (beautiful golden bark), 7 to 8 feet.
,, Weeping, 6, 8 to 10 feet.
PLATANUS (Plane) OCCIDENTALIS, 5, 6 to 7 feet.
,, ORIENTALIS, 5, 6 to 7 feet.
POPULUS (Poplar), Black Italian, 8, 9, to 10 feet.
PYRUS MALUS FLORIBUNDUS, 5 to 6 feet.
QUERCUS (Oak), 8 to 10 feet.
,, ,, Weeping, 6 to 8 feet.
SALIX (Willow) American Weeping, 5 to 6 feet.
ULMUS (Elm), Weeping, 8 to 10 feet.
PYRUS AUCUPARIA (Weeping Mountain Ash), very handsome, 8 to 10 feet.
TILIA (Lime), Weeping, large leaf, 6 to 9 feet.
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CLIMBING PLANTS.

AKEBIA QUINATA, strong, in pots.
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THE

Gardeners' Chronicle.

SATURDAY, NOVEMBER 25, 1882.

THE FIXING OF THE DUNES.

A WELL known work, the *Elements of Sylviculture*, by the late G. Bagneris, Inspector of Forests and Professor at the Forest School of Nancy, has been translated and published by Messrs. William Ryder & Son. The principles of forestry are the same everywhere, and this excellent scientific manual will assist the progress of forest knowledge in this country as in France. I do not propose to review the book but only to notice the supplement "On the Fixing of the Dunes." Some years since I was greatly interested in the complete destruction of an estate and village in Shetland. Dr. Hibbert described what had happened in his account of Shetland, but I had the particulars from the lips of the laird whose property had been overwhelmed, and I passed over the scene of his loss, where a fair estate and some of the best of pasture land had been reduced to the condition of dunes or wastes of sand.

The site of the disaster is near the head of Quendal Bay, where a ruined church at the water's edge is now the only building, and an anchor sticking in the sand marks the site of the village which has been destroyed. It is difficult to conceive that this barren waste could have been one of the most fertile spots in Shetland. But on the west side of Quendal Bay there is still some fertile land in a sheltered situation, while the eastern side has the appearance of having been blasted or laid under some baleful influence, so sudden is the transition from verdant pastures to sandy dunes and barren links. I was surprised to learn that the drifting sands of Quendal, when carpeted with turf, could have been productive, since the Maplin Sands do not look more barren than these do now. In the moist climate of Shetland, however, the land was productive so long as it remained covered up with turf, but one day—to explain the process of destruction—a leak occurred, and the wind got in and the sand began to escape. This mischief might have been arrested by stopping the leak, and preventing the flow of sand; but Shetlanders, with all their virtues, usually leave their affairs to the disposal of the Fates, and in that sense they are improvident. The wind which destroyed Quendal by undermining it is never made a subject of complaint here. The people have learned to bear whatever ill winds and evil fate may overtake them, preventible or otherwise, as a matter of course. When the wind forbids their putting off to the fishing for a day or two they group together on the shore and wait with the greatest equanimity. "She's no softer yet," is the placid comment, "she's as stiff as ever."

The wind blew hard at Quendal, and the sand leak grew worse. The burrowing of rabbits or the pawing hoofs of ponies may have caused the first slight outpour. Gradually the rent grew larger till the wrecked fields from which the subsoil had been removed lay in heaps and hollows. During the height of the sand storms the people of Dunrossness found it difficult to reach their church through the clouds of fine sand drifting in their faces, while the same devastating flood covered up their

gardens and entered the crevices of their dwellings just like dry snow. At the present time the church, partially protected by the surrounding wall, stands on the old level of the land above the waste, but the wind is no respecter even of consecrated ground, and bones have been already scattered and coffins exposed. In a few years the work of devastation will be complete, and neither the living nor the dead will remain within their ancient boundaries.

All this might have been prevented by that stitch in time which is so proverbially important. The first breaches in the sod, through which the soil escaped, might have been closed by the planting of certain grasses on the plan described by M. Bagneris.

There are several grasses too silicious in their composition for cattle to feed upon them, whose sole use in Nature seems to be to bind together the loose particles of sandy land. They may be found growing wherever the fine materials of our shores have been tumbled up into sandy dunes and links, repairing the mischief that might have been prevented by their more timely use. One of the best of the sand plants is the well-known sea Lyme-grass, Elymus arenarius, which has been employed in the reclamation of those low coasts of Holland that the sea barely covered. The motion of the sands was first obstructed by means of wattles and rows of stakes driven deep and laced together with straw ropes or the boughs of trees. The masses of seaweed and sand which collected round these obstructions were carefully planted with Elymus, and thus stronger barriers were raised which resisted the highest spring tides.

The same plant has been systematically employed on those low sandy coasts, where the tides and winds have thrown up sand banks at high-water mark, for the purpose of binding and converting them into pastures. The common sea reed, Arundo or Psamma arenaria, is another of Nature's agents in raising bulwarks against the encroaching waves on low coasts, and Parliament has protected it on that account by more than one Act. The careful Hollanders have made use of it in their extensive reclamations, and a Scotch improver, Mr. Macleod, of Harris, introduced it for the binding of a portion of his native land which would otherwise have slid into the sea.

The author of *Sylviculture* visited the low and sandy coast between the mouths of the Adour and the Gironde, a country of dunes, where the sands have been fixed by appropriate plants, such as the Psamma arenaria, a Euphorbia, and the Cluster Pine, P. pinaster. M. Bagneris states that the Cluster Pine had been long ago employed in the dunes, as is proved by the forest of La Teste, which dates back several centuries. At the present time the dunes are fixed by constructing in the first place a wall parallel to the coast line, and about 100 yards from high-water mark. The wall is itself a dune, formed artificially by a paling made of planks 5 feet 4 inches long, 1 inch thick, and 5 or 6 inches wide, and pointed at the ends. These planks are set in a trench dug 16 inches deep, in which they are driven 8 inches into the sand, so that when the trench is filled in 40 inches remain above-ground. Intervals of 1 inch are left between the planks. The effect of this paling is to arrest the sand, which is then deposited in the form of an inclined plane sloping to the sea. The palings are gradually raised higher by means of a hook and lever, and thus the dune rises, being fixed by the planting of Psamma arenaria in tufts 20 inches apart over its whole surface. This fence forms the outer bulwark. The dunes are then sown within by scattering broadcast a mixture of the seeds of several suitable plants—the Cluster Pine, the common Broom, the Furze, and Psamma arenaria.

The loss of land by dunes may be observed upon our own coasts near Yarmouth, at Silloth in Cumberland, in Hayling Island, and many other places; and all these unsightly spots, occurring as they do near places of popular resort, might be reclaimed with great advantage so far as appearances are concerned, if not with actual profit from a monetary point of view. *Traveller.*

New Garden Plants.

TRICHOMANES HARTII, *Baker, n. sp.**

THIS new Trichomanes has just been sent to me in a living state by Mr. F. W. Burbidge, from the botanic garden of Trinity College, Dublin. It was sent to him from Sierra Leone by Dr. W. H. Hart, the son of the Vice-Provost of the college, and brother of the well-known Irish botanist, who was one of the naturalists to the last Arctic expedition. On searching the Kew herbarium I find that we possess a sheet of specimens gathered by Gustav Mann on the banks of the Bagroo River more than twenty years ago. It comes nearest to the least divided forms of the well-known cosmopolitan T. rigidum, especially the East African T. Boivini of Vanden Bosch, but is much less divided, with the secondary segments in all the pinnæ except the lowest not cut down to the middle, and bearing only one free involucre at the base on the upper side. In cutting, therefore, it comes nearest to alatum and macilentum, but in texture, veining, and general habit its alliance is clearly with rigidum.

Caudex short, slender, suberect. Stipes tufted, 2—4 inches long, winged in the upper part, naked, except for a few obscure fibrillose paleæ towards the base. Frond deltoid, tripinnatifid, 3—6 inches long, dark green, firm in texture for the genus, glabrous, but with a few fibrillose paleæ, principally on the midrib of both surfaces. Main rachis distinctly winged down to the base. Pinnæ 8—12-jugate, crowded, sessile, all except the lowest lanceolate; lowest pair the largest, deltoid, much more produced on the lower side. Ultimate segments oblong, obtuse, erecto-patent, entire or slightly toothed. Veins stout, distinct, usually forked, even in the most divided ultimate segments; intermediate faint veinlets none. Sori usually only one to each secondary segment, except in the deeply pinnatifid large ones on the lower side of the lowest pair of pinnæ. Involucre narrowly funnel-shaped, not more than ½ line long, truncate or obscurely toothed at the throat, not dilated into a collar. Receptacle sometimes three times as long as the involucre. *J. G. Baker.*

SPIRÆA BULLATA.†

In the summer of the present year we received from Messrs. Rodger, McClelland & Co., of Newry, a very pretty dwarf shrubby Spiræa, with no other indication than that it was a species from Japan. Search in the herbarium proving fruitless, we turned to M. de Maximowicz's monograph, cited below, and had little difficulty in determining the plant to be his S. bullata; and on sending a small piece to the distinguished Russian botanist he was good enough to confirm our determination. The plant is likely to be highly esteemed for the rockery or for the select collection of miniature shrubs, on which account we append a description taken from the plant sent us by Mr. Smith.

A dwarf shrub, 12—18 inches high; branches erect, wiry, cylindric, densely clothed with reddish-brown down. Leaves subsessile, ⅛ inch long, inch wide, coriaceous glabrous, dark green, and bullate above, paler beneath, ovate oblong crenate, crenations glandular-serrate recurved; nerves pinnate, very prominent on the under-surface. Flowers numerous, dark pink or claret-coloured, in much branched dense terminal corymbs. Pedicels short, villose, bracteolate. Flower-tube about ⅛ inch diameter, villose, broadly cup-shaped. Sepals suborbicular, with a gland-tipped apiculus, at first as long as or scarcely shorter than the petals. Petals rosy-lilac, oblong-obtuse, shortly stalked, at first scarcely exceeding the sepals, but ultimately twice their length. Stamens numerous, in two rows, free, red, glabrous. Disc thin and glandular. Ovaries five, distinct; ovules pendulous; styles glabrous thickened upwards, pinkish; stigmas capitellate.

M. Maximowicz describes the plant as cultivated in the gardens of Yeddo, and as probably an alpine species; indeed, it has the appearance of a dwarf form of S. japonica (= the S. Fortunei of gardens). Mr. Smith has pointed out to us the singular circumstance that the "petals are not folded over the bud, but grow up around the flower after the stamens are well developed." *M. T. M.*

ODONTOGLOSSUM MARGINELLUM, *n. sp.**

This curious species appeared at Colchester in the New Plant and Bulb Company's collection, whence it was kindly sent me by Dr. Wallace; and afterwards at Ghent, 45, Chaussée de Courtray, with M. le Professeur Dr. Boddaert van Cutjem, where it was grown by Herr Wilke. It is in the way of Odontoglossum angustatum and O. tetraplasium. Notwithstanding my full knowledge of the abominable variability of the first-named, I yet think it is distinct. The best mark is the shape of the column (as observed in the unfertilised state). Our plant has a slender column, emarginate in the middle, where O. angustatum is angulate. Then the blade of the lip is very broad in our plant, the calli quite distinct. The flowers are light ochre-coloured, the sepals, petals, and column with brown spots. Lip fine deep, black reddish-brown, with a yellow anterior margin and yellow tops to a few of the calli, which look remarkably pretty under the lens. *H. G. Rchb. f.*

DENDROBIUM RIMANNI, *n. sp.*†

A stately Dendrobe, of the section Stachyobia antennata, which have the petals antenna-like, longer than the sepals. It is nearest Dendrobium Mirbelianum (Gaud.), Lindl., but is very distinct in the nervation of the flower. Stems cylindra to fusiform, furrowed on the superior half with a few broad oblong very coriaceous leaves, which look as if lent from Cattleya Forbesii. The raceme is a little zigzag, with short acuminate bracts. The flowers themselves are equal in size to those of a good Dendrobium speciosum. The lateral sepals are nearly falcate and bent downwards, like the teeth of a Dinotherium. Mr. Rimann, one of the very numerous Sanderian travellers, and my fellow countryman, discovered this in the Malayan Archipelago. I suppose it grows on Tree Ferns, since such things as Fern roots and Fern scales are to be found between the entwined roots. Herr Rimann has made a good sketch of a flower, and has written down some useful remarks:—"Sepals yellow inside, striped with purple outside. Petals yellow. Lip white, with purple reticulations. Leaves oval, 3½ inches by 2½ inches."

Herr Rimann, whose *début* has been unusually successful, is declared to be the discoverer of the species by attaching to it the name, Dendrobium Rimanni. *H. G. Rchb. f.*

PHALÆNOPSIS VIOLACEA (*Teijsm. et Binn.*) VAR. SCHRŒDERIANA.

This comes very near to the old, nearly forgotten purple type of the species, but its flowers are larger and more brilliantly coloured. The inside of all the lower halves of the sepals and petals is not quite purple-mauve but covered with broken purple-mauve lines, which remind us of Phalænopsis Luddemanniana, which, however, is quite distinct.

This youngest *enfant chéri* was introduced by Messrs. J. Veitch & Sons, and is now possessed by Baron Schrœder, who adds his name to this as well as to the celebrated and much esteemed Aerides. *H. G. Rchb. f.*

* *Trichomanes Hartii*, Baker, n. sp.—Caudice brevi suberecto; stipitibus productis cæspitosis sursum alatis deorsum parce fibrillosis; frondibus deltoideis magnitudine mediocribus tripinnatifidis utrinque parce fibrillosis; rachi distincte alato; pinnis 8—12 jugis sessilibus lanceolatis; infimis maximis inæquilateraliter deltoideis; segmentis ultimis oblongis obtusis erecto-patentibus integris vel denticulatis; soris ad basin anteriorem segmentorum ultimorum sæpissime solitariis; involucro parvo infundibulari ore truncato; receptaculo exserto.

† *Spiræa bullata*, Maximowicz, Adnot. de Spiræaceis, in *Acta Hort. Petropolit.*, tom. vi. (1879), p. 204.

* *Odontoglossum marginellum*, n. sp.—Odontoglossum angustatum inter et tetraplasium: sepalis lanceolatis tepalis latioribus; labelli callo basilari bivalvi antrorsum dilatato extrorsum denticulato in basi a labelli lamina omnino libero, ligulis antepositis extrorsis utrinque geminis, dentibus forcipatis antepositis antrorsis, lobis retusis supinis biseriatis quaternis bigeminis, interjecto jugo brevi, lamina labelli oblonga apiculata lobulata denticulata; columna graeili medio emarginata, non angulata.

† *Dendrobium Rimanni*, n. sp.—Aff. Dendrobio Mirbeliano (Gaud.), Lindl. Pseudobulbo cylindrato fusiformi multisulcato superne folioso: foliis coriaceis oblongis Cattleyarum; racemo terminali; sepalo impari lineari ligulato acuto; sepalis lateralibus falcatis; tepalis a cuneata basi spatulatis obtusis; labelli trilobi lobis lateralibus semiellipticis; lobo mediano oblongo-ligulato acuto undulato, carinis ternis longitudinalibus elevatis ante apicem desimentibus; nervatione totius floris multum reticulata.—In ins. Molucca det. Rimann, 1882. *H. G. Rchb. f.*

LIST OF GARDEN ORCHIDS.

(*Continued from p.* 566.)

44. BLETIA.—Sepals free. Lateral lobes of the spurless labellum erect, parallel, or spreading at the tips. Column rather long, footless. Racemes long-stalked, loose, simple or branched.—Terrestrial or epiphytical herbs, of more slender habit than the species of Phaius, and most of them having smaller flowers. In this genus the labellum never enfolds the column, as it does in Phaius. There are about twenty species in tropical and subtropical America, and one or two in China and Japan.

B. ACUTIPETALA = B. verecunda.

1. B. FLORIDA, R. Br., in *Ait. Hort. Kew.*, ed. 2, v., p. 206; *Bot. Reg.*, t. 1401; *Walp. Ann.*, vi., p. 442. *Cymbidium floridum*, Salisb., *Prodr.*, p. 9. *Gyas florida*, Salisb., in *Trans. Hort. Soc. Lond.*, i., p. 299. *Bletia pallida*, Lodd., *Bot. Cab.*, t. 629.—Trinidad. Imported by R. A. Salisbury in 1786. Pretty pale rose-coloured flowers. Hort. Kew.

B. GEBINA, see B. hyacinthina.

2. B. GRACILIS, Lodd., *Bot. Cab.*, t. 1977; *Bot. Mag.*, t. 1681; *Walp. Ann.*, vi., p. 440. — Mexico. Introduced by Messrs. Loddiges in 1830. A very slender species, having whitish flowers, with a red and yellow lip.

3. B. HAVANENSIS, Lindl., *Bot. Reg.* 1838, Misc., n. 35; *Walp. Ann.*, vi., p. 443.—Cuba. Introduced in 1835 by Captain Sutton; flowered in Sir Charles Lemon's collection at Carclew in 1837. Very near, if not the same as B. verecunda. It is not quite clear from Walper's *Annales* what Dr. Reichenbach intended to do with this.

4. B. HYACINTHINA, R. Br., in *Ait. Hort. Kew*, ed. 2, v., p. 206; Lindl., *Gen. and Sp. Orch.*, p. 122; Blume, *Orch. Arch. Ind.*, t. 6, fig. 1; Lodd., *Bot. Cab.*, t. 1968; Rchb., *Fl. Exot.*, t. 118. *Limodorum striatum*, Thunb., *Fl. Jap.*, p. 28. *Cymbidium striatum*, Swartz, *Nov. Act.*, vi., p. 77. *Epidendrum striatum*, Thunb, *Ic. Pl. Jap.*, t. 9. *Bletilla striata*, Rchb. f., *Bot. Zeit.* 1878, p. 75. *Cymbidium hyacinthinum*, Smith, *Exot. Bot.*, i., t. 60; *Bot. Mag.*, t. 1492. *Bletia Gebina*, Lindl., *Gard. Chron.* 1847, p. 819; *Bot. Reg.* 1847, t. 60; Blume, *Orch. Arch. Ind.*, t. 6, fig. 2. *Bletilla Gebina*, Rchb. f., *Fl. des Serres*, viii., p. 246. *Calanthe Gebina*, Lodd., *Cat.*, n. 1846. *Bletia hyacinthina*, R. Br., foliis albo-strictis, Sieb., Regel, *Gartenfl.*, t. 527; *Gard. Chron.* 1867, p. 292.—China and Japan. Introduced about 1802 by Mr. Thos. Evans. All the varieties of this nearly or quite hardy species are very pretty. Hort. Kew.

B. JAPONICA, cultivated at Kew, may be a variety of B. hyacinthina, or it may be the B. nipponica of Franchet and Savatier.

B. ORTGIESIANA, Rchb. f., *Hamb. Gart. Zeit.*, xvi., p. 420.—Jamaica (?). Cultivated at Zurich by Mr. E. Ortgies in 1860.

B. PALLIDA = B. florida.

5. B. PARKINSONI, Hook., *Bot. Mag.*, t. 3736; *Walp. Ann.*, vi., p. 440.—Mexico. Introduced by Mr. Parkinson, and flowered at Woburn in 1839. Very narrow rosy flowers.

6. B. PATULA, Hook., *Bot. Mag.*, t. 3518; Lindl. and Paxt., *Fl. Gard.* ii., p. 69, with a woodcut; *Walp. Ann.*, vi., p. 444.—Hayti. This handsome species was received at the Botanic Garden, Edinburgh, from Dr. Fischer, St. Petersburg, 1830.

7. B. REFLEXA, Lindl., *Bot. Reg.*, t. 1760; *Walp. Ann.*, vi., p. 441.—Mexico. Cultivated by Messrs. Loddiges in 1834.

8. B. SECUNDA, Lindl., *Bot. Reg.* 1840, Misc., n. 120; *Walp. Ann.*, vi., p. 440. *Eulophia dilatata*, Lindl., *Ann. Nat. Hist.* 1842, x., p. 184.—Mexico. Introduced by Messrs. Loddiges. Of no beauty.

9. B. SHEPHERDII, Hook., *Bot. Mag.*, t. 3319; *Paxt. Mag. Bot.*, ii., t. 126 (very bad).—Jamaica. Cultivated by Messrs. Shepherd of the Liverpool Botanic Garden long before 1834. This has much broader leaves, and otherwise differs from B. verecunda, with which it has been associated. Hort. Kew.

10. B. SHERRATTIANA, Batem., *Bot. Mag.*, t. 5646; *Gard. Chron.* 1867, p. 1142.—New Grenada. Imported by Messrs. Low about 1864, and flowered by Mr. Sherratt, gardener to Mr. Bateman, in 1867. This is the handsomest of the genus. The flowers, which are 2 to 2½ inches in diameter, are described as bright rosy-red, yet they are represented a rich purple-red.

11. B. VERECUNDA, R. Br., *Ait. Hort. Kew.*, ed. 2, v., p. 206; Lindl., *Gen. and Sp. Orch.*, p. 121. *Helleborine americana*, Martyn, *Hist. Pl. Rar.*, t. 50; Miller, *Fig. Pl.*, t. 145. *Limodorum altum*, Linn., *Syst. Veg.*, p. 680; Jacq., *Ic. Pl. Rar.*, iii., p. 17, t. 602 (tuberosum on plate); *Bot. Mag.*, t. 930. *Limodorum verecundum*, Salisb., *Prodr.*, p. 9. *Limodorum tuberosum*, Jacq., *Coll.*, iv., p. 108. *Cymbidium verecundum*, Swartz, *Nov. Act.*, vi., p. 75. *Cymbidium altum*, Willd., n. 44. *Gyas verecunda*, Salisb., *Trans. Hort. Soc. Lond.*, i., p. 299. *Limodorum purpureum*. Redouté, *Liliac.*, t. 83. *Bletia acutipetala*, Hook., *Bot. Mag.*, t. 3217.—Florida, West Indies, Mexico. This Orchid was cultivated by Collinson, or rather by Wager, in 1731, from bulbs received by the former, as part of a dried specimen, and it was figured, as may be seen from the foregoing references, by both Martyn and Miller. I have found no earlier record of the cultivation of an exotic Orchid. B. verecunda is a pretty species. Hort. Kew.

(*To be continued.*)

SPECIES OF COTONEASTER.

IN the genus Cotoneaster we have a series of the most useful trees and shrubs for the adornment of gardens. The arborescent species, such as C. acuminata and affinis, have deciduous leaves, and are specially remarkable for the brilliant colouring of their



FIG. 118.—COTONEASTER MICROPHYLLA.

berries. The shrubby species, which are mostly evergreen, are all well adapted for shrubbery borders, low hedges, walls, or rockwork, or they may be grown as standards worked on clean stems of the common Hawthorn. They are perfectly hardy, and stand sea air well. The following notes were taken from some specimens recently forwarded by Mr. Charlton, of the Nurseries, Tunbridge Wells, for the purpose of showing how beautiful they were as berry-bearing plants in autumn, but there are several other kinds of which no mention is here made.

COTONEASTER RUPESTRIS. — Much branched, branches closely set, diverging from the main branch at a very acute angle. Young shoots setose, old wood smoky-brown, glabrescent. Leaves about ½ inch long, ⅜ inch broad, oblong, obovate, obtuse, apiculate. Berries coral-red, pear-shaped, about



FIG. 119—COTONEASTER THYMIFOLIA.

⅜ inch long, profusely developed. This is perhaps the C. rotundifolia of Wallich.

C. SIMONSI.—Much, but loosely and divaricately branched; young wood covered with appressed, setose hairs, older wood brownish, cracked, glabrous. Leaves about ¾ inch long, ovate, lanceolate, acute at both ends, entire, setose at the edges, petioles very short. Berries freely produced, ½ inch long, reddish-orange, pear-shaped, not relished by birds.—North-West India.

C. BUXIFOLIA. — Closely branched, branches acutely ascending, younger ones thinly setose, older glabrescent, purplish. Leaves ½—¾ inch, coriaceous, ovate, oblong. Berries globose, ⅜ inch diameter, crimson.—North-West India.

C. MICROPHYLLA, Wallich; Baker, in Saunders' *Refugium*, t. 49 (fig. 118).—Irregularly branched, branches widely spreading, younger ones setose, older ones glabrescent, purplish-brown. Leaves ⅛ inch long, linear oblong, deep green above, paler beneath, margins recurved. Berries globose, ¾ inch in diameter, crimson. Differs from C. rotundifolia in its narrower leaves, which are more recurved at the margins, and in its somewhat smaller berries.—Himalaya Mountains.

C. THYMIFOLIA, Baker, in Saunders' *Refugium*, t. 50 (fig. 119).—Apparently a small form of C. microphylla, with smaller narrower leaves and smaller berries. Its neat habit renders it very suitable for trailing over small rockeries.—Native of the North-West Himalayas. Our illustrations show the distinguishing points between C. microphylla and C. thymifolia.

THE ROYAL GARDENS, FROGMORE.

WE have often written in praise of the Chrysanthemum, that queen of autumn flowers, which cheers the eye and warms the heart of all that worship at Flora's shrine. Who that has watched the marvellous transformation that has taken place in the cultivation of this charming winter flower during the last decade, and can compare the flowers of to-day with those of ten or a dozen years ago, who knows the brilliant effects they are capable of yielding, but does not feel gratified at the result. It is interesting, too, to note that Her Majesty the Queen not only takes a deep interest in the cultivation of our favourite winter flower, but has recently had erected a new show-house in the Royal gardens, Frogmore, in which there is at present a display of blooms of large size, fine forms, and the brightest hues imaginable. The structure is upon the west side of the gardens, and runs north and south. It is 200 feet long, 30 feet wide, and over 20 feet high, and was erected by Messrs. James Boyd & Sons, of Paisley, who are also constructing other plant-houses. The roof is supported by strong iron columns which are to be clothed with ornamental creepers, as also iron arched columns underneath its apex. The hot-water pipes are fixed close to the walls of the house, and will be hidden from view by a staging for plants. The bed in the centre will be planted with Camellias and other choice flowering plants with climbers to cover the roof. The house has been designed with a view to utility as much as ornament, and is such a structure as the Queen of England should have had in the Royal gardens long ago. For although there are nearly 3 acres covered with glass, none of the existing houses are capacious enough to accommodate free-growing plants in, and the present addition, apart from being absolutely needful for practical purposes, will furnish ample space for the Royal visitors to enjoy and admire the choicest plants and flowers in their respective seasons.

The show of Chrysanthemums occupies a portion of this house. In the centre there are noble-leaved Palms, forming a broad canopy of foliage which affords the crowning grace to the group. We were struck with the names of the flowers representing the Royal family and which we presume, from the choice of the varieties, and from the blending of the colours, we may ascribe to the forethought of Mr. Jones. There is Empress of India, a fine deep white flower, beautifully incurved, almost entwined with Queen of England, a large full blush flower, tossing its head against the dark crimson blooms of Prince of Wales. And the soft primrose shade of Golden Empress of India is very pleasingly associated with Princess of Wales and Duchess of Edinburgh, both of which are of a rosy-lilac hue and the finest flowers in the section to which they belong. Prince Alfred is rosy crimson, and Princess Beatrice is one of the sweetest of flowers of a rosy-pink shade, perhaps the most chaste-looking flower in the collection. White Venus peeps out from under the shadow of a Palm-leaf, and is of that charming delicate white hue slightly tinted with pink which is characteristic of the variety. Jardin des Plantes produces blooms of rich golden-yellow that are very telling against St. Patrick (ruby-red), and Lord Derby (dark purple).

We might go on *ad infinitum* to note the characteristics of the varieties, but as the collection consists of about 1700 plants it would be impossible to do full justice to all. The Japanese section are sparsely intermixed with the large incurved flowers, and the group is margined with dwarf pom-

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pons and reflexed flowers, which present great variety of form and colour. The finest incurved flowers consist of the following varieties:—Mrs. G. Rundle, Mrs. Haliburton (very large), George Glenny, White Beverley, Mrs. Dixon, Bronze Jardin des Plantes, John Salter, Alma, Fingal, Mr. Corbay, Golden Eagle, White Globe, Lady Slade, Refulgens, and many other newer varieties. The Japanese flowers are selected of the most distinct colours, and their curious forms are very striking in the group. They consist of Fair Maid of Guernsey (a large pure white flower), Arlequin, Bouquet Fait, Ethel (a late white variety), The Daimio, Peter the Great (canary-yellow), and Félicité, a reflexed flower of much substance and purity.

At the north end of the enclosed portion there is quite a blaze of bloom from the tall white Fair Maid of Guernsey and crimson Prince Alfred, to the beautiful Cloth of Gold in 32-pots, and quite covered with its rich golden blossoms. The erection of a rockery for greenhouse Ferns and other suitable plants is in contemplation; but of this, as also the other new additions, we hope to be able to speak later on.

KNOWSLEY HALL,

THE principal seat of the Earl of Derby, is situated about 8 miles from Liverpool and 2½ from Prescot. The main entrance, which is called the Liverpool Lodge, lies to the west. The park is very extensive, long enclosed, having been surrounded with a pale fence more than 500 years ago, now replaced by a substantial stone wall, ample in height for the keeping in of deer, of which there are fine herds of both the red and fallow. The wall is some 14 miles in length, and there are no less than eleven entrance lodges at the various roads leading to the mansion. There is considerable undulation in the surface of the park, which gives a succession of open glades and extended breadths of timber, the latter of which bears the appearance of being older than the dimensions of the trees would lead us to suppose, as in the district generally they do not attain a size equal to that in many other parts of the country: they are principally Oak. Traces of the coal measures are frequently seen cropping up here to the surface, which accounts for the timber not attaining full size. In one of the open glades are to be seen the remains of a private race-course made by a past earl. There is a beautiful and extensive piece of ornamental water covering some 95 acres, with a handsome boat-house. The view from this point, with Ormskirk in the distance, is very fine and extended.

A feature of the Knowsley Park is the immense extent clothed with Rhododendrons, which occupy several scores of acres; here they appear to be completely at home, strong, vigorous, and luxuriant, dense and impenetrable to the eye as a wall, covering the ground over enormous breadths so that not a weed or a blade of grass can exist under them, their surface forming hills and hollows innumerable, as they are elevated or depressed in accord with the ground on which they grow. They seed and vegetate by the million, gradually keeping extending at the outer edge of these great thickets, which when in bloom present a vast sea of colour, picturesquely beautiful in its varied outline, here receding, there projecting, in a way that gives the whole a natural appearance, and producing an effect indescribably charming.

Approaching the mansion from the main or western entrance, the road leads through the portion of park devoted to meadow and pasture, always green, as is the surface generally in this part of Lancashire, which knows little of that sunburnt look that the drier climate of the southern counties frequently gives the land in dry summer seasons.

Reaching the building, which stands on a gentle elevation, the view from the principal entrance, westward over Croxteth and West Derby, about 7 miles distant, as also towards Liverpool and Woolton, is varied and effective. The mansion is remarkable for its historic associations, and originally was only a shooting-box, at which time Lathom was the principal seat of the family. The south front has a pleasant look-out over stretches of lawn interspersed with trees, consisting of Limes, Elms, Chestnuts, Sycamores, and Oaks, with splendid old Thorns, in which the place abounds with splendid examples.

On the eastern side of the building the grounds present quite a different appearance to either of those already described. Here we find large masses of Rhododendrons which have been introduced with the best effect. In no part of the kingdom does this, the finest of evergreen shrubs, thrive better than in Lancashire; a cool subsoil, such as most of the county possesses, appears to be of quite as much consequence to its well-being as the nature of the surface material in which its roots actually penetrate, for whenever the understratum is of so porous a nature as to allow the moisture to pass through it too quickly, the plant suffers during the spells of dry weather that often occur whilst its growth is being made, or, at all events, before the young wood has had time to get fully matured. The luxuriant condition of the immense masses of Rhododendron present in this part of the garden, clothed with dense healthy foliage down to the surface of the closely mown green turf, gives at all times a beautiful appearance to the place. On each side of the walk which leads round in this direction from the south front of the mansion there is a series of flower-beds cut in the grass; these are filled with the ordinary bedding materials, in most cases each bed is confined to one variety of plant, those which contain bright colours being toned down by a free use in others of Heliotropes and similar things possessing soft tints. This leads to the flower garden, which is in front of the library; the design is simple and effective. Here, again, the beds are in most cases occupied by one variety of plant, edged with another of dwarf habit, and affording a contrast in colour. Pelargoniums, in the different shades of red and pink, with yellow Calceolarias, enter largely into the composition; these are edged with blue Lobelias and Mesembryanthemums; a very dwarf form of Ageratum, selected here from amongst a number of seedlings, is also used for this kind of edging, and looks well. The large masses of Rhododendrons likewise existent in this part act as a framework to the bright coloured flowers, presenting collectively a very pleasing picture without an undue amount of colour. On the northern side are a number of large circular beds, independent of the flower garden which they flank; these are filled with Roses on their own roots, that thrive and flower well. They occupy a position in front of the conservatory, which stands in a parallel line with the flower garden.

In place of a gravel path which originally ran the whole length of the library, from the conservatory to the chapel, a handsome terrace of artificial stone has been recently made, which adds much to the appearance of the place, and affords an agreeable promenade at most times. The conservatory is connected by a glazed corridor with the library. This glass-covered way contains a miscellaneous collection of flowering and fine-leaved plants arranged on the floor. Amongst these are a couple of handsome young examples of Araucaria excelsa, the plume-like branches of which are always beautiful, but never more so than whilst the plants are comparatively young, and not too large for the position they occupy. Along with a variety of other things here were some large Agaves, and quantities of Campanula pyramidalis, unusually well grown, their tall stately stems covered with white and blue flowers, differing in shades of colour. They are amongst the best things that can be grown for summer decoration. The conservatory is a large lofty span-roofed structure, divided so as to give different temperatures suited to the requirements of the various plants therein cultivated. In the first division the centre bed is planted with Camellias, fine plants ranging from 10 to 12 feet in height, and in excellent health, their ample deep green foliage giving unmistakable evidence of their vigorous condition. With the Camellias there is also a fine old example of Datura suaveolens, one of the most suitable plants for turning out in a house where there is room for it to grow in a way that admits of its attaining a size large enough to exhibit its true character. The plant when I saw it in the beginning of August was blooming well; its ability to give two or three crops of flower during the year is not the least merit it possesses. On the back wall are grown some good examples of Acacia in company with another grand old plant—Luculia gratissima—which has been discarded in not a few places to make way for newer things, many of which are infinitely inferior. Possibly its not being so easily propagated as many plants may prevent its being more frequently met with, for although it can only be seen to the best advantage when planted out, it will nevertheless bloom nicely in a pot, and kept within limits suitable to an ordinary-sized house. The front side of this conservatory is glass, down almost to the floor level. Here are the two kinds of Tea-plant, long supposed to be distinct species, but which they in reality are not. Plants of various descriptions go to make up the filling of this coolest end of the structure, and which are introduced as their season for flowering comes round, giving the desirable feature of change. Overhead are a number of large hanging baskets filled with Achimenes, very well done; light and dark varieties are used separately, and are hung alternately, in which way there are few things so telling during the summer months. The adjoining half of the house is kept at a stove temperature; the centre is occupied with Palms, Cycads, and Musas; the Rajah variety has recently fruited here, but, as elsewhere, is not found equal to the old kind; Mr. Harrison finds it much improved by keeping as long as it will remain sound. Another fine plant seldom met with has a place in this conservatory—Brownea grandiceps, a native of the Caraccas, and deserving of being grown wherever room can be found for it in a large house, its grand red flowers are so distinct in appearance from other things that it never fails to command notice. Amongst many other plants of an interesting character to the general observer, as much as those more intimately connected with gardening pursuits, is the Coffee-plant (Coffea arabica), a healthy example of which was bearing a crop of berries. The roof is nicely draped with climbers, such as Clerodendrons, Passifloras, and others of like habit; they are not suffered to extend in a way that would interfere with the light needful for the well-being of the many and varied things that are grown in the body of the house, but are kept within such limits as are requisite to give effect to the whole. The borders are edged with Selaginella, which when properly cared for has always a fresh appearance.

Northwards from this there is a considerable extent of pleasure ground, well furnished with numbers of trees that, where present on this aspect, never fail to convey that idea of shelter from the wintry blast, without which a dwelling, either large or small, ever seems wanting. Trees of the ordinary kind usually met with grow fairly here, but do not reach the size attainable in localities where the soil and climate are more suited. Deciduous shrubs appear to thrive satisfactorily, and the ever-acceptable Rhododendrons are again here, as in every other part of the grounds, growing with the greatest luxuriance. Following a broad walk we come to the site where once was the aviary, containing part of the unrivalled collection formed by a preceding earl, and of which there was no equal in private establishments and very few in public. The pond yet remains which was used by such of the water fowl as were kept in this part of the grounds. The best use of this piece of water has been made, the island and whatever portions of the banks permitted, are now well furnished with suitable shrubs, that give to the whole a pleasing appearance. There is here a very fine old Thorn that is deserving of notice, with a thick trunk and a very fine head. Further in this direction is the kitchen garden, with the very extensive fruit and plant houses required to supply such an establishment as Knowsley. Many of the houses are new or comparatively so, having been built since Mr. Harrison, the present gardener, took charge of the place. The first of these consists of a range of four vineries, roomy substantial structures, filled with Vines in excellent condition; these houses are each some 50 feet in length by 18 in width. When they were built, the old Vines being in a fairly vigorous condition, were to some extent retained, but have since mostly been replaced. Entering at the western end the first house is principally filled with Black Hamburghs; these were bearing a nice crop. Young Vines have been planted here, which will now take the place of the old ones. In the second house all are Black Hamburghs; the two following are all Muscats, and were carrying a very good crop of handsome even bunches just beginning to colour. Further northwards from this there is another vinery, a big, roomy, hip-roofed house, 70 feet by 20 feet. Black Hamburghs are here again the variety grown, with one or two of Buckland Sweetwater and Ferdinand de Lesseps. These were also carrying a very good crop of medium-sized bunches, colour and general finish unexceptionable. Along the back of this house were a nice lot of half-specimen Azaleas suitable for conservatory decoration, strong, healthy, and well set with flower-buds. *T. B.*

(To be continued.)

THE SEXES OF FLOWERS.

Mr. Meehan, in reverting to this subject, in the *Proceedings* of the Academy of Natural Sciences, Philadelphia, recalls the circumstance that the Acer dasycarpum is not polygamous, as stated in the text-books, but strictly monœcious or dicœcious. There are no hermaphrodite flowers, but each tree is usually either male or female, though occasionally the separate sexes are found on the same tree. The male flowers have no trace of a gynœcium, but the female flowers have well-formed anthers, but never have pollen, or even perfect themselves by lengthening filaments, as in the perfect male flower. Notwithstanding the perfect form of the anther, the stamens in the female are abortive. But the chief physiological fact of importance noted in the paper of 1868 was that a tree which for years would produce nothing but female flowers would sometimes change the sex, and bear only male flowers; while no instance could be found of a male tree eventually producing female-bearing branches. During the fourteen years since this discovery was recorded, Mr. Meehan has found frequent instances of change from female to male as at first observed, but not one instance of change from male to female. There could be no doubt of the order in which the sexual change occurred. While the Maple was growing vigorously it followed the rule with all trees and made no attempt to flower. With some check to the vegetative force, the reproductive power asserted itself, and flowering began; this is the second stage. With a greater check to the vegetative force, only male flowers resulted. This was the third stage. Since that time he had shown that when a Maple tree passed from the vegetative to the reproductive condition, and bore at once male flowers only, it was a leap down from the first to the third stage, missing the second or female—for he had found that though the amount of vital power exerted in the production of seeds, and the immense loss of leaves which the production of seed implied (as all know who are familiar with the Silver Maple after bearing a heavy crop of seeds), the female trees of the same age and under the same circumstances were usually as large as the males which had no such strain on their nutritive powers.

About the time of the fall of the leaf there is little to distinguish a flower-bud from a leaf-bud. But the flower-bud continues to grow at a comparatively low temperature, at which the leaf-bud remains stationary. Even when the thermometer was several degrees below the freezing point, flower-buds would increase in size, though naturally much more rapidly when above this line. In the Peach the growth of the flower-bud was very rapid between 32° and 40° Fahr., until by early spring they will have reached often as much as three-fourths larger in size. Indeed, a Peach-bud will often have its flowers fully expanded before the leaf-bud has scarcely begun to grow. We learn from this lesson that it takes less heat to develope a flower-bud than a leaf-bud. In the light of these observations he had been watching during the past winter the behaviour of the buds on the Silver Maple. These advanced gradually until, by February 23, they commenced to expand—the leaf-buds remaining as they were at the fall of the leaf. They had been expanding continually as the days were warmer or colder, up to the present date (March 7), but the expanding blossoms have been wholly male flowers. Only to-day, as noted in the specimens exhibited, were the purple tips of the pistils visible through the parting bud-scales. It was obvious that here we had reached another important stage in the life history of the Maple tree. First, it requires less heat to induce growth in a Maple flower-bud than a leaf-bud; secondly, it requires less heat to induce growth in the male flower than in the female.

Comparing the male with the female trees, Mr. Meehan noted differences in their habits of growth. Taking a twig of the last season's growth, in a flowering condition, one or two blossoms might appear alongside of the leaf-bud, in trees of either sex. So far we could find no difference. But in the female tree the central or leaf-bud, when it pushed into growth in the spring, made a shoot of several or many inches in length according to the vigour of the tree or parent branch. In the male tree, on the contrary, the central growth was not more than perhaps a quarter of an inch, forming a mere tuft of leaves on the top of what was a head of male flowers. In fact, these branches were reduced to mere spurs, and weak spurs at that. He had measured these little branches or spurs which had been bearing male flowers for ten successive years, which were not more than from 3 to 5 inches in length, and not thicker than Wheat straws. It was from these spurs that the great mass of opened flowers appeared. The male flowers on the shoots of last year did not advance as did the flowers on the spurs. The immense amount of pollen from the early flowers, forming the great bulk of all the pollen produced by the tree, is scattered before the female flowers open, and is absolutely useless for any purpose of fertilisation, or useless for any purpose of individual benefit to the tree or to the race, so far as we can see. These later opening flowers, formed on the wood of last year, are evidently the chief reliance, if not the only reliance, of the female flower for its reproductive energy. At any rate the fact that the whole of the weak spurs of the Maple tree produce nothing but male flowers, and that these male flowers expand at a lower temperature than the females do, is conclusive as to the law.

This law, thus demonstrated, will be of great practical value to culturists. So far as the single point of the advancement of the flowers by a low temperature is concerned; the Peach grower will be interested in keeping the temperature cool, so that there shall be no advance of the flower until the temperature is high enough to bring forth the leaf-buds as well. Now we can go further and understand why some amentaceous plants so often produce no fruit or imperfect seeds. It is well known that isolated trees of Birch, though producing abundance of male and female flowers, very often have not a perfect seed. We may now see how the catkins may be brought forward by a low temperature not sufficient to excite the female flowers, and thus lead them to mature and shed their pollen before the weather is warm enough to bring forward the female blossom to receive the necessary pollination. In seasons where the weather is cool till the regular springtime comes, or in climates where there is little very exciting warmth till the regular growing time arrives, there is not likely to be so great a period between the opening of the male and the female flowers. That this is the case with the common European Hazel or Filbert as grown in this country, an examination to-day clearly indicates. The catkins have attained their full length, and the anthers are ready to shed their pollen with another day's sun, but there is no sign yet of the little purple stigmas bursting through the scales of the buds which form the female flowers. Should the anthers disperse their pollen to-morrow, as they doubtless will if the temperature rises to 45°, there certainly can be no fertilisation, and consequently no Hazel nuts from the trees in question next year. It was a well-known fact that the European Hazel nut often failed to bear nuts in this part of Pennsylvania, and we have clearly the explanation in the facts now developed.

Mr. Meehan then briefly referred to the influence which these new facts must have on questions of dichogamy. There need not necessarily be any constant rule in the production of proterandrous [flowers in which the stamens are mature before the pistils] or proterogynous flowers [in which the pistils are mature before the stamens]. We might expect to find proterandry prevailing to a greater extent in plants growing where there was a more constant succession of warm and cool days, than in the same species growing where the climate is not what is called changeable, that is to say, where the temperature was regularly low until the regular spring season had arrived, in which case there would not be much difference in time between the advance of stamens or pistils.

In conclusion he said, if he might be allowed to generalise from this experience with the Maple tree, the following principles seem proven :—

Male flowers do not appear on female Maple trees till some of its vital power has become exhausted.

Branch-buds bearing female flowers have vital power sufficient to develope into branches.

Branch-buds bearing male flowers have not vital power enough to develope into branches, but remain as spurs, which ever after produce male flowers only.

Buds producing male flowers only are more excited by heat than females, and expand at a low temperature under which the females remain quiescent.

A few warm days, succeeded by cooler ones, will therefore make a corresponding difference in time between the opening of the male and the female flowers, and possibly in the proportionate advancement of the stamens and pistils in hermaphrodite flowers.

Begonia Ingrami.—A whole group of these, grown in 32-pots, make a fine display in one of the houses at Frogmore. The plants are arranged in rows, and are covered with their bright scarlet flowers. They are chiefly grown for furnishing purposes.

SOUTH AFRICAN PLANTS
YET TO BE INTRODUCED.

Whilst naming a collection of plants brought by Mr. Nelson from the Transvaal Republic some time since I noted several among them that appeared to me very desirable to introduce into cultivation; the following brief notes upon them may, therefore, be acceptable to those who are on the look-out for something new and choice to introduce.

Clematis Stanleyi, Hook.—A distinct, erect, softly hairy species, about 1½ foot high, with bipinnatisect leaves, and showy flowers 2 inches in diameter, springing from the upper axils. Aparently very showy.

Thalictrum rhynchocarpum, Dill. and Rich.—A very graceful plant, with elegant Adiantum-like foliage and paniculate inflorescence; the solitary fruits (achenes) are borne on long slender hair-like stalks. This is a very suitable plant for table decoration; it was introduced in 1862 by Mr. T. Cooper, who had it in cultivation for several years, but I believe has now lost it.

Ranunculus Baurii, MacOwan.—This is a very fine and distinct Buttercup, much in the way of the famous R. Lyalli, and like that species it will probably be troublesome to cultivate, since it was introduced by Mr. T. Cooper about 1862, but did not flourish. It has large orbicular peltate leaves, beautifully variegated according to Dr. Sutherland, and a lax corymb of many-petalled yellow flowers.

Cassia delagoensis, Haw.—A beautiful and rare species with pinnate leaves 4 to 6 inches long, and terminal panicled racemes of large deep yellow flowers; the stipules are remarkable for their semi-lunar acuminate form. This was collected on the Cave Mountains, and would form a very handsome greenhouse shrub.

Wormskioldia longepedunculata, Mast.—A beautiful dwarf herbaceous perennial, about 1 foot high, with long narrow pinnatifid leaves, and long-stalked racemes of flowers, an inch in diameter, and apparently of a vivid scarlet or orange colour. This is a very desirable plant, being suitable for greenhouse or conservatory decoration, as its dwarf habit, and the numerous flower-stems that rise well above the leaves, with their freely produced brilliant flowers, make it very attractive and conspicuous. It grows on the Cave Mountains at Zoutpansberg.

Berkheya subulata, Harv.—This, if introduced, would make a useful decorative greenhouse plant; it has erect simple stems a foot high, terminating in a single Thistle-like bright yellow flower-head, 1½ inch in diameter; the leaves are linear and setulose on the margins. It appears to be a common plant in Natal.

Menodora africana, Hk.—An exceedingly pretty herbaceous perennial, throwing up a profusion of annual stems 4—6 inches high, from a woody root-stock; the crowded stems are well furnished with finely cut leaves, and bear a profusion of golden-yellow flowers. Mr. Nelson says of this, that it is "One of the showiest plants met with in my travels. The plant is about 6 inches high to 24 inches in diameter, crowded almost to obscurity with the richest golden blossoms 1 inch in diameter." Collected near the Vaal River. The genus Menodora is interesting on account of its geographical distribution; it belongs to the order Oleaceæ, and is allied to Jasminum; out of the fourteen species known, two are South African, and the rest are American, most of them being found in Texas or Mexico, and the others in S. Brazil, Patagonia, and Mendoza.

Ipomœa simplex, Thbg.—A very dwarf species, 2—4 inches high, with a tuberous rootstock, linear or narrow lanceolate leaves, that are often lobed, and very showy purple flowers, 2 inches in diameter. This was introduced in 1844, and is figured in the *Botanical Magazine* at t. 4206, but is probably now lost to cultivation; it is a beautiful little plant.

The above are only a few of the plants collected by Mr. Nelson that are desirable for cultivation; there were many others, notably a new Lythrum, of dwarf habit, with dense spikes of purple flowers; a new Argyrolobium with silvery leaves and yellow flowers; and a new Triaspis, a Malpighiaceous shrub with opposite cordate-ovate leaves and numerous umbels of bright yellow flowers with fringed petals. From the above it may readily be inferred that there are plenty of beautiful plants yet to come from South Africa; indeed, it needs but a brief inspection of the South African specimens contained in such an herbarium as that at Kew to show that it will be a very long time before its floral riches are exhausted in a horticultural sense. *N. E. Brown.*

PLANT PORTRAITS.

ALBUCA NELSONI, N. E. Br.; Hook. f., in *Bot. Mag.*, t. 6649.—The plant figured and described in *Gard. Chron.* 1880, p. 198, f. 41. Hort. Kew.

APPLE, WARNER'S KING, *Florist*, t. 572, October.—A fine culinary Apple, of large size, globular form, yellow, slightly speckled with brown dots. Figured in these columns under the name of D. T. Fish.

ARCTOTIS AUREOLA, *Garden*, October 14, 1882.—A Cape perennial, with lyrate, pinnately-lobed, hoary leaves, and large orange flower-heads at the end of long, leafless flower-stalks. Cape of Good Hope. Hort. Cambridge.

AZALEA BALSAMINIFLORA, *Revue Horticole*, October 1.—A coloured figure of the beautiful Japanese Azalea, already mentioned in our columns.

CELMISIA SPECTABILIS, Hook. f., *Bot. Mag.*, t. 6653.—A showy New Zealand Composite with tufted lanceolate silky leaves, dilated at the base; the white flower-heads measure 2 inches across, and placed at the ends of long stalks bearing numerous linear bracts. Hort. Veitch.

CRESCENTIA NIGRIPES, *Revue Horticole*, Oct. 16.—Mr. Baillon refers this curious plant to Amphitectra. The yellowish flowers have a tubular calyx divided into two lobes, and a tubular corolla, bent acutely at the base.

DAHLIAS, POMPON VARIETIES, *Florist*, t. 571, Oct. 1.—1, Carl Mendel, scarlet; 2, Comtesse de Sternberg; 3, Wilhelm Nitsche, rosy-purple, tipped with white; 4, Lady Blanche, white.

GREVILLEA THELEMANNIANA SPLENDENS, Hügel; Ed. André, in *Revue Horticole*, Oct. 16.—A greenhouse Proteaceous shrub, with pinnately divided foliage, the lobes being very slender; flowers in close heads, scarlet, with long projecting styles.

HABERLEA RHODOPENSIS, Frivaldsky; Hook. f., in *Bot. Mag.*, t. 6651.—A remarkable Gesnerad of tufted habit, with hairy oblong ovate coarsely toothed leaves narrowed to a broad stalk; flower-stalks erect, hairy, leafless, with a terminal many-flowered umbel of nearly regular lilac tubular flowers. Native of Rumelia, where it is confined to a single valley. With the exception of the nearly allied Ramondias, natives of the Pyrenees, Thessaly, and Servia respectively, no other Gesnerad is found nearer than the North-western Himalaya. Hort. Kew.

LÆLIA PERRINI, Lindley; Moore, in *Williams' Orchid Album*, t. 60.—Flowers 6 inches across, nearly circular in outline; sepals narrow, oblong lanceolate; petals obovate oblanceolate, both reddish-violet, lip smaller than the segments, convolute at the base, white at the throat, anterior part rich purple. Brazil.

LILIUM PARRYI, S. Watson; Hook. f., in *Bot. Mag.*, t. 6650.—Bulbs like those of L. pardalinum, but produced close to the old bulb; stem tall, glabrous, vertical, many-leaved; leaves narrow, lanceolate; racemes many-flowered; perianth 2½ inches across, campano-funnel-shaped segments, recurved, yellow, spotted with red at the base. South California. Hort. Kew.

ODONTOGLOSSUM TRIUMPHANS, Rchb. f.; Moore, in *Williams' Orchid Album*, t. 58.—Flowers racemose, about 4 inches across; segments yellow, mottled and transversely barred with chestnut-brown; lip smaller than the segments, oblong acute, white at the base, with an anterior chestnut-coloured blotch.

ONCIDIUM CUCULLATUM GIGANTEUM, *Garden*, August 19.—Flowers racemose, sepals and petals brown, edged with yellow; lip pale lilac with darker spots.

OPUNTIA DAVISII, Engelm.; Hook. f., in *Bot. Mag.*, t. 6652.—A species with cylindrical knotted branches and bronze-coloured flowers. Native of New Mexico. Hort. Loder.

PESCATOREA LEHMANNI, Rchb. f.; Moore, in *Williams' Orchid Album*, t. 57.—Flowers nearly circular, sepals and petals obovate spatulate, purplish with white stripes; lip shorter than the petals, oblong, violet, bristly.

ROSE ALFRED K. WILLIAMS, *Garden*, Sept. 1, 30.—H.P. raised by Schwartz, flowers regular, bright carmine-red.

ROSE SIDONIE, *Journal des Roses*, October.—A perpetual Rose, with large very full rose-pink flowers.

VANDA ROXBURGHII, R. Br.; Moore, in *Williams' Orchid Album*, t. 59.—Flowers racemose, broadly ovate, 2 inches across; segments oblong obovate, green, with brown tesselations; lip oblong, shorter than the segments, violet.

GERMAN POPULAR NAMES OF PLANTS.

THE first part of a carefully edited work* on German popular names of plants has lately appeared, and it will be very welcome to every one interested in the origin of English plant names. A very large proportion of our genuine popular names of the most important native trees, shrubs, and herbs are from the same roots as the German names, and many of them have undergone little alteration, whilst the common origin of others is not so evident. The first part of Pritzel and Jessen's book consists of nearly 450 pages (small 8vo), and contains the popular names of all plants, alphabetically arranged under their Latin names, from Abies Picea to Vitis vinifera, or nearly the whole of this section of the work, for, as the pictorial titlepage informs us :—

> " Mit Abies, der Tann,
> Da fahet sich's an.
> Das Seegras macht's End
> Zostera benennt."

The second part will contain the continuation, with an appendix of the names of funguses, and full Latin and German indexes. In one respect the arrangement is preferable to that of Britten and Holland's *Dictionary of English Plant Names*, and that is in the popular names given to a plant being all enumerated in alphabetical order under its botanical name.

With a full German index it will be quite easy to find what plant bears, or has borne, a certain name, and at the same time the various forms of that name, as well as of any others that have been applied to the plant, come under observation. This plan also saves a great deal of repetition, not merely of the Latin names, but also of the notes on the derivation and meaning of words. More than a hundred names, including variations of the same name in different dialects, have been given to some plants, and many have received upwards of fifty. The authors state that their work contains 24,000 names as against 13,000 in Holl's *Wörterbuch deutscher Pflanzennamen*, published about fifty years ago, and the most recent of its kind. This number includes names of some exotic plants as well as those of the indigenous ones, but it is incomplete as far as the names of exotic plants are concerned, as there is no name for Cocos nucifera, Ficus elastica, or for Passiflora. On the other hand, the Date, Teak, and Mahogany are mentioned. From a rough calculation, Britten and Holland's *Dictionary* will contain about 10,000 names, but their work is by no means so complete as Pritzel and Jessen's in dialectical variations of the same name, which are counted as different names by the latter. A mere comparison of the number of names in the two works gives, of course, no idea of their respective merits, and in many things they are not comparable, because the scope and purpose are not the same in the two works. The English work abounds in explanations and quotations, and is cast in a popular form, whilst the German work is more in the nature of a contribution to philology pure and simple. We do not mean that the explanations are insufficient in the latter work, for, as already mentioned, the arrangement of the material renders a repetition of explanation unnecessary. Thus an indication of the meaning of the various classes of names applied to a plant is more intelligible where all the different forms each name has undergone are brought together. Before giving a specimen of the work we will venture a translation of the first few lines of the preface of the surviving author, Dr. Jessen, who says :—" Our German mother tongue has formed its words in such a picturesque and poetical way that every inquiry into the fundamental meaning of a word becomes a source of interesting and pleasant ideas—the plant names that have originated with our people offer a rich treasure of such associations. To give only one example here, how charming it is that our word 'beere' (berry) signifies 'shining amid dark foliage,' while 'besie' or 'besing,' so common in the north-east, as a kindred form, possesses the same meaning." This appeals equally to the student of English plant names, who will also find much to interest him in the following names of the Oak tree and acorn.

* *Die deutschen Volksnamen der Pflanzen.* Neuer Beitrag zum deutschen Sprachschatze. Aus allen Mundarten und Zeiten zusammengestellt. Von Dr. G. Pritzel und Dr. C. Jessen. Hannover: Cohen.

7. QUERCUS ROBUR, L.

This includes the more recently distinguished species, 6 and 8 (Q. sessiliflora and Q. pedunculata), which have only been distinguished by the people as varieties in the few places where both occur. Middle Ages—Quercus; Glans.

Aachen, Pressburg
Ackerbaum—*Gleditsch*
Ackeren, Ackern (fruit)—*Gleditsch*
Aich, Aiche—*Megenb.*
Aich, Aichill, Aichil (fruit)—*Mtthd.*
Aiks (fruit)—*Gothisch.*
Akel (fruit)—*Mtthd.—holld.*
Druden — Druidenbaum — *Bechst.*
Echila (fruit)—*Althd.*
Eckebom : Ostfriesland
Eckel, Ecker, Eckeren, Eckern (fruit)—*Mtthd.*
Eek, Eekbom : Ostfriesland bis Pommern und Altmark, *Nd.*
Eenk, Eke, Ekenbom : Unterweser, Ostfriesland
Eich, Eiche—*Mitthd.*
Eichbaum.—*Hort. San., Beck, Fuchs.*
Eichila, Eilshila (fruit)—*Althd.*
Eik : Mecklenburg, Altmark.
Eike : Göttingen
Eghel—Ekelbôm—*Mittnd.*
Eih, Wildia—*Althd.*
Eissholz—*Bock.*
Ek—syn. Apoth.—*Niederd.*
Ek, Ekern (fruit)—*Mitthd.*
Eykel, Eykeyr (fruit)—*Mittnd.*
Eykelbom—*Mittnd.*
Hacheich—*Kilian.*
Heister, *Nd.* Hêster (junge pflanze)
Horseleich—*Fresius.*
Ihch : Siebenbürgen
Scodeke—*Mittnd.*
Sleizeicha—*Mtthd.*

In some parts of Aussen the old form *âker* = acorn, and pronounced almost exactly the same as the German *eker*, is still in use; and *âkering* is = to collecting acorns.

It has already been stated that the accepted names of our trees are nearly all from the same roots as the German. The following are examples of some of the German names of trees nearest in sound to our own :—*Mepelterne* = Maple tree; *Hasel* = Hazel; *Hornbaum* = Hornbeam; *Iwa* = Yew; *Ellaer* = Elder; *Bichen* = Beech; *Appel* = Apple; *Beer* = Pear; *Pflum* = Plum; *Slôn* = Sloe, and so on. The current German word for tree is *baum* (beam in English, as Hornbeam, Whitebeam); but in old high German it was *tera, tra;* and we have *Affaldra, Affeldre, Aphultra, Affolter, Apfalder* = Apple tree. In German, as in English, there are many book-names of herbaceous plants that are merely translations of the older Latin names; but all the commoner plants have indigenous names; and the English names of the same plants are often derived from the same roots, thus—*Dockenblätter* = Dock; *Nessel* = Nettle; *Distel* = Thistle, Teasel; *Rusch* = Rush; and *Segge* = Sedge. There are numerous corruptions of most of the popular names, and often they are so different from the original that they are only traceable by an expert philologist. Others are less difficult to trace. As will be seen, Dock is a shortened form of *Dockblätter*, which is derived, according to Pritzel and Jensen, from *tuch* = cloth (*dôk*, low German), and *blatter* = leaves. Sedge comes from a word that denotes cutting; Teasel from a word that denotes tearing, and so on. The foregoing derivation of Dock seems feasible enough when one knows the pronunciation; and another link exists in the North of England—Dockin or Docken, cited by Britten and Holland. Prior was unable to find a satisfactory derivation of the word Dock. One thing is particularly noticeable in German plant names—in the various dialects the same word runs through nearly all the vowel sounds. For example, *Kartoffel* is the current high German for Potato, and during the 300 years or so that this vegetable has been in Germany it has received the following names, a large proportion of which, it will be perceived, are modifications of *Erdäpfel* = earth-apples, and *Erdbirne* = earth-pears :—Aidbisam, Aerdappel, Apern, Artoffeln, Bodenbirne, Erdäpfel, Erdbirnen, Erdnät, Erdpumser, Erdtuffel, Flözbirn, Grieblingsbaum, Grüblingsbaum, Grumpiren, Grundbirn, Gümmeli, Herdapfel, Herdbirre, Hörpfel, Jacobsäpfel, Jerdapel, Jerdnäss, Ippels, Kantuffeln, Kartoffeln, Knollen, Krumpiren, Kurtuffeln, Mäusle, Nudel, Patätschen, Pataters, Plänterk, Taberhollen, Tartoffeln, Toffelchen, Toffeln, Tartuffeln, Tüffelken, Tüffeln, Tüften, and Tuffeln.

This notice has exceeded the usual limits, and we must conclude with the observation that the botanical part is remarkably free from errors. A few typographical errors, such as Sedum aice, Ranunculus acer, and Stratiotes aloides, might be corrected; and Dr. Jessen is wrong in taking himself as the first authority for Prunus amygdalus, as Dr. Baillon long ago formally reduced this species to Prunus. With regard to the authorship of this work, we assume that G. Pritzel should have been G. A. Pritzel, the author of the invaluable *Thesaurus Literaturæ Botanicæ*. We are confirmed in this assumption by the fact that Dr. Jessen (who edited the latter part of the last edition of the work named, after Pritzel's decease) speaks of Georgius Pritzel in his epilogue to the *Thesaurus*. *W. B. Hemsley.*

WORKSOP MANOR.

As most of your readers know, this once magnificent residence is situate in the "Dukeries," and about 2 miles from the Worksop Station on the Manchester, Sheffield, and Lincolnshire Railway. It is the residence of H. J. Cookson, Esq., and formerly of the late Lord Foley. The estate was acquired some years ago by a former Duke of Newcastle, prior to which it belonged to the Howard family, and was the residence of the Earl of Surrey. The house and grounds are surrounded by a beautiful park and extensive woods, which contain some of the finest specimen Beeches and Cedars of Lebanon in the kingdom.

The terrace (of which you gave an excellent engraving at p. 1625 of the volume for 1872), as in previous years, reflected great credit on Mr. Sutton for his judicious arrangements. Here the long-established masses of colour are toned down by the careful introduction into the principal circular and other beds of minor importance of subjects generally used to relieve the monotony of carpet beds, viz., Yuccas, Echeverias, Santolina, Sempervivums, Polemonium cœruleum var., &c. The larger beds were filled with Pelargoniums Lady Middleton, Rose Queen, Bayard, Waltham Seedling, Flower of Spring, &c. The standard Portugal Laurels, which in 1872 were so irregular in size are now all equal, and with heads 6—7 feet in diameter, and the boxes in which they are planted are all beautifully draped with Ivy.

The noble terrace wall never was so well furnished as it was this season with luxuriant Vines, Clematis, Aristolochia Sipho, Loniceras, Banksian Roses, and Jasmines. The large clumps of Pampas-grass (Gynerium argenteum) on the lower terrace were, in September, throwing up their beautiful feathery inflorescence, and close by were some good masses of the soft lemon-coloured Calceolaria amplexicaulis. At the north end of the terrace, and immediately under the windows, is the beautiful Box garden designed by Lady Foley, every plant of which is "green and growing," and there is not a "gap" or brown patch to be seen, while all is kept within limited dimensions by the shears, and the whole design brought out with a clean groundwork of small limestone. A ribbon border parallel to the Box garden, and backed with a Yew hedge, was nicely set off with rows of Sunflowers and Chrysanthemum frutescens. The shrubbery border contained grand masses of Colchicum autumnale, Campanulas, the charming blue Salvia patens, Marigold Sans Souci, Sweet Peas, &c.

The kitchen garden is 6 acres in extent and a parallelogram in form, enclosed by well-built walls, the whole divided into sections by transverse walls, several of which are flued. It is sheltered from the east and west winds by plantations, and on the north by thin belts of trees, and the greater part of the garden has a good fall from west to east. Mr. Miller, during his term of management, did much to raise the standard of fertility of this well-favoured garden by a systematic course of double trenching, a practice well followed up by his old pupil and successor, Mr. Sutton, as the enormous crops of vegetables, &c., produced year by year amply testify. The crop of Onions this season was an extraordinary one, and sown in January. Many of the bulbs were 13 inches in circumference; the varieties grown are Danver's Yellow, Banbury, and Nuneham Park.

Potatos turned out clean and heavy crops—a kind named Haigh's Improved Kidney was very good; by the way, I may mention that Mr. Sutton occasionally uses a dressing of Rape-dust at the planting season. Peas are always excellent, William I., Princess Royal, Yorkshire Hero, Dr. McLean, Laxton's Omega, and year Ne Plus Ultra being the kinds relied on; but this Mr. Sutton had a kind on trial that has been grown by the writer's family for over sixty years, and which is superior to Ne Plus Ultra in every sense excepting in height, the average being 7 feet, and frequently 8 feet—a quality not favourable for various reasons; it cooks to a "marrow" even when other varieties would be quite uneatable: the name of it is unknown. The earliest Pea grown at Worksop Manor is Sutton's Emerald Gem. Immense crops of Comfrey and Mangel Wurzel are grown in the kitchen garden for the cattle, Mr. Sutton having supervision of farm and park, as well as of the gardens. New vegetables are often sent here for trial by nurserymen and others, and first and foremost this season is Gilbert's Chou de Burghley, a Cabbage Broccoli, which commends itself to all who have hitherto had the pleasure of seeing and tasting it; there is also a new Cabbage on trial sent by Messrs. Dickson, Brown & Tait, Manchester, and if it prove as delicate and delicious in flavour as it is good in appearance it will be a worthy companion to the Chou de Burghley. In the section of the garden adjoining the gardener's house is a splendid row of the cut-leaved Blackberry (Rubus laciniatus), sent out several years ago by Messrs. Fisher, Son & Sibray, which bore an enormous crop of fruit.



Fig. 120.—The terrace garden at Worksop Manor.

This Bramble makes a profitable and beautiful screen, fit for almost any position not requiring an evergreen. On an unprotected Peach wall there were nice crops of Violette Hâtive, Grosse Mignonne, and Crawford's Early,a fair sprinkling of Pears and Plums, and heavy crops of Apples on standards, the most noteworthy of which were Blenheim Orange, Keswick Codlin, and Lord Suffield. Strawberries in pots for forcing are in fine condition, possessing firm, plump crowns; 1200 are fruited annually of the following kinds:—James Veitch, Keens' Seedling, and President.

Mr. Sutton excels in the cultivation of the Fig. Out of a house 16 feet by 12 feet he has gathered this season for the first crop upwards of 100 dozen of fine fruit, and the second crop appears to be as good; the trees are planted out and the shoots trained as near the glass as is consistent with safety. The variety grown is Brown Turkey. The second Peach-house contained good crops of Elruge Nectarines and Barrington Peaches. In the four substantial vineries were good crops of family Grapes, medium-sized bunches being preferred; Muscats, Hamburghs, Lady Downe's, Foster's Seedling, were exceptionally well finished; whilst Mrs. Pince's Black Muscat, grown side by side with Madresfield Court, is far and away ahead of the latter, with the true musk flavour even so early as the middle of August, and Mrs. Pince is better coloured than it is usual to see it. By the way, the house in which Mrs. Pince is grown is heated entirely by flues: has that anything to do with its superior flavour?

Melons are also well grown at Worksop Manor, a well constructed span-roofed pit in three divisions being set apart for them and the cultivation of winter Cucumbers; the Melon chiefly grown is a beautifully netted variety of Mr. Sutton's own raising. In one of the divisions of the Melon pit is a fruiting plant of Vanilla aromatica which produces annually heavy crops of fine fruit; in another division was a grandly flowered specimen of Stephanotis floribunda. Mr. Sutton ripened a fruit of it last year and has this season a fine batch of seedlings; it will be interesting to observe if they vary in their floriferous character. A few nice Pines are grown in lean-to pits, the Pine stove proper having recently been converted into a plant stove, cut flowers and plants for house decoration being in great demand.

Perhaps the most interesting floral feature in September, the time of my visit, was the north greenhouse, the roof of which was covered with Lapageria rubra and L. alba bearing nearly 3000 flowers and flower-buds, thus practically demonstrating that the best aspect for this Chilian gem is one of full light but not receiving the direct rays of the sun. *J. N. S.*

The Rosery.

PROTECTING TENDER ROSES.—The prevalent deluging rains, with intervals of bright cold weather and some frost, should put Rose cultivators on the alert with a view of providing protection for any tender Roses that may be growing in the open air. The severe winter of 1881 did immense harm to tender Roses, and while the wind remains for the most part in the north, there is no knowing how soon the weather may change to frost, and that of a severe character. It is when frost follows close on the heels of drenching rains accompanied by nipping winds that the greatest harm is done. The whole of the Tea-scented, China, and the greater portion of the Noisettes, will require to be protected more or less; for though they may withstand sudden and sharp attacks, it is long-continued frosts and easterly winds that do the harm, especially when the latter are prevalent during the spring months. Hay-bands, or old hay, or coarse grass, twisted into the form of bands, afford a capital and efficient protection; and if a stake be driven into the ground close to the plant, the branches gathered up close to it, and the bands twisted round them, but little harm will come. Standard and dwarf plants may be similarly served in this way. One Rose grower who employs this mode of protection recommends that the bands should be wound tightly about the lower parts of the plant or head where the buds were inserted, "but towards the middle, and at the upper part of the plant, leave a little space between the coils of the ropes to admit air during dry weather." The same authority recommends half-decayed leaves for protecting Roses on their own roots, placing them 3 or 4 inches thick upon the beds. If it is deemed necessary to protect the heads of any of these some Fern will be found useful. This was largely used in a Rose garden during the severe weather of the winter of 1880-81, and with the best results. Where Fern is not obtainable, a mixture of long grass from the verges of woods, and leaves, will do equally well, and be found to keep damaging frosts and winds at bay. It is the scathing north and easterly winds that do more harm in the long run than frost, and which so much need to be guarded against, especially when they visit us in March, when the Roses are commencing to be active.

Notices of Books.

Country Rambles; *or Manchester Walks and Wild Flowers, &c.* By Leo Grindon. Manchester: Palmer & Howe.

On a chill, dull November day we take up this book, knowing little or nothing of Manchester but its forbidding streets, and still less of its environs. Few things as we write are less tempting than an actual visit to the moors and bogs of Lancashire, and yet as we read page after page of Mr. Grindon's book the pulse quickens, the botanising box seems to say "Use me," the walking-stick like a diviner's rod almost presses itself on our acceptance. We feel for our pocket lens, make sure that we have knife, pencil, string, and the other *impedimenta* of a botanical ramble. Now this is about the highest compliment we can pay the author, but it is genuine. On realising the impossibility of accompanying Mr. Grindon in the flesh, and comparing the dreary outlook with the glowing page, we begin to experience a feeling of surprise that so much of rural beauty and interest is still to be found near Manchester. True, if man has in some cases effected its destruction, he has, on the other hand, vastly increased the facilities for enjoyment. The railway now enables a hard-worked Lancashire operative to inhale the keen Derbyshire air and refresh his mind with the stern beauties of the Peak. What possible tonic could be better? and if a doctor should be wanted to administer it, or to give trustworthy counsel as to the proper use of it, who better than the author? We are not about to criticise the work in detail—we have already admitted our want of the requisite local knowledge, but on general grounds we feel fully justified in commending the book—even on a dull November day—as excellent reading. The author is a most intelligent companion; he knows his way about, to use an expressive phrase; he knows what to look for, and how to look for it; and he has the gift of persuading others to see what he sees, to their great advantage. As he takes us over hill and dale, through woods and fields, our conductor gossips the while about trees and flowers and insects; he tells us scraps of local history; we peer with him into the village church, and scan the pictural façades of the "black and white" mansions of Lancashire and Cheshire, and have a "look round" their gardens. We hear of worthies among the Lancashire folk—of keen naturalists among a class of whom even their brother naturalists know next to nothing. And then, foreseeing perhaps that the perusal of his pleasant pages will create a demand for further supplies in quantity and quality beyond what can be expected in his own little book, the author tells his reader of the wonderful free libraries of Manchester. If he has been an excellent companion in the field, his qualifications stand out even more distinctively as he makes known to us the treasures of those libraries.

We were about to suggest for a future edition two things—a map, and a chapter giving the general physical features and surface-geology of the district; but, on second thought, it is better to leave this book as it is. It is sure to stimulate some earnest reader to devise his own map, and piece together the local facts of physical geography and geology in the best and most agreeable of all ways—personal investigation; and so Mr. Grindon's object will be better attained than by any formal didactic teaching.

—— *The Micrographic Dictionary* (Van Voorst).—The fourth edition of this work, indispensable to microscopists, has now reached the seventeenth part, which brings the work down to the end of the letter R

—— *Flora of Spain.*—Professor Willkomm's *Illustrationes Floræ Hispaniæ insularumque Balearium* has reached its fifth part. The coloured figures are as remarkable as before for their fidelity and freedom from artistic conventionalities and exaggerations. Campanula Bolosii and C. speciosa should be secured by plant-lovers, as two of the finest of their class. The text is in Latin, French, and Spanish.

Orchid Notes and Gleanings.

CATTLEYA LABIATA.—Among other fine things in bloom at Mr. R. P. Percival's, Clevelands, Birkdale, is a very good form of the autumn-flowering Cattleya labiata, with the base of the column white, and a distinct white ray proceeding from it halfway up each of the petals. This greatly enhances the beauty of the flower by daylight, but by gaslight it renders it perfectly enchanting. The same gentleman has also in bloom a very distinct form of Cattleya guttata Leopoldii with white wings to the labellum.

ODONTOGLOSSUM CRISPUM, VAR.—Mr. Toll, of Manchester, sends a flower of a very distinct form of Odontoglossum crispum. The whole of the flower is pure white except the base of the labellum and the upper part of the column, which is marked with bright lemon-yellow. The middle of the labellum is polished, and has a glassy appearance. Altogether the flower reminds one of a flattened Cœlogyne cristata, and if it retains its present character it will be a very desirable variety.

DENDROCHILUM UNCATUM, a pretty addition to the genus, with growth of D. filiforme and flowers of the size and shape of those of D. glumaceum, is now in bloom at Messrs. Low's nursery at Clapton. The flowers are white, faintly tinged with sea-green, and are very fragrant.

DENDROBIUM HUGHII, that delicate little novelty, is now in bloom at the Clapton Nursery. In growth it resembles D. lasioglossum, and the pure white sweet-scented flowers have the flat labellum of D. barbatulum, a variety which they much resemble, but the flowers are more clustered than those of D. barbatulum.

CYMBIDIUM MASTERSII. — From Mr. Simcoe, gardener to G. Neville Wyatt, Esq., of Cheltenham, comes a very fine spike of that lovely sweet-scented Orchid, Cymbidium Mastersii. It has the pure white flowers of the species as it was originally imported, but the closer arrangement of the flowers, and the purple markings of their labellums, are very similar to the variety affine. A large spathe of the new Anthurium Andreanum over 6 inches in diameter accompanies it, and serves to show to what perfection this marvellous plant can be grown.

PESCATOREA LEHMANNI.—The same box also contains a very fine form of the white and violet Pescatorea Lehmanni, which Mr. Simcoe says grows like a weed with him (if others could say the same it would not be the rare plant it is); Odontoglossum Rossii rubescens, Cypripedium Spicerianum magnificum, a grand dark form of Sophronitis grandiflora, Odontoglossum Insleayi superbum, and O. Londesboroughianum are also sent.

VANDA OR ODONTOGLOSSUM?—Which will produce the largest fullest flower of these opposite species? At any rate we have a rival in V. Sanderiana to O. vexillarium, as the dried flower proved shown at Stevens' Rooms on the 16th inst., the first public sale of this grand novelty. It is to be hoped a large quantity will arrive, and be successfully grown, for truly it is a grand species. I traced the outline of a flower, and find it nearly 5 inches in diameter, the shoulders of each segment being very broad, and the flower pressing out as in a grand O. vexillarium. The price for the large specimens was as high as twelve to sixteen guineas, a fine small plant (sure to live) fetching three guineas or more. The habit is good provided it grows in an upright position, the leaves being shortish, very strong, and the stem also has the latter quality. The plants showed a quantity of spikes, sub-erect even in a small state. It will prove a great ornament to our houses. One very noticeable trait in its character is the almost total absence of roots at intervals up the stems, those organs being produced at the very base in thick clusters. This will be a drawback towards importing it, for in a good many specimens many had died. Odontoglossum Alexandræ maintains its price, especially grand varieties, as is evidenced by "half a plant, bearing a thirteen-bloomed spike," fetching forty guineas. The vendor had a wish to retain one half, so sold half only, the half to be at the purchaser's option. It was a very grand form, of great substance and purity, with a very heavy distinct spot on the sepals and lip, the lower sepals pale rosy-mauve. *D. B. C.*

Plants and their Culture.

Stoves.—Where insects of whatever kind are rife in this department, all the time that can be conveniently spared to eradicate some kinds and reduce others to a minimum, should be spent at this thankless yet necessary task. In doing this it will be far better to go through the entire collection; those that are the worst infested may be seen to in the first instance, and again looked at after the others have been overhauled, before all are once again arranged in their places. Do not hurry this kind of work just for the sake of the appearance of the houses for a few days. Time spent in this manner now will doubly repay itself before many months are past. When we took charge here, we found mealy-bug in every direction, but were determined to master it in one way or another; this we have succeeded in doing to our entire satisfaction. For years past this pest has not troubled us; being entirely free from it we can devote considerably more time to the general well-being of our plants. When once any cultivator has experienced a freedom from this insect, one at least of his many anxieties is cast to the winds. We can move our plants about from house to house now just as we please, and no fear has to be apprehended of spreading bug to the fruit-houses; neither can it be caught by taking plants to the conservatory, that structure being clear of it also. On those who are in charge of a collection of stove and greenhouse plants, be it either large or small, I would like to impress the urgent necessity there is of reducing this insect above all others to a minimum and ultimately finally exterminating it. It will redound to their credit to succeed in these attempts. Some growers still doubt that this can be effected, but the places are few and far between where success cannot be secured by perseverance. Having twice succeeded myself I speak more confidently perhaps than I should otherwise do. Our practice has been recited in previous Calendars, and need not be repeated; suffice it to say we keep a strict watch on all new additions to our collection, and should a stray bug be found he is seen to at once. A small house by itself holds all fresh plants till they are proved to be clean.

For all stove plants a night temperature of from 63° to 65° will now be ample, with a rise of 10° or 15° in the daytime, according to the weather. When mild, even if the sun is not shining and thus raising the temperature, a chink of top air will be beneficial during the early part of the day. No undue excitement in growth should be attempted at this, the dullest season of the year. We know not what sort of weather may be in store for us a month or two later on; should it then be severe a drop of 5° at night below the above quotations will be far better than trying to maintain the same by hard firing. Economy with regard to fuel should be enforced, more especially in the earlier part of the season; then, later on, when growth is again advancing, the use of the same can be better applied. Those who are located near the metropolis, or other large towns, will find the exterior of their houses to have received a considerable deposit during foggy weather. It is essential to cleanse the glass as far as possible in order to obtain the full benefit of the light, the more so in the case of houses in which a somewhat high temperature is maintained. An ordinary hair broom will effect this without much difficulty. Plants of Poinsettias that are still developing their showy bracts will be greatly aided by occasional doses of liquid manure, provided they have well filled their pots with roots. The latest stock of these plants will be safe in a minimum temperature of 55°, if it is still requisite to retard them. Young stuff of foliage plants that are needed to be kept as healthy as can be in small pots, to draw from as changes for dinner-table decorations, will be greatly benefited by frequent sponging with a weak solution of any accepted insecticide. Besides acting as a preventive against insects, their foliage will look all the brighter and cleaner when the plants are placed on the table. Should any Crotons amongst this stock be making a set of young leaves, reserve any such till they are tolerably well hardened. We still continue to take off nice bright coloured shoots of these plants, finding no difficulty in striking them when healthy and of free growth.

Forcing Department.—A few pots each of the Paper-white and Roman Narciss should be introduced every few days, so also should the white Roman Hyacinths. These and the Narciss just named are most valuable between now and Christmas, the Paper-white and Schizostylis coccinea being excellent companions for the early Hyacinth. A few imported clumps of Spiræa (Astilbe) japonica may likewise be brought on; for early work we have found these superior to home-grown stock. Of Tulips, the Duc van Thols will be the best to bring in early; these should not, however, be placed in too brisk a temperature, or the flowers will be flimsy. Azalea indica alba, A. narcissiæflora, and A. punctulata, are among the best kinds to work into flower for Christmas. After two or three seasons' forcing these varieties will flower with comparative ease. If Lily of the Valley be required, early imported crowns will be found the most reliable. Plunging them in cocoa-fibre with a brisk heat will soon induce them to throw up spikes.

Conservatory.—The Chrysanthemums will now, and for some few weeks to come, keep this structure gay. Remove all decaying flowers and foliage at every opportunity. If the buds have not been too severely thinned, there will be found many that will yet open, either to add to the effect, or to be found useful to supply cut flowers. Ventilate freely on all favourable occasions to keep the atmosphere as dry and buoyant as possible. Where Camellias are being grown in the open borders of this house, see that they are well supplied with water. Do not on any account allow them to suffer from this time onwards, or loss of buds will be the result. Where too many of these are swelling off for the good of the plants thinning may be resorted to. With us, however, this is seldom needed, the dense fogs we experience at times being even too effectual in this respect. *James Hudson, Gunnersbury House Gardens, W., November* 21.

The Kitchen Garden.

The first favourable opportunity should be taken to get all pieces of ground manured, dug, and trenched where necessary, as they are cleared of Cauliflower and early Broccoli stumps, so as to be in readiness for early plantings of Peas, Cauliflowers, and other crops. The wheeling of manure, however, should not be attempted while the walks and grounds are saturated with rain. Owing to the very mild weather which we have experienced during the present and preceding month, together with the great quantity of rain which fell during that period, vegetation has been rather active for the time of year, and if a severe spell of frost were to suddenly set in now, it would make havoc among many of the crops. Bearing this in mind, it will be necessary to be provided with a good supply of bracken, or whatever protecting material may be most readily obtained, close at hand, with which to protect ridges of Celery, Endive, and young Lettuce plants, which are growing in warm situations out-of-doors; also those under hand-glasses, and in pits and frames, whenever the character of the weather may render protection necessary. Take advantage of a fine day when the leaves are dry to finally earth up late plantings of Celery and Cardoons, and pull up any weeds that are among breadths of Broccoli, Cauliflower, &c., and remove them to the rubbish heap, together with any yellow leaves which may be attached to the stems of the plants.

Frame Ground.—The subjects in this department should have an abundance of air in the absence of frost and snow—I mean the young Lettuce and Cauliflower plants for spring planting—to ensure a sturdy growth in the plants. Look over the established plants of Endive and Lettuce in this department, and remove therefrom any decaying matter that may be adhering to them, and destroy forthwith any slugs that may be found located amongst them.

Forcing Department.—The present will be a good time to put Potato sets of the Ashleaf and Hammersmith Kidneys, which are two excellent varieties, in boxes, or singly in 3-inch pots in leaf-mould, and put them in a little heat to start them preparatory to being planted on the hot-beds when they have made a couple of inches of growth a few weeks hence. Another batch of Rhubarb and Seakale roots should be got into the Mushroom house, or, where this accommodation does not exist, should be covered with pots in the open ground, and the pots covered with 3 or 4 feet thick of Oak or Chestnut leaves. Another frame of Asparagus should be got in at once. Sow Mustard and Cress at short intervals, so as to have a good succession of them for salading, and see that successional beds of Radishes are attended to in the way of airing and watering at the the roots. Stable-dung (including the horse-droppings) and leaves in about equal quantities should be thrown together next week, and turned over a couple of times in the course of a week or two to sweeten, wherewith to make up hotbeds for Potatos, Carrots, Radishes, &c., about the middle of the ensuing month. Keep a good supply of rich soil to hand in the potting-shed in readiness for the sowing and top-dressing of French Beans and other purposes connected with this department. *H. W. Ward, Longford Castle Gardens, Wilts.*

Peaches and Nectarines.

If the directions given in previous Calendars have been carried out, the early house will now be ready for starting; and if ripe Peaches are required by the middle or end of May it should be started at once. All that will be necessary for the first two or three weeks will be to close the house, unless we get very severe weather, when a little fire-heat may be used to keep the temperature from 40° to 45° by night, and 50° to 55° by day, with a rise of 5° or 10° more by sun-heat. Where fermenting materials composed of fresh leaves and stable-manure can be used, it may be done with advantage, giving off a nice humid heat; it will require frequent additions and turning to keep it sweet and fresh. Syringe the trees, paths, and walls with tepid water twice daily, about 9.30 A.M. and 2 P.M., except on very dull days, when the morning syringing will be sufficient. Where the sashes have not been removed the trees will require a thorough watering at the roots with tepid water at about 85°, but when they have been removed they will stand for a time. The heavy drenching rains we have had this autumn must have completely saturated the borders to the very bottom. If the roots are allowed to go outside they must be protected with a good covering of dry litter or leaves. I am confining the roots in our early houses to the inside borders, for I find, where the roots are encouraged inside by frequent top-dressings and mulching, that very few go outside; and where there is plenty of root-room inside I consider this the best plan, the roots being more under command, and much more easily supplied with water, especially in bad weather. The second house may now be cleaned according to directions already given; when the weather is unfit for outdoor work such work may be pushed forward with advantage. Go over trees in late houses, and take off all loose leaves, to expose the wood to all the light possible. *J. Wallis, Keele Gardens, Nov.* 21.

THE CHRYSANTHEMUMS IN THE TEMPLE.

An Invitation.

Come unto the Temple! Come!
See the gay Chrysanthemum!

When the floral world is glum,
Welcome, bright Chrysanthemum!
Let the "Lazy Minstrel" hum
Praises to Chrysanthemum:
On his banjo let him thrum
Glory to Chrysanthemum!
Some "incurved," "reflexed" are some,
Curious Chrysanthemum!
White and crimson, lilac, plum,
Elegant Chrysanthemum!
"Snowdrop," "Stella," "Stria-*tum*,"
Exquisite Chrysanthemum!
"Constance" and Rex Rubro-*rum*,"
Newest fine Chrysanthemum!
Pretty girls at prandi-*um*
Toast the sweet Chrysanthemum!
Afterwards at "kettledrum"
Bless the dear Chrysanthemum!

Luncheon in the Temple! Come!
Oystereo—Chrysanthemum!—Punch.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Nov. 27	Sale of Dutch Bulbs, at Stevens' Rooms; and at the Auction Mart, by Protheroe & Morris
TUESDAY,	Nov. 28	Sale of Camellias and Azaleas, Fruit Trees, Bulbs, &c., at the City Rooms, by Protheroe & Morris. Sale of Nursery Stock, at Lee's Nursery, Richmond.
WEDNESDAY,	Nov. 29	Ancient Society of York Florists' Chrysanthemum Show (three days). Sale of Hardy Plants and Bulbs, at Stevens' Rooms. Sale of Nursery Stock, at Steele's Nursery, Richmond, by Protheroe & Morris.
THURSDAY,	Nov. 30	Sale of Imported Orchids, at Stevens' Rooms.
FRIDAY,	Dec. 1	Sale of Lilium auratum and other Bulbs, at the Mart, by Protheroe & Morris.
SATURDAY,	Dec. 2	Sale of Hardy Plants and Bulbs, at Stevens' Rooms.

IT goes terribly against the grain to see the destruction of British Ferns and Orchids practised by "eradicators"—for that is their just title—who supply the markets or the hawkers who offer their wares from door to door. We all rejoice at the extension of the love of plants, and the good influences which result from it; but we shudder at the prospect of the speedy extirpation of our choicest favourites. A partial remedy is to be found in the gardener, who, in the first place, knows how to collect the plants with the least amount of injury, and, in the next place, is competent and willing to propagate and distribute them in the ordinary way. Only on these grounds can the wholesale raids made upon Odontoglossums and Phalænopsis and other foreign Orchids, to go to the other extreme, be expiated. If the plants are ruthlessly and remorselessly stripped from their native haunts, there is at least the possibility that by the art of the cultivator they may be preserved, propagated, and developed, so that in our hothouses they may attain a degree of perfection unknown under the more hostile conditions to which they are exposed in Nature.

The fancy for "alpine plants" is also giving rise to well grounded fears that many of the best and most interesting plants may be extirpated, and that thus so many elements in the history of the world as studied by the naturalists will be lost. What would be said if a raid were made upon the national archives, or even upon our parish registers? Whatever may have been the case once, protests loud and deep would now surely be uttered, and, more than that, effectual means would be taken to prevent the recurrence of such vandalism in the future. The protection of rare or interesting objects of natural history may be defended on the same principle. No one would desire to limit the legitimate collection of rarities for the purpose of gratifying an innocent taste, still less when the plants or other objects are secured for the purpose of study or of advancing knowledge. Between this legitimate use and ruthless extirpation for the mere sake of greed, there is a vast difference which every one with a spark of intelligence can recognise, even if he be not able in all cases to "draw the line."

Our Swiss friends have, as we learn from our correspondents, taken alarm at the rapid diminution of their treasures, and are taking steps to prevent it. The markets of Geneva and other towns are supplied with "alpines" torn up by hundreds and thousands when in bloom by ignorant peasant women. At first cut blooms and bouquets of the more accessible species were brought from the neighbouring fields, but as the taste for their cultivation increased, roots were brought from the higher and more distant mountains. It is easy to imagine what a sacrifice is thus made. Only a very small proportion of the plant are sufficiently carefully uprooted to grow properly. Moreover, the traffickers in these plants uproot all they can lay hands on in any particular locality—not on their own account only, but for the purpose of preventing any one else sharing in the nefarious traffic. Comparing the flora of the environs of Geneva, as it was when catalogued in 1861 by REUTER, with what it now is, Mr. CORREVON assures us that the diminution of rare species in the vicinity of that city is most striking, so much so, that the total disappearance of some of the most interesting and characteristic species is only a matter of a very short time. Thus Atragene alpina, Cypripedium Calceolus, Daphne alpina, Tulipa sylvestris, Erythronium dens-canis, Ononis rotundifolia, have almost entirely disappeared from the Salève; Cyclamen hederifolium from the only known Swiss locality near Aigle, and Tulipa maleolens from near Sion. From the higher mountains come by hundreds and thousands such plants as Gentiana verna, G. acaulis, Draba aizoides, Dryas octopetala, Soldanella montana, the Edelweiss, the Androsaces, Violas, Pinguiculas, Primulas, Anemones, and the like. Some of the women have even uprooted hundreds of seedling Pinus Cembra, inflicting thus a distinct loss to the mountain side. In the Valais things are no better, the Vandals bring thence Anemone montana, Adonis vernalis, Bulbocodium vernum, Viola pinnata, Opuntia vulgaris, Achillea tomentosa, and a host of others. These are disposed of by the "hotte"-ful in Vevey, Lausanne, Clarens, and specially Geneva. Against this state of things ineffectual protests have been from time to time raised by the botanists and flower lovers. The decoration of apartments by means of these little gems is the fashion of the day in Switzerland, and, under the circumstances, a most deplorable one. The local nurserymen could readily supply, at no greater cost, plants equally or more suitable for the purpose without injury to any one. It has been suggested that the public should be induced not to buy the plants, or at least that they should consent to buy the cut flowers only. We greatly fear such persuasion would be as little listened to as that which seeks to induce ladies to renounce bird-plumage for trimmings, or seal-skin for clothing, or which would banish veal from our tables. Some happy mutation of fashion may accomplish in a few weeks more than all the protests of distressed enthusiasts.

Meanwhile some members of the Swiss Alpine Club have formed themselves into an Association for the Protection of Plants. The Association seeks to educate public opinion on the matter, to show the fatal consequences of the present practice, to indicate the best methods of growing the plants from seed, and of cultivating them. More practical still in his methods is the member who has just purchased the mountain of Dôle, and prohibits any one from uprooting plants without his sanction. The owner of the Reculet, one of the richest localities for plants near Geneva, intends to follow the same course; so that it is hoped that just as mountains of refuge have been established where the chamois can no longer be molested with impunity, so similar sanctuary may be afforded to the alpine plants.

We can but sympathise most heartily with our Swiss friends, even although it may subject us to the same threats and penalties as those to which we were once subjected when our curiosity, and the desire to keep the readers of this Journal informed as to the culture of the Vine, led us to inspect some vineyards near Villeneuve. On that occasion the *amendes* and restrictions were, in theory at least, so numerous, that a glance over the vineyard wall even became a dangerous practice; but as loyal devotees of FLORA we should willingly submit to any judicious restrictions that may be found desirable; and as the Geneva Association for the Protection of Plants is desirous of entering into communication with members of our Alpine Club, with botanists and others interested in the flora of the Alps, we take this opportunity of making known the objects of the Association, and refer those interested to our correspondent, M. CORREVON, the Curator of the Botanic Garden, Geneva, for further information.

—— A FINE OLD WALNUT TREE.—The portrait on the opposite page (fig. 121) is that of a noble old Walnut tree, which grows near one of the drives at Mentmore, the palatial seat of the late Baron MAYER DE ROTHSCHILD, and now of Lord ROSEBERY. When measured a few years ago it was 66 feet high, and had a circumference of bole at 4 feet from the ground of 12 feet 7 inches. The circumference of its branches was 270 feet, and their spread in diameter 96 feet.

—— WISTARIA SINENSIS.—Mr. SQUIBBS, gardener to Mrs. BONSOR, Rook's Nest, Godstone, kindly informs us in reply to the enquiry at p. 560, that when his late father, in July, 1822, became gardener at Rook's Nest to CHARLES HAMPDEN TURNER, Esq., there was a Wistaria planted in one of the vineries, but this being presumably found an inconvenient place for it, the plant was removed, and ultimately planted against a south wall at Leigh Place, Godstone, the residence of Mr. TURNER'S son, and there it remained until a few years ago. At one time it covered a wall sixty yards long, but it gradually declined in vigour, and, the main stem decaying, it was cut down, but it still continues to throw up shoots. Mr. SQUIBBS states that Captain WELBANK was Mr. TURNER'S brother-in-law, and resided until his death at The Priory, Sandridge; and as his father raised several plants, and Mr. TURNER was a great patron of horticulture, Mr. SQUIBBS thinks it probable that the Chiswick plants were sent from Rook's Nest. With reference to the notable old plant at "Bothams" we are glad to know, on the authority of the owner, Mr. CHARSLEY, that it is still alive.

—— THE GREAT YORK HORTICULTURAL FÊTE, 1883.—The exhibition to be held in June next will celebrate a quarter of a century's work in the promotion of horticulture by the committee of this Society, it having been established in 1859, and it has always been in a prosperous condition. During that period it has paid upwards of £10,000 in prizes, and has divided upwards of £700 amongst the charities of York. A circular is now being issued by the committee to the leading members of the nursery and seed trade of the country, inviting special aid in the way of extra prizes, to supplement the liberal schedule annually issued by the committee. Vegetables have hitherto had but little notice at York, so that an excellent opportunity is offered for extra prizes in this class. The committee is anxious to make this twenty-fifth exhibition the most remarkable the Society has yet held, and therefore earnestly hope this appeal will be liberally responded to.

—— HARD-WOODED HEATHS.—The new Heath-house recently erected by Messrs. T. JACKSON & SON, of Kingston, is now filled with the finest collection of these plants to be seen in the country. Messrs. JACKSON'S nursery has long been famous for its specimen Heaths, which have never looked more promising than they do in their new home. The house contains three rows of plants in such robust health that at a short distance one could hardly believe they belonged to the hard-wooded section. The plants are kept fully exposed unless in case of stormy weather, and their increasing health and vigour is the strongest proof we can mention of Mr. PUTTICK'S abilities as a Heath grower, Mr. PUTTICK having grown most of the plants from the cutting. There are not many collections of hard-wooded Heaths (specimens) now left in the country, and we hardly know what will become of hard-wooded plants in general when the present race of cultivators pass away. During the late exhibition at Kingston a great many gardeners paid a special visit to the nursery to see the Heaths, whose history is so closely identified with the great exhibitions of the past twenty years.

—— BANKS OF GARDENIAS.—People who grow Gardenias as pot plants scattered up and down a whole house can form but little idea of their exquisite beauty where planted out in narrow borders, and trained in the form of a sloping bank. Their green leaves and pure white fragrant flowers are a beautiful sight at any time, but especially in winter, when sweetly-scented flowers are both scarce and rare. Mr. JONES has a border of this kind in one of the houses at Frog-

more, in which the plants are coming into flower, the flowers being large and the foliage of the plants of a deep green colour. The entire surface of the border is overrun with Selaginella Kraussiana, which however is hardly visible, owing to the dense character of the foliage.

—— Passifloreæ of Ecuador and New Grenada.—A paper on this subject was read at the last meeting of the Linnean Society by Dr. Masters, who based his remarks upon the collections made by M. Ed. André. As a rule, owing to their succulent nature, the flowers of these plants are very badly preserved in herbaria, and their structure is, in consequence, difficult or impossible to make out. The excellence of M. André's specimens, together with the valuable descriptive notes and drawings which accompany them, have permitted of full examination in most cases. Nine Tacsonias were collected, of which one was previously undescribed, and twenty Passifloras, four of which were new to science. The specimens also were of interest from the point of view of geographical distribution. Among the plants collected by M. André is the singular T. floribunda, the petals of which originate from the centre of the tube of the flower instead of from the throat. There still remain many fine species to be introduced to gardens, and it is probable, from the high elevation at which the plants grow, that some of them would be hardy in the South or West of Ireland and England, and in the Channel Islands. Grafting on P. cœrulea might be tried; indeed further experiments on the hardihood of these plants are the more promising, from the fact that the common P. cœrulea, which endures all but the most severe winters in the neighbourhood of London, is a native of the neighbourhood of Rio Janeiro. If, then, a plant so nearly tropical is yet found to be hardy, what may not be expected of others?

—— Chrysanthemum "Progne."—This is a medium-sized reflexed flower of a rich amaranth colour, and "violet-scented." The one great objection to Chrysanthemums as cut flowers is that they are not sweet-scented, and now that we appear to be fairly on the way of securing this acknowledged *desideratum* in this useful class of plants, it is to be hoped that we shall soon have a new race of sweet-scented varieties of various colours. In the Royal gardens, Frogmore, Mr. Jones grows the above variety in quantity, and in point of effect it is one of the most striking flowers in the collection.

—— Yucca recurva.—No one can look upon a finely-developed specimen of this handsome species without being convinced that it is most appropriately named the Weeping-leaved Yucca. It has a graceful and elegant habit of growth; the leaves at first are erect and somewhat glaucous, and afterwards they change to a deep green hue, and gracefully bend downwards, in this respect presenting a marked contrast to the stiff, erect leaves of Y. gloriosa and other species. Y. recurva is seen to great advantage when isolated specimens grow into large size, and thus it is always a conspicuous feature in a shrubbery border where it is so placed as to display its proportions to the best advantage. In the stiff clayey loam of Messrs. Charles Lee & Son's nursery, at Ealing, this species grows with great luxuriance, and it has withstood without injury the severity of past winters. It is said that Y. recurva will stand longer before flowering than others; but when it does this, and the fine head is ruined in consequence, the plant renews itself by throwing out a number of suckers round the root. These should be allowed to remain to the plants till



Fig. 121.—Old walnut tree at Mentmore. (see p. 688.)

they have attained a good size, and then be taken off in the month of May, planted out in the open ground, the soil being trodden firmly about them, and here they will soon root, and in the course of two or three years grow into fine and handsome plants. It is a plant peculiarly well fitted for planting on rockwork, taking care, however, that there is sufficient soil for it to root well into. In the case of a large specimen with a well developed head, the greatest danger in winter may be apprehended from snow. It would therefore be a wise precaution to tie up the centre leaves in a bundle for a time, until all probable danger from this cause had passed away.

—— CELERY FOR MARKET.—In some of the market gardens lying between Ealing and Brentford Celery is largely grown for market. One grower has several acres in the finest possible condition, and the time and attention bestowed on it from the time it was planted-out until it was finally earthed-up has been so great and persistent that it must of necessity be a remunerative crop. The earthing-up process has been carried out quite up to the leaves, and to do this the soil has been deeply dug out of the trenches. Very little, if indeed any, water can find its way among the leaves down into the stems of the plants; and the smooth slanting bank of earth on either side throws off rain into the trenches. A crop of Celery must also serve the purpose of deeply stirring the ground, and preparing it for a following crop. It will be observed that the market gardeners grow their Celery in the open, away from the shelter of trees, or any drip from them. As the final earthing-up was given only recently, it may be assumed that the intention of the grower is not to dig until Christmas or even later.

—— Mr. WILLIAM SUTHERLAND, formerly Manager to Messrs. R. P. KERR & SONS, of the Aigburth Nurseries, Grassendale, Liverpool, and author of *Hardy Herbaceous and Alpine Flowers*, has been appointed Nursery Manager to the firm of Messrs. W. B. ROWE & Co., Barbourne Nurseries, Worcester.

—— NOTES ON THE PRODUCTS OF LOMBARDY.—In a recently issued official report on the products of Italy it is stated that the Lemon tree is extensively cultivated north of Saló, along the Lake of Garda. It is costly to rear, but when exempt from disease 20,000,000 of the fruit can be gathered from 60 hectares (a hectare being nearly 2½ acres) of ground, to the value of 500,000 lire (a lire = 9½d. about) The same district produces 12,000 quintals of oil, and is capable of yielding a larger quantity of garden fruit, the sale of which will be much facilitated by the opening of the St. Gothard railway. Twenty-five years ago the hill region was covered with vineyards, yielding an annual produce of 2,000,000 hectolitres of indifferent wine, worth 18,000,000 lire, or 55 lire per hectare. To-day scarcely one-fourth of that quantity is obtained, owing to Vine disease and the competition of Piedmont and the other chief wine-growing districts of Italy. The region is now almost exclusively devoted to silkworm culture, which gives incessant labour to thousands of persons, and alone saves them from destitution. The most minute care is requisite for silkworm rearing; the houses must be large, airy, and wholesome; if a door or window be left open for ten minutes—if a due supply of leaves be omitted, or if for a few moments the necessary heat be not maintained—the whole of the precious insects may be lost.

—— BOUVARDIAS AT SUDBOURNE HALL.—In the whole range of winter-flowering plants there are none to surpass Bouvardias for their combined free and continuous habit of blooming and the fragrance of their flowers, which are alike suitable for decorative use in the conservatory or for cutting. But under the ordinary method of pot culture as followed by most growers their full capabilities are not brought out in the size of the trusses, and still less in the length of succession of bloom the plants yield as compared with the planting-out system. Mr. BETHELL adopts the latter method. The cuttings are struck in the winter, or early in spring, potted off as soon as rooted, stopped once or twice early, and then turned out in pits or frames in ordinary prepared soil, after which they require little attention beyond water and air more or less, according to the state of the weather. In this way they are fully furnished at the bottom with blooming shoots, and in addition each plant makes a number of strong growths from 15 to 20 inches high, as thick as an ordinary pencil. It is these latter that give the large trusses, and keep on in succession, as they flower at six or eight joints below the leading bunch, coming in over a length of time when the plants receive enough warmth. They are taken up and potted in autumn, just as they are coming into flower, and kept in a genial growing temperature, increased as the weather gets colder.

—— TRADE APPOINTMENTS.—The record of changes and new appointments in private gardens supplied by correspondents in our columns from week to week still leaves unmentioned many that are not without horticultural interest but which of necessity must go unrecorded. We may, however, well make an exception in favour of a young Chiswick man, Mr. A. HEMSLEY, who has for the past four or five years been one of Mr. BARRON'S most active and intelligent aids, having during that time had charge of the plant-houses and all the incidentals appertaining to the pot-plant department. Mr. HEMSLEY leaves Chiswick on Thursday next to take up the duties of plant foreman at Messrs. LITTLE & BALLANTYNE'S nursery, at Carlisle, where the experience gained at Chiswick, and his undoubted capacity as a plant grower will stand him in good stead. Those who have been enabled to visit Chiswick from time to time, or even have seen only the plants from the gardens now and then so artistically displayed at South Kensington, must have felt that the grower possessed sterling merit, and was well worthy of encomium. No finer collection of Begonias could have been found in the kingdom than has for the past two or three years been seen at Chiswick, very many of the fine varieties being seedlings of Mr. HEMSLEY'S raising. Gloxinias, too, have been seen in superb condition, and the Chiswick strain is second to none in the kingdom. Peculiarly successful, also, has Mr. HEMSLEY been with Chinese Primulas, not only in the production and increase of new kinds, but in their culture as decorative plants. The fine collections of Pelargoniums of various sections, the Achimenes and allied plants—all have well testified to his cultural abilities. Mr. HEMSLEY takes into his new post not only the best wishes of his Superintendent, but also those of his numerous friends.

—— THE ESSEX FIELD CLUB.—An ordinary meeting of this Club will be held at the headquarters, 3, St. John's Terrace, Buckhurst Hill, this (Saturday) evening, at 7 o'clock. The following papers will be read:—1. "Notes on the London Clay and Bagshot Beds at Oak Hill Quarry, Epping Forest." By N. F. ROBARTS, F.G.S. 2. "On the Relations to each other of Several Forms of Inflorescence." By JOHN GIBBS. Mr. R. M. CHRISTY'S specimens of species and varieties of Essex Primroses will be exhibited, in illustration of portions of his paper read at the last meeting.

ABERDEENSHIRE AGRICULTURAL ASSOCIATION.—Mr. JAMIESON thus summarises the results of six years' experiments:—

"1. Non-crystalline phosphate of lime, ground to a floury state, applied to soil deficient in phosphate, greatly increases the Turnip crop, and also, though to a less extent, the cereal and grass crops, but always with equal effect, whether it be derived from animal or mineral matter.

"2. Soluble phosphate is not superior in effect to insoluble phosphate if the latter be in finely disaggregated form, *e.g.*, disaggregation effected by precipitation from solution, or by grinding bones after being steamed at high pressure. In such finely-divided conditions the difference is in favour of the insoluble form, in the proportion of about twelve for the soluble to thirteen and fourteen for the above insoluble forms respectively. In less finely-divided form (such as mineral phosphate impalpable powder), insoluble phosphate is inferior to soluble phosphate in the relation of about ten to twelve.

"3. Nitrogenous manures used alone have little effect on root crops unless the soil is exceptionally poor in nitrogen, and rich in available phosphate.

"Nitrogenous manures used with phosphate on soils in fairly good condition give a visible increase of root crop, but this increase is due mostly, and often entirely, to excess of water in the bulbs.

"Nitrogenous manures greatly increase cereal crops, and the increase in this case is not due to excess of water.

"As to the relative efficacy of different forms of nitrogen: the ultimate effect of nitrogen in sulphate of ammonia, in guano, and steamed bone-flour is nearly identical, whether used with soluble or insoluble phosphate. Nitrate of soda, when used with soluble phosphate, is also identical with the above forms, but is of less efficacy when used with insoluble phosphate.

"4. Fine division (or perfect disaggregation) of phosphates assists the braird nearly as much, and with more healthy results, than applications of nitrogenous manures.

"The most economical phosphatic manure is probably non-crystalline, floury, insoluble phosphate of lime; the cheapest form being mixed with an equal quantity of the form in which the highest degree of disaggregation is reached.

"(At present these two forms are respectively, ground mineral phosphate (coprolite), and steamed bone-flour)."

—— CHRYSANTHEMUM CRIMSON KING.—This variety is classed under the head of new Japanese Chrysanthemums on p. 659, and it is but natural it should be so placed by any one drawing a conclusion from the shape and appearance of the flowers; but it is said to be included among Triomphe du Nord and others, that are scarcely distinguishable from the Japanese types, though classed with them; in fact, it is getting very difficult to say what are and what are not Japanese varieties, so closely do these and the ordinary show varieties approach each other. Nor is Crimson King a new variety, for it is said to be well known to the Northern growers, though on account of its scarceness it has been seldom offered to the public. In its habit of growth and shape of flower it is very similar to Julia La Gravère, but the flowers are considerably larger, and the colour brilliant crimson. The judges at the Aquarium Chrysanthemum Show followed the lead of the Floral Committee of the Royal Horticultural Society, and awarded the above variety a First-class Certificate of Merit.

—— UNSEASONABLE FLOWERING.—"Mid-Kent" writes:—It may be of interest to some of your readers to know that I have in my orchard a small Pear tree which is at the present time in full bloom. I cannot in any way account for this unusual occurrence; for, in common with the other trees in the orchard, it blossomed at the customary time.

—— THE WEATHER.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending Nov. 20, issued by the Meteorological Office, London:—The weather has been very cloudy and unsettled, with frequent falls of cold rain, snow, or hail. A brilliant display of aurora has been observed on several occasions, that of the evening of the 17th being very general. Temperature has been below the mean in all districts, the deficit ranging from 3° in Ireland and the W. of Scotland to 5° in "England, E." The highest of the maxima (55° and 56°) were registered in Ireland. Over England the thermometer did not rise above 53°, and in "Scotland, E.," 44° was the highest point reached. The minima were low everywhere, varying from 21° in "Ireland, N.," and "England, S.," to 26° in "Scotland, E."; in Ireland and the north-west of Great Britainn they occurred during the earlier part of the period, but over the greater part of England temperature was lowest on the morning of the 18th. The rainfall has been rather less than the mean in "England, N.E.," but more in all other districts; the greatest excess was eight-tenths of an inch in "Ireland, N." Bright sunshine shows a considerable decrease in duration everywhere, the percentages ranging from 15 in "Scotland, W.," to 29 in "England, S.W." Depressions observed:—During nearly the whole of this period an area of high pressure has been established over Scandinavia, and another area of comparatively high barometric readings over Spain, while over our islands and the north of France several depressions have appeared and generally travelled E.S.E. The winds have consequently varied greatly in direction, and frequently risen to fresh or strong gales—from the S. or S.W. in the N. and N.W., and from the N.E. in the S.E. Towards the close of the period pressure gave way in Scandinavia, and westerly or north-westerly winds (in some places blowing a gale) set in on all our coasts.

—— GARDENING APPOINTMENTS.—Mr. HENRY ANDREWS, who has acted as Foreman for several years under the late F. FAULKNER, of Woolton Hall, Liverpool, has been engaged to succeed him as Gardener by F. R. LEYLAND, Esq. —— Mr. R. HUBBARD, lately Foreman at Hackness Hall, Scarborough, has been promoted to the post of Gardener at that place.

ON THE AUTUMNAL RUST OF GRASSES.

The life history of two Pucciniæ detrimental to Wheat and other grasses has recently been made the subject of comment in the *Gardeners' Chronicle*. They were especially noticed because of the harm they did to Wheat. It will be remembered that of these two parasitic fungi, the one, Puccinia rubigo vera, appeared in its earlier state at the commencement of spring—in the months of March, April, and May—at which time its Uredo spores produced the rust on the young Wheats that not unreasonably alarmed the Wheat-growing community so much; while the other, the dreaded Wheat mildew (P. graminis), developed its rust in June, July, and August. Upon the grasses of many pastures at the present time (September) may be observed abundance of orange spores, so profuse that in walking through these affected pastures one's boots are covered with a reddish-yellow dust. This will be the case during October, and possibly till the beginning of November, until the early frosts put an end to the growth of the fungus. The long luxuriant autumnal growth of grass in meadows is the first to harbour this pest; but it is not confined to meadows, for it has already made its appearance on the Rye-grass sown on arable land.

Writing in 1878, Dr. Schröter* mentions the fact that some eighteen Pucciniæ have in Europe alone been described as distinct species parasitic upon various grasses. That these are all good and undoubted species very few botanists will feel able to believe; but that they are not, upon the other hand, all of them, mere varieties, no one who has given any attention to the subject will admit for a moment. As first sight it might be thought that the same Pucciniæ, growing upon different grasses, may so vary as to be called by species-splitting mycologists distinct species. But when we find, as we constantly do, two different Pucciniæ on the same grass, often at the same time, it must be conceded that something more than a variation in the host-plant has to do with the production of the specific form of the Puccinia. Extended and careful cultures of the various fruit forms of these parasitic fungi on their several host plants, graminaceous and otherwise, have thrown a flood of light upon their life-history which cannot longer be ignored by us. It is not, however, proposed to treat the readers of the *Gardeners' Chronicle* to a detailed account *seriatim* of these eighteen species; many of them are mere botanical curiosities, interesting enough to mycologists, but without practical importance to the rest of mankind. It may be thought that the fungus forming the subject of this paper lacks practical importance, for although it is detrimental to the various grasses upon which it occurs, yet by attacking them at a season of the year when their value for grazing purposes is to a great extent past its baneful influence upon the grass is not so important as if it had occurred at an earlier period of the year. This is to a certain extent undoubtedly true, but it must be borne in mind that there is no hard and fast line as to the time at which this fungus makes its appearance, just as with flowering plants stray specimens of the common kinds may be found at all seasons of the year, as, for example, the common Daisy; so with the Uredines, the bulk of them occur at their proper seasons, yet stray individuals may be encountered at almost every season of the year.

It is not, however, so much with respect to the injury the fungus in question does to its host plant as to the possible harm it may do to the animals which feed upon the affected grass that it is worthy of our attention. Instances of sheep, and especially lambs, having been fed upon rusty pastures or rusty Rye-grass at this season have come under my notice, in which they were attacked by a train of symptoms of greater or less severity, the most marked feature amongst which is a severe and irritating cough. This autumnal cough of lambs is not, I believe, unknown to many sheep breeders. Of course, the act of coughing may be produced in sheep as well as in all animals by a variety of causes, notably by any irritation of the bronchial tubes, whether produced by simple bronchitis from cold, or from the presence of foreign bodies in them. One not uncommon and dangerous form of cough is due to the presence in the lungs of an entozoon (Strongylus filuria); but with this affection we have nothing to do. The question is, Will the presence of the Uredo spores of rusty grasses set up pulmonary irritation, and if so, how? That the simple mechanical irritation of organic and inorganic particles inhaled during respiration can and does produce serious and fatal disease of the lungs in the human subject is well known to physicians as the cause of pulmonary disease amongst knife grinders, stone-masons, miners, millers, cotton operatives, and many others whose occupations compel them to breathe for many hours daily an atmosphere laden with dust. These affections are all more or less chronic in their nature. There is, however, a well-known and distressing complaint to which many persons are liable called hay asthma, or hay fever, which attacks the sufferer when he has enjoyed the fragrant perfume of newly-mown hay. It is believed that this distressing disease is produced by inhaling the pollen from the recently mown grasses, which, in contact with the warm moist mucous membrane of the bronchial tract, rapidly begins to throw out pollen tubes. Be this as it may, there is the fact that sheep fed upon rusty pastures suffer from severe cough, and it is by no means difficult to imagine that the uredo spores would germinate with great ease upon the moist mucous membrane of the sheep's bronchial tubes. Circumstances have not hitherto enabled me actually to demonstrate this, but there is certainly nothing impossible or unreasonable in the supposition.

The Uredo in question belongs to Puccinia coronata (fig. 122), one of our most interesting species on account of the form of the teleutospores. The Uredo consists of orange spores, more spherical in form than those of P. graminis. It is common upon the cultivated Oat, and may be recognised by the naked eye from the large patches in which it usually appears, it being in this respect quite distinct from the Uredo of either P. graminis or P. rubigo vera. It is not uncommon on Holcus lanatus, Lolium perenne, Dactylis glomerata, Avena sativa and elatior. The teleutospores are subcuticular, but their structure is so remarkable that when once they have been seen they cannot fail to be immediately recognised. In form they are cylindrical, but wider above than below. They are provided with very short stalks inferiorly, but the upper division of each spore is crowned with a variable number of well developed curved processes, hence the name. The Æcidium of this Puccinia is the Æcidium crassum of Persoon, common upon Rhamnus frangula and cathartica. When the Æcidium spores are placed upon an Oat plant under favourable conditions they in from fifteen to twenty days produce the Uredo just as the Æcidium spores of the other heterœcismal Pucciniæ do. I have made five cultures with the spores of Æcidium frangulæ amongst my heterœcismal experiments this year, four of which were followed by the Uredo.

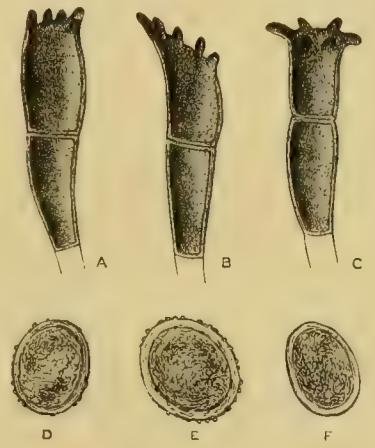


Fig. 122.—Puccinia coronata.

a, *b*, *c*, Teleutospores; *d*, *e*, *f*, Uredospores.

Appended are the spore measurements, the synonyms, and the host-plants of Puccinia coronata in a tabular form:—

Spore Measurements.

Æcidium spores	16—20 by 25 mk.
Uredo spores	20—28 by 16—20 mk.
Teleutospores	35—60 by 12—20 mk.

Synonymy of the Spore Forms.

Æcidium rhamni, Gmel.	Æcidium irregulare, DC.
,, crassum, Pers.	Puccinia coronata, Corda.
,, frangulæ, Schum.	,, serata, Preuss.
,, cathartici, Schum.	Solenodonta Flotowii, Raph.

Host Plants of the Æcidium.

Rhamnus cathartica, L. Rhamnus alpina, L.
Rhamnus frangula, L.

Host Plants of the Uredo and Teleutospores.

Andropogon ischæmum	Avena fatua
Alopecurus pratensis	Poa nemoralis
Agrostis stolonifera	,, trivialis
Calamagrostis epigeios	,, pratensis
,, Halleriana	Glyceria spectabilis
Aira cæspitosa	Molinia cœrulea
,, flexuosa	Festuca gigantea
Holcus lanatus	,, elatior
,, mollis	Bromus mollis
Archenatherum elatus	,, inermis
Avena sativa	Triticum repens
,, orientalis	Lolium perenne
,, strigosa	

Charles B. Plowright.

* Schröter, *Entwicklungsgeschichte einiger Rostpilze*, iii., p. 70, reprint from Cohn's *Beitrage*.

HOME CORRESPONDENCE.

Gardeners' Royal Benevolent Institution.—Your readers will, I am sure, be pleased to hear that it has been decided to put eighteen pensioners on the funds of this Institution on January 11 next. This will make the number of pensioners on our books 100—the largest number we have ever had at one time. I also beg to state that the collection in aid of the Pension Augmentation Fund for 1882 will close on November 30. The amount received up to this day is £478 8*s.* 7*d.*, being £83 4*s.* 9*d.* behind the amount received last year. The committee earnestly trust that among the many gardeners in England this sum will be made up before the day of closing the fund, and further hope that in a very few years they will have the gratification of being able to announce their ability to raise the pension £4 each. May I also add that the voting papers for the coming election of pensioners will be in the hands of the subscribers on or about December 16. *Edw. R. Cutler, Secretary, Nov.* 20.

The Divining Rod.—I am very glad indeed to recognise in Mr. Wolley Dod the young naturalist who joined me in the pursuit of insects in Windsor Park some forty years ago; and especially so to find that the same community of feeling and taste exists in plants, as in other branches of natural history. I am afraid Mr. W. Dod will have to add another to his list of troublesome and exacting visitors before many seasons have passed. I am glad my water-finding rod has struck the electric spark of memory, and so will bring me at any rate floods of pleasant recollections. Mr. Dod demands why, in some hands, the rod turns up, and in some down? This apparently eccentric movement in the rod is as inexplicable as the action itself, in our present state of knowledge in regard to the motive power. I suggested electricity as a possible influence in the phenomenal movement of the rod; I should esteem myself a very great discoverer if I could accurately define and describe the mysterious operating power. There may be ascending and descending currents of the subtle fluid or element, and as they pulsate so the rod acts. Perhaps it is the case that at one period of the day the effect is seen in one direction, and the opposite in another. We have not yet fathomed all the secrets of Nature, and there is much in this matter of water-finding to be elucidated. The second question is conveyed by the relation of an experiment, which, in its results, is interesting if fairly carried out; for, without disproving the action of the wand in the hands of an expert water-finder, it shows that electricity artificially generated differs in its action from the force that affects the man over subterranean water courses. It seems reasonable to assume that there exists a force that has a greater affinity for organic life than for metallic conductors. To the third question I can only say, that not having seen the experiment of blindfolding tried on the operator, I am unable to refute or confirm the assertion by personal experience, but in the case of Bletton, who made a great sensation in France in 1782, Dr. Thouvenel relates that 800 experiments were made under his own eyes in Lorraine, and water was found, the operator being in many instances blindfolded. I cannot class table-turning with the divining-rod; expectant force cannot cause the extreme point of a stick to curl upwards or downwards while the thicker part remains straight and unaffected by movement in the hand. It is not in the mere finding of water over a wide water-bearing area that the skill of the water-finder consists—any one acquainted with the district could do that; it is in indicating the spots where hidden runlets have their passage that the superior power of the gifted operator is evidenced. Mr. Dod mentions clay formations where wells might be sunk with an assurance of find-

ing water. It is certainly not my experience where the formation is of any thickness. Not above half-a-dozen miles from Belvoir a well was sunk, and borings carried down 900 feet unsuccessfully. The fact is, in compact clay the water from above runs off, and the water springs below cannot penetrate an impervious mass. I will now in as few words as possible give Mr. Dod my authority for saying that the rod has been employed in all ages for the discovery of water; and, sanctioned by the authority and opinion of an eminent divine—Menestrier—instance Jacob's rods of green Poplar, Hazel, and Chestnut, the wonder-working rod of Aaron, and the wand of the great Lawgiver Moses. In ancient Rome there was an aqueduct called Virgo, because the springs of water that supplied it were pointed out by a young girl gifted with the sensitive power of the water-finder. At a very early period in France the merits of the divining-rod were discovered and discussed, and it was credited with the power of discovering metals. In 1632 the Baroness Beausoleil published a work on the rod. In 1640 Father Kircher wrote a work on the subject, and while denying that the rod had power in discovering metals, acknowledged its tendency towards subterranean water, adding, "*Quod non dicerem nisi a me sumpto id verum cognovissem.*" The most famous of French hydroscopists was Bletton, whose operations excited a great amount of attention in 1782-3. Instances like the above, which might be greatly multiplied, will perhaps sufficiently justify the remark I made on the subject. In conclusion, let me express the belief that we have not yet penetrated so deeply into the arcana of Nature as to have wrested all the secrets that are hidden there. *Wm. Ingram, Belvoir, Nov.* 18.

—— I think I may be of some service in supporting Mr. Ingram on this subject. No one questions his veracity and good faith, but how then are we to account for facts staring us in the face?—for the Evil Spirit cannot be blamed now as heretofore when we are totally unable to account for the phenomenon. I therefore beg leave to throw in my mite to try if possible to turn the balance and put the weight of evidence on the back to which it belongs. Some thirty or forty years ago a wiseacre arrived in Aberdeen and gave himself the name of "water-finder," but he used neither charms nor spells; still so effective was his theory that he took the water from a corn mill (Mill of Eastertown), which was the subject of a lawsuit wherein the miller lost his case. Now his theory was this, that he by "meikle study" had found out that there was an underground current of pure spring water traversing Aberdeen, and perhaps the whole of the kingdom, and this current was nowise difficult to find, as he laid it down that it travelled often at great depths but that its track was always nearly east and west within one point of the compass of its trend. He commenced operations by finding a natural spring at a greater or less distance from his starting point; his business now was to intersect a line drawn through the point: he got five or six such points in my native village (Old Meldrum), and though a small place there was a great scarcity of water and it had to be brought to the market-place in pipes, and this supply was got from apparently high ground. A mariners' compass and three poles were all his tools, and by the aid of these he found the direction which the underground current took. It will, therefore, be seen that the Aberdeen man used his compass and poles just as a surveyor would, and starts from a given point in the right line without any quackery, such as the curling of the rod, which on the face of it has a smack of the old trick of table-turning; and a circle being drawn with this point for its centre and a perpendicular let fall from it the work is confined to the bearings of the needle, and if the premises are true so will the work be. Mr. Veitch, of Mount Radford Nursery, Exeter, was greatly in want of water, and being told of the water-finder by the "rod," laughed at the idea of finding aught in that way; but as the fee was small and the supply said to be certain it was undertaken, the sinking of the well commenced, and water found, although at so great a depth that it had to be raised by a pump, but still all parties were satisfied. *Alex. Forsyth.*

Webb's "Improved" Schoolmaster Potato. The following correspondence seems worthy of publication, inasmuch as it opens up the important question as to the nature of so-called "improvements" in Potatos. On November 17, Messrs. Webb & Sons, of Stourbridge, wrote to me as follows:—"We are very pleased to notice that you were awarded the 3d prize offered by us for twelve Webb's Improved Schoolmaster Potato at the Royal Horticultural Society's show on the 14th inst., but we cannot trace having had the pleasure of supplying you with our improved variety. Probably you obtained your supply elsewhere. If this is the case, please inform us by return of post, and we will then remit you the value of our prize." To this I at once replied in the following terms:—"I have referred to the conditions of the competition for your special prizes for Schoolmaster Potato set forth on p. 35 of the Royal Horticultural Society's schedule of arrangements for the year 1882, and I do not find it therein stated it was incumbent on exhibitors to obtain seed from you. The judges having by their award satisfied themselves that I had acted up to the requirements of the competition, it is not necessary I should supply you with any further information." Will Messrs. Webb & Sons give, in your columns, an authoritative statement as to the actual and unmistakable marks of improvement found in their Improved Schoolmaster Potato? Almost as soon as Schoolmaster Potato was first put into commerce "improvements" were forthcoming. I am acquainted with a large number of Potato cultivators, but I never yet met with any one who could tell wherein one differed in any degree from the other. Will Messrs. Webb & Sons, and Mr. C. Turner, who sent out the Potato, and who, therefore, has the original stock, agree to send samples of each to the Chiswick Gardens next spring, that a fair and impartial test may be made of the so-called "improvement"? *Richard Dean, Ealing, London, W.*

The Royal Horticultural Society's Committees.—It is by no means an inappropriate season to discuss the acts of the South Kensington committees because the year is drawing to a close, and still farther, it is not out of place to discuss their composition because certain changes in their constitution—very trifling ones, it is true—are usually made at the close of the year. Some interest may attach to the composition of the Council of the Society, but in the horticultural world far more attaches to the constitution of the Floral and Fruit Committees, because these are the national censors of myriads of plants, fruits, and vegetables coming to London for censorship from all parts of the kingdom. As so much that is both of purely horticultural and trade value attaches to the committees' awards it is of the first importance that they should be made by a body of men second to none in knowledge and in impartiality, and who will make their deliberations over the merits of the various things put before them a stern reality and not a farce. When, as has been shown, out of perhaps twenty members present only some five or six will vote upon the merits of any specimen, words fail to paint the contempt which must be felt for the ignorance or indifference of the non-contents. The Council must see in what is now going on in the South Kensington Gardens that any *prestige* that body may have hitherto enjoyed from the possession of those gardens is gone, and without doubt it is just as well for horticulture that these gardens should go, and thus relieve the Society of a heavy but useless burthen. But under these circumstances there is all the greater need that the Society should be able to establish more widely and firmly its purely horticultural position. Such statements as to the working of the committees as were made in these columns last week—and it is too well known that they are true—must tend to destroy that confidence in the importance and value of the committees' awards which of all things it is desirable they should be possessed of. To assist in retaining, and if possible strengthening, general confidence, the Council as a body should make a thorough revision of the *personnel* of its two horticultural committees, should, as has more than once in the past been advised, make them into one body, but divide it into three or four divisions, so that we may no longer see the round men in square holes, but have an assurance that each member should be placed in the subdivision for which his peculiar knowledge or qualification most befits him. But in doing this the Council should also determine to remove all merely ornamental or honorary members. To be a member simply because I have a friend in power who kindly puts me on would be to me a most humiliating position, and specially so should it be to all those who know that their membership simply means excluding others whose claims to position in horticulture are, except at South Kensington, universally recognised. There are far too many speciality men on the committees. One is great in Apples, but knows nothing of anything else; another is posted in Orchids only, another in Roses, another in some special florist's flower, another in alpine plants and these only, and so on, whilst some know nothing of anything useful, and so they go on. Now appointments of this kind are very stupid and very contemptible, and result in making the committees bodies whose awards are made by three or four members, whilst the rest are silent, somnolent, or gossiping. Another matter which should engage the attention of the Council is the sort of courtesy which should be shown towards eminent, and specially provincial, horticulturists when they happen to attend the meetings. It has been before urged, and I urge it again, that when such persons are present, the chairman should, at the instigation of the secretary, invite them to take a seat at one or other table as for the time being an "honorary" member [This is done at the Scientific Committee. ED.]. The provincial trade regard the committees at present as being rather metropolitan coteries than as national horticultural bodies; and such a suggestion as just made, if properly carried out, would be productive of the best results in the provinces. There are plenty of amiable gentlemen on the Council, and not a few genuine, warm-hearted horticulturists, but they are in these matters too much in the habit of being led. There is yet ample time ere the year expires for a thorough inquiry to be made into the working and composition of the committees, and of future desirable changes and arrangements; and if this be done with the broadest desire to render the committees more popular and far more efficient, much good will will come of it. *X.*

Jerusalem Artichokes (p. 660).—"W. O. M." speaks very positively that "we may take it as sure that it is a corruption of the Italian name, *Girasole Articiocco.*" Will he kindly give a reference to any Italian work that speaks of the plant under that name before 1617, when it was known in England as Artichoke of Jerusalem? Also any proof that it was introduced to Europe by way of Italy, and not, as generally supposed, by way of France? See *Gard. Chron.*, Nov. 1874, and April 14, 1877. *Henry N. Ellacombe.*

Treatment of Zonal Pelargoniums for Winter Blooming.—I am a devoted admirer of hardy flowers, and, as I mentioned in a recent issue, always contrive to have a supply up to the present month. Even in this, the last week of November, I could present you with a passable bouquet, that would include such outdoor flowers as Schisostylis coccinea—in spite of 6° of frost last week—double Matricaria and Chrysanthemums in profusion, with Ferns, Sweet Fennel, &c., for variety. However, for brilliancy of display and variety and richness of tints, commend me to winter flowering zonals. Here I would first like to say, in regard to the term zonal, it is hardly comprehensive enough, as some of the best pink and other kinds have no zone, or only a very faintly marked one. Your note in last issue, p. 659, referring to Messrs. Cannell's display of those at the last meeting of the Royal Horticultural Society, induces me to ask your permission to point out how I manage, with limited time and limited facilities, to have those in bloom the whole winter, and to add the names of a few more to your excellent list, of some now very fine with me. By this means your window gardeners, and especially if they have such as a large south bay window, might attain the same object. These are flowers in which almost every year sees a stride made in the direction of improvement, so if you think your old plants not the best, or of the latest introduction, better procure rooted cuttings, say in July, or unrooted, say in June. I procured mine of the former description, from the firm already mentioned, towards the end of that month. I did not want any blooms or flowers then, as my two dozen flower-beds, borders, and Rose beds were all brilliant. I potted three dozen of the newest and best—a few from which I shall presently name—in comparatively small pots, and plunged them in a close cold pit or frame until the leaves and roots began to work in unison. Had I plunged them outside in the shade or even in the sun, they would have received a greater check; the under-leaves would have fallen, but that is all. I mention this so as to suit suburban flower lovers who may have only limited time, and may not have frames for this purpose, but who may dearly like to have their small attached conservatories brilliant during the dull winter months. I mentioned small pots, and would like to make one explanatory reference thereto, as the point is material. There are some glorious bloomers, as Comtesse de Taunberg, Miss Hamilton, oculated white; Ceres, rose-salmon, &c., but so dwarf in habit and slow in growth that if larger than a 4-inch pot is used no flowers and no satisfaction is the result. After ten days in the pit, which was kept pretty close for the first week, I could perceive the roots were in working order, and, as the next consideration was to harden them off, to induce a firm sturdy growth, not to encourage any flowers until as late as possible in the autumn; and lastly, to put them where they would take care of themselves, as unfortunately I have many other duties to attend to, possibly like many of your amateur readers. I succeeded in all four respects by plunging my zonals up to the rims—not over—of the pots in the flower beds, and full in the sun. They here took care of themselves undoubtedly for months; part of the time I was through much of England, and found them doing admirably on my return, except to pick off an occasional bloom. During those months they never required even a watering. I respectfully commend this system, without claiming anything new for it, to many of your busy readers as not a bad way to commence to grow zonals—larger flowers and larger pots will by-and-bye be required. I like much the round flowers for pots, and find Celia, deep rose, and Hermia, rosy-red, good now. I would add of the same kind Zanoni, softer crimson, not yet in bloom with me. Of whites I find White Clipper Improved, Eureka, and I may include Miss Hamilton, plum-coloured eye, the best. Of salmons for winter I prefer Mr. Colson and Fanny Catlin, with Ceres, already mentioned. Of pink and rose there are none better than

Mrs. Strutt, pink-purple ; Constance, best rose colour ; Cyprus, and Eurydice. This is merely supplementary to those you name. *W. J. Murphy, Clonmel.*

Root and Branch.—I had a fancy some years ago that something might be done in the forestry of Conifers by restricting growth to the terminal bud alone. For this end all the side buds of some Scotch Firs were removed yearly as soon as they were well developed. My largest specimen is now a finely grown tree some 40 feet high. For eleven years successively it was operated upon as I have described—in fact, as long as I could get at the leading shoot without the aid of a ladder. When this tree is put into the sawpit it should, barring accidents, afford 11-foot boards of utterly faultless timber. Of course, if the laterals had been allowed to grow the plant would have been weight for weight larger at the end of the eleven years, but I think that in some fifty or sixty years hence the difference will be found inappreciable. *R. Trevor Clarke.*

Tomatos as Pickles.—Any one having any ripe fruits of Tomatos will find they make a delicious pickle by merely placing them in a jar, covering with the best vinegar, and tying down securely for a fortnight ; the addition of two or three Capsicums improves them in some people's opinion ; others prefer them cut open when fit for use, and a little of Lea & Perrin's Worcester Sauce added. The small kinds, ranging in size from that of marbles to walnuts, are the best for the purpose. The small green fruits are also much relished by some, but they require to remain longer in the vinegar before using. *W. H. Divers, Burghley.*

Single Dahlia Paragon.—I was told by the late Mr. J. Barkway, nurseryman, of East Dereham, that Paragon was raised at that place by (if my memory serves me rightly) the late Mr. Moore, the raiser of Delphinium formosum. I am under the impression that Beauty of Thetford and Paragon are distinct varieties, the former I am told being sweet-scented. It is too late with me to ascertain if Paragon is sweet-scented, but if not, then I should say they are not the same. *J. C., Gr., Shadwell Court, Thetford, Norfolk.*

Lapageria alba at Tranby Croft.—One of the finest, if not the finest, examples of this noble plant in England is that to be found in the conservatory of Mr. Arthur Wilson, of Tranby Croft, near Anlaby in Yorkshire. Its fine healthy shoots, as thick and succulent as Asparagus, were at the time of my visit growing "in thick array" over one side, and across the roof of a large conservatory, and literally loaded with magnificent wax-like blooms, which might be counted by the hundred. Mr. Cartwright, the courteous head gardener, has evidently hit upon the happy knack of handling this sometimes difficult subject ; and, indeed, the houses under his charge, filled with glorious examples of Crotons, Gardenias, Orchids, and tropical plants of every description, bear unmistakable evidence of his great success as a cultivator. *P.*

Helleborus niger maximus : Schizostylis coccinea : Aster Archer Hind. — The enclosed blossoms of Helleborus niger maximus, after being in a vase for about a week, began to lose their stiffness, and were evidently going off. By being plunged entirely, both flowers and stems, in cold water for a night they had yesterday morning regained their stiffness, though perhaps they may not outlast a journey to London as well as if freshly gathered. This Hellebore, which was given to me by the late Miss Hope, has been on rockwork, undisturbed, for two or three years. When coming into blossom it is covered with a *cloche*, and this year it has a profusion of flower-buds. As one of the best hardy plants for late autumn it should be grown in every garden. The plants like to be well top-dressed, so as to make good foliage, on which much of their well-doing depends. Sprays of Schizostylis coccinea, which last equally well in water, and blossom better than if left ungathered out-of-doors, look well with the Christmas Rose ; and with some such blue Aster as A. "Archer Hind" (one of the best of some beautiful Michaelmas Daisies kindly sent to us by Mr. Wolley Dod), shows the value of hardy flowers for late autumn, even in such a season of wind and rain, with a frost or two of 7° or 8°, as we have this year. *C. M. Owen, Knockmullen, Gorey.* [The Aster known under this name is A. versicolor. ED.]

—— The Christmas Rose is unusually early in flowering this season ; there were fully expanded flowers here on October 8, now there are hundreds of flowers well up above the foliage, with that length of foot-stalk so seldom seen later on in the season. This is remarkably early in my experience of the Christmas Rose even in the South. Two years ago they were scarcely out on December 25, with the assistance of handlights over them. I think we may attribute this early flowering to the wet, cold, and sunless autumn we have had, as there is no doubt they are moisture-loving plants. I may say that our plants are well established, and it is my opinion that the Helleborus dislikes so much transplanting and dividing as some recommend. *P. Conway, Muntham Gardens, Worthing.*

Reports of Societies.

Kingston and Surbiton Chrysanthemum : *Nov. 16 and 17.*—When six years ago the members of this Society resolved themselves into a committee, to found a Chrysanthemum show at Kingston, to be held annually, the most sanguine promoters of the scheme could hardly have anticipated that such signal success would have attended their efforts within so short a period. The late show completely eclipsed all its predecessors in nearly every department, and the promoters claim for it that it was one of the best, if not the very best, exhibition of its kind in England. From an intimate knowledge of all the other great shows of the same kind held all over the country we are pleased to be able to endorse this statement, as regards general "quality," and especially as regards the cut flowers. But in the hour of prosperity victorious generals, as well as the main body of the rank and file, are apt to forget the circumstances that mainly contributed to success. We are sorry to say that this was the case at Kingston, and that the one man (Mr. W. Tunnington) who faced the brunt of the battle for four consecutive years, and travelled between 1600 and 1700 miles, mostly at night, in cold November weather, to take part in those exhibitions, was "coolly ignored" by the authorities at the finish. This oversight we cannot help thinking a mistake. The great interest manifested in the result of the competition for the Challenge Vase has made the show what it is. It was owing to a discussion that took place in the columns of the *Gardeners' Chronicle* that the North-country growers ever came to Kingston, and the stands of flowers they have exhibited year after year since 1879 entitle them to at least respect. Moreover, in a cultural sense both sides have gained by the competition. What London growers have gained in an improved type of incurved flowers, the North-country growers have gained in the Japanese section. And there is still room for improvement, as we know. Neither in the neighbourhood of London nor in Liverpool are the large Anemone-flowered kinds exhibited in the same style as they are at Bristol. Let a stranger bring a stand or two of these to Kingston one year, and we are bound to say that he will meet more than one strong rival the next. But to return to the show itself, the arrangements were well carried out, and the effect when the hall was lighted up at night was charming. There were three tables running the full length of the hall, faultlessly furnished with choice plants suitable for the dinner-table, and cut flowers. The two sides of the hall were well filled with groups of Chrysanthemums and other plants arranged for effect, and also trained specimens. But the centre of attraction was the group, or bank, of trained specimens sent "not for competition," by T. H. Bryant, Esq., Glencairn, Surbiton Hill, which filled the whole of one end of the hall. The plants were arranged in a massive sloping bank three lines in depth. The back row was composed of standard trained plants, of different varieties, the centre line with the largest plants we ever saw, averaging over 7 feet in diameter. There was a tall pyramidal-trained plant at either end: and the third line was made up of smaller specimens. The largest of these specimens were of Mrs. George Rundle, George Glenny, and Mrs. Dixon, the two former bearing the marvellous number of 260 and 280 blooms each. The plants were grown from cuttings in eleven months! They were rather over-trained, but as an effort of cultural skill and manipulation we doubt whether such an exhibition of plants of the kind from one pair of hands was ever staged before. Had the plants been exhibited before the committee of the Royal Horticultural Society they would most likely have been awarded exemplary recognition. In class 1 the prize was given for the best group of miscellaneous plants arranged for effect, in a space not exceeding 100 feet. The groups set up in this class were by far the most artistic feature of the show, especially the 1st and 3d prize groups. The 1st prize was won by Mr. C. Attrell, gr. to Sir C. J. Freake, Bart., Bank Grove, Kingston, who had good Palms, a handsome Acacia, well-grown Chrysanthemums, a fine Yucca in the centre, Crotons, Dracænas, Richardias, a handsome groundwork of Ferns, and a neat edging of small flowering plants and Ferns ; this arrangement was very much admired. The 2d prize was awarded to Mr. King, gr. to R. Few, Esq., Wolsey Grange, Esher, who had Palms, Chrysanthemums, Crotons, Bouvardias, and Primulas. Mr. W. Brand, gr. to W. Clay, Esq., Elm Villa, Kingston, was placed 3d, with an exceedingly pretty group, very lightly arranged, and in effect quite equal to the group that obtained the 1st prize, although the plants were not of such high quality. There was strong competition in class 2, for the best collection of Chrysanthemums in pots, to be shown as grown, in a space not exceeding 50 square feet, quality and general effect to be the leading feature. Among seven competitors, Mr. C. Orchard, gr. to J. Galsworthy, Esq., Coombe Leigh, Kingston, was well to the front with a fine collection which presented an imposing bank of flowers, and was neatly edged with dwarf white flowering pompons. Japanese and incurved flowers were richly intermixed in this group, and the colours were very charmingly blended ; Mr. J. Croxford, gr. to Mrs. Dunnage, Albury House, Surbiton, was 2d, also showing a good collection ; and Mr. J. Buss, gr. to A. S. Price, Esq., Parkside, Ewell, 3d. In the class for six large-flowering varieties, with single stems, distinct, Mr. W. Burns, gr. to H. A. Riggs, Esq., Wykeham Lodge, Hersham, was 1st, with fair specimens of Fingal, George Glenny, Mrs. Dixon (very good), Venus (also good), Mrs. Shipman, and Mrs. G. Rundle ; Mr. J. Sallows, gr. to J. J. Flack, Esq., Hampton Road, Twickenham, being 2d, with plants equally large, but not so well flowered. For three plants, large-flowering, distinct : 1st, Mr. G. Stevens, St. John's Nursery, Putney ; and for three standards, single stems, distinct, Mr. W. Burns was 1st, and Mr. J. Sallows 2d. In the single trained specimen class Mr. King was invincible with a fine plant of George Glenny ; Mr. Sallows 2d, with Mrs. G. Rundle ; and Mr. W. Burns 3d. Six trained pompons, single stems, distinct kinds.—1st, Mr. J. Hoskins, gr. to S. Williams, Esq., The Laurels, Putney ; 2d, Mr. J. Lyne, gr. to Mrs. Schlusser, Belvedere, Wimbledon ; 3d, Mr. J. Child, gr. to Mrs. H. Slade, Claygate. Mr. J. Watson, gr. to Captain Cundy, Norbury House, Surbiton, was 1st for three specimens ; and Mr. J. Lyne obtained a similar award for three standards. Mr. George Stevens was 1st for a single trained specimen.

The absorbing interest of the day was, however, directed to the competition for the Champion Challenge Vase, value 25 guineas, the gift of the President and Vice-Presidents in 1879 for forty-eight Chrysanthemum blooms, distinct, twenty-four incurved and twenty-four Japanese. It was arranged that the competitors in this class should not stage their flowers until the hall was thoroughly cleared, and this was effectually done (though not without some trouble) under the personal direction of the President, F. A. Davis, Esq., and T. H. Bryant, Esq., who were determined that there should be no "followers" to impede the judges in their duties as was the case last year. It will be remembered that Mr. Harding won the vase in 1879, Mr. Tunnington in 1880, and Mr. Faulkner (who died a few days before the present show) last year. The competition, therefore, according to the conditions of the schedule, rested between Mr. Tunnington, Mr. Harding, and F. R. Leyland, Esq., who sent the blooms grown by his late gardener. Mr. Harding obtained the verdict of the judges by two points, and becomes the absolute owner of the vase, his victory apparently giving great satisfaction to the Southern growers. Mr. Harding was considered to be strong in Japanese blooms, and his incurved flowers were far ahead of what he showed last year, but some of them were decidedly coarse. The incurved sorts consisted of Empress of India, Golden Queen of England, Alfred Salter, Jardin des Plantes, Princess of Wales, John Salter, Golden Empress of India, Queen of England, Princess Teck, Hero of Stoke Newington, Novelty, Nil Desperandum, Prince Alfred, Mrs. Heale, Mr. Brunlees, Empress Eugènie, White Venus, Mr. Bunn, Princess Beatrice, Lady Hardinge, Pink Perfection, Mrs. Haliburton, and Le Grand. The Japanese sorts were Marguerite, Monarch, Bouquet Fait, Triomphe du Châtelet, M. Orden, Curiosity, Baron de Prailey, Fair Maid of Guernsey, Madame C. Andiguier, Bronze Dragon, Comtesse de Beauregard, Comte de Germiny, M. Planchenian, Criterion, Madame Moulise, La Incomparable, Elaine, La Nymphe, Fulgore, Plantagenet, Thunberg, Garnet, Dr. Masters, and Boucharlet. Mr. Tunnington's large incurved were incomparable, but the judges discovered the points of destinction among his Japanese blooms, and awarded him the 2d place ; F. R. Leyland, Esq., Woolton Hall, being 3d. In order to maintain the interest taken in the shows, the Society offered a second Challenge Vase, to be competed for under the conditions already mentioned, and Mr. E. Molyneux, gr. to W. H. Myers, Esq., Swanmore Park, Bishops Waltham, Hants, easily carried off the trophy with splendid stands of flowers, most of which were duplicates of the varieties exhibited by the competitors for the other vase. Mr. C. Gibson, gr. to J. Wormald, Esq., Morden Park, Mitcham, who carried off the ten guinea prize at the Royal Aquarium, was 2d ; and Mr. Jellicoe, Camp Hill, Woolton, Liverpool, 3d. For twenty-four incurved flowers, distinct variety, a timepiece, value four guineas, was won by F. Leyland, Esq., Woolton Hall, Liverpool, with an excellent stand of flowers, of which White Beverley, Venus, Barbara, Mr. Howe, and Mr. Bunn, were the best. Mr. G. Harding was 2d, and Mr. Tunnington 3d. Twelve incurved flowers.—1st, Mr. Molyneux, with blooms second to none in the show ; 2d, Mr. G. Woodgate, Warren House, Kingston ; 3d, Mr. J. Strong, gr. to H. Sweet, Esq., Dornay House, Weybridge. Six incurved flowers.—1st, Mr. F. Benson ; 2d, Mr. C. Slade ; 3d, Mr. Coombes. Six incurved blooms, one variety.—1st, Mr. E. Molyneux, with grand blooms of Princess of Wales ; 2d, Mr. Benson ; 3d, Mr. Strong. In the class for twenty-four Japanese varieties, Mr. E. Beckett, gr. to J. P. Corry, Esq., Sandown House, Esher, was 1st, showing fine blooms ; Mr. King 2d, Mr. G. Harding 3d, and Mr. Woodgate 4th. Twelve Japanese varieties.—1st, Mr. W. Burns ; 2d, Mr. J. Croxford ; 3d, Mr. Strong. Six Japanese.—1st, Mr. C. Herrin, Chalfont Park, Slough ; 2d, Mr. Benson ; 3d, Mr. J. Watson. Six Japanese blooms, one variety.—1st, Mr. E. Molyneux, with wonderful flowers of Madame C. Andiguier ; 2d, Mr. C. Herrin ; 3d, Mr. G. King. For twelve reflexed flowers, not less than six varieties.—1st, Mr. E. Molyneux ; 2d, Mr. E. Coombes ; 3d, Mr. J. Hill. Twelve Anemone-flowered.—1st, Mr. E. Gibson ; 2d, Mr. E. Molyneux ; 3d, Mr. C. Orchard. And for twelve bunches of pompons, distinct, three stems as cut to form

a bunch, Mr. J. Lyne was 1st, Mr. E. Beckett 2d, and Mr. Moorman 3d. Twelve bunches of Anemone pompons, not less than eight varieties.—Mr. Lyne was again 1st, and Mr. E. Beckett 2d. The table plants were good throughout. Mr. Munro, gr. to Lady Chichester, had 1st for nine, Mr. Bates 2d, and Mr. E. Beckett 3d. Mr. G. King was 1st for six, Mr. Hickle 2d, and Mr. Stephenson 3d. Mr. King was 1st for berried plants, Mr. E. Beckett for Primulas, and Mr. J. Buss for Cyclamens.

For the best collection of six dishes of fruit Mr. W. Bates was 1st, Mr. E. Beckett 2d, and Mr. Munro 3d. Prizes for Pears and Apples were taken by Mr. G. King, Mr. C. Attrill, and others; and one or two collections of vegetables were also exhibited, as well as a collection of Grapes from Messrs. T. Jackson, Kingston, not for competition. There was a capital show of plants and cut flowers from amateurs and cottagers who do not employ a gardener more than one day a week, and the special prizes offered for the best devices for the dinner-table, bouquets, and other floral ornaments, were also well contested.

Chrysanthemum Show at Devizes: *Nov.* 21.—This was an exhibition of Chrysanthemums, &c., held in connection with an annual bazaar in aid of the Benevolent Society at Devizes. The plants were arranged with excellent judgment and taste by Mr. Thomas King, the gardener at Devizes Castle, who had the management of the show, and the bazaar stands were set up to admit the groups of plants. The effect was extremely pleasing, and it was heightened by the fact that the exhibits were generally of a high-class character. The best six plants of large flowering Chrysanthemums came from Mr. J. Bradner, Redland Road, Bristol, large sized as exhibition plants go, but excellently grown and flowered. With four specimens Mr. C. N. May, Devizes (Mr. W. Sharp, gr.), was 1st with thoroughly well done naturally grown specimens. There was also a class for four plants of Mrs. G. Rundle and its two sports, and a plant of Le Grand. Here Dr. Hitchcock was 1st with a very good lot, and Mr. C. N. May 2d. In the class for six pompon varieties C. E. Colston, Esq., Roundway Park (Mr. H. Clack, gr.), was 1st with nice clean, upright, well grown specimens—a style of growth that appears to be favoured at Devizes—with good heads of bloom. There was also a class for four pompon varieties. The best six Japanese Chrysanthemums (a very creditable lot indeed) came from C. E. Colston, Esq. Cut blooms were remarkably good, and there was an excellent competition in all the classes. The best twelve blooms came from Mr. James Hobbs, Lower Easton, Bristol; 2d, Mr. John Bardner. In the class for twelve incurved blooms, shown with 4 inches of stem and foliage, Mr. John Bayliss was 1st with a very fine lot. Dr. Hitchcock was 1st with twelve blooms of Japanese Chrysanthemums; 2d, Mr. T. Chandler.

Fruit was represented by displays made by the fruiterers of Devizes. Mr. H. King was 1st with a large and varied collection admirably set up, Grapes being a strong point; and Mr. Chivers was 2d. In the class for a collection of six dishes of fruit the 1st prize was withheld owing to want of merit. On the whole the show was one highly creditable to the town and neighbourhood of Devizes, and it was pleasant to see flowers in association with practical works of benevolence.

Edinburgh Botanical: *Nov.* 9.—The first meeting of the forty-seventh session of this Society was held at 5, St. Andrew Square. Dr. Cleghorn presided, and in the course of some introductory observations referred to the decease, since their last meeting, of Dr. Dickie, Emeritus Professor of Botany in Aberdeen, a great authority on Algæ; also Dr. Parnell, Edinburgh, one of the original members of the Society, who had given much attention to fishes and grasses, his book on British grasses being quite a standard work; and also Dr. Thwaites, late Director of the Botanic Gardens, Ceylon, who had devoted thirty years of his life to exploring the flora of the island, and who had also published an enumeration of its plants. The following papers were read:—

I. "On the Germination of Podophyllum Emodi," by Prof. Dickson, M.D. Dr. Dickson remarked that observations had been made by botanists from time to time on a peculiarity in the germination of certain plants belonging to various natural orders where the bases of the cotyledons are connate into a narrow tube of greater or less length. This tube being too narrow to allow the upward passage through it of the developing plumule, this last breaks its way through the base of the cotyledonous tube. The above-mentioned anomalous condition has been observed in the following orders:—

RANUNCULACEÆ.	
Delphinium fissum	Bernhardi, 1832; *Linnæa*, vol. vii.
,, ochroleucum	
,, nudicaule	Asa Gray—but with erroneous interpretation; Siliman's *Journal*, quoted in *Journal of Botany* for Dec., 1871.
Anemone coronaria and various other species.	Irmisch, *Bot. Zeitung*, 1856.
Eranthis hyemalis	
BERBERIDACEÆ.	
Leontice altaica	
,, vesicaria	
CRUCIFERÆ.	
Dentaria	Bernhardi, *l.c.*
UMBELLIFERÆ.	
Bunium luteum	
Prangos ferulacea	
Ferulago	
CUCURBITACEÆ.	
Megarrhiza californica	Asa Gray, *Bot. Text Book*, 6th edit., 1880.
PRIMULACEÆ.	
Dodecatheon Meadia	Bernhardi, *l.c.*

To this list has now to be added another Berberidaceous plant—Podophyllum Emodi—the germination of which has been observed in connection with seeds from Thibet, recently presented to the Royal Botanic Garden, Edinburgh, by Mr. Elwes. The cotyledonary tube here is of considerable length, and in most cases it would appear that the plumule remains over winter in a comparatively undeveloped condition, in this respect resembling Leontice, as described by Bernhardi, where only the cotyledons and a small tuber appear the first season, the development of the plumule occurring in the second. In one case, however, the plumule had developed sufficiently to break through the base of the cotyledonary tube, just as in Delphinium or any of the other cases mentioned. The cotyledonary laminæ are expanded and leaf-like, and in several specimens the remarkable peculiarity was observed of the development of an adventitious root from the cotyledonary tube a little above its base.

II. "Note on Rubus Idæus, var. Leesii," and "Notice of some Plants from Inverness-shire," by Dr. Mactier, St. Andrews. I beg to bring to the notice of the Botanical Society that the Rubus Idæus, var. Leesii, of Babington, has been found in this neighbourhood. I know of no record of its being previously noted in Scotland. Neither Babington nor Hooker mention it as growing in the North, and the former, in one of the earlier editions of his manual, gives only two or three English stations. I found it in full flower in June last, 3 or 4 miles south of St. Andrews, growing in a thicket of common Raspberry and Bramble. Six or eight plants were noted, but others would probably have been found had a closer search been made. Its numerous flowers, together with the many small, roundish, simple leaves, and the grey colour of their under-surfaces, were in such marked contrast in the common form of Rubus Idæus that it could hardly be overlooked. Indeed the first plant I found (in an isolated position) was so utterly unlike anything I had before seen that it at once attracted my attention, though I was walking at a considerable distance and not then on the look-out for plants. Having failed to identify the plant satisfactorily here I sent specimens to various friends. Mr. Sadler, from a small scrap considered it to be rotundifolius; Dr. F. Douglas, of Kelso, thought it was Leesii; so, to settle the question, I forwarded specimens to Professor Babington at Cambridge, and he writes in reply:—"Your discovery is very interesting, and you have named it correctly. I did formerly consider it as a distinct species, but with some slight doubt, as I believe that it does not ripen seed. I have seen the fruit apparently ripe, but could never find a ripe seed on it, nor indeed do I know that ripe seeds ever have been found. Exactly the same plant is found in Sweden, Germany, and France, and has gone by various names, but all I believe posterior to my name of Leesii. In the eighth edition of my *Manual* I have placed it as a form under Idæus. It is not quite constant in form, although nearly so." I send herewith dried specimens of the plants for inspection, as also a sprig of the common Idæus for comparison. It will be noticed that the annual or barren stems differ materially from the flowering ones; in the former the leaves are all more or less trifid, the petiolules short, and the leaflets rounded, whereas in the latter the leaves are generally small, simple-rounded or trilobed rather than trifid, but, as Mr. Babington remarks, they are not constant in form. These peculiarities are most marked in the upper part of the plant. Being from home during the summer I was unable to note the appearance of the plants at that season, but my friend the Rev. Mark Anderson, tells me that he visited the spot and found that although the common Raspberry was in full fruit not a single berry was to be found on the Leesii, I may add that I hope next season to be able to procure a number of specimens, which I shall be happy to supply to any members of the Society who wish to have them.

It may be interesting to record a new station for the Lysimachia vulgaris, which in the text-books is stated to be rare in Scotland. I found it in September last on Speyside, between Aviemore and Boat of Garten, and in two separate localities a couple of miles distant from each other. I believe it is quite new to that district, for the Rev. Mr. Keith, of Forres, who has for many years been engaged on the flora of the province of Moray, writes to me that he is quite unacquainted with it. He suggests, indeed, that it may have been a garden escape, but my friend Dr. F. Douglas, an old and experienced botanist, who saw the plants *in situ*, quite agreed with me in believing them to be undoubtedly indigenous. The common garden variety is, if I mistake not, quite a different plant, the Lysimachia ciliata (?). They were growing in great abundance over a limited space in wet, swampy ground, and, being vigorous and in full bloom, presented a splendid appearance. I would further beg to note that during the two past summers I, in company with my sons with me, found the Saxifraga rivularis on the north face of the Cairngorm range, growing at an elevation of only 2400 feet, by the Ordnance Survey map. This plant, which is considered one of the most alpine of all our Saxifrages, was also new to the district, and the fact of its being found at so low an elevation may be accounted for by the snow-fed source of the stream in which it grew. The Saussurea alpina and Malaxis paludosa were also interesting finds in the same locality, the latter on low ground near Nethy Bridge.

III. "Note on Proliferous First Fronds of Seedling British Ferns," by Charles T. Druery, London.

IV. "Note on Cross Fertilisation," by Rev. J. A. Paton, M.A., B.Sc., Inch. In my experiments in cross-fertilising different varieties of Potato in my garden with a view to raise new, and, if possible, improved seedlings, I have been led to an interesting observation. Last summer the number of flowers upon the Potatos was very great, and the fruit was very abundant, bunches being on nearly every plant. This year, however, though the flowers were equally abundant, the only "plums" were those arising from flowers marked as having been cross-fertilised. I may say that when this seemed to be the case I examined all the rows very carefully, and the result was as I have stated. It is held that, in general, flowers are most easily fertilised by their own pollen [?] Are there, in certain circumstances, exceptions to this rule? It has been suggested that the weather was damp, and unfavourable to the action of the pollen; or that the air was very still, so that the pollen was not naturally shaken on to the pistil. But neither of these was the case. The days when I crossed the flowers (and when Nature should have been fertilising also) were hot and sunny, though sometimes showery at night, it is true; and there was a slight breeze. Certainly the damp could not be the cause, as it acted equally on crossed and uncrossed flowers.

V. "Notes on Rare and Interesting Plant in Flower at present at the Royal Botanic Garden," by John Sadler, Curator. The plants were:—Durio zibethinus (Durion or Duryon fruit), Alsodeia Welwitschia, Colletia bictoniensis, Malpighia urens, and Parochætus communis.

Mr. Dunn exhibited a specimen of Hoya stenophylla, and Dr. Paterson, Bridge of Allan, exhibited a hybrid Sarracenia.

Mr. Sadler then read a number of notices he had received from gardeners all over the country regarding the temperature during the winter of 1881-82.

Mr. Sadler also submitted the following statement on the effects of the weather of last winter and spring on open-air vegetation, and also a report of the present state of vegetation and temperature at the Botanic Gardens. The first touch of frost experienced at the gardens was on October 26. On the morning of that day the thermometer fell to 27°, or 5° frost; on the 27th it stood at 30°, or 2° frost—collectively 7° of frost for the month. The frost on the 26th nipped all the tender plants, such as the single Dahlias, of which there was a good show. Since November commenced frost had only been registered on the morning of the 8th, when the glass fell to 30°, and this morning (the 9th) it fell to 32°. October was a wet month. In the thirty-one days there was rain on nineteen days. Since November commenced, out of the nine days of this month there has been rain on six days, and last night from about twenty minutes to eleven till fifteen minutes after that hour, there was a heavy fall of sleet and snow. This morning the glass stood at 32.° At present there is still a wonderful display of blossoms on the rock garden, including different species and varieties of autumn Crocus, &c.

Scottish Horticultural Association.—The ordinary monthly meeting of this Association was held in the Hall, 5, St. Andrew Square, Edinburgh, on Tuesday, the 7th inst., the President in the chair. Mr. A. D. Mackenzie read a paper on the "Heating and Ventilation of Greenhouses." He said that in heating hothouses we are practically limited to the use of hot-water pipes; the old flue, which served its day and generation, has now gone, and therefore need not be taken into account. The heating by hot-water is by convection—that is, the air immediately in contact with the pipes gets heated, is pressed up, and its place is supplied by the colder air coming in from the sides; in this way the air is kept in continual motion or circulation, varying in intensity in proportion to the heat of the pipes and the temperature of the air. The heat from an open fire is of quite a different nature, by radiation. The heat radiating from an open fire travels through the surrounding atmosphere without raising its temperature to any appreciable extent until the walls and solid objects have first received the heat and reflected it back.

Mr. Lewis Bayne, Kinmel Park, exhibited branches in fruit of Hippophaë rhamnoides, fruit of Cydonia japonica, and flowers of Ligustrum japonicum. Mr. M. Chapman, Easter Duddingstone, exhibited Fuchsia excelsa in flower, Schizostylis coccinea, and Helleborus angustifolius. Mr. Wm. Sinclair, East Linton, exhibited a new seedling fancy Pansy. Mr. Geo. Goodfellow, Caldwell, exhibited fruit of President Garfield Tomato, weighing 2 lb. 6 oz. Messrs. Dickson & Co. exhibited Osmanthus illicifolius grafted on the Ash, scarlet American Oak, evergreen Elm from Japan, and foliage of the Tilia americana.

Manchester Botanical Society: *Nov.* 21.—An exhibition of Chrysanthemums was held in the Town Hall, that far surpassed any previous display of the kind in this city. The Chrysanthemums entered for competition were perhaps four times more numerous than on any former occasion, and all of them were of unusual excellence as regards both growth and bloom. Nearly the whole of one side of the great room was taken up with exhibits in the first class of collections of nine large flowered distinct varieties, many of which were marvels of culture. The varieties with which Mr. C. S. Agnew won the premier place comprised the Queen of England, Golden ditto, Empress of India, Golden ditto, M. Cullingford, Prince of Wales, White Venus, Pink Venus, and Nil Desperandum. Between Mr. Agnew's collection and that of Mr. W. Scott, who came 2d, there was little, if any, difference in the matter of bloom, but the Prestwich plants, which were remarkably well leaved down to the pots, had the best of it in compactness of growth. Mr. Scott's varieties included the Queen of England, Golden ditto, Empress of India, Golden ditto, Barbara, Mrs. Haliburton, Dr. Sharp, Blonde Beauty, and Nil Desperandum. The exhibits of the 3d prize winner, Mr. E. G. Potter, comprised the Empress of India, Golden ditto, Golden Queen of England, Dr. Sharp, Mrs. Sharp, Alfred Salter, Mrs. Cunningham, White Beverley, and White Globe. Mr. Agnew was also placed 1st in the class of

four large distinct-flowered Chrysanthemums, with the Queen of England, Prince of Wales, White Beverley, and Guernsey Nugget; Mr. J. G. Best coming next with the Queen of England, Empress of India, Golden ditto; and Mr. Howe, and Mr. O. Schneider occupying the 3d place with the Queen of England, Golden ditto, Empress of India, and Prince of Wales. The cut blooms were also remarkable for number, variety, and merit, the Japanese or tasselled kinds being very strongly represented. The customary "bank" of plants and flowers along the organ end of the hall was not wanting, nor has it ever been more worthily filled than it was by Messrs. Dickson, Brown & Tait, of this city, and Mr. John Allen, of Altrincham. Probably none of the visitors had ever before seen so good a display of Cyclamens at this season of the year, and the judges marked their appreciation of the plants by the award of a Cultural Certificate of the First-class. The same recognition was given to the rare examples of Calanthe Veitchii, C. vestita, and Poinsettia pulcherrima, shown by Mr. Allen. Half-a-dozen specimens of a choice new hybrid Orchid, the Dendrobium Leechianum, exhibited by Mr. W. Leech, were also favoured with the special commendation of the judges, as were some extraordinarily fine Gros Colmar Grapes, from a North-country vinery, shown by Mr. James Mason, of the Victoria Buildings. Messrs. G. and W. Yates, Manchester and Heaton Norris, contributed a good general collection of plants. A very pretty display was made by Messrs. W. Clibran & Son, of the Oldfield Nursery, Altrincham; Messrs. H. Cannell & Sons, Swanley, sent a representative collection of cut blooms, Pelargoniums, Heliotropes, and Salvias; and interesting contributions to the exhibition were also made by Mr. B. S. Williams, Upper Holloway; Messrs. Sutton & Sons, Reading; and Mr. John Hooley, Fallowfield and Stockport.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, NOV. 22, 1882.

MONTH AND DAY.	BAROMETER. Mean Reading Reduced to 32° Fahr.	BAROMETER. Departure from Average of 18 years.	TEMPERATURE OF THE AIR. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 30 years	Hygrometrical Deductions from Glaisher's Tables 6th Edition. Dew Point.	Degree of Humidity. Sat. = 100.	WIND. Average Direction.	RAINFALL.
Nov.	In.	In.	°	°	°	°	°	°			In.
16	29.16	—0.59	39.0	34.0	5.0	36.6	— 5.6	33.7	90	N.W	0.53
17	29.79	+0.06	41.0	31.0	10.0	35.8	— 6.2	30.3	81	N.W. to N.N.W	0.00
18	29.72	+0.01	42.0	26.0	16.0	34.9	— 7.0	29.7	81	E: SW.	0.07
19	29.28	—0.42	46.0	37.0	9.0	41.7	— 0.1	34.1	75	W.	0.20
20	29.22	—0.48	45.0	34.0	11.0	39.5	— 2.2	34.9	84	W.	0.04
21	29.65	—0.04	43.0	34.5	8.5	39.2	— 2.5	35.1	89	W.	0.00
22	29.37	—0.32	53.5	39.0	14.5	48.7	+ 7.0	43.9	84	S.W.	0.11
Mean	29.46	—0.25	49.4	33.8	10.6	39.5	— 2.4	34.5	83	W.	0.05

Nov. 16.—Slight fall of snow in morning. A dull, overcast day and night; strong gusts of wind.
— 17.—Fine bright day; rather windy. Clear night: fine aurora; ice on ground.
— 18.—Fog in morning. Overcast day and night; cold day; rain at night.
— 19.—Fine morning; overcast day; squall with rain at 3 P.M. Dull night.
— 20.—A dull, overcast day. Cold night; fine in early part of evening.
— 21.—Overcast all day and night, but fine.
— 22.—Overcast, but warm day; strong gusts of wird at times. Warm, damp night.

LONDON: *Atmospheric Pressure.*—During the week ending November 18, the reading of the barometer at the level of the sea increased from 30.02 inches at the beginning of the week to 30.10 inches by 9 A.M. on the 12th, decreased to 29.96 inches by 3 P.M. on the 13th, increased to 29.97 inches by midnight on the same day, decreased to 29.12 inches by 9 A.M. on the 16th, increased to 30.05 inches by 9 A.M. on the 18th, and was 29.69 inches by the end of the week.

The mean reading for the week at the level of the sea was 29.83 inches, being 0.11 inch higher than last week, and 0.12 inch below the average of the week.

Temperature.—The highest temperature in the week was 44°.2, on the 13th; on the 16th the highest temperature was 39°. The mean of the seven high day temperatures was 41°.6.

The lowest temperature in the shade in the week was 26°, on the 18th; on the 13th and 14th the lowest temperature was 37°. The mean of the seven lowest temperatures was 33°.1.

The greatest range of temperature in one day was 16°, on the 18th; the smallest was 4°.3, on the 14th. The mean of the seven daily ranges was 9°.5.

The mean temperatures were—on the 12th, 36°.7; on the 13th, 48°.8; on the 14th, 39°; on the 15th, 38°; on the 16th, 36°.6; on the 17th, 35°.8; and on the 18th, 34°.9; and these were all below their averages by 6°.2, 1°.9, 3°.5, 4°.3, 5°.6, 6°.2, and 7° respectively.

The mean temperature was 37°.4, being 9° lower than last week, and 4°.5 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun, was 95°.5, on the 18th; the lowest was 46° on the 14th. The mean of the seven readings was 67°.8.

The lowest reading of a minimum thermometer with its bulb placed on grass was 25°, on the 18th. The mean of the seven readings was 28°.5.

Rain.—Rain fell to the amount of 0.73 inch, of which 0.53 inch fell on the 16th.

ENGLAND: *Temperature.*—During the week ending November 18 the highest temperatures were 53° at Truro, and 51° at Plymouth; the highest temperature at Bradford was 43°.1, at Blackheath 44°.2, and at Bolton 44°.5. The general mean was 47°.

The lowest temperatures in the week were 22° at Cambridge, 23° at Leicester and Hull; the lowest temperature at Liverpool was 30°.4, at Sunderland 30°, and at Truro and Plymouth 29°. The general mean was 26°.

The greatest ranges of temperature in the week were 25°.8 at Leicester, 24°.5 at Cambridge, and 24° at Truro; the least ranges were 18° at Bristol and Sunderland, and 18°.1 at Liverpool. The general mean was 21°.

The mean of the seven high day temperatures was highest at Truro, 48°.6, at Plymouth 46°.4, and at Hull 45°.3; and was lowest at Wolverhampton, 41°.2, at Bradford 41°.1, and at Sheffield 41°.4. The general mean was 43°.2.

The mean of the seven lowest temperatures was highest at Truro, 35°.4, at Sunderland 35°, and at Plymouth and Brighton 34°.3; and was lowest at Wolverhampton, 28°.5, at Hull 29°.7, and at Cambridge 30°.1. The general mean was 32°.

The mean daily range was greatest at Hull, 15°.4, at Truro 13°.2, and at Wolverhampton 12°.7; and was least at Blackheath, 8°.5, at Bradford 8°.7, and at Brighton 8°.9. The general mean was 11°.2.

The mean temperature of the week was highest at Truro, 41°.6, at Plymouth 39°.9, and at Sunderland 39°.4; and was lowest at Wolverhampton, 34°.5, at Cambridge 35°.6, and at Nottingham 35°.8. The general mean was 37°.2.

Rain.—The largest falls were 1.27 inch at Truro, 1.21 inch at Brighton, and 0.98 inch at Liverpool. These smallest falls were 0.25 inch at Nottingham and Leeds, and 0.30 inch at Brighton. The general mean fall was 0.68 inch.

Aurora Borealis seen on the 17th at many stations.

Fog prevailed on the 18th at Cambridge, and on the 12th, 15th, and 18th at Blackheath; on the 12th at Liverpool.

Snow fell on the 16th at Wolverhampton, on the 15th and 16th at Blackheath, on the 15th at Liverpool, and on the 17th at Sunderland.

SCOTLAND: *Temperature.*—During the week ending November 18, the highest temperature was 49°.2, at Greenock. The highest temperature reached at Leith, was 43°.5. The general mean was 46°.2.

The lowest temperature in the week was 22°, at Glasgow; at Aberdeen the lowest temperature was 30°.1. The general mean was 26°.8.

The mean temperature was highest at Aberdeen, 38°.9, and lowest at Perth, 32°.1. The general mean was 36°.

Rain.—The largest fall was 0.95 inch, at Dundee, and the smallest was 0.04 inch at Paisley. The general mean fall was 0.35 inch. No rain fell at Glasgow.

JAMES GLAISHER, F.R.S.

Obituary.

WE regret to record the death, under painful circumstances, on the evening of the 11th inst., of Mr. THOMAS FROST, of The Bower Nursery, Maidstone, aged fifty-nine. Mr. Frost had been in ill-health for a long time, but it appears from details published in the *Kent Messenger* that on the morning of the 11th he appeared in good spirits, and, accompanied by his wife, came to London on business. While walking down the Strand in the afternoon he was seized with an apoplectic fit, and was at once removed to the Westminster Hospital, but for want of the necessary order the staff were unable to do anything for him [?]. Having recovered somewhat Mr. Frost commenced his return journey to Maidstone, but on reaching Aylesford station he expired. He was for some years gardener at Preston Hall, Maidstone, and commenced business as a nurseryman in 1863. For many years past he had taken a prominent part in the affairs of the Maidstone Gardeners' Mutual Improvement Association, of which at the time of his death he was one of the officers. He was also for many years one of the judges of fruit at the Royal Botanic Society's shows, and nearly forty years ago became a life subscriber of the Gardeners' Royal Benevolent Institution.

—— We have also to record the death, on Tuesday, from the effects of a terrible assault committed on Sunday night, of Mr. THOMAS EVES, nurseryman, and proprietor of the Pavilion Subscription Ground, Gravesend.

Answers to Correspondents.

AMERICAN PAPER: *Reader E.* The *American Gardeners' Monthly*, published by Charles H. Marot, 814, Chestnut Street, Philadelphia.

APPLE TREES: *Hotspur.* Apple trees bear well under far worse conditions than those you mention. The trees will probably bear all the sooner that the soil is not heavy. The depth of soil is quite sufficient. Do not mix any manure with the soil when you plant; but mulch the surface of the ground about the trees with half-rotten litter after planting. Make the trees firm to stout stakes. You can top-dress the land in a few years, but unless it is very poor it will not require it at present. See well to your varieties, that they will suit your soil and locality.

INSECT EGGS: *Correspondent.* The eggs you send are those of a butterfly—probably Hipparchia Janira. Their delicate lavender-grey colour, and the regular pattern formed by their ribs, render them very pretty objects when viewed under a pocket lens. The artist

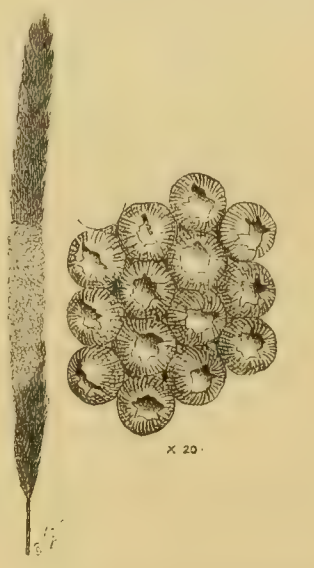


FIG. 123.—GRASS AND INSECTS' EGGS.

has represented all the eggs as having given exit to the caterpillar, but many of them are still unbroken, and their symmetry consequently more perfect than here shown (fig. 123).

BLACK HAMBURGH VINE: *R. C.* When you prune the Vines in winter thoroughly cleanse them with soft-soap-water at the rate of about 6 oz. to the gallon. Repeat this operation upon two or three occasions. Then remove the surface-soil from the border to a depth of about 3 or 4 inches, and replace with fresh compost. Whitewash the walls at the same time with hot lime, and paint the hot-water pipes with black varnish. If you send us a specimen of the maggot we will try and name it for you.

CERTIFICATES: *A Constant Reader.* Examinations of gardeners were held a few years ago by the Royal Horticultural Society, and by the Society of Arts, at which certificates were gained by successful candidates, but such examinations are not now held.

GUM: *C. M. W.* Mix some finely-pounded white shellac with methylated spirit, as much of each as will make the quantity required of the proper consistency. It should be well shaken up for half-an-hour, and then placed by the fire to keep the bottle warm for about a day, giving it an occasional shake up.

HORSE RADISH: *H. H.*—Your soil and aspect is not suitable for growing Horse Radish; it requires a deep rich soil, and will succeed well in a partially shaded corner where few other things would grow. Potatos would always do well in such a situation, and so would Onions in a wet season. Plant early Potatos, and leave room between the rows for autumn and winter greens. If you enrich the soil with manure, you will be able to grow Horse Radish in it, but you will do

better to plant it under the conditions we have suggested.

MUSK, MIGNONETTE, &c: *Cor.* Your questions are very simple, but they are put so vaguely that we cannot give you the precise information that we would like. You do not say whether you have glass accommodation for raising the seeds or not. If so, and you want large plants of Mignonette or Musk sow the seeds early in February, and plunge them in a mild bottom-heat until they germinate. Grow the young plants steadily on in a warm temperature until the weather grows warm, when they may be placed out-of-doors in a shaded aspect, and keep the flowers pinched off until you want the plants to come into flower. If you desire small plants to flower early, you have only to keep them in 4 or 6-inch pots, and you will have them in flower by May. In this case the plants must be encouraged under glass all the time. You should make three sowings in a season to keep up a supply of Mignonette in small pots, viz., one in February for early work, another in May, and a third in August for yielding a later supply. Your question as to bedding plants is rather a comprehensive one. Perilla is a fast growing plant, and you will be early enough if you sow the seeds next April. Amaranthus should be sown about the same time.—Lobelias not later than the middle of February, if you are to have good plants in May. Marigolds sow any time about the end of March or beginning of April. Centaureas and such-like are best sown in the autumn or very early in February. You are all behind as regards Cinerarias; next April or May will be soon enough to sow these. You can buy small seedlings cheap, and pot them on.

NAMING PLANTS AT EXHIBITIONS: *H. M.* Most societies have a rule to the effect that all plants and flowers must be correctly and legibly named, but we do not remember to have heard of any one being disqualified for its non-observance. If the judges awarded the prize without insisting upon the rule being carried out in its integrity, the exhibitor is certainly entitled to claim it. But, strictly speaking, the judges did not follow out the terms of the schedule. Are you not, however, mixing up two things, correct nomenclature and bad writing?

NAMES OF FRUITS: *A. B.* We cannot name any of them. The specimens are very poor ones. — *L. Jordan.* We do not recognise your Apple.

NAMES OF PLANTS: 142 *Conservatory.* Garden varieties of flowers are beyond us, and we do not undertake to name them. —*C. J. Lerry.* Salvia Pitcheri.—*Alex. Reid.* Cotoneaster affinis.—*W. H. C.* 1, Retinospora plumosa aurea; 2, not recognised; 3, Retinospora ericoides; 4, Abies grandis; 5, probably Picea orientalis; 6, Abies magnifica. — *J. O. C.* 1, Vaccinium arctostaphylos; 2, Cistus ladaniferus; 3, not recognised; 4, Leycesteria formosa; 5, Pyrus crenata; 6, small leaved Box.—*G. Rockhouse.* Cymbidium affine.—*C. W. D.* Archer Hind Aster = A. versicolor.—*J. F., Beechwood.* Plumeria acutifolia. —*D. M.* 1, Selaginella caulescens; 2, Arthropodium cirrhatum, var. variegatum; 4, Pteris biaurita. The others we cannot name from such imperfect specimens.—*R. C. K.* Lilium Fortunei. — *D.* Send when in flower.

NOTES: *D. B. C.* Shall be glad to hear from you as occasion offers.

PEARS CRACKING: *A. W.* The cracking of your Pears is due to the growth of extremely minute fungi, for which we are not aware of any cure.

PLANTING: *V. C. B.* Plant them diagonally at 9 feet apart. It will take 538 plants to the acre.

POT-MAKERS: *G. B.* Mr. J. Matthews, The Royal Pottery, Weston-super-Mare; Messrs. J. & W. Adams, Belle Isle, King's Cross, N.

PRIMULAS: *C. Kershaw.* Your strain of white Primulas is a very good one, though the flowers are small by comparison with some others. They are, however, deeply and beautifully fringed, and full of quality in other respects.

PALMS: *R. Peter.*—Your plants are clearly suffering from the effects of an overheated arid atmosphere, if they have not been actually injured by gas or some temporary escape of burning heat. Are you quite sure the plants have not been used for furnishing purposes in the house? If so, and they were taken from a high stove temperature and exposed to cold draughts, they would, upon being returned to the plant stove, exhibit the symptoms you complain of. The leaves seem rather thin and attenuated, and if the plants suffered from dryness at the root, and the temperature suddenly rose to a high figure, the atmosphere being dry as well, the same symptoms would appear. We think, however, if you inquire strictly into the system of managing the plants, you will have no difficulty in ascertaining the cause.

REMOVAL OF GOODS: *H. H.* You have no legal claim upon your master.

ROSES AND GARDENIAS: *Constant Reader.* Do not upon any account cut your Maréchal Niel Roses back; you would simply destroy the fruits of your own labour by so doing. Examine the points of the shoots, and remove the green portion, which will be weakly, and, as a rule, badly ripened. If the shoots are 30 feet long, so much the better. Train them to the wires as soon as it suits your convenience. Observe the growth for yourself, and you will have more confidence another year. You will see all along the shoots "eyes" or "buds," which will break away into growths by-and-bye, and each young shoot will bear a flower. Next season encourage fresh young shoots from the base of your plants, and let them grow as much as they like, and treat them in a similar way next autumn. A vigorous plant will produce a shoot 40 feet long in a season. (2.) Gardenias require no rest in the sense that you put it. Your plants are in a miserable condition, and are clearly deficient of roots. Keep them moderately dry through the winter, and cut them back early in spring when the soil is on the dry side. When the plants break, and have made growths about an inch long, shake them out, and repot them in fibrous peat and silver-sand; then plunge them in a gentle bottom-heat, which may be increased as the plants show symptoms of growing. The young wood roots freely, and you may easily raise a fresh stock from cuttings at the same time if you feel so disposed.

STOVE CLIMBERS: *H. Allen.* Passiflora princeps (a charming thing for your purpose), Ipomœa Horsfalliæ, Combretum purpureum, Dipladenia amœna, and Jasminum gracillimum.

VINES AND MEALY-BUG: *D. W.* — Barking Vines with a view of destroying mealy-bug is an aimless business; it does the bug little or no harm, and very often injures the Vines. The action of the sun upon the Vines in the spring, when the sap begins to flow (that is, in Vines that are severely barked) is very injurious. The heat affects the Vines much in the same way that it would affect newly-formed skin upon a man's hand. If you have stripped the Vines of their bark very close, wrap some moss round their stems for a few months at the beginning of the year. Scrub the Vines thoroughly with a solution of soft-soap at the rate of 6 oz. to the gallon, and in the spring, when heat is applied, watch for every insect and destroy it as it makes its appearance. The insects find a harbour about the eyes of the Vines, so be careful not to scrub too hard close to the buds.

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CATALOGUES RECEIVED.

FISHER, SON & SIBRAY, Sheffield—Select Roses, Hardy Trees and Shrubs, &c.

LUCOMBE, PINCE & Co., Exeter — Hardy Trees and Shrubs, Fruit Trees, Vines, Roses, &c.

R. W. PROCTOR, Ashgate Road, Chesterfield — Hardy Trees and Shrubs.

GARLIES MITCHELL, Stranraer—Forest and Ornamental Trees, Roses, &c.

H. & F. SHARPE, Wisbech—Trade List of Seed Potatos.

DICKSON & ROBINSON, Old Millgate, Manchester — Forest and Ornamental Trees.

DICKSONS & Co., 1, Waterloo Place, Edinburgh—Forest and Ornamental Trees, &c.

THOMAS KENNEDY & Co., Dumfries—Forest, Fruit, and Ornamental Trees.

COMMUNICATIONS RECEIVED:—W. I.—Amateur.—T. J.—C. E. Pearson.—A. D. W.—Clark Bros. & Co.—Consul for Belgium.—A. O.—J. W.—W. B. H.—Prof. Rchb.—W. H. H. —J. B.—E. S.—N. Z.—J. W.—A. F.—C. Wissenbach.—Heath & Son.—J. Sunley.—A. F.—D. T. F.—E. A., Paris — Douglas Ball.—H. W. W.—A. D. W.—J. W. J.—W. Haig. —H. W.

DIED, on the 15th inst., at Belle Vue House, Bagshot, Surrey, Mrs. ELIZA WATERER, aged thirty-four.

—— On the 21st inst., at Claremont, Harlow, Essex, CATHERINE GIBSON, eldest surviving daughter of Mr. Wm. Baxter Smith.

Markets.

COVENT GARDEN, November 23.

THE quantity of Grapes that have been planted of late years is now beginning to have an effect on our market, and, with samples keeping badly, prices remain low. The Apple market is well supplied with good importations. Kent Cobs are dull. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	2 0	2 6	Lemons, per 100	— 6	0–10 0
Aubergines, per doz.	4 0	..	Melons, each	2 0	4 0
Cobs, 100 lb.	45 0	50 0	Pears, per dozen	1 0	2 0
Figs, per dozen	0 6	1 0	Pine-apples, Eng., lb.	2 0	2 6
Grapes, per lb.	1 0	3 0			

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, per doz.	3 0	6 0	Garlic, per lb.	1 0	..
— Jerusalem, doz.	4 0	..	Herbs, per bunch	0 2	0 4
Asparagus (Sprue), per bundle	1 6	..	Horse Radish, bund.	4 0	..
Beans, French, English grown, p. lb.	0 8	..	Lettuces, Cabbage, per score	1 6	..
Beet, per doz.	1 0	..	Mint, green, bunch	0 4	..
Bruss. Sprouts, bush.	3 0	4 0	Mushrooms, p. baskt.	1 0	2 0
Cabbages, per doz.	1 0	2 0	Onions, per bushel	3 0	..
Carrots, per bunch	0 4	0 6	— Spring, per bun.	0 6	..
Cauliflowers, English, dozen	2 0	4 0	Parsley, per bunch	0 4	..
Celery, per head, per bundle	0 4	..	Radishes, per doz.	1 6	..
	1 0	..	Seakale, per punnet	2 0	..
Cucumbers, each	0 6	1 0	Small salading, pun.	0 4	..
Endive, per score	1 0	..	Spinach, per bushel	2 0	..
			Sweet Potatos, lb.	0 6	..
			Tomatos, per doz.	2 0	..
			Vegt. Marrows, doz.	3 0	..

POTATOS:—Magnum Bonums, 100s. to 130s.; Regents, 90s. to 120s.; Champions, 80s. to 100s. per ton.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldii, doz.	12 0	24 0	Ferns, in var., dozen	4 0	18 0
Arbor-vitæ (golden), per dozen	6 0	18 0	Ficus elastica, each	1 6	7 0
— (common), dozen	6 0	12 0	Foliage Plants, various, each	2 0	10 6
Begonias, per doz.	6 0	12 0	Fuchsias, per dozen	4 0	9 0
Bouvardia, doz.	10 0	18 0	Genista, per doz.	8 0	12 0
Chrysanthems., doz.	6 0	18 0	Hyacin. (Rom.), per pot	1 6	2 0
Coleus, per dozen	4 0	6 0	Marguerite Daisy, per dozen	6 0	12 0
Cyclamen, doz.	9 0	24 0	Myrtles, per doz.	6 0	12 0
Cyperus, per dozen	6 0	12 0	Palms in variety, each	2 6	21 0
Dracæna terminalis	30 0	60 0	Pelargoniums, scarlet, per doz.	2 6	6 0
— viridis, per doz.	12 0	24 0	Solanums, per doz.	9 0	12 0
Epiphyllum, dozen	18 0	30 0			
Euonymus, various, per dozen	6 0	18 0			
Evergreens, in var., per dozen	6 0	24 0			

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 blooms	0 2	0 4	Lilac (French), bun.	8 0	9 0
Arum Lilies, per doz.	6 0	8 0	Lilium various, per 12 blooms	3 0	6 0
Azalea, 12 sprays	1 0	2 0	Marguerites, 12 bun.	6 0	9 0
Bouvardias, per bun.	0 6	1 0	Mignonette, 12 bun.	1 6	4 0
Camellias, per dozen	2 0	4 0	Narcissus, 12 sprays	2 6	3 0
Carnations, 12 blms.	1 0	3 0	—(paper-white), Fr., per bunch	0 9	1 3
Chrysanth., 12 bun.	4 0	9 0	Pansies, 12 bunches	1 0	3 0
— (Fr.) per bunch	0 6	1 6	Pelargoniums, 12 spr.	0 9	1 0
— (best white), bun.	1 0	3 0	— zonal, 12 sprays	0 3	0 6
— 12 blooms	1 0	2 6	Primula, double, per bunch	1 0	1 6
Cornflower, 12 bun.	2 0	4 0	Roses (indoor), doz.	1 0	3 0
Cyclamen, 12 blooms	0 3	0 6	— (outdoor). doz.	0 6	1 0
Epiphyllum, 12 blms.	0 9	1 0	— Coloured, doz.	1 0	2 0
Eucharis, per doz.	3 0	6 0	Stephanotis, 12 spr.	6 0	8 0
Fuchsias, 12 bunches	6 0	8 0	Tropæolum, 12 bun.	1 0	2 0
Gardenias, 12 blms.	4 0	6 0	Violets, 12 bunches	1 0	1 3
Gladioli, 12 sprays	1 6	3 0	— French Czar, bun.	1 0	2 0
Heliotropes, 12 sp.	0 6	1 0	— Parme (Fr.), bun.	3 6	4 6
Hyacinths (Roman), 12 sprays	2 0	3 0	White Jasmine, bun.	0 9	1 0
Lapageria, white, 12 blooms	2 0	4 0			
— red, 12 blooms	1 0	3 0			

SEEDS.

LONDON: *Nov.* 22.—The seed market is now gradually assuming a quieter appearance, as usual at this season of the year; nevertheless, values all round maintain the firmness previously reported. Advices from America state that the receipts of red Clover seed to date of crop 1882 were only 10,335 bags, against 18,000 during same time last year. More money is asked for foreign Italian and Trefoil, which buyers are reluctantly compelled to give. There are numerous inquiries for Canary seed, and prices are steadily advancing. Rape seed is also dearer. Linseed quiet. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

At Mark Lane on Monday the supply of home-grown wheat was small, but of foreign liberal. Prices remained without quotable change from Monday se'nnight. Barley supplies were fair, and the market fully as dear. Beans tended against buyers, and Peas showed 6*d.* to 1*s.* advance on the week. Oats on large arrivals were less freely purchased, and late extreme rates were barely upheld, prices ruling about the same as on the previous Monday. Maize from scarcity was again dearer. On Wednesday there was only a limited business in any kind of grain. Wheat and flour remained at Monday's value. Barley was steady, Beans and Peas tended against buyers, and Maize, from scarcity, upheld late value. Oats were not quotably altered, but late rates were not so readily obtainable.—Average prices of corn for the week ending Nov. 18:—Wheat, 40*s.* 8*d.*; Barley, 34*s.* 4*d.*; Oats, 20*s.* 6*d.* For the corresponding period last year:—Wheat, 45*s.* 4*d.*; Barley, 34*s.* 6*d.*; Oats, 20*s.* 2*d.*

HAY.

Tuesday's Whitechapel Market report states that larger supplies met with a dull trade at the following quotations:—Prime Clover, 115*s.* to 128*s.*; inferior, 75*s.* to 80*s.*; prime meadow hay, 95*s.* to 100*s.*; inferior, 36*s.* to 60*s.*; and straw, 30*s.* to 45*s.* per load. — On Thursday there was a large supply. The trade was quiet, at Monday's rates. — Cumberland Market quotations: — Superior meadow hay, 95*s.* to 108*s.*; inferior, 65*s.* to 84*s.*; superior Clover, 110*s.* to 126*s.*; inferior, 75*s.* to 95*s.*; and straw, 38*s.* to 44*s.* per load.

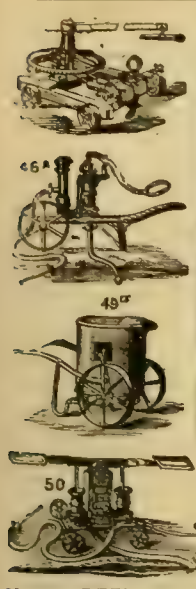
POTATOS.

The Borough and Spitalfields Markets reports state that supplies are moderate and the demand good, at the following quotations:—Magnum Bonums, 110*s.* to 120*s.*; Regents, 90*s.* to 100*s.*; Champions, 80*s.* to 90*s.* per ton; German reds, 5*s.* to 5*s.* 3*d.* per bag.—The imports into London last week consisted of 13,571 packages from Hamburg, 1330 bags Ghent, 344 bags 86 sacks Boulogne, 1000 bags Bremen, 100 sacks St. Nazaire, 16 bags Rotterdam, 405 bags Harlingen, 13 tons St. Malo, 63 tons Roscoff, and 398 bags from Stettin.

COALS.

The prices current at market during the week were as follows:—East Wylam, 17*s.* 6*d.*; Ravensworth West Hartley, 15*s.* 6*d.*; Walls End—Hetton, 19*s.* 6*d.*; Hetton Lyons, 17*s.* 6*d.*; Lambton, 19*s.*; Wear, 17*s.* 6*d.*; Hawthorn, 17*s.* 9*d.*; South Hetton, 19*s.* 6*d.*; Thornley, 18*s.* 6*d.*; Tees, 19*s.* 6*d.*

Government Stock.—Consols closed on Monday at 101⅛ to 102 for delivery, and 102 to 102⅛ for the account. Tuesday's final quotations were 101⅞ to 101⅛ for delivery, and 101⅛ to 102 for the account. The closing figures on Wednesday were 101⅞ to 101⅛ for delivery, and 101 15/16 to 102 1/16 for the account. Thursday's final quotations were 101⅛ to 102 for delivery, and 102 to 102⅛ for the account.

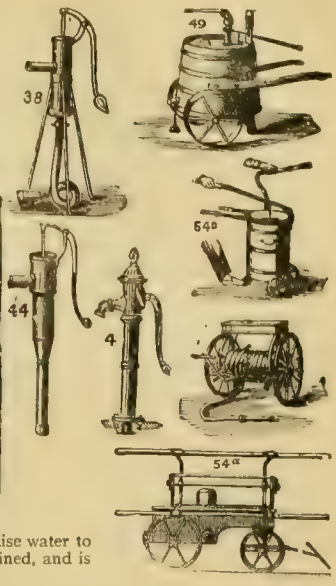


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NOW READY, A REVISED EDITION OF THE

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CULVERWELL'S GIANT MARROW PEA.



THE GIANT MARROW.—DRAWN TO SCALE.

The Editor of the "JOURNAL of HORTICULTURE," in the Number for July 20, 1882, says :—

"Mr. MUIR has sent us from Margam a sample of CULVERWELL'S GIANT MARROW PEA, which he regards as the finest variety in cultivation. We have never seen finer Peas than those submitted to us. The pods are of great size, 7 inches long and 1¼ inch wide, curved, dark green in colour, and crowded with fine Peas. Mr. Muir states the variety is a great cropper, and the produce is of the first quality when cooked. It is thus one of the most useful Peas in cultivation as well as one of the best for exhibition purposes that can be grown."

Price, 2s. 6d. per Half-pint Packet; 1s. 6d. per Quarter-pint Packet.

TRADE PRICE ON APPLICATION.

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SEED MERCHANTS and NURSERYMEN,
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The Largest Rose Gardens in England.

CRANSTON'S NURSERIES
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ROSES ON OWN ROOTS.

A large quantity of very fine plants of Hybrid Perpetuals, Bourbons, Hybrid Chinas, &c. List of varieties, with prices, on application.

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SEAKALE—SEAKALE.

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ANY QUANTITY.

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Cultivators of
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TREES and SHRUBS,
ROSES, RHODODENDRONS,
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LARCH, extra fine, clean, 2½ to 3½ feet, 25*s.* per 1000. SCOTCH FIR, 1 to 2 feet, 15*s.* per 1000. AUSTRIAN PINE, 1 to 2 feet, 25*s.* per 1000, all well rooted.
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Sweet-scented Rhododendron.
Magnificent Specimen Plant of

RHODODENDRON COUNTESS of SEFTON, being the original seedling plant, and having become too large for our houses, we wish to dispose of it. It is over 6 feet high from the pot, and 6 feet through, very green and healthy and thick with shoots, and is covered with a mass of bloom buds numbering from 400 to 500. This would be a very suitable plant for a large conservatory, or for any person requiring sweet-scented cut blooms. Price £10 10*s.* nett cash. We have also smaller plants, 3½ to 5 feet high, bushy, and full of buds, 21*s.* each.
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ROSES, ROSES.—60,000 dwarf Roses, on Manetti, fine, 30*s.* per 100, £12 10*s.* per 1000. ASPARAGUS plants, 2-yr. Connover's Colossal, 20*s* per 1000; 2-yr. Grayson's Giant, 15*s.* per 1000. Strong SEAKALE, for forcing, 50*s* per 1000; planting Seakale, 30*s* per 1000. Nett cash against invoice.
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SINGLE DAHLIA SEED, saved from all the best named varieties, including whites, and our novelties for next year—a finer and better strain we feel sure does not exist—10*s.* per ounce, or in retail (2*s.* 6*d.*) packets, price of which may be had on application to
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HORTENSIA THOMAS HOGG, 2-yr., £1 per 100.
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Selection of 50 good varieties.
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See *Gardeners' Chronicle*, November 4, 1882.

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PALMS and TREE FERNS.—Eighteen very large, many of them handsome Plants, to be sold, for want of room. For particulars, &c., apply
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SEAKALE CROWNS for Forcing and Planting, the finest in the Trade, the small Purple-leaf Tops. A few thousand RASPBERRY CANES still on hand. Apply to
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THEY ARE NOW A GRAND SIGHT.

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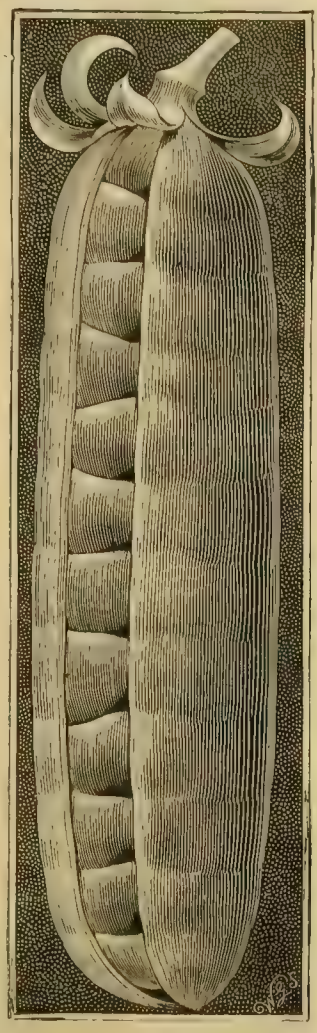
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PARAGON,

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Paragon is the earliest of the large wrinkled Marrows, being ready before Prize-taker; in fact, in the gardens at Thorpe Perrow it was gathered at the same time as William I., both kinds having been sown at one time. It is very hardy, and will stand earlier sowing than any Pea of its class.

We have every confidence in recommending this Pea. Our Stock being small, we are not able to offer more than a limited number of packets; but we are anxious to give our Customers the very first opportunity of testing the merits of what we consider the greatest acquisition in Peas for an early crop that has ever been offered.

Price, 3s. 6d. per Quarter Pint Packet.

CHARLES SHARPE & CO.,
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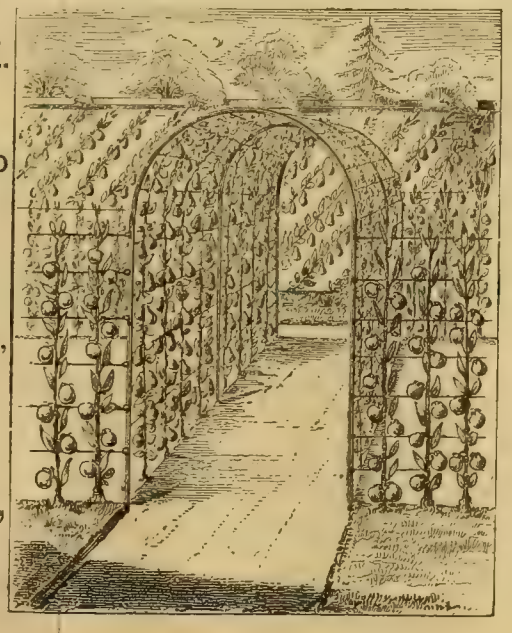
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CLIMBING PLANTS, &c.,

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J. CHEAL & SONS,
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COCOA-NUT FIBRE REFUSE.

4*d.* per bushel; 100 for 25*s.*; truck (loose, about 2 tons), 40*s.*; 4-bushel bags, 4*d.* each.

LIGHT BROWN FIBROUS PEAT, 5*s.* 6*d.* per sack 5 sacks, 25*s.*; sacks, 4*d.* each.

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COCOA NUT FIBRE REFUSE, newly made, as supplied to the Royal Horticultural Society and principal Nurserymen in England, in sacks at 1*s.* 3*d.* each, or 15 sacks, 15*s.*; 30 sacks, £1 5*s.*, sacks included. Truck-load, loose, 33*s.*; fifteen bags or more and truck-load free on to rail. Post-office order or cheque with all orders. Established 1872.—J. STEVENS AND CO., "Greyhound" Yard, and 132, High Street, Battersea, S.W.

COCOA-NUT FIBRE REFUSE by Chubb's Patent Process, as supplied to all the Royal Gardens and principal Nurseries of Europe; useful at all seasons. Invaluable for Potting, Plunging, Forcing, Ferneries, Strawberries, Bedding-out Plants, &c.; Destroys all Slugs and Insects.

JULY 1, 1882.—In consequence of the great scarcity of husks and enormous Continental demand for our "Refuse," we are compelled from this date to advance prices as follows, and only orders accompanied by remittance will receive attention (in rotation). We also find it necessary to caution purchasers to beware of spurious imitations and buy the genuine "Refuse" direct. Sacks, 1*s.* 6*d.* each; 10 Sacks, 13*s.*; 15 Sacks, 18*s*; 20 Sacks, 23*s.*; 30 Sacks, 30*s.* (all Sacks included); Truck-load, free on rail, £2. Limited quantities of P.M. *Special Quality*, granulated, in sacks only, 2*s.* 6*d.* each (2 prize medals), valuable for potting and use in conservatory. Terms strictly cash with order.—To obtain the genuine article, buy direct from the Manufacturers, CHUBB, ROUND AND CO., Fibre Works, Milwall Road, West Ferry, London, E.

GARDEN REQUISITES as supplied to the Royal Gardens. Cocoa-Nut Fibre Refuse, 1*s.* 6*d.* per sack; 10 for 13*s.*; 15 for 18*s.*; 30 for 30*s.*; all sacks included. Trucks (loose), 40*s.* Selected Brown Fibrous Peat, 5*s.* per sack; 5 for 22*s.* 6*d.* Black Fibrous Peat, 4*s.* 6*d.* per sack; 5 for 20*s.*; sacks 4*d.* each. Coarse Silver-Sand, 1*s.* 6*d.* per bushel. Yellow Fibrous Loam, Leaf-Mould, and Peat-Mould, each at 1*s.* per bushel. Manures of all kinds. Fresh Sphagnum. Garden Sticks and Labels. Russia Mats, &c. Tobacco Cloth and Paper, best in the market; Cloth, 8*d.* per lb.; Specialité Paper, imported solely by us, 10*d.* per lb., 28 lbs. 21*s.* Write for Price LIST.—W. HERBERT AND CO., Horticultural Stores, 19, New Broad Street, E.C. (turning by Gow's, Fishmonger), one minute from Broad Street Railway Station.

COCOA-NUT FIBRE REFUSE, best and pure only, 4 bushel bag, 1*s.* 4*d.*; 15 bags, 14*s.*; 30 bags, 25*s.*; sent to all parts. Truckloads 33*s.*, free to rail.
A. FOULON, 32, St. Mary Axe, London, E.C.

12-oz. Sample Packets, free by post, 12 stamps.

FIBROUS PEAT for ORCHIDS, &c.—BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6*s.* per Truck. BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, 15*s.* per ton per Truck. Sample Bag, 5*s.*; 5 Bags, 22*s.* 6*d.*; 10 Bags, 45*s.* Bags included. Fresh SPHAGNUM, 10*s.* 6*d.* per Bag. SILVER SAND, Coarse or Fine, 52*s.* per Truck of 4 tons. Red Sandstone ROCKWORK, £5 per Truck of 4 tons. GRAVEL, good colour, 25*s.* per Truck of 6 tons.
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PEAT.—Excellent for Rhododendrons and common purposes. Delivered at Nine Elms Station, at 21*s.* per ton; sample bag (1 cwt.) on Rail Ringwood, 2*s.*
GATERELL AND SON, Peat Merchants, Bisterne, Ringwood.

LOAM, splendid Yellow Fibrous, 15*s.* 6*d.* per ton. Useful Brown PEAT, 22*s.* per ton, free to Bricklayers' Arms, S. E. R. Fine ORCHID PEAT, as supplied to the principal Orchid Growers. Prices on application.
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FRESH GREEN ORCHID SPHAGNUM.—Gentlemen and Gardeners requiring Sphagnum should send their Orders before the frost. In hampers, 5*s.* per hamper.
THOS. BEAUCHAMP, Woodfalls, Downton, near Salisbury.

To Gardeners and Others.

SPLENDID BROWN FIBROUS PEAT for sale. Put on Leighton Buzzard Station, in quantities of not less than 2 tons, at £2 per ton. Good small PEAT for Rhododendrons and common purposes, in trucks of 4 tons and upwards, £1 per ton. Apply to
T. GUNDRY, Stockgrove Park, Leighton Buzzard, Beds.

SUSSEX DOWN TURF, of finest quality for price, on rail at Portslade Station (4 miles from Brighton) in large or small quantities. Special quotation to the Trade. Apply,
W. MILES, West Brighton Nurseries, West Brighton, Sussex.

Thomson's Vine and Plant Manure.

Manufactured and Sold by

THE LIVERPOOL HORTICULTURAL COMPANY
(JOHN COWAN), LIMITED.

This is the Manure used to produce the splendid Grapes grown at the Tweed Vineyard, Clovenfords.

Full particulars on application. The Trade supplied.

All Letters to be addressed to THE MANAGER, The Vineyard and Nursery, Garston, near Liverpool.

ROLL TOBACCO PAPER, CLOTH and CORD, of excellent quality, supplied on the very best of terms by
RICHARDSON AND CO., Wholesale Tobacconists, Leith.
An AGENT WANTED for London.

GISHURST COMPOUND.—Used by many of the leading Gardeners, since 1859, against Red-spider, Mildrew, Thrips, Greenfly, and other Blight, in solutions of from 1 to 2 oz. to the gallon of soft water, and of from 4 to 16 oz. as a winter dressing for Vines and Fruit Trees. Has outlived many preparations intended to supersede it. In Boxes, *1s.*, *3s.*, & *10s. 6d.*

AMERICAN BLIGHT on APPLE TREES CURED by rubbing a wet hard Painter's brush on Gishurst Compound, and working the lather into the infected part.

GISHURSTINE keeps feet dry, softens hard boots, preserves leather, takes a polish. In boxes, *6d.* and *1s.* each.—Wholesale by PRICE'S PATENT CANDLE COMPANY (Limited). Retail by Seedsmen and Oilmen. Complaints are made of difficulty in getting Gishurstine. Some leading Nurserymen have put it on their lists, others are requested to do so.

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The *Gardeners' Magazine* says:—"We must give these the palm before all other plant labels, as the very first in merit."
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Gentlemen, Fruit Growers, and Gardeners, wishing to dispose of their Fruit, &c., to the best advantage, can be SUPPLIED WITH BASKETS, LABELS, &c., at once, by applying to the above. Banker's reference and terms on application.

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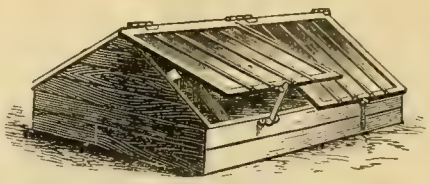
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Horticultural Builders & Hot-Water Engineers,
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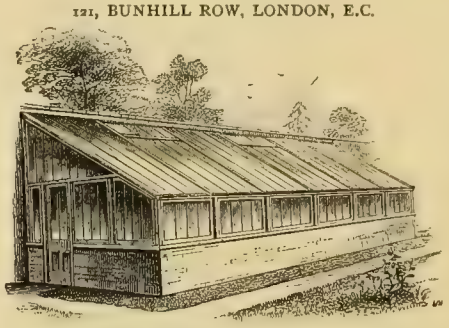
6 feet long, 4 feet wide, packing cases free,	£2	15	0
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The glass is nailed and puttied in.

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Hothouse Builders and Engineers,
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Mr. Fawkes' New Illustrated Work of Reference on Horticultural Buildings, post-free, *10s. 6d.* Prospectus sent gratis.

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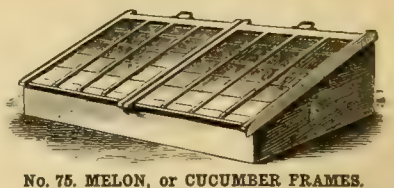
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ORCHID and PLANT HOUSES, &c., &c.;
HOT-WATER APPARATUS for all purposes,
BOILERS, CASTINGS, &c., &c.
Best Materials and Workmanship. Moderate Prices.
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No. 1	8 ft. long	..	6 ft. wide	..	£3	7	6
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These Frames are 13 inches deep in front, and 24 inches deep at the back; the lights are 2 inches thick, with a strong iron strengthening rod, and one handle to each light. All painted four coats of best oil colour, the lights being glazed with best 21-oz. English glass.

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Can be obtained in all sizes and qualities of

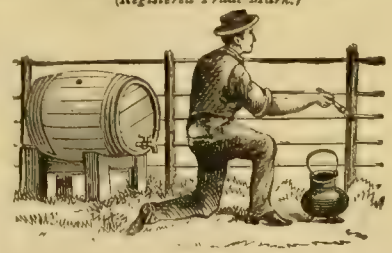
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UNSOLICITED TESTIMONIAL.

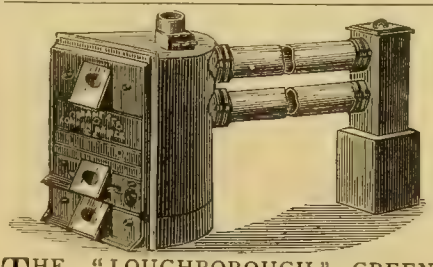
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H. & S.'s Varnish has been an article of common use on most of the large estates in the kingdom for upwards of thirty years; and their constantly increasing trade in it, and the numerous Testimonials they receive, stamp it as a truly genuine article. Every cask is legibly marked with their name and Registered Trade Mark as above, without which none is genuine.

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It is economical, simple, powerful, and perfectly safe.

It requires no brick setting, no stokehole, and no hot-water fitter for fixing. The boiler stands in the greenhouse, the front only being outside and flush with the outer wall, so that the whole of the heat from the boiler itself is utilised. It burns over twelve hours without attention, at a nominal cost.

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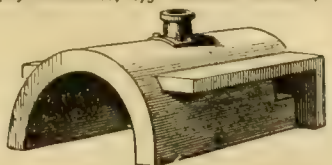
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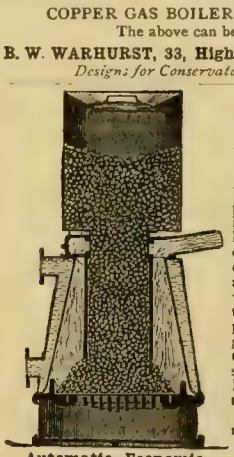
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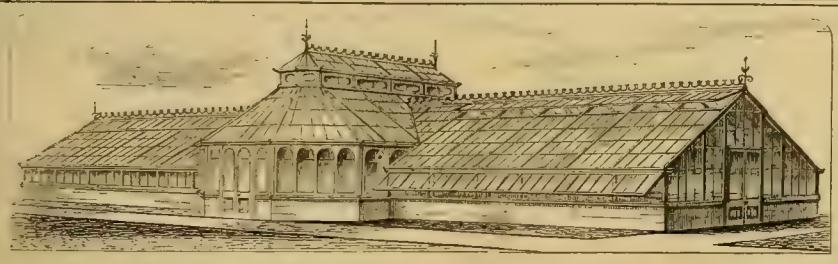
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8	,,	..	..	0	5	0	19	,,	..	..	0 10 6
9	,,	..	..	0	5	6	20	,,	..	..	0 11 0
10	,,	..	..	0	6	0	21	,,	..	..	0 11 6
11	,,	..	..	0	6	6	22	,,	..	..	0 12 0
12	,,	..	..	0	7	0	23	,,	..	..	0 12 6
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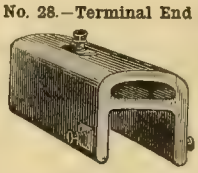
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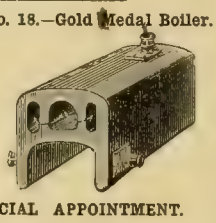


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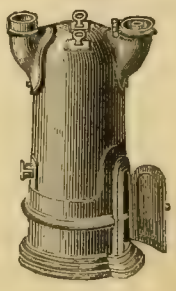


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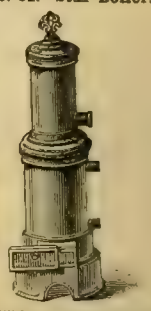
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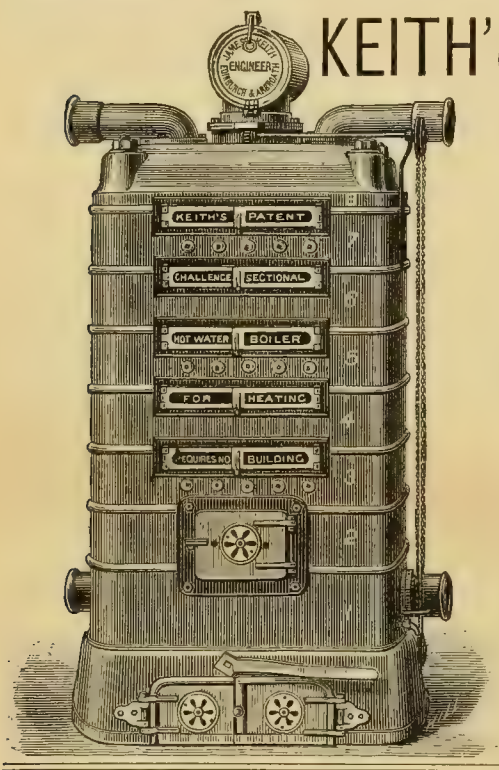
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"I am delighted with your Boiler; it answers admirably, and the directors are satisfied that it is one of the best £25 worth ever put in the hotel."

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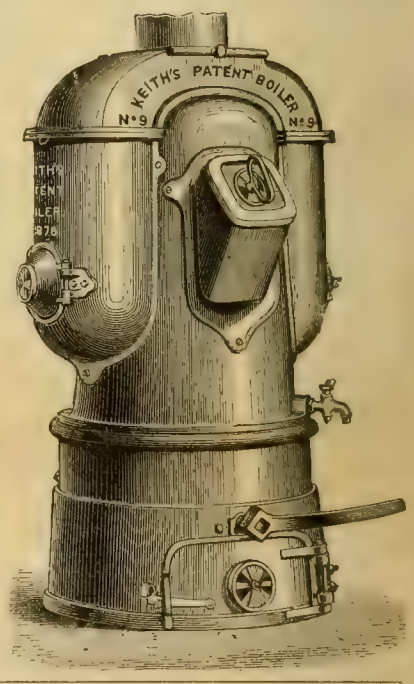
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THE

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NOTICE to SUBSCRIBERS and OTHERS, Post-office Orders and Postal Orders should now be made payable at DRURY LANE.

NOTICE IS HEREBY GIVEN, that the PARTNERSHIP heretofore subsisting between us, the undersigned, THOMAS HARRISON the Elder, JOHN HARRISON, and THOMAS HARRISON the Younger, carrying on business as Nurserymen and Seedsmen, at Leicester, in the county of Leicester, under the firm or style of Harrison & Sons, HAS BEEN THIS DAY DISSOLVED by mutual consent; and that all debts due and owing to or by the said late firm will be received and paid by the said JOHN HARRISON and THOMAS HARRISON the Younger, by whom the said business will in future be carried on.—As witness our hands this 4thday of November, 1882.
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JOHN HARRISON.
THOS. HARRISON the Younger.

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WANTED, SPRUCE FIRS for Christmas Trees, from 3 to 10 feet, must be well furnished. State particulars to
THOMAS HORSMAN, Nurseries, Ilkley, Leeds.

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Price to the Trade on application.
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To the Trade.
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SEED POTATOS—SPECIAL OFFERS. —A quantity of Magnum Bonum, Reading Hero, Paterson's Victoria, and Rivers' Royal Ashleaf to offer. Special prices upon application to
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SALES BY AUCTION.

Monday Next.

DUTCH BULBS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY NEXT, December 4, at half-past 12 o'Clock precisely, first-class Double and Single HYACINTHS, of all colours, for Glasses, Pots, and Borders; TULIPS, CROCUSES, SNOWDROPS, NARCISSUS, ANEMONES, RANUNCULUS, and other BULBS, just received from well-known farms in Holland, and in lots to suit all buyers.

On view morning of Sale, and Catalogues had.

Wednesday Next.

HARDY PLANTS and BULBS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, December 6, at half-past 12 o'Clock precisely, First-class Standard and Dwarf ROSES, including most of the popular sorts, Standard, Pyramid, &c.; dwarf-trained FRUIT TREES, RHODODENDRONS, Variegated and Irish YEWS, Portugal and Common LAURELS, HOLLIES, Hardy Conifers, Ornamental Flowering TREES and SHRUBS, Hardy Herbaceous PLANTS, from a well-known English Nursery; also a consignment of choice named Double and Single HYACINTHS, TULIPS, CROCUSES, NARCISSUS, GLADIOLI, LILIUMS, and other BULBS from Holland.

On view morning of Sale, and Catalogues had.

Thursday Next.

CATTLEYA TRIANÆ, very finest forms.

MR. J. C. STEVENS has received instructions from Mr. F. Sander, St. Albans, to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, December 7, at half-past 12 o'Clock precisely, a very grand importation of CATTLEYA TRIANÆ, in unusual health and largest masses, and in finest condition, with green healthy leaves and fine eyes, and coming from the same locality whence the grand varieties came we sold two years ago; a grand lot of ONCIDIUM PAPILIO MAJUS, large-bulbed variety; a fine lot of ODONTOGLOSSUM ALEXANDRÆ, finest varieties collected in bloom; a few plants of the new and rare WARSCEWICZELLA WENDLANDI, and other importations.

On view morning of Sale and Catalogues had.

Thursday Next.

5000 LILIUM AURATUM from Japan.

MR. J. C. STEVENS will include in his SALE by AUCTION on THURSDAY NEXT, December 7, an importation of about 5000 Bulbs of LILIUM AURATUM, just received from Japan, in the finest possible condition.

On view morning of Sale, and Catalogues had.
Auction Rooms and Offices, 38, King Street, Covent Garden, W.C.

Saturday Next.

HARDY PLANTS and BULBS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on SATURDAY NEXT, December 9, at half-past 12 o'Clock precisely, First-class Standard, Dwarf, and Climbing ROSES, including best named varieties of Hybrid Perpetuals, Tea-scented, Moss, and others; Dwarf-trained FRUIT TREES, Standard Ornamental TREES, CLIMBING PLANTS, &c.; also a consignment of first-class BULBS from Holland.

On view morning of Sale, and Catalogues had.

Imported Orchids.

CATTLEYA MOSSIÆ, autumn-flowering variety, collected by Mr. John Carder, many of them in flower at the time, just to hand per ss. "Severn."

ODONTOGLOSSUM CRISPUM (Alexandræ), just to hand per ss. "Para."

MR. J. C. STEVENS has been instructed by Messrs. Shuttleworth, Carder & Co., to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY, December 12, at half-past 12 o'Clock precisely, the above and other importations.

Further particulars in next week's Advertisement.

On view morning of Sale, and Catalogues had.

Monday Next, and December 11.

FINAL SALES of DUTCH BULBS this season.

MESSRS. PROTHEROE AND MORRIS will SELL, at the Mart, Tokenhouse Yard, City, E.C., as above, at half-past 11 o'Clock precisely each day, large consignments of first-class HYACINTHS, TULIPS, CROCUSES, and NARCISSUS and other ROOTS from Holland, in lots to suit all buyers.

Catalogues at the Mart, and 8, New Broad Street, E.C.

Sunbury, Middlesex.

By order of the Executors of the late Mr. R. A. Osborn.

HIGHLY IMPORTANT UNRESERVED SALE of the third and final portion of the unusually well grown NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, Osborn's Nursery, Sunbury, Middlesex, within ten minutes' walk of the Station, L. & S.-W. Railway, on TUESDAY NEXT, December 5, and two following days, at 12 o'Clock punctually each day, the third and final portion of the exceptionally well grown NURSERY STOCK, the whole of which is in the best possible condition for removal, including a large portion of handsome specimen Coniferæ; also several thousands of Ornamental Coniferæ and Evergreen Shrubs, including 5000 Gold and Silver Hollies, very fine plants in various sizes; 2000 Green Hollies, 15,000 Ornamental Trees, including 1000 Purple Beech, Limes, Planes, Scarlet and other Thorns, 10,000 Fruit Trees, consisting of Maiden and Trained Apples, Cherries, Nectarines, Plums, &c.; 5000 Standard and Dwarf Roses, beautifully grown, including all the finest varieties, Manetti Stocks, thousands of small Coniferæ for planting-out, also the remaining stock of Vines, Figs, and Tea Roses, in pots. FLOWER POTS, PIT LIGHTS, FRAMES, Four-wheel spring VAN, and numerous other effects.

May be viewed prior to the Sale. Catalogues may be had on the Premises; of Messrs. Walker, Belward & Whitfield, Solicitors, 5, Southampton Street, Bloomsbury, W.C.; and of the Auctioneers and Valuers, 8, New Broad Street, E.C.; and Leytonstone.

N.B. The valuable and productive FREEHOLD ESTATE of 17 acres, together with the modern GLASS ERECTIONS and DWELLING-HOUSE, to be SOLD. Particulars and terms of the Auctioneers, as above.

Lilium auratum from Japan.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Mart, Tokenhouse Yard, City, E.C., on MONDAY, December 11, several thousands of very fine bulbs of LILIUM AURATUM, just received from Japan.

Catalogues at the Mart, and 8, New Broad Street, E.C.

Park Estate, Barnet, Herts:

The Property of the British Land Company (Limited)

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FOR SALE, by PRIVATE TREATY, Three Enclosures of valuable FREEHOLD LAND, Tithe Free and Land Tax redeemed, situate within a few minutes' walk of Barnet and Oakleigh Park Stations on the main line of the Great Northern Railway, from whence there are frequent trains to Broad Street Station on the North London Railway, and to Moorgate Street, Ludgate Hill, King's Cross, and Victoria, on the London, Chatham, Great Northern, and Metropolitan Railways. Lot A. contains 3a. 3r. 31p.; Lot B. contains 2a. 3r. 10p.; Lot C. contains 3a. 1r. 8p. The property being within easy access of the London Markets, it is well worth the attention of persons desirous of acquiring land for Nursery or Market Garden purposes. There is an excellent stream of water running through the land. The purchase-money may be paid by a deposit of 10 per cent, and the balance by half-yearly instalments—5 per cent. interest being charged on the balance unpaid: but the whole or any part may be paid off at any time without notice. Free Conveyance will be given on the Vendors' Title being accepted.

Plans, Price, and further Particulars, may be obtained on application to the Auctioneer, at the Offices of the British Land Company (Limited), 25, Moorgate Street, E.C.

FOR SALE, near London, a NURSERY, about an acre, 3 Greenhouses well stocked, heated with hot water, 28 Lights, Cottage and large Shed. Lease 18 years. H. CROOK, Grove Nursery, Brabourne Grove, Hollydale Road, Nunhead.

TO LET, CONSERVATORIES with FRUITERER and GREENGROCER'S BUSINESS attached. Splendid position. Main Road. £50, all Stock, Fixtures and Fittings included. Only wants seeing.—Apply, first, F. PAGE, 106A, Ladbroke Grove Road, Notting Hill, W.

To Gardeners.

HAMILTON PALACE GARDENS.

THE TRUSTEES on the ESTATE of Francis Davidson are prepared, with consent of the Commissioners of His Grace the Duke of Hamilton, to SUBLET the GARDENS attached to Hamilton Palace. A large sum has been spent by Mr. Davidson on improvements since he entered into possession, and the whole gardens are in excellent condition. The Vineries and Greenhouses are extensive, and the former are stocked with highly productive Vines of the best sorts. The lease is a very favourable one, and has six years still to run. The Lessee will be required to take over Mr. Davidson's Stock, Plant, &c., at a valuation, and in addition the Trustees will expect a sum for the improvements made by him that are still unexhausted.

Further information and orders to see the Gardens will be given by the subscribers, and offers will be received by them up to Tuesday, 26th prox.

The Trustees do not bind themselves to accept the highest or any offer.

CRAWFORD AND HERON, Agents for Trustees.
104, West Regent Street, Glasgow, Nov. 25, 1882.

Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at 8, New Broad Street, E.C.

St. George the Martyr, Southwark.

TO NURSERYMEN and OTHERS.

TENDERS are invited, on or before TUESDAY, December 12 next, for SUPPLYING and PLANTING about Twenty PLANE and other TREES. Forms of Tender and other particulars may be had at the Vestry Clerk's Office, Borough Road, S.E.

November 30, 1882. A. MILLAR, Vestry Clerk.

CHRISTMAS TREES.—Thousands from 1½ to 6 ft. Scotch FIR, extra trans., 2½ to 4 ft., ASH, LARCH, Siver FIR, PRIVET, Dwarf and Standard ROSES, Trained and Pyramid APPLE and other FRUIT TREES, FRUIT STOCKS, &c. QUICK, from 10s. per 1000.
W. GROVE, Nurseryman, Hereford.

LARCH, extra fine, clean, 2½ to 3½ feet, 25s. per 1000. SCOTCH FIR, 1 to 2 feet, 15s. per 1000. AUSTRIAN PINE, 1 to 2 feet, 25s. per 1000, all well rooted.
W. JACKSON, Blakedown, near Kidderminster.

Standard and Dwarf Roses.

W. B. ROWE AND CO. (Limited) have to offer a few thousands of the above, which are unusually fine; they also call particular attention to the large stock of FRUIT TREES—Standards, Pyramids, Dwarf-trained and very fine Horizontal Fruiting Apples and Pears.
Barbourne Nurseries, Worcester.

TO OFFER.—Native Highland Scotch PINE SEED (true), collected by us in the best forests in the North. Also many millions of 1-yr. and 2-yr. SEEDLINGS of the above. Samples and prices from
JOHN GRIGOR AND CO., The Nurseries, Forres, N.B.

FOR SALE, 50 large SYCAMORE, 18 to 20 feet, stout and good; about 60 grand Chichester ELMS, 20 to 25 feet in height, stout, straight, and well-rooted; 100 large and stout BEECH, 12 to 14 feet, well-rooted and suitable as single trees For price, &c., apply to
ROBT F. DARBY, Cirencester Nurseries.

To the Trade.

CHRISTMAS ROSES.—Splendid quality, well set with buds, per 100, 30s., 40s., and 50s.
DEUTZIA GRACILIS, fine forcing plants; SPIRÆA JAPONICA, LILY of the VALLEY crowns, LILIUM LANCIFOLIUM, LILIUM AURATUM, GLADIOLUS BRENCHLEYENSIS, extraordinarily fine, and low in price.
SANDER AND CO., St. Albans.

Lilies and other Bulbous Plants for Autumn PLANTING, ORCHIDS, &c.

THE NEW PLANT AND BULB COMPANY beg respectfully to invite an inspection of their CATALOGUE, No. 60. Post-free on application.
Lion Walk, Colchester.

NEW ROSES of 1882, in pots.—Vendors' Selection, 30s. per dozen; Purchaser's, 36s. per dozen. The above comprise all the best English and French-raised Hybrid Perpetuals, Perpetual Polyantha, Teas, Hybrid Teas, and Perpetual Moss.

ROSES of 1881, of above-named classes, 18s. to 24s. per dozen, in pots.

CHOICE ROSES.—Tea-scented, Hybrid Tea, Noisette, China, and Bourbon, 18s. to 24s. per dozen, strong plants in pots.
Descriptive LIST on application.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

SPIRÆA PALMATA:
The largest stock for forcing in the world.
LAURUS CAUCASICA:
The finest Laurel ever introduced.
RHODODENDRONS:
All kinds and all sizes.
STANDARD RHODODENDRONS:
You may select from thousands.
HARDY TREES, SHRUBS, ROSES, &c.
For general planting, acre after acre.
Intending planters are invited to come down and see the stock. The Nursery is ten minutes from Sunningdale Station, S.-W. Railway.
CHARLES NOBLE, Bagshot.

THE NURSERIES, DUMFRIES.
(Established 1787.)
Our Stock, which is one of the largest in Scotland, comprises FOREST, FRUIT, and ORNAMENTAL TREES, DECIDUOUS and EVERGREEN SHRUBS, ROSES, GREENHOUSE PLANTS, &c.; also a very large and splendid Stock of THORN QUICKS, for Hedging and for Filling up Gaps
The Trees and Shrubs are of all ages and sizes, and are well adapted for extensive planting or giving immediate effect in the formation and improving of Ornamental Parks, Pleasure Grounds, &c. Prices on application.
THOMAS KENNEDY AND CO., Seed and Nursery Establishment, Dumfries.

New Seedling Apple, The Queen.
FIRST-CLASS CERTIFICATE.

SALTMARSH AND SON are now supplying strong maiden trees of this excellent variety, without which no collection, however small, will be complete, at 3s. 6d. each; also a few strong 2-yr. pyramids, on Crab and Paradise stocks, at 5s. to 7s. 6d. each. Price to the Trade on application.
The Nurseries, Chelmsford, Essex.

VIOLET, NEW DOUBLE MAZARINE BLUE.—This variety is very robust in habit, the flowers are large and perfectly formed, very fragrant, and freely produced. It is the finest Ultramarine-Blue Double Violet in cultivation. Price, each, 2s. 6d.; per dozen, 24s., from
JAMES CARTER AND CO., 237 and 238, High Holborn, London, W.C.

Planting Season.

ANTHONY WATERER begs to invite attention to the following well-grown and properly rooted NURSERY STOCK:—
AUCUBA JAPONICA, 1½, 2, and 3 feet. Thousands.
BOX, Green and Variegated, 2, 3, 4, 5, 6, and 7 feet. Thousands.
YEWS, English, 2, 3, 4, 5, 6, 8 to 10 feet. Thousands.
" Golden, all heights up to 10 feet, and various shapes—Globes, Pyramids, &c. Thousands.
" Irish, 5, 6, 7, to 10 feet.
JUNIPERS, Chinese, 5, 6, 7, to 10 feet.
PICEA PINSAPO, 5, 6, 7, to 10 feet.
" NORDMANNIANA, 5, 6, 7, to 10 feet.
SPRUCE FIRS, well furnished, 3, 4, 5, 6, and 7 feet. Many thousands.
" Black, 3, 4, and 5 feet.
SPRUCE, Hemlock, 4, 5, and 6 feet.
WEARE'S ARBOR-VITÆ, 4, 5, 6, and 7 feet.
HOLLIES, common Green, of all heights, up to 10 feet. Thousands.
" Green, of sorts, such as LAURIFOLIA, MYRTIFOLIA, HODGINS', ALTACLARENSE, Yellow-berried, &c. An enormous Stock.
" Variegated, from 3 to 5, 6, 7, 8, and 10 feet.
" Waterer's, beautiful Specimens.
" Golden Queen, up to 10 feet. Hundreds.
" Silver Queen, up to 10 feet. Hundreds.
" Perry's Weeping Standards and Pyramids.
" Golden Weeping Standards and Pyramids.
The Stock of Hollies of various kinds comprises many thousands, and affords a choice quite unequalled.
CUPRESSUS LAWSONIANA ERECTA VIRIDIS, 3, 4, 5, 6, 7, and 8 feet. Thousands.
" " GRACILIS, 3 and 5 feet.
" " ARGENTEA, 3 and 5 feet.
" " LUTEA, hundreds of fine plants, 3, 4, and 5 feet high.
RETINOSPORA PLUMOSA AUREA, 3, 4, and 5 feet.
" OBTUSA AUREA, 4, 5, 6, and 7 feet.
" PISIFERA AUREA, 3 and 4 feet.
THUIOPSIS DOLABRATA, 3, 4, 5, and 6 feet. Hundreds.
BEECH, Purple, 6 to 10 and 12 feet. Thousands.
LIMES, 10, 12, 14, 15, and 16 feet. Thousands.
PLANES, 10 to 20 feet.
MAPLE, Norway, 10 to 15 feet.
CHESTNUT, Horse, 10 to 16 feet.
" Scarlet, 10 to 16 feet.
POPLAR, CANADENSIS NOVA, 10 to 16 feet. Thousands.
OAKS, Scarlet American, 10 to 12 feet.
ACER DASYCARPUM, 10 to 16 feet.
" SCHWEDLERII, 10 to 12 feet.
And a vast and Miscellaneous Stock of Flowering DECIDUOUS SHRUBS and EVERGREENS, which intending purchasers are respectfully invited to come and see.
Knap Hill Nursery, Woking, Surrey.

NEW APPLE, SCHOOLMASTER.
First-class Certificate, R.H.S.
The best Apple introduced for some years.
A large and handsome fruit, of splendid quality, either for cooking or dessert, and suitable for the most exposed situations. See *Florist and Pomologist* and *Herefordshire Pomona* for illustrations. Strong Maidens, 7s. 6d. each, of the principal Nurserymen. Liberal Trade terms. Coloured plate, price 6d. Particulars post-free from
THOMAS LAXTON, Bedford.

To the Trade.
SEED POTATOS.

H. and F. SHARPE'S Wholesale LIST of SEED POTATOS is now ready, and will be forwarded on application. It comprises the best varieties in cultivation, of the finest quality, free from disease, and selected specially for seed purposes. The prices will be found exceptionally low.
Seed-Growing Establishment, Wisbech.

TO THE TRADE.—We can offer a large quantity of fine sound POTATO ONIONS, grown on upland Price on application to
HOGG AND ROBERTSON, Seedsmen, 22, Mary St., Dublin.

FRANCIS BELL, NURSERYMAN, Easingwold, offers:—
2,000,000 SCOTCH LARCH, 1½ to 2 feet, 2 to 3 feet, 3 to 4 feet.
200,000 SCOTCH FIR, 1 to 1½ foot, 1½ to 2 feet.
200,000 QUICKWOOD, 2 to 3 feet.
The above are recently transplanted, with good leads and roots. For particulars apply as above.

EIGHTY THOUSAND CLEMATIS, in Pots, of all the finest double and single varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants.
Descriptive LIST on application.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester

R. AND G. NEAL, NURSERYMEN, SEEDSMEN, and CONTRACTORS, Wandsworth Common, S.W., respectfully invite an inspection of the large and varied Stock of SHRUBS, FOREST, ORNAMENTAL, FRUIT and ROSE TREES grown at their Nurseries, which are now in fine condition for transplanting. All plants delivered free by own vans, within 6 miles of the Nursery. Builders supplied at Trade Prices. CATALOGUES on application.
The Nurseries are within 1 mile of the Clapham Junction and Wandsworth Common Stations.

STRAWBERRIES.—Strong roots for present planting and for fruiting next year, 4s. per 100. Descriptive LIST and price for plants in pots for forcing on application. — RICHARD SMITH AND CO., Nurserymen and Seed Merchants. Worcester.

PLANTS FOR POTTING AND FORCING:—
AZALEA MOLLIS, with from 10 to 30 buds
" a selection of the best hardy kinds, including PONTICA, NARCISSIFLORA, and GRAF VON MERAN, well budded.
KALMIA LATIFOLIA, nicely grown plants with flower-buds on wellnigh every shoot.
RHODODENDRONS, well budded and the best varieties for the purpose.
DEUTZIA CANDIDISSIMA, fl.-pl., established in pots.
HYDRANGEA PANICULATA GRANDIFLORA, very strong
ANDROMEDA PULVERULENTA or SPECIOSA.
These can be obtained in satisfactory plants and at fair prices from
ANTHONY WATERER, Knap Hill Nursery, Woking, Surrey.

Special Offer to the Trade of
LEICESTER SEEDS,
which may be had on application to
HARRISON AND SONS, Seed Growers, &c., Leicester.

SPECIAL OFFER TO THE TRADE.
RED CURRANTS, 10s. per 100, 80s. per 1000
WHITE CURRANTS, 12s. per 100, 80s. per 1000.
BLACK CURRANTS, 10s. per 100, 80s. per 1000.
All strong transplanted.
JOHN PERKINS AND SON, 52, Market Square, Northampton.

DOUBLE PINK BOUVARDIA, "PRESIDENT GARFIELD," a handsome and beautiful variety. Good plants, price 5s., 10s. 6d., 15s., and 21s. each, from JAMES CARTER AND CO. Trade price per dozen on application, with sample plants.
CARTERS', 237 and 238, High Holborn, London, W.C.

KENTISH FRUIT TREES.—Standard, Pyramid, and Trained CHERRIES, APPLES, PEARS, and PLUMS, in all the most profitable varieties for Market growers, at 20 per cent. under usual prices for cash.
T. EVES, Nurseryman and Fruit Grower, Gravesend Nurseries. Established 1810.

TWO HUNDRED THOUSAND HERBACEOUS and ALPINE PLANTS for Borders, Rockwork, &c. See Descriptive LIST, giving colour, height, time flowering, &c., free by post for 1d. stamp.
Selection of 100 good showy varieties for 25s.
R. SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

APPLE TREES with MISTLETO growing on them. Price from 7s. 6d. to 21s. each.
RICHARD SMITH AND CO., Nurserymen, Worcester.

LAPAGERIA ALBA, well-rooted plants, 10s. 6d., 15s. and 21s. A few extra specimens, size and price on application.
LAPAGERIA RUBRA, superb, 7s. 6d., 10s. 6d. and 15s. A few extra-sized specimens, size and prices on application.
W. HOWARD, Southgate, N.

Gardenias.
MESSRS. JOHN STANDISH AND CO.'S Stock of GARDENIAS was never so extensive or good as it is this season. They have thousands of plants to select from, in all sizes, from fine specimens in 18-inch pots to small plants in 60's. All clean and healthy, and to a large extent well set with buds for winter-flowering. VERY REASONABLE prices will be quoted on application.
Royal Nurseries, Ascot, Berks.

HORIZONTAL TRAINED FRUIT TREES.—For extra sized Horizontal Trained Pears, which will cover bare walls, and come into bearing at once.
PYRAMID APPLES and PEARS and ESPALIER APPLES, extra transplanted, and in fruiting condition.
AUCUBA JAPONICA, beautifully coloured and very fine.
AUCUBA VERA, thickly set with berries.
Through trucks to any part of the United Kingdom. Plants and trees added to compensate for freight. Apply to
GEORGE SMITH, The Dell Nursery, Rock Ferry, Cheshire.

110 SPECIMENS OF
CHOICE NEW ZEALAND FERNS,
Artistically Mounted and Correctly Named.

Messrs. PARTRIDGE & COOPER
Have received a Consignment of these unique Collections from New Zealand, and have them on View, for Sale, at
192, FLEET STREET, E.C.
THEY SHOULD BE SEEN BY ALL LOVERS OF FERNS.
Suitable for Christmas Presents,
Or as Illustrated Catalogues to the Trade.

TO THE TRADE.

A very large quantity of fine
Half-Standard and Dwarf-Standard ROSES,
Of all the leading sorts, to offer cheap.
Apply to—
BENJAMIN R. CANT,
THE CHAMPION ROSE GROWER,
COLCHESTER.
A DOUBLE FIRST-CLASS CERTIFICATE,
The Highest Honour ever bestowed by the Royal Horticultural Society, was awarded to the
ENGLISH RAISED SEEDLING ROSE,
DUCHESS OF CONNAUGHT (NOBLE),
now being sent out at 10s. 6d. each.
CHARLES NOBLE, Bagshot.

SINGLE DAHLIA SEED.
SPECIAL TRADE OFFER
OF MY
VERY SUPERIOR and CERTIFICATED STRAIN
IS READY, AND MAY BE HAD ON APPLICATION.
THOMAS S. WARE,
HALE FARM NURSERIES, TOTTENHAM, LONDON.

SEAKALE—SEAKALE.
VERY LARGE.
ANY QUANTITY.
Apply to the Grower for Particulars.
W. BAGLEY,
MILLSHOT FARM, FULHAM, S.W.

The Largest Rose Gardens in England.
CRANSTON'S NURSERIES
(ESTABLISHED 1785).
ROSES ON OWN ROOTS.
A large quantity of very fine plants of Hybrid Perpetuals, Bourbons, Hybrid Chinas, &c. List of varieties, with prices, on application.
CRANSTON'S NURSERY and SEED CO.
(LIMITED).
KING'S ACRE, HEREFORD.

BULBS.
Illustrative Descriptive List free on application.
SPECIMEN TESTIMONIAL (UNSOLICITED):—
"*March* 10, 1882.—Crocus, &c., in borders, purchased and planted last autumn, are making a fine show, and giving every satisfaction. Hyacinths in pots have been very fine and much praised, having spikes of bloom 9 *inches in length and so close that they appeared to be solid.* Tulips have been very fine and highly praised. Hyacinths in border now showing very strong bloom."
RICHARD SMITH & CO.,
SEED MERCHANTS and NURSERYMEN,
WORCESTER.

NOTICE.
SELLING OFF OF NURSERY STOCK.
EWING & CO.,
EATON, near NORWICH.
Great Reduction in Price for Cash Payments, viz.:
15 per Cent. for Cash before delivery.
10 per Cent. for Cash within One Month of date of invoice.
5 per Cent. for Cash within Three Months of date of invoice.
After Three Months no discount can be allowed.

Among other things the following are in stock in great quantity and of fine quality:—
MARÉCHAL NIEL ROSE, on Brier stock, short standards, 1½ to 2 feet in stem, 2s. 6d. each, 24s. per dozen; half standards, 2 to 3 feet in stem, 3s. to 3s. 6d. each, 30s. to 36s. per dozen.
PRIVET, Broad or Oval-leaved, fine, transplanted, 1½ to 2 feet, 8s. per 100; 2 to 3 feet, 10s. per 100
PURPLE BEECH, best dark broad-leaved variety, 4 to 5 feet, 12s. per dozen, 75s. per 100; 5 to 6 feet, 18s. per dozen, 120s. per 100; 6 to 8 feet, 24s. per dozen.
NUTS and FILBERTS, best varieties, very fine bushes, 4s. to 12s. per dozen, 25s. to 75s. per 100. Cheaper by the 1000.
HORSE CHESTNUTS, splendid stout trees, extra transplanted, 10 to 12 feet, 12s. per dozen, 75s. per 100; 12 to 14 feet, 18s. per dozen, 120s. per 100.
Ditto, Scarlet-flowered, 6 to 8 feet, 18s. per dozen; 8 to 10 feet, 24s. per dozen; 10 to 12 feet, 36s. per dozen.
SEAKALE, extra fine planting roots, 10s. per 100; forcing roots, 15s. per 100; good small roots, 50s. per 1000.
ASPARAGUS, fine planting roots, 2s. 6d. to 3s. 6d. per 100, 20s. to 30s. per 1000; forcing roots, 5s. to 10s. per 100.
Trade Terms on application.

Seeds of Clivia.
IMANTOPHYLLUM MINIATUM, from the best large-flowered brightly coloured varieties 12 seeds, post-free, 5s. 6d.; 100 seeds, post-free, 32s.
E. PYNAERT VAN GEERT, Brussels Gate, Ghent, Belgium.

CHRYSANTHEMUMS. — We have been awarded Four First-class Certificates for our this season's novelties. Cuttings can now be had of the 20 extraordinary grand new varieties, introduced by us this year, at 1s. 6d. each, or the set for 20s. Well rooted plants can also be had now of all the sorts, at 3s. 6d. each. See CATALOGUE (gratis) for description. Cuttings of the best older varieties, our selection, from 2s. per dozen.
S. DIXON AND CO., Amhurst Nurseries, Auton Street, Hackney, E.; and City Seed Warehouse, 34, Moorgate Street, London, E.C.

An Inspection Invited of
ABBEY WOOD NURSERIES.—30 Acres of Specimen Gold, Silver, and Ornamental HOLLIES, RHODODENRONS, CONIFERÆ, and General Stock. Ten thousand Sir J. Paxton STRAWBERRIES, fine crowns, 2s. 6d. per 100, or £1 per 1000, cash with order.—GEORGE HAVELOCK, Abbey Wood, North Kent Line (outside station

CREEPERS for WALLS, TRELLISES, &c., in great variety. See Descriptive LIST. Most of these plants being in pots, may be moved now.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

DOUBLE WHITE BOUVARDIA, "ALFRED NEUNER."—First-class Certificate Royal Horticultural Society. Price, strong established plants, 1s. each, 9s. per dozen, from JAMES CARTER AND CO. Trade price per 100 on application, with sample plants.
CARTERS', 237 and 238, High Holborn, London, W.C.

Special Offer to the Trade.
SINGLE DAHLIA SEED, saved from all the best named varieties, including whites, and our novelties for next year—a finer and better strain we feel sure does not exist—20s. per ounce, or in retail (2s. 6d.) packets, price of which may be had on application to
KEYNES AND CO., Salisbury

To the Trade.
SEED SPECIALITIES.
ELCOMBES' DWARF VICTORIA BEET.—This, without doubt, is the very best Beet in cultivation. Its root is of a dark rich crimson colour, excellent flavour, with rich metallic crimson leaves, surpassing all other kinds for its richness of colouring and effectiveness in the flower garden.
ELCOMBES' IMPROVED PARSNIP (True Stock Seed) Very superior, producing handsome shaped roots, free from fibres, and acknowledged to be the best flavoured Parsnip in cultivation.
CUCUMBER—HORTON'S PROLIFIC.—A most prolific kind, very hardy, suitable for summer and winter forcing and open ground culture, fine flavour.
Trade Price on application.
ELCOMBE AND SON, Seed Merchants and Nurserymen, Romsey.

RARE HOLLY FERNS, with thorns like miniature Holly leaves perfectly hardy. Plants, free; 2, 1s. 9d.; 6 plants, 4s. 6d. free; 1s. doz. Carriage paid
MORLEY AND CO., Fulwood, Preston.

RASPBERRY CANES. — 500,000 of the celebrated Carter's Prolific (see *Mark Lane Express*, Aug. 1, 1881, p. 104) to dispose of, at £2 per 1000. Samples of 100 5s., packing included, free at Railway Offices in London in CHANGE of rail Payments to accompany Orders. Postal Order on Knockholt. Apply to
ALBERT AND EDWIN BATH, Colgates Farm, Sevenoaks, Kent.

Special Offer.
CEDRUS DEODARA.
CRYTOMERIA ELEGANS.
VARIEGATED YEWS.
H. LANE AND SON, having many thousands of the above, well transplanted, can offer them very cheap; also many other TREES and SHRUBS.
The Nurseries, Berkhampstead, Herts.

To prevent Disappointment, Order at once,
NEW RASPBERRY,
BAUMFORTH'S SEEDLING,
The Best Raspberry in the Kingdom.
See Testimonials.
Price, 5s. per dozen canes; 35s. per 100.
Extra strong selected, 7s. 6d. per dozen.
EDMUND PHILIP DIXON, The Yorkshire Seed Establishment, Hull.

ANEMONE JAPONICA ALBA and ROSEA.—JAMES CARTER AND CO. offer a splendid stock of these beautiful late summer and autumn-flowering plants. They should be in every garden.
Price 9d. each; per dozen, 7s. 6d.
CARTERS', 237 and 238, High Holborn, London, W.C.

To Planters.
JAMES BIRD offers the undermentioned
Forest stuff, price on application:—
SCOTCH FIR, 1½ to 2 feet, and 2 to 3 feet.
SPRUCE FIR, 1½ to 2 feet, and 2 to 3 feet.
PINUS AUSTRIACA, 1½ to 2 feet.
HAZEL, 3 to 4 feet.
ROSES, Standard and Dwarf.
The Nurseries, Downham.

TO THE TRADE.
THE LYON LEEK (Novelty). The finest for Exhibition.
EAST LOTHIAN INTERMEDIATE STOCK, true.
ANTIRRHINUM, extra choice, saved from the finest varieties.
INTERNATIONAL PRIZE GLOBE QUILLED ASTER, mixed.
GLASGOW PRIZE COCKSCOMB, the finest strain existing.
VICTORIA BRUSSELS SPROUTS, the hardiest and best variety.
JERUSALEM ARTICHOKES.
Prices on application.
STUART AND MEIN, Nurserymen and Seedsmen, Kelso, N.B.

Order from your Seedsman
LAXTON'S NEW PEAS,
EVOLUTION and WILLIAM HURST.
Particulars in previous Advertisement, or post-free from
THOMAS LAXTON, Bedford.

GARDEN SEEDS.
FARM SEEDS.

CHARLES SHARPE & CO.,
SEED GROWERS,
SLEAFORD,

Having now completed harvesting their SEEDS, will have much pleasure in sending SPECIAL OFFERS on application, with Samples if desired.

ROSES.—Strong, healthy, well-rooted, best named show varieties, 7s. 6d. per doz., 27s. for 50, £2 10s. per 100. Standards, 18s. per doz.
SWEET VIOLETS, full of bud. New York, the best double, 2s. 6d. per doz.; De Parme, Double Red Russian, Belle de Chatenay, Odoratissima, 3s. 6d per doz.
LIST of Roses, and twenty-six varieties of Violets, with directions for cultivation, 1½d. Address
Mr. R. W. BEACHEY, Fluder, Kingskerswell, Devonshire.

LAPAGERIA ALBA (the best White variety), from 10s. 6d. each; RUBRA (the best crimson variety), from 7s. 6d. each; a few extra strong plants, price on application to
R. H. VERTEGANS, Chad Valley Nurseries, Edgbaston, Birmingham.
R. H. V.'s pocket CATALOGUE of herbaceous and other hardy plants free on application.

To Large Buyers and the Trade.
GREEN EUONYMUS, good and bushy, 15 inches, 20s. per 100, £9 per 1000, for cash.
WILLIAM HOLMES, Frampton Park Nursery, Hackney, E.

Spruce Firs for Christmas Trees.
WM. JACKSON AND CO., Nurseries, Bedale, Yorkshire, can supply in large quantities the above, 1½ to 2 feet, 5s.; 2 to 3 feet, 10s; 3 to 4 to 5 feet, 12s 6d. per 100. Quartered wide apart, large, and specimens. Prices, and all particulars on application. Now is the time to order. LARCH, strong, in all sizes. GOOSEBERRIES and CURRANTS; Victoria and other PLUM TREES; Lord Suffield and other APPLE TREES, good and cheap.

ROSES AND FRUIT TREES. — Fine Pyramid APPLES and PEARS of the hardiest and best cropping varieties only, 6s., 9s., 12s, and 18s per dozen. Dwarf trained trees, 24s. and 30s. per dozen, all with splendid fibrous roots.
PLUMS and CHERRIES, Pyramids, 12s., 18s., and 24s. per dozen Dwarf trained trees, 30s. per dozen.
RED and BLACK CURRANTS, 2s. and 3s per dozen.
RASPBERRIES, 1s. 6d. and 2s. per doz., 8s. and 10s. per 100.
STRAWBERRIES, 2s. 6d per 100 CATALOGUES free.
LA GRIFFERAIE ROSE CUTTINGS for Stocks, 1s. per 100, 7s. 6d. per 1000, cash.
DWARF H.P. ROSES, all the leading varieties, 7s. per doz., 50s. per 100. CATALOGUES free.
WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

FINEST SEEDLING and TRANSPLANTED TREES.
ALDER, 3 to 4 feet, 18s. per 1000.
ASH, 2 to 3 feet, 16s. per 1000.
LARCH, 2-yr., extra, 3s. 6d. and 5s. per 1000.
,, 3 to 4 feet, 26s. per 1000; 4 to 5 feet, 30s. per 1000.
SPRUCE FIR, 2-yr., £7 per 100,000.
,, 1 to 1½ foot, 10s. per 1000; 1½ to 2 feet, 12s. per 1000.
SCOTCH FIR, 1 to 1½ foot, 12s. per 1000; 1½ to 2 feet, 15s. per 1000; 2½ to 3½ feet, 18s. per 1000.
PINUS AUSTRIACA, 2-yr., fine, 2s. 6d., per 1000, or £12 per 100,000.
,, LARICIO, 10 to 15 inches, 20s. per 1000; 1½ to 2 feet, 25s. per 1000; 2 to 3 feet, 30s. per 1000.
THORNS, 1½ foot, 10s. 6d. per 1000; 2 feet, 12s. per 1000; 2 to 3 feet, 13s. 6d. per 1000.
CRABS, 1-yr., extra, 3s. per 1000.
PEARS, fine, 1-yr., 5s. per 100.
GARLIES MITCHELL, Stranraer.

ABIES DOUGLASII, 10 to 12 in., transplanted, 16s per 100.
ABIES DOUGLASII, 3 to 3½ feet, transplanted, 50s. per 100.
,, 4 to 5 feet, 75s. per 100.
ESCALLONIA MACRANTHA, 1 foot, 10s. per 100.
CEDARS Red, 8 to 12 inches, 1-yr. transplanted, 10s. per 100.
CUPRESSUS LAWSONIANA, 2½ feet, 30s. per 100.
PINUS INSIGNIS, 3-inch pots, 7s. per 100.
,, NORDMANNIANA, 6 to 8 inches, 12s per 100.
CEDRUS DEODARA, 4 to 5 feet, 18s. per dozen.
,, ,, 6 to 7 feet, fine, 36s per dozen.
PICEA NOBILIS, 4 feet, 60s. per dozen.
,, ,, 5 feet, 70s per dozen.
THUIA LOBBII, 2½ to 3 feet, 60s. per 100.
,, ,, 4 to 5 feet, 12s. per dozen.
Catalogues free on application.
GARLIES MITCHELL, Nurseryman, Stranraer.

Tea Roses.
THE LIVERPOOL HORTICULTURAL COMPANY (JOHN COWAN), Limited, The Vineyard and Nurseries, Garston, near Liverpool, have a splendid stock of TEA ROSES in all the leading varieties.
LIST free. Price to the Trade on application.
Also a large stock of GRAPE VINES.

Special Offer.
CEDRUS DEODARA, fine plants
3 to 4 feet, 15s. for 12, 60s. for 50, 110s. for 100.
4 to 5 feet, 18s. for 12, 70s. for 50, 130s. for 100.
THOMAS PERKINS AND SONS, 34, Drapery, Northampton.

SEAKALE, exceptionally fine Roots for Forcing, 2s. 6d. per dozen, 16s. per 100.
ASPARAGUS, strong, for Forcing, 12s. per 100; specially selected ditto, 16s. per 100.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

VIOLETS continue BLOOMING until next March. We have an acre of all the best in cultivation, in splendid vigour, and full of buds. For full particulars send for a CATALOGUE.
NEAPOLITAN, large clumps for cold frames, 20s. per 100; fine plants in 5-in. pots, in flower, 8s. per doz., £2 10s. per 100.
MARIE LOUISE, large clumps ditto, 25s. per 100; splendid plants in 5-in. pots, full of flower, 9s. per doz., £3 per 100.
BLOOMS of SWANLEY WHITE (Double) sent to any address for 8 stamps.
H. CANNELL AND SONS, Home for Flowers, Swanley, Kent.

WEBB'S PRIZE COB and other FILBERT TREES, Calcot Gardens, near Reading.
Apply to Mr. COOPER, F.R.H.S., Calcot Gardens, near Reading, Berks.

CANNAS, for Parks and Large Gardens.
Special offer of extra strong roots.
Selected, in 10 varieties .. .. 21s. per 100, 180s. per 1000
All varieties, mixed .. .. 12s. per 100 105s per 100.
Orders now booked as long as stock lasts.
HOOPER AND CO., Covent Garden, London, W.C.

TO THE TRADE.—Fine clumps Christmas ROSES, in three sizes 4s., 8s., and 1 per dozen; also fine roots of Yellow CROCUS, GLADIOLI BRENCHLEYENSIS, and GARLIC.
JNO. JEFFERIES AND SONS, Cirencester.

THURSDAY NEXT.

CATTLEYA TRIANÆ
VERY FINEST FORMS.

MR. J. C. STEVENS has received instructions from Mr. F. SANDER St. Albans, to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, December 7, at half-past 12 o'Clock precisely,

A VERY GRAND IMPORTATION OF CATTLEYA TRIANÆ,

in unusual health, and largest masses, and in finest condition, with green healthy leaves and fine eyes, and coming from the same locality whence the grand varieties came we sold two years ago; a grand lot of ONCIDIUM PAPILIO MAJUS, large-bulbed variety; a fine lot of ODONTOGLOSSUM ALEXANDRÆ, finest varieties, collected in bloom; a few plants of the new and rare WARSCEWICZELLA WENDLANDI, and other Importations.

On view morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

IMPORTED ORCHIDS.

CATTLEYA MOSSIÆ, AUTUMN-FLOWERING VARIETY

Collected by Mr. John Carder, many of them in flower at the time.
Just to hand, per S.S. "Severn."

ODONTOGLOSSUM CRISPUM (ALEXANDRÆ

Just to hand per S.S. "Para."

MR. J. C. STEVENS has been instructed by Messrs. SHUTTLEWORTH, CARDER & CO., to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY, December 12, at half-past 12 o'Clock precisely, the above and other Importations. Further particulars in next week's Advertisement.

On view morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

CAPE FLOWERS.—This season's, finest selected, 10s. per 1000. Samples free.—MOYSES STEVENS, 22, Stockbridge Terrace, Victoria Street, W.

FOREST TREE SEEDLINGS.

One of the largest and finest stocks to choose from, including over three millions of two Seedling LARCH, with sound leaders—a splendid lot. Samples and prices post-free on application to

PETER S. ROBERTSON & CO.,
NURSERYMEN, EDINBURGH.

CRANSTON'S NURSERIES.
(Established 1785.)

NOW READY,

Descriptive and Priced Catalogue of ROSES

For Autumn 1882 and Spring 1883.

CRANSTON'S NURSERY and SEED CO.
(LIMITED),
KING'S ACRE, HEREFORD.

Ferns a Speciality.
The largest stock in the greatest number of varieties of
EXOTIC AND BRITISH FERNS
In the Trade, suitable for STOVE and GREENHOUSE cultivation, for Outdoor Ferneries, and other purposes. Special LIST free on application. Illustrated CATALOGUE 6*d*.

W. AND J. BIRKENHEAD, Fern Nursery, Sale, near Manchester.

A. M. C. JONGKINDT CONINCK, Dedemsvaart, by Zwolle, Netherlands, has to offer
MANETTI STOCKS.
Prices on application.

RICHARD SMITH & Co. WORCESTER

SEVENTY-FOUR ACRES of FRUIT TREES.—Apples, Pears, Plums, Cherries, Peaches, Nectarines, Apricots, and other Fruit Trees, as Standards, Dwarfs, Pyramids, Bushes, Cordon and Trained Trees in great variety, all full of vigour, and warranted true to name. Descriptive Price LIST, containing a sketch of the various forms of Trees, with Directions for Cultivation, Soil, Drainage, Manure, Pruning, Lifting, Cropping, Treatment under Glass; also their Synonyms, Quality, Size, Form, Skin, Colour, Flesh, Flavour, Use, Growth, Duration, Season, Price, &c., for 1*d*. stamp.

LIST of all the EVERGREEN FIR TRIBE, suitable for Britain, giving size, price, popular and botanical names, derivations, description, form, colour, foliage, growth, timber, use in arts, native country, and size there, situation, soil, and other information, with copious index of their synonyms. Free by post for six stamps.

LIST OF STOVE and GREENHOUSE PLANTS, comprising the best selections of Camellias, Azaleas, Ericas, Epacris, Ferns, &c., free for 1*d*. stamp.

LIST of EVERGREEN and DECIDUOUS SHRUBS, RHODODENDRONS, STANDARD ORNAMENTAL TREES, CLIMBING and TWINING PLANTS, with their generic, specific, and English names, native country, height, time of flowering, colour, &c., and general remarks, free for 1*d*. stamp.

ALL KINDS of GARDEN SEEDS, of first quality. BULBS, MUSHROOM SPAWN, TOBACCO PAPER, ARCHANGEL MATS, and other GARDEN REQUISITES. See LISTS, which may be had on application.

RICHARD SMITH & Co. WORCESTER

ROSE PLANTING SEASON.

PAUL AND SON,

THE OLD NURSERIES, CHESHUNT, N.,

RESPECTFULLY INVITE ORDERS FOR

ROSES—STANDARDS, DWARFS, and CLIMBERS.

The Stock of Roses this year at this ancestral home of the Rose is very fine; plants are strong, vigorous, healthy, and abundant, and prices are reasonable.

FIFTY FIRST PRIZES, including most of the leading ones, have been won during the year; making some 1250 First Prizes obtained since 1860 by this Old-established Firm—dating from 1806.

Carefully prepared CATALOGUES of ROSES, FRUIT TREES, and BULBOUS and HERBACEOUS PLANTS now ready, and post-free on application.

PAUL & SON, THE OLD NURSERIES, CHESHUNT, N.

WALKER'S PERPETUAL BEARER PEA.

NUTTING & SONS

Again have the pleasure to offer this valuable New Pea, which has fully maintained all that was said of its character as being the most prolific and longest-bearing Pea yet introduced.

It has again taken the 1st Prizes at the Royal Oxfordshire Horticultural Show, on August 2 and September 8, 1882, having previously received a First-class Certificate from the same Society, in August, 1881. Also 1st and 2d Prizes at the Thame Show, on September 14, 1882.

It was awarded a First-class Certificate, last year, by the Royal Horticultural Society.

Price, in Sealed Pints, 3s. 6d.

Trade Price and Testimonials, also LIST of other VEGETABLE and FLOWER SEED NOVELTIES, free on application.

NUTTING & SONS,

SEED WAREHOUSES, 60, BARBICAN, LONDON, E.C.

H. LANE AND SON have 130 Acres of NURSERY STOCK to offer, in great variety, including:—

EVERGREEN TREES and SHRUBS.—Cedars, Cupressus, Junipers, Piceas, Retinosporas, Thuias, Wellingtonias, Aucubas, Bays, Berberis, Box, Cotoneasters, Hollies, Laurels, Yews, &c.

DECIDUOUS TREES and SHRUBS.—Acers, Ash, Beech, Birch, Chestnuts, Elms, Hawthorns, Limes, Mountain Ash, Planes, Poplars, Sycamores, Weeping Trees, Deutzias, Elders, Forsythias, Gueldres Rose, Lilacs, Ribes, Spiræas, Weigelas, &c.

FOREST TREES.—Ash, Beech, Chestnut, Larch, Scotch, Spruce, and Austrian Firs, Hazel, Oak, Poplar, Quick, &c.

RHODODENDRONS, ROSES, and FRUIT TREES in great variety of all descriptions.

VINES in pots, &c.

CLIMBERS for Walls, &c.—Clematis, Honeysuckles, Ivies in great variety, Jasmines, Wistarias, Virginian Creepers, &c.

CATALOGUE on application
The Nurseries, Berkhamsted, Herts.

KENT, the GARDEN of ENGLAND

350,000 Fruit Trees, True to Name.

The Largest Stock of Standard Cherries in Britain.—Cherry Orchards are a paying investment.

The Largest Stock of Black Currants.
A lucrative market crop.

The Largest Stock of Gooseberries and Red Currants.—These have again returned large profits per acre.

The Largest Stock of Cluster or Farleigh Damsons.—A grower takes 2500 bushels this year (when fruit is short), and sells at 13s. per bushel. A plantation of these will soon buy the ground they stand on.

The Largest Stock of Plums and Gages in Britain.—Many thousands of Standard and Half-Standard **Pears** and **Apples.**

The Stock of Garden, Wall, Pyramidal, and Trained Fruit Trees is equally extensive.

The Descriptive Catalogue of Fruits free for two stamps.
The Fruit Trees in these Nurseries are not equalled for vigour, freedom of growth, and abundant fibrous roots. Success in removal is certain.

THE KENT ROSES DO LIVE,
because they are wonderfully rooted.
New Descriptive List free by post.
Remarkably fine H.P.'s and Teas, Standards, Half-Standards, and Dwarfs.

Evergreens, Hollies, Coniferæ, Forest Stuff
—many acres—are in finest order.

GEORGE BUNYARD & CO.,
FRUIT TREE and ROSE GROWERS,
GENERAL NURSERYMEN, FLORISTS & SEEDSMEN,
MAIDSTONE, KENT.

N.B.—Frequent Trains from London by North Kent or London, Chatham and Dover Line.

GEORGE  **JACKMAN**
WOKING NURSERY,
ESTABLISHED 1810. **& SON,** **SURREY.**

Select List of Choice Fruit Trees. Suitable for Large or Small Gardens.

Select List of the Best Varieties of Roses.
Dwarfs, Standards, and in pots.

Select List of American Plants. For Peat and Loamy Soils.

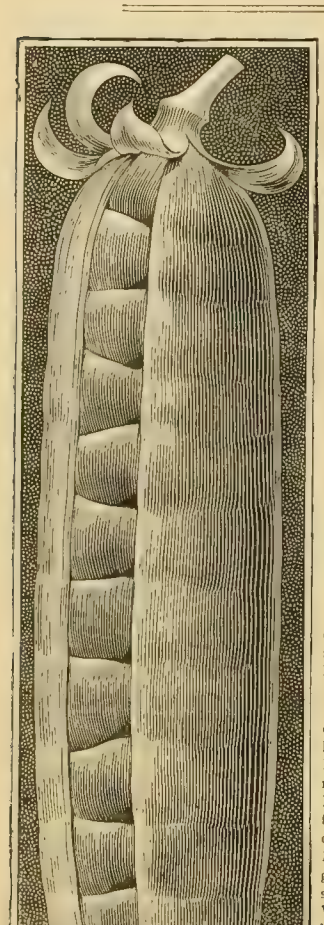
Select List of Hardy Trees, Shrubs, and Forest Trees. Suitable for Parks and Private Gardens, and adapted for Belts, Shrubberies, Screens, Covers, &c.

Select List of Conifers. For Lawns and Pleasure Grounds, also for Winter Bedding, Box and Window Plants.

Select List of Hardy Climbers. Including their celebrated Clematises.

Geo. Jackman & Son's Descriptive Catalogue free on application.

SHARPE'S Early Paragon Pea.



Paragon,

the most recent of Mr. Culverwell's introductions in the way of Peas, shows in many respects a marvellous improvement upon any variety at present in the Trade. It is a blue wrinkled Marrow, of fine flavour; height from 3 to 4 feet; the pods are produced two and three together, in such abundance as to almost conceal the foliage. The pods are of an unusual size, broad and thick backed, containing from twelve to fourteen immense Peas packed in a double row, as shown in the illustration.

Paragon is the earliest of the large wrinkled Marrows, being ready before Prizetaker; in fact, in the gardens at Thorpe Perrow it was gathered at the same time as William I., both kinds having been sown at one time. It is very hardy, and will stand earlier sowing than any Pea of its class.

We have every confidence in recommending this Pea. Our Stock being small, we are not able to offer more than a limited number of packets; but we are anxious to give our Customers the very first opportunity of testing the merits of what we consider the greatest acquisition in Peas for an early crop that has ever been offered.

Price,
3s. 6d. per Quarter Pint Packet.

THE EARLIEST OF ALL POTATOS.

SHARPE'S VICTOR.



Sharpe's Victor is a seedling raised from the Alma Kidney and the old early short-top round Potato. It is earlier than any present variety, and having a very short top is especially suitable for frame cultivation; its precocity is such that it has been fit for the table in nine weeks from the time of planting, and the raiser assures us that at this date, October 17, he is now growing his fifth successive crop this year, the first being lifted in January. Thus there is no difficulty in **securing new Potatos for the Table every day in the year.** Victor is a flattened roundish oval in shape, with a beautiful clear skin and extremely shallow eyes, being one of the handsomest as well as the heaviest cropper of any variety adapted for Frame-work, or for a first early crop outdoors. It is dry and mealy when cooked, and the flavour and quality of the flesh are superior to nearly every other variety at present in use.

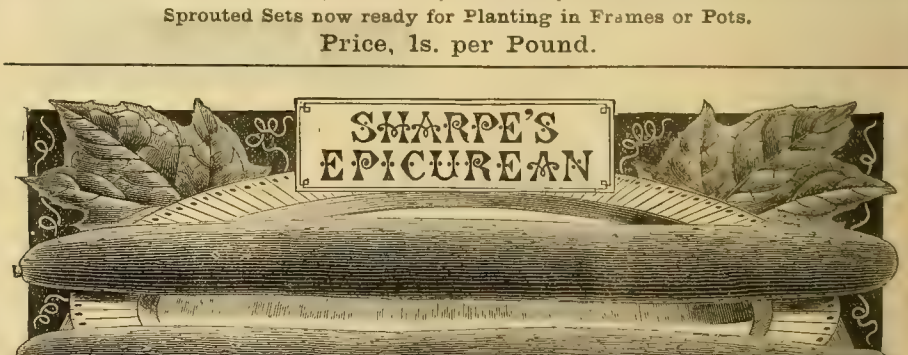
As an instance of the precocity of this New Potato we give an extract from the note-book of the Raiser, detailing his successive crops during the last twelve months:—

Planted in pots, under glass,	Nov.	11,	1880,	lifted,	Jan.	13, 1881.
,, frame	,,	Jan.	27, 1881,	,,	Mar	19, ,,
,, open air	,,	April	5, ,,	,,	June	7, ,,
,, ,,	,,	June	22, ,,	,,	Aug.	18, ,,
,, ,,	,,	Sept.	2, ,,	,,	Nov.	7, ,,

Thus five generations were brought to maturity in 300 days, so that six might have been grown in less than twelve months, which has never yet been accomplished with any other Potato yet introduced.

Sprouted Sets now ready for Planting in Frames or Pots.

Price, 1s. per Pound.



This, the perfection of Frame Cucumbers, is a cross between Telegraph and Tender and True; in form it has a resemblance to Telegraph, but is of a darker green and much longer—fruit 31 inches in length having been cut from it. In flavour it is superior to Tender and True, but its chief recommendation is its marvellous productiveness, in which it excels everything that has come under our notice, as many as 300 and 400 fruit having been cut from twelve plants, in a 3-light pit, three-quarter span.

For succession it is unequalled, bearing as abundantly at Christmas as Midsummer—and in addition to its handsome form and lovely colour, it is a variety that seldom produces seeds, not one in a hundred containing a trace. This peculiarity has delayed sending out the stock for a year or two, and at one time it was so nearly lost that only by striking cuttings could it be preserved.

Retail price, per Packet, 2s. 6d.

CULVERWELL'S GIANT MARROW PEA.

THE GIANT MARROW.—DRAWN TO SCALE.

The Editor of the "JOURNAL of HORTICULTURE," in the Number for July 20, 1882, says:—

"Mr. MUIR has sent us from Margam a sample of CULVERWELL'S GIANT MARROW PEA, which he regards as the finest variety in cultivation. We have never seen finer Peas than those submitted to us. The pods are of great size, 7 inches long and 1¼ inch wide, curved, dark green in colour, and crowded with fine Peas. Mr. Muir states the variety is a great cropper, and the produce is of the first quality when cooked. It is thus one of the most useful Peas in cultivation as well as one of the best for exhibition purposes that can be grown."

Price, 2s. 6d. per Half-pint Packet; 1s. 6d. per Quarter-pint Packet.

TRADE PRICE ON APPLICATION.

CHARLES SHARPE & CO., SEED MERCHANTS, SLEAFORD.

NOW READY.

THE

GARDEN ANNUAL

Almanac and Address Book

For 1883.

PRICE, ONE SHILLING,

Post-free, 1s. 3d.;

Strongly Bound, with Leather Back, 1s. 6d., Post-free, 1s. 9d.

THIS is the most complete and accurate Yearly Reference Book for the use of all interested in Gardens yet published. The alphabetical lists of the Trade have been much extended and corrected to date in the present Edition, and a new list of the Trade in each county given. The lists of Gardens, Country Seats, and Gardeners have been very much extended, amounting to double the number hitherto published in any Directory. THE GARDEN ANNUAL may be ordered through all Booksellers, Nurserymen, and Seedsmen. It contains, among other matters, the following, viz. :—

Almanac for the Year 1883.

Concise Calendar of Gardening Operations for each Month.

Flowers, Fruits, and **Vegetables** procurable each month.

A carefully-compiled **Alphabetical List of Nurserymen** and **Seedsmen, Florists, Horticultural Builders, Engineers,** and of the **Horticultural Trade** generally.

The **Principal Gardens** and **Country Seats** in Great Britain and Ireland, arranged in the order of the Counties, extended and corrected to date.

Alphabetical List of **Country Seats** and **Gardens** in the United Kingdom, with names of their **Owners,** very much extended, and corrected to date.

Alphabetical List of **Head Gardeners** in the principal Gardens of the United Kingdom.

New Plants which have received Certificates from the Royal Horticultural and Royal Botanic Societies.

Planters' Tables, Full and Practical.

Tables of **Seeds** and for **Seed Sowing.**

Quantities of **Grass Seeds** for various Areas.

Draining and **Fencing Tables.**

Timber, Brickwork, Tank, and other useful measurements.

Hot-water Pipes, their Contents and Weight, and Calculated Heating Power.

Weights and **Measures** — English, and their Foreign Equivalents.

Money—Ready Reckoning, Wages, and Calculating Tables.

Obituary.

Price 1s., *post-free,* 1s. 3d.; *strongly bound, with leather back,* 1s. 6d., *post-free,* 1s. 9d.

"THE GARDEN" OFFICE:

37, SOUTHAMPTON STREET,

COVENT GARDEN, LONDON, W.C.

SPECIAL OFFER.

CRANSTON'S NURSERY AND SEED CO.

(*LIMITED*),

Having a very large stock of the undermentioned Trees and Plants, will be happy to give special quotations for large or small quantities, to suit all purchasers.

CONIFERÆ,

All recently transplanted.

ABIES DOUGLASII, 2, 3, 4 to 6 feet.
CEDRUS ATLANTICA, 3, 4 to 5 feet.
,, DEODARA, 2, 3, 4 to 5 feet.
CRYPTOMERIA ELEGANS, 2, 3, and 4 feet.
PICEA LASIOCARPA, 2, 3, and 4 feet.
PINUS AUSTRIACA, 2, 3, and 4 feet.
TAXUS ELEGANTISSIMA (Golden Yew), 1, 2, and 3 feet.
THUIA ELEGANTISSIMA, 1 to 2 feet.
WELLINGTONIA GIGANTEA, 2, 3, 4, 5, and 6 feet.

ORNAMENTAL EVERGREENS.

ANDROMEDA FLORIBUNDA, 2 feet.
AUCUBA JAPONICA, 1 to 2 feet.
BUXUS (Tree Box) of sorts, 1, 2, to 3 feet.
DAPHNE INDICA RUBRA.
EUONYMUS JAPONICUS.
,, ,, VARIEGATUS.
CERASUS (Laurel), Common, 2 to 3 feet, bushy.
,, ,, CAUCASICA, 2 to 3 feet, bushy.
,, ,, COLCHICA, 2 to 3 feet, bushy.
,, ,, ROTUNDIFOLIA, 1 to 2, 2 to 3 feet, bushy.
LAURUSTINUS, bushy.

STANDARD ORNAMENTAL AND WEEPING TREES.

ACER (Maple) NEGUNDO VARIEGATA, 5 to 6 feet.
,, ,, in variety, 5 to 7 feet.
BETULA (Birch), Weeping.
,, ,, LACINIATA.
,, ,, PURPUREA.
CERASUS (Cherry), Double flowering, 5 to 6 feet.
CRATÆGUS (Hawthorn), Double and Single flowering, 4 to 6 feet.
CYTISSUS (Laburnum), Common, 5, 6, and 7 feet.
,, AUTUMNALIS, 5, 6, and 7 feet.
,, AUREUM, 5, 6, and 7 feet.
,, WILDENI, 5, 6, and 7 feet.
FAGUS (Beech). Purple, 4, 5, and 6 feet.
,, Weeping 4 to 5 feet.
FRAXINUS (Ash) AUCUBÆFOLIA, 7 to 8 feet.
,, AUREA (beautiful golden bark), 7 to 8 feet.
,, Weeping, 6, 8 to 10 feet.
PLATANUS (Plane) OCCIDENTALIS, 5, 6 to 7 feet.
,, ORIENTALIS, 5, 6 to 7 feet.
POPULUS (Poplar), Black Italian, 8, 9, to 10 feet.
PYRUS MALUS FLORIBUNDUS, 5 to 6 feet.
QUERCUS (Oak), 8 to 10 feet.
,, ,, Weeping, 6 to 8 feet.
SALIX (Willow), American Weeping, 5 to 6 feet.
ULMUS (Elm), Weeping, 8 to 10 feet.
PYRUS AUCUPARIA (Weeping Mountain Ash), very handsome, 8 to 10 feet.
TILIA (Lime), Weeping, large leaf, 6 to 9 feet.
ÆSCULUS (Horse Chestnut) RUBICUNDA, 8 to 10 feet.
,, ALBUM, fl.-pl., 8 to 10 feet.
,, FLAVA, 8 to 10 feet.

CLIMBING PLANTS.

AKEBIA QUINATA, strong, in pots.
AMPELOPSIS VEITCHII, strong, in pots.
,, HEDERACEA, strong, in pots.
BIGNONIA RADICANS MAJOR, strong, in pots.
CAPRIFOLIUM (Honeysuckle) AUREA RETICULATA, strong, in pots.
,, BRACHYPODA, strong, in pots.
ESCALLONIA MACRANTHA, strong, in pots.
HEDERA (Ivy), Irish, very strong, in pots.
,, LATI-MACULATA, very strong, in pots.
,, DENTATA, very strong, in pots.
,, PALMATA, very strong, in pots.
,, Variegated, of sorts, very strong, in pots.
CLEMATIS, a large collection, including all the finest varieties.

STRAWBERRIES, SEAKALE, ASPARAGUS, RHUBARB.

Many acres of Fruit Trees, Roses, Forest Trees, &c.

Descriptive Catalogues on application.

CRANSTON'S NURSERY AND SEED CO, (Limited),
KING'S ACRE, HEREFORD.

THE

Gardeners' Chronicle.

SATURDAY, DECEMBER 2, 1882.

A FOREIGN RESIDENT.

THOUGH now so much at home in this country I cannot claim to be a native True, I have relatives among the Cornels in your hedgerows, and even on your moors, but they are very distant and not nearly so like me in personal appearance as my brother in the Himalayas. It is necessary, I find, for me to say as much, for many people will persist in calling me by a wrong name, and every one knows how irritating that is. The Laurels are a very ancient and respectable race no doubt, and I have no wish to disparage them, but I am not one of them, neither did my family ever reside in the island of Cuba, so far as I know. As for me I was born in Japan. I may say this, for although there is, I suppose, not a bit of my original self left, and although I am like the celebrated gun pertaining to an Irishman, which had had a new lock and a new stock and a new barrel, yet I still retain my characteristic features, and to all appearance am just the same as ever.

I was brought to this country somewhere about a hundred years ago, yet not I in my present self, but myself in another stage of existence ; so that, in a sense, I have been dead for many years, but still I live on, and though those who first brought me over petted me in a stove, and, after that, in a greenhouse, yet I scorned such indulgence, and as I neither object to your cold, nor your heat, nor your murky skies and smoke-laden atmosphere, I have a chance of living for some time longer, particularly as, owing to an interesting circumstance, which I shall presently mention, I have been lately enabled to renew my youth and adorn myself with such a variety of new dresses that my old friends of 1783, could they see me, would, I am sure, not be able to recognise me.

Up to the time I have just mentioned I was periodically cut to pieces, or I was pegged down to the ground, and being, as I have already remarked, of an accommodating temper, so far from resenting these injuries I turned them to account, and now, by their means, I am able to assert myself in thousands and tens of thousands of places where, but for the dismemberment to which I have alluded, I could never have put in an appearance. Indeed, I should have been dead long, long ago, without possibility of coming to life again.

"How do I account for my hardihood?" Why, kindly Nature has provided me with a robust constitution, for which, like Benedick, I thank her ; then she equipped me with suitable dress, and a frame adapted to circumstances. I am well adapted to "my environment," as I have heard some of your correspondents remark, in terms not familiar to me in 1783. Thus, in addition to my ability to bear with impunity the fluctuations of your certainly variable climate, I have thick fleshy feeders capable of taking up and storing any quantity of water ; and then I have a capacious digestive apparatus, which is always at work, winter and summer, more or less, and not wholly stopped by any cold or heat, or wet or drought, or coarse food, to which I am here subjected. I have a thick skin, which serves admirably as a waterproof cloak, and which enables me to defy the smoky fumes of your atmosphere, so that although my naturally comely face is too often besmirched with coal-dust, and I am sometimes half-suffocated with noisome vapours to which I was unaccustomed in the woods of Japan, yet the

first shower serves to wash my face, and, thanks to unusually good lungs, and their location where smoke and dust cannot easily get at them, I manage to get along fairly well, and may justifiably boast that I contribute to decorate grimy squares, dreary back-yards and gloomy window-sills, as well, and I think a great deal better than some of my competitors. I know that some people call me freckled—well, my face is spotted, I own, but it was not always so, neither is it always so now, for that great change to which I have alluded has restored my original complexion, so that now I am in a position to please those who like me in my gaily-spotted attire, and those who prefer me in my native rich green dress.

But it is time now to allude more definitely to that important epoch in my life to which I have referred. Well, there is not the slightest reason for concealment or reticence—I am married. It was all very well: I did not murmur when you cut me to pieces and pegged me down, but I was very reserved for all that, and my capabilities were not so much as suspected till I married, when I imagine I must somewhat have astonished you by my versatility. You had been accustomed to see me in one uniform dress, but now an empress has not a larger wardrobe. "How did it all happen?" Well! As long ago as 1843, and indeed for several years before that, I had, as modestly as I could, shown that I was not altogether unwilling to enter into the married state, and your portrait-gallery includes a sketch of my appearance at the time (fig. 124). It was not till 1861, however, that—to say the truth—I availed myself of the agency of a professional match-maker. His name was Fortune. It happened to him to meet with my husband in Japan little more than twenty years ago. It was, indeed, a piece of good fortune both to you and to me when he introduced us one to the other.



FIG. 124.—AUCUBA JAPONICA.

I do not indeed know what advantage accrued to my partner and other self, but as for me, I became a new creature. The few and not very showy ornaments I possessed previously now developed into the most resplendent of cots, so that now, in addition to my bravery of green and gold, I am able to add brilliant crimson decorations, contrasting well with my previous dress. I speak of these crimson ornaments as cots, for, concealed within them, lie our darling little ones. I know what satirical people say about the appreciation which mothers lavish on their children, but I submit that I am quite as much justified in feeling proud of my offspring as the poet who indulges his self-complacency with the perusal of his verses, and on precisely the same grounds. Moreover, have I not enriched your gardens with an infinite variety of beauty? If you tire of my freckly countenance, and call it, as I have heard some do, sickly looking, you cannot say that of the wholesome deep green hue which suffuses our children; and as for their features, no two are alike, and yet they are all good-looking—I say it without hesitation, and I am not ashamed to affix my name to it—*Aucuba japonica.*

New Garden Plants.

PINUS LATISQUAMA, *n. sp.*

I NAME an interesting new Pine, discovered by Dr. E. Palmer in 1880, in the mountains south of Saltillo, Mexico. It belongs to the Pinasters with peripheral ducts in the leaves and with subterminal cones. The short (1½ to 2 inches long) extremely slender and slightly serrulate leaves are in fives; their lanceolate, almost entire bracts, and their loose sheaths are quite deciduous; the ovate sub-cylindrical cones, 3 inches or more long, are peduncled and sub-terminal, *i.e.*, they are produced above the uppermost leaves of the season, and between them and the terminal bud or the shoot of the following season; their chestnut-brown, shining scales are obliquely rhomboid, very broad, transversely carinate, with the umbo depressed and without a prickle; the lowest scales of the cone have the form of reflexed tubercles; the seeds apparently large and wingless (fig. 125, p. 173).

This species, about the habit, bark and timber of which nothing further is known, has very peculiar alliances. The foliage and its sheaths, and the position and the peduncle of the cone, would make it a Strobus, if the form of the cone-scales did not constitute it undeniably a Pinaster; it is evidently most nearly allied to the cembroid or nut-Pines, but recedes from them by the leaves being serrulate and the cone-scales being without those bosses which are so prominent in the true nut-Pines. The leaves are among the thinnest Pine-leaves known, scarcely one-third line wide; they have two very small peripheral ducts on the dorsal side, separated from the epidermis only by the simple layer of hypoderm cells which underlie the epidermis all around the leaf. The cone here figured (fig. 125), was 3½ inches long, and 1¾ inch in diameter when closed, its peduncle ½ inch long. The scales were arranged in $\frac{13}{21}$ order: the middle ones are unusually wide for the size of the cone, 1 inch or more broad. Seeds were not seen, but the cavity of the scale shows that they are probably ½ inch long or over, and destitute of a wing. *G. Engelmann.*

EUCHARIS SANDERI.

This is a new and perfectly distinct plant now flowering, perhaps for the first time in this country, at Kew, from a bulb presented to that establishment by Messrs. F. Sander & Co. It differs abundantly from the other described species of the genus by its shorter tube, somewhat ascending (not so much spreading) perianth segments, and by the corona, which is so conspicuous in E. amazonica, &c., being almost suppressed. In all likelihood it will prove a valuable addition to stove plant cultivation, and may become as popular as E. amazonica itself. A figure of the Kew plant is being prepared for the *Botanical Magazine.*

CALANTHE BRACTEOSA, *n. sp.**

This has the general habit of Calanthe angræciflora. I possess wild specimens from the Viti Islands, and there came some time ago a fresh inflorescence from Ghent, from the Compagnie Continentale d'Horticulture, grown from plants introduced from the Samoa Islands. The leaves are very long petioled, oblong, not very broad, acuminate, hairless both sides. The strong peduncle is hairy as far as I know it, and bears a rich inflorescence of white Calanthe flowers, peculiarly curious for the great development of bracts, which even surpass the flowers in the specimen from Ghent. Ovaries outside of sepals, spurs are covered with a very short pubescence. *H. G. Rchb. f.*

TWO NEW PELLIONIAS.

It is but two years since the charming P. Daveauana was introduced to the notice of horticulturists, and already it finds a place in many of the best collections, and where it is grown is esteemed as a basket plant, and for forming an ornamental edging under staging. Quite recently the Compagnie Continentale d'Horticulture, Ghent, have introduced two other forms of this genus, of which they have obligingly furnished me with specimens for description. One of them is a green-leaved variety of P. Daveauana, and the other is a new and distinct species, with dark variegated foliage; they have the same habit as P. Daveauana, and will, no doubt, be received by gardeners with as much favour, as they may be used for the same purposes, and will be found useful for contrasting with it. The following are descriptions of the two novelties:—

PELLIONIA DAVEAUANA, VAR. VIRIDIS, *N. E. Br.*

This is very similar to the type, except that the upper side of the stem, the petioles and the midrib and veins beneath are sparsely covered with short hairs, and the leaves are of an uniform bright green, or are here and there marked in an indistinct manner with whitish blotches. It comes from Cochin China.

PELLIONIA PULCHRA, *N. E. Br.; n. sp.*

Glabrous, except a few short hairs upon the upper side of the petioles. Stem fleshy, creeping, ⅛ inch thick, tinged with dull purplish. Leaves alternate, petiolate, stipulate; stipules membranous, ovate-acuminate, purplish; petioles 1—3 lines long, terete; lamina obliquely oblong, very obtuse, base obliquely cordate, margins slightly crenate, upper surface dull, blackish along the midrib and veins, the interspaces being green, affording a pretty variegation; the under-surface is of a very pale and rather delicate purplish tint, primary lateral veins five on each side of the midrib, three arising from its base, and two from its apical part on each side, the upper one of the basal three on the narrower half of the leaf arising much higher up the midrib than the corresponding one on the broader half of the leaf, all slightly impressed above, prominent beneath. Flowers and fruit not seen. A native of Cochin China. This pretty species differs from P. Daveauana markedly in the form, colour, and texture of the leaf, since this organ is not narrowed to a point as in P. Daveauana, but is nearly or quite as broad at the abruptly rounded apex as at the base; the coloration is altogether different, and, although quite glabrous, the living leaf has a somewhat velvety feel when gently rubbed between the finger and thumb, which is not the case in P. Daveauana, and doubtless the inflorescence will show further differences. *N. E. Brown, Herbarium, Kew.*

* *Calanthe bracteosa*, n. sp.—Aff. C. angræcifloræ: bracteis lanceis flores subæquantibus superantibusve; sepalis extus puberulis tepalisque cuneato oblongis apiculatis, labelli isthmo brevi, laciniis lateralibus linearibus obtusis; laciniis anticis latioribus nunc antrorsis, lamellis quinis serrulatis in ima basi, nunc in ligulas multas(?) solutas, calcari filiformis suberulo, ovarium pedicellatum non æquante. Insul. Samoa. *H. G. Rchb. f.*

A BUCKINGHAMSHIRE GARDEN.

Nov. 11. The ruin is complete! and cleared away too . . . Yet there is consolation, and something very comfortable, in the neatness of the dug borders, and the beds made up for the winter.

The symmetrically banked up Celery—crested with the richest green—in the kitchen garden, rather takes my fancy: so also does the fine bit of colour of some huge heaps of dead leaves, that I see already laid up in the rubbish yard. The dead leaves have to be swept away from lawn and garden walks, but I believe we do not consider any but those of Oak and Beech to be of much service. Leaves do not fall until the goodness of them has decayed. They are of use, however, when left to cover the ground above tender roots. In the Fantaisie the earthy bed can scarce be seen, so close lies this warm counterpane of leaves! During the first days of the month the parterre was done, Tulips put in, and a lot of Crocuses in double row. In a few beds the dwarf evergreens, which had been removed for the summer, are planted in again—just to make the parterre's emptiness look less cheerless from the dining-room windows. Between these small evergreen bushes, in their season, will come up spikes of Hyacinths, of varied hue. I do not care for a whole bed of Hyacinths and Tulips as they give me little real pleasure unless the colours be mixed. The chief charm of a garden, I think, depends on surprise. There is a kind of dulness in Tulips and Hyacinths, sorted, and coming up all one size and colour. I love to watch the close-folded Tulip bud, rising higher and higher daily—almost hourly—from its brown bed, and never to be quite certain of the colour that is to be, till one morning I find the rose, or golden, or ruby cup in all its finished beauty; perhaps not at all what was expected! And then, amid these splendours, will suddenly appear one shorter or taller than the rest, of the purest, rarest white. How that white Tulip, coming as it were by chance, is valued! And so again this year a mixed

lot are put in. There was a time when we had only one Tulip in all the garden. I used to look for it regularly in a certain shady border under a Laburnum tree, an old-fashioned, dull, purple and white-striped flower, but it never failed to show at the very end of every season. I had a regard for that Tulip, and last summer it was a disappointment to wait in vain for its appearance in the accustomed spot. Many there were of its kind, surpassing it in loveliness; but then they were not the same.

Hyacinth beds will be a new thing here, but I doubt if they will make us quite so happy as has hitherto the unexpected advent of some stray pyramid of small odorous bells, pink, blue, or creamy-white, in out-of-the-way places in the garden. After their flowering is over the pot-bulbs are always turned out somewhere in the borders. When a plant has lived with one for a time under the same roof, or even in the greenhouse, giving out for us its whole self of sweetness or of beauty, it seems so cruel that it should at last be thrown away as something worthless and forgotten! Some Narcissus that have had their day have just been put into a round bed on the further lawn mixed with the "Mrs. Sinkins," white Pink; and there is a rim all round of double lilac Primroses. I have long wished to have plenty of that dear old neglected Primrose,—so now we have a number of healthy roots from a garden in Derbyshire. In the centre of this bed is a very tall dead Cupressus, one of our few failures in transportation last spring. A Cobæa, which was to have grown up quick and made a "bonnie green gown" for the poor bare tree, proved failure No. 2. It absolutely refused to grow, or do anything but look stunted and miserable, till one day, late in October, there it was running up the tree as fast as possible, clothing every twig with leaves and tendrils, and large, deep, bell-like blossoms. Its day must be short, however, at the wrong end of the year, and even now its bells are chilled to a greenish hue. A fine red climbing Rose on one side, and one of the old Blairii on the other, will make a kinder and more beautiful summer garment.

We have made a new Lavender border, and now I hope to have enough for the bees, and afterwards enough, when dried, to lay within the drawers and wardrobes, and give us "all the perfume of summer, when summer is gone;" enough, too, for pot-pourri, though we do not always make this fresh each year. It takes time, and there is so little time in these days, and often the Roses are too wet, and the Lavender too scarce. The recipe we use is an old one: the paper is yellow, and the ink faded. But our best pot-pourri of these days does not come near the undying fragrance of some Rose leaves, three generations old, that we still preserve in one or two old covered jars and bowls of oriental porcelain. Along the south wall one oblong bed is planted with dark purple Heartsease, and two more with yellow. There are six beds in all, and in the spring they will glow resplendently with a setting of Crocuses, white, yellow, and lilac; meanwhile a good layer of cocoa-nut fibre gives a look of comfort for the winter, and moreover rather annoys the field-mice.

Under the Holly hedge, facing south, a narrow border has been made ready to receive a quantity of white Iris roots. The Holly hedge, planted for shelter and for pleasure, along a broad walk on one side of the carriage-drive, is not in itself a success as yet. It was put in four years ago, but the trees were too old, I think; this year it is flushed all over with scarlet berries—not a good sign, perhaps.

I am sorry to have to remove my beloved white Irises, but they have increased so enormously as to make some change necessary. Nearly twenty years ago I brought home from the South of France one or two small roots carried in a green [pitcher. For half that time they grew and multiplied on the sunny terraces of a sweet Somersetshire garden, and now for ten other years the same roots, transplanted here, have flourished, if possible, still more abundantly. It may be a fanciful idea, but I think our white Irises might not have succeeded as they do had they not been loved so well. Everybody has a favourite flower, I suppose—the white Iris is mine—almost the Fleur-de-lys of France. Nothing can be more refined and lovely than the thin translucent petals. To see these flowers at their best one must get up and go into the garden at 5 o'clock on some fine morning at the end of May. I did it once, and as I walked beside their shining rows in the clear daylight I felt there were no such pearly shadows nor any such strange purity in the whiteness of other flowers. We have given away a great many, but I fear I am not altogether sorry that they do not seem to succeed elsewhere as they do with us. I am trying to collect every different Iris I know of. We have now several which are very beautiful, and we should have more were it not that numbers die off after, perhaps, one short summer's loveliness. They dwindle and become sickly, and then altogether disappear. Almost our whole stock of one well-established kind—an old inhabitant of the garden—was destroyed by mice two seasons ago. The flower is bronze-brown, with a golden blaze in the middle. La Marquise, an old-fashioned dove-coloured sort, with purple frays, will grow anywhere. So will the large, broad-leaved, pale lilac kind; and the yellow Algerian. A little black wild Iris, that fringes the vineyard trenches about Florence, we have either lost or it will not flower. They call it "La Vedova." I brought home some roots once from Bellosguardo, and we put them in where all the warmest rays of the south sun would find them. But only the long narrow, wild onion-like leaves appear—or I fancy they belong to the Vedova; still I do not lose hope, but watch for them always when March comes round, and some day, somewhere, I think, my little "widow" is sure to surprise me! The wild yellow Italian Tulip, that came with the Iris, succeeds here well. The patch of pale gold never fails, by the first week in April, to enliven the sunny side of a Yew hedge. A few untidy yellow blooms, supported on slender limp stalks, live there, just the same as in their own dear Italy. I stoop down to gather one, and for a moment the English garden is not there. Before me lies a grassy vineyard path—there are the great open farm-sheds full of sunlight and sunlit shade—and the pair of grey long-horned oxen calmly waiting for the yoke. Near them, with her knitting, stands a patient, sad-eyed woman, while happy children run down the path at play, or tie up bunches of yellow Tulips under the Fig trees. Then there is a tall, white flag Iris, whose place is not yet fairly fixed. It is a handsome thing, and quite unlike the Fleur-de-lys. I think of mixing it in with the yellow Flags and Osmunda regalis beside the little watercourse. Last July, to watch the slow blooming of some Japanese Iris in the kitchen garden gave me intense delight. They grew tall and straight, with curiously ribbed leaves. The single flower at the top of each stem opened out very flat with rounded petals, rich purple in colour, and measuring nearly 7 inches across. One saw at once it was the purple flower the Prince, in the German fairy tale, found on the mountains, and carried off to disenchant his love with in the old witch's cottage by the wood—only a large pearl lay in the centre of that flower.

We have gathered in our harvest of winter decorations for the hall and corridors. There is Pampas-grass with its silken plumes, and soft tassels of all kinds of downy German grasses, and everlastings of all lovely shades of orange and red. They have hung in bunches head downwards in the vinery to dry for weeks past, and they will last for the next twelve months as fresh as they are now. I have been told of a great bouquet of everlasting flowers in a Dutch gentleman's drawing-room at the Cape, which was affirmed to be 200 years old. Armfuls of Honesty, also "Money in your Pocket," as the poor say—they are to gleam like flakes of mother-o'-pearl in the firelight of December's dusky afternoons. We left plenty in the garden, however, where they will stand a good deal more of rough weather before they fall to pieces. Honesty is always handsome in all stages of its growth, and like the people who take things easily, it thrives everywhere. With us it is quite at home in a damp north border, close under a line of Elms. All through June and July, the red glow of a mass of it in full bloom made a brilliant effect; and now in these November days the ripe seed vessels are transformed—their outer husk has shelled off, leaving only the silvery centre. The other day, in my early walk, just where the Allée Verte ends (no longer green, it is now a golden corridor, with, underfoot, crisp russet leaves), I seemed to come upon—not Wordsworth's host of dancing Daffodils—but a company of spirits! The slanting sunbeams fell upon a clump of Honesty, and touched with fire every one of the myriad little silver moons. Though no wind stirred, they seemed to quiver with a ghostly life in a shimmer of opal lights.

Nov. 18.—Winter is striding on, and every bit of colour in the garden becomes more precious than ever. Only a few days ago I made a nosegay of crimson summer Roses, a fine auratum Lily, a Gladiolus, a Welsh Poppy, and a large red-rimmed Himalaya Poppy, with a wonderful spray of flexuosa Honeysuckle that filled the hall with its fragrance. A little while since, in one sheltered corner, Salvia patens still held its own in unsullied blue. Marigolds were plenty; St. John's Wort must have made a mistake in its dates, for it was all over polished yellow buds ready to unclose; Mignonette and a few Sweet Peas lingered still. Here and there one came upon a white Snapdragon or a flash of rose-red Phlox ("Farewell Sum-

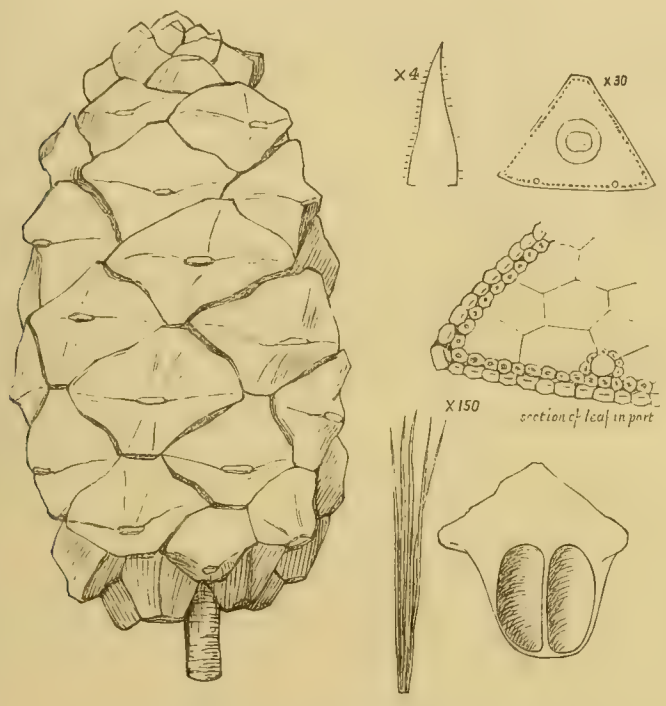


Fig. 125.—Pinus latisquama. (see p. 712.)

Cones, leaves, and fruit scales actual size; leaf sections magnified.

*

mers" they call them in the West). It was impossible not to admire the vigour and beauty of Primroses and Polyanthus in all colours. One only hopes this abundant autumnal bloom may not interfere with their blossoming in the spring; it is certainly more than I ever remember in former seasons. A rockwork of big flints was quite gay with Virginian Stock and Primroses. To-day the frost is most severe. The Marigolds look unlike themselves, with a white cap border of frost quilled round their orange faces; the half-opened buds in a Tea Rose bed are like fancy Moss Roses; only the moss is white, and every leaf is fringed with little sharp-pointed crystals. The China Rose Tree by the green door in the wall is covered with pink Roses, which I forgot to gather yesterday for my flower-glasses. This morning the frost has curiously changed them. The delicate petals are stiffened all through as if they were turned into wax models, though their lovely pink is not dimmed, and they smell as sweet as if nothing had happened. By this time our Irish Yews have resumed their sadness. The berries are all carried off, and the blackbirds have fattened so well on them and the bunches of Grapes (left for their benefit on the house Vines) that they rise from the lawn most heavily. I never saw such fat blackbirds. The seed of the Yew berries, which I believe to be the only poisonous part, is, I think, in most cases, left unswallowed; but in one little tree I found the remnants of an old nest filled with a compact mass of Yew seeds. The large blue titmouse carries off his berry to the Sumach tree, and there pecks off the pulp holding it down with his foot. The larger thrushes are gone, I know not where; only one small bird, with richly spotted breast, is still seen about the grass, under the Stone Pine.

The Chrysanthemums in the greenhouse must have the last word. Nothing could be more beautiful than they are now, and have been for several weeks past. Some of the Japanese kinds are indescribably lovely; arrayed in tints that make one think of a sea-shell, or the clouds about an April sunrise. There is something perhaps in their delicious confusion of petals, that helps this wonderful effect of colour. The other sorts, which are stiffer in arrangement, and more decided in colour, are somewhat less delightful to me. A tiny wren was among the Crysanthemums this morning, noiselessly flitting in and out like a little shade; evidently in a state of the highest enjoyment. No doubt I and the bird both took our pleasure, with them, in different ways!

BRISTOL HOUSE.

IT is proverbial that medium-sized gardens in the neighbourhood of the metropolis and of other large towns are as a rule conspicuous for high merit in the cultivation of plants or fruit, and very often for both. Bristol House, Putney Heath, the residence of T. D. Galpin, Esq., at present occupies a position of distinction in the eyes of the horticultural world, as the garden where the prize Chrysanthemum blooms were grown to which the judges awarded the Champion Challenge Vase at the Kingston and Surbiton Chrysanthemum Exhibition, which took place only a few days ago. The garden is beautifully situated and laid out, the shrubs and trees being suited to the locality, and the walks and lawns being kept in excellent order. But at this season of the year the principal interest and attraction of a garden —from a gardener's point of view at any rate—lies in the indoor department, especially if plants and flowers are grown in first-rate style as they are at Bristol House. Chrysanthemums are of course made a speciality, and the collection is very fine, although the bulk of the flowers are past their best; and it need hardly be added, that the best blooms have been cut for exhibition. But the evidence of high cultivation is still apparent in the vigour of the stems, and the substance and colour of the foliage, which is of the deepest green.

Exhibitors who grow from 500 to 600 plants, and are sometimes hard put to to make up a couple of stands of twenty-fours, would be surprised to see Mr. Harding's collection, which does not number more than 250 plants, if as much. Another remarkable thing is their sturdiness—they are wonderfully dwarf considering the size of the blooms they are bearing. The largest, and from a cultural point of view the most remarkable blooms are of Empress of India, Princess of Wales, Empress Eugenie (which is very fine for the variety), John Salter, Themis, Barbara, which is bearing very fine flowers on dwarf plants; Nil Desperandum, Lady Hardinge, and many others, which are, however, now past their best. Mr. Harding has always excelled as a grower of the Japanese varieties, and they have been unusually good with him this season. The best flowers in his collection at present are of Fanny Boucharlet, Bronze Dragon, Baron de Prailey, Triomphe du Nord, Alba plena, M. Ardin, Sarnia, Thunberg, Albo striatum, Plantagenet, Fleur Parfaite, Père Delaux, Soleil Levat, and Criterion.

There are many cutivators who distinguish themselves in the cultivation of one particular class of plants only, but Mr. Harding is no mere department man, as may be seen by any one who walks through the different plant and fruit houses under his charge. A very nice collection of Cinerarias is in bloom, and zonal Pelargoniums are still as gay as if it were early autumn. In the plant stove, too, there are foliage and flowering plants as well as Orchids well cultivated and an example of cleanliness. The effect in this house is much improved by the introduction of a very nice batch of dwarf grown Poinsettias bearing bracts averaging from 12 to 14 inches in diameter. In a span-roofed pit we noticed a good stock of Tropæolum Ball of Fire coming on for supplying cut flowers, as also Bouvardias, Eucharis, Primulas, &c. A little group of Plumbago rosea is producing masses of flower-spikes so freely that we could wish it was more serviceable as a cut flower. As it is, however, it looks pretty in the plant stove, or arranged among Ferns where its bright red flower-spikes, which require no supports, are singularly effective.

Next to these perhaps a batch of Mignonette (Miles' hybrid) in small pots coming into flower are the most noteworthy examples of cultural skill as well as the most useful. There is also a good collection of Azaleas, Epacris, and soft-wooded Heaths, and some of the finest Tea Roses in pots for forcing in the country. The specimens are grown in 12-inch pots, and consist of only two varieties, viz., Niphetos and Rubens. There is a group of large Ferns in the conservatory, and flowering plants, which makes this structure not the least interesting portion of a very interesting and well managed garden.

HYBRID ABUTILONS.

THE new race of hybrid Abutilons raised by Mr. George, of Putney Heath, are now in excellent condition, and their qualities as winter flowering subjects may be fairly estimated from the display of flowers they are now producing. Mr. George has taken great pains to raise an entirely new race of this most useful class of plants, of dwarf habit and profuse flowering properties, which gardeners will gladly welcome as fresh material for decorating the dinner-table and sitting-room. The plants have been obtained by using the pollen of the well-known Sellowiana marmorata upon Mr. George's free-flowering section, and the plants partake more or less of the dwarf habit of the former, while they possess in a remarkable degree the free-flowering properties of the latter. In their habit of flowering also many of them closely resemble A. Sellowianum marmoratum, which, as most people are aware, produces its flowers in clusters, and sends its flower-spikes well out from among its leaves. The flowers are, of course, greatly improved in size, form, and colour; several of them are, indeed, so far in advance of any existing variety both in size of flower and colour as to place them beyond the region of comparison.

Sir Garnet Wolseley is a bright red; the flowers are beautifully formed, one shoot bearing as many as eight flowers, which are deeply veined, and altogether the variety is a very striking one. King of Roses is well named, and is also a handsome flower. Crimson King bears flowers not so large as the former, but well formed; and purpurea is a very striking shade of purple, and the plant is of medium dwarf habit. Orange Gem bears flowers of a distinct shade of colour; they are more open than those above mentioned, and although they are not so handsome in form, they supply a distinct shade of colour, and the plant is of good habit. Lustrous is a charming thing in the half-open state, and its flowers, when cut, will furnish a striking shade of colour for dressing small glasses for the dinner-table or sitting-room. Emperor is of erect habit, and the flowers are of a deep blood-red colour; and Goldfinch is a good yellow.

The Premier is rosy-purple, the rose shade being of intense brightness, and the flowers are very large and well formed. This variety puts all others in the shade, the individual flowers being 3 inches in diameter. Cloth of Gold is the finest yellow in existence, and Brilliant is a free flowerer of dwarf habit, the shoots bearing flowers almost down to the rim of the pot. Enchantress is also very pretty, and King of Crimsons is the richest colour we have seen; the flowers are large, the petals overlap each other, and almost incline to a semi-double form. This variety it seems impossible to improve upon. Silver Bell is the peculiarity of the collection, producing two flowers upon the same flower-stalk, and is of a very pleasing shade of colour. Little idea can be formed of the merit of these hybrids without actually seeing the plants, and comparing the size, forms, and colours of the flowers with other varieties which have been looked upon as the leading kinds. They are plants which the million can afford to purchase and cultivate, and we are sure to find them before long brightening up many a dingy-looking so-called conservatory, many a naked window, and enlivening the surroundings of many a dull-coloured sitting-room with their rich and various coloured flowers.

CHALFONT PARK,

THE RESIDENCE OF J. N. HIBBERT, ESQ.

IF we wished to pourtray a spot where plenty, happiness, and quiet could be found, surely we might well select the charming, secluded, peaceful place of which we now write. We are not versed in antiquarian or historical lore, but judging from analogy it would hardly be wide of the mark to assume that the fine mansion which constitutes Mr. Hibbert's pleasant residence is but the successor to some ancient abbey where the holy fathers combined with their religious ceremonies good living and generally a jolly time. Chalfont Park lies literally in a delightful valley, and through it meander a couple of capital trout-streams, one of which falls into a broad river-like expanse of ornamental water that borders the lawn and pleasure-grounds, whilst the herbage which covers the valley and the hill-sides is rich and fattening; and in every direction noble trees, in groups and singly, give not only to the lowing kine shade and repose, but add to the entire demesne that air of nobleness and beauty which invariably characterises our English parks, and renders them the envy of foreigners.

Chalfont Park may be said to lie somewhat out of the world, in so far that it is remote from railways, the nearest station being at Uxbridge, about five miles distant. From that not uninteresting Middlesex township the great Oxford road runs on to Gerrard's Cross, over the common by the famous hostel and park of Bulstrode, and thence to Beaconsfield. But some half mile ere Gerrard's Cross is reached a road turns off to the right, and running along the valley, skirts the park of Chalfont, and leads away to Amersham and Shardeloes (where venerable and estimable Thomas Bailey still presides over the gardens), and also to Rickmansworth and Hertfordshire. Pilgrims not exactly to the shrine of St. Giles, the patron saint of the next Chalfont (for the park is situate in the parish of Chalfont St. Peter's), but perchance to the house once inhabited by John Milton, may have oft passed through Mr. Hibbert's park, for no hard restriction is put by its liberal owner upon such liberties; and very pleasant indeed is it to turn from out the high road, though that is umbrageous and quiet, into the very delightful surroundings which Nature and Art combined have helped to make so enjoyable.

The mansion and the attendant gardens are situate just about half-way up the verdant valley; of course lying low, yet sheltered; not surrounded by, but rather decorated by, a few lofty trees that stand like giant sentinels or guardian angels over their owner's household, whilst all around, and most thickly upon the hill-sides and tops, literally regiments of trees form the encamped army that not from human spoiler, but from some of Nature's war array, give ample protection.

The illustration (fig. 128, p. 721) shows the chief front and pleasure grounds looking towards the river, as seen in the foreground, whilst the coign of vantage from which the photograph was taken is just beneath the branches of a group of Cedars of Lebanon that form a very conspicuous feature upon the eastern hill-side. The house, as may be observed, is of the castellated

or Tudor style, and without being pretentious, is large, and in admirable accord with the surroundings.

Just on the margin of the ornamental water, and evidently enjoying greatly the abundant moisture for its roots, is a grand cut-leaved Alder, the branches of which spread to a diameter of some 80 feet. Beech, white Poplar, and Elms, are very fine indeed, whilst shrubs of many kinds, Rhododendrons especially, grow luxuriantly. The bedding display which decorates the lawn in front of the house is marked by gaiety and brightness, yellow Calceolarias, Lobelias, and bedding Pelargoniums thriving and blooming luxuriantly. Seen under the heavy and continuous rain which so sadly marred the pleasure of our visit two combinations stood out as singularly pleasing. One was a mixture of the old silver bedding Pelargonium Lady Plymouth, and a capital blue Viola, well named by Mr. Herrin, the gardener, Chalfont Beauty; the other was Marshal McMahon bronze Pelargonium set in a carpet of dwarf blue Ageratum. This latter gave one of the most pleasing effects we have seen for a long time. A few carpet beds were looking in the rain clean, fresh, and pleasing; their flatness and formality more than recompensed in the ever bright smiles they reflect under dismal weather aspects. It would not be right to pass from the pleasure-grounds without making allusion to the charming appearance presented by the large quadrangular courtyard, round which stand the servants' offices. Here — unwonted sight!—may be seen not only groups of plants in pots, effectively arranged, but also many large plants. Still farther, all available wall space is covered by climbers of some sort, even Vines being used to hide from view some unsightly roofing.

The kitchen gardens adjoin the pleasure-grounds, and are very conveniently placed in reference to the kitchen department. At the farther end, embowered in luxuriant shrubs, stands the gardener's cottage, approached from the park by an independent entrance; behind, however, it opens into a roomy plant-house, from which, on either side, run the fruit-houses. Coming from out this plant-house there is seen on either hand an old-fashioned flower-garden, and from the centre runs right through the kitchen garden a broad pathway bordered on either side by flowers in various forms, and backed by espalier fruit trees, not a few of which seem of considerable age. Some are yet fruitful, but others are well-nigh spent. Existing conditions allow gardening to be done under the reverse of high-pressure. It is of a useful, plodding, satisfying kind, keeping pace with the wants and needs of an establishment that is not exacting. None the less we see evidence of good cultivation all round, and of plenty.

In the vineries were hanging many capital bunches of Grapes; and as not a few readers will perchance regard the condition of a man's Grapes as the highest test of his gardening abilities (a point about which there may be two opinions), it may not be uninteresting to state that Mr. Herrin exhibited not a few of the capital bunches we saw hanging in the Chalfont vineries with excellent results at the Crystal Palace in September last. Amongst kinds not at all common was fruiting a rod of Abercairney Seedling, a fine well-coloured black Grape that seems to be intermediate between Black Hamburgh and Alicante. The berry is rather oval, and of rich brisk flavour that, allied to its evidently good fruiting qualities, should make it a popular variety. Of better known kinds Hamburgh, Alicante, Lady Downe's, and Mrs. Pince's Black Muscat, were all good, the bunches large and well-finished. Golden Queen, also fruiting, was not in such good condition as was Muscat of Alexandria, although these latter Vines had been only recently lifted and replanted with capital results.

Peach-houses newly planted were promising well, the trees making fine growth. Of Strawberries in pots the favoured sorts are Vicomtesse Hericart de Thury, President, and Keens' Seedling. These are in first-rate condition.

In plant-houses there is a good collection of useful furnishing stuff, and not a few good specimens; and upon a roof Passiflora racemosa is blooming finely. Mr. Herrin is a successful grower of large-flowered Chrysanthemums for exhibition, and some 250 plants in pots, tall, robust, and carrying, even so early, large plump buds, testify that the conditions of culture which lead to success are being largely complied with. *D.*

Sarracenia alba.—A specimen of this charming novelty may now be seen in Messrs. Veitch's nursery, Chelsea, bearing three fine pitchers of remarkable size, beautifully variegated towards the top, and nearly 2 feet in length.

FORESTRY.

Forest Work for December: Planting.—The mild open weather that we have experienced during November has been in every way favourable for planting operations, which in most districts should now be in an advanced state. Where the soil consists of stiff clay, or a peat-bog which retains a large quantity of water by capillary attraction, planting had better be deferred till spring, as we have found the antiseptic properties of peat to be very injurious to the roots when allowed to lie for any considerable time on the cold bog before commencing to grow. Drain, pit, and otherwise prepare ground intended for spring planting, also see that the fences are in a good state of repair, so that the inroads of cattle and sheep may be averted, nothing being more injurious to newly planted trees than having their leaders or branches nibbled off by sheep or hares. Where the latter are numerous, it is well to provide against their attacks by the timely use of wire-netting around the plantations, which will also be a guard against rabbits, the ravages of these during severe weather being quite as much to be dreaded as that of either sheep or hares. It is advisable where a home nursery is on the estate, only to lift at one time sufficient plants for a couple of days' work, as by this means the roots never become dry—a matter of much importance for the future welfare of the trees; but, of course, on this a great deal must depend upon the distance the nursery and plantations are apart, as well as on the number of men employed.

Thinning.—The thinning of all hardwood plantations (Oak excepted) should now go on, but however anxious the forester may be to prosecute this work, he will probably have to give way to game preservation. Hedgerow timber should now be grubbed or felled, and cut into convenient lengths, advantage being taken of the first dry frosty weather to have it removed, so that the fields may be as little cut up by cartage as possible. Dead or dying trees on the lawn, pleasure-ground, or park, may be removed during suitable weather. Prune off all dead branches, or those that have become broken by the wind, and either have them carted away or burned. Plantation drives and rides should be gone carefully over, and any protruding branches cut back so that the sportsman may have an uninterrupted view; also see that rabbits have not undermined the roads, leaving holes alike dangerous to horses or foot passengers. Scour out and deepen plantation drains, leaving them of such a width at the bottom that a spade can be conveniently used in cleaning. Cut new drains where such are needed to remove stagnant surface water, and see that the gratings of all closed drains do not become choked by an accumulation of leaves, which at this season give no little amount of trouble.

Nursery.—During open weather the transplanting of strong seedlings may be proceeded with, more especially where vacant ground of a suitable quality is at hand. In some cases, however, this is better left over till spring, for, should hard frost succeed, the young plants are apt to get thrown out of the ground, but by a little attention this may to a great extent be averted. Turn compost heaps, and during suitable weather wheel on manures, road-scrapings, lime, &c.; also trench or ridge up vacant patches to receive the full benefit of frosts during winter. It is advisable to have a portion of the nursery under green crop every year, as it not only cleans the ground but leaves it in prime condition for being planted with seedling forest stuff. All seeds recently collected should be examined, especially those in the rot-heap. Collect tree seeds as they become ripe, and have them stored away in a dry and airy situation until required for use.

Roads.—All roads and drives should now be put in thorough repair, when they will become settled and solid by traffic before spring. In repairing them avoid using boulders, as they are both disagreeable and unsatisfactory. The formation of new roads may also be carried out, in which thorough drainage, a sound bottom, and finely broken surface metalling are the main requisites. Collect leaves on lawns and drives, and have them conveyed at once to the rubbish heap.

Hedges.—Where not already finished, the trimming of hedges should be prosecuted and speedily brought to a close. Now is a good time to form new hedges or to fill up gaps in old ones by planting young quicks. The ground alongside existing hedges should be cleaned at least once during the season, which will much enhance the value of such fences by promoting strong, healthy growth. The hoe and rake we find best for this purpose. *A. D. Webster, Penrhyn Castle, North Wales.*

The Herbaceous Border.

Hardy Plants at Grasmere, Byfleet. — So much has been said about the pleasure to be derived from the cultivation of hardy herbaceous plants and shrubs that I resolved to pay Mr. Joseph Stevens a visit at this dull season of the year, knowing that his choice collection of over 10,000 distinct species and varieties would afford a fair opportunity of forming a correct opinion. I am bound to say that I was quite unprepared for the treat that was in store for me, as I was under the impression that I had delayed my visit a little too long, and that the recent heavy frost or two must have destroyed everything in the shape of bloom. Such was not the case, however, as a fair sprinkling of flowers remained, and the immense dried stems of Lilies on the edges of the shrubberies needed only to be clothed by the eye to form subjects to wonder at. I never saw anything like the growth of these Lilies. On a single stem of L. Dalmaticum 5 feet in height I counted fifty-two flower-scars, and many of the clumps of L. auratum bore a score of stems each from 6 to 8 feet in height. Other plants exhibit here equally amazing proportions, such as Delphiniums 8 feet in height, with stems as large as a broomstick, and Polygonum cuspidatum 10 feet in height and 12 feet across. Such plants as these, and many others seen in perfection at Grasmere, cause the hardy plantsmen to rave about them so, and well may they be excused.

Years of pleasant care have been given by Mr. Stevens to his hardy plant collection, and their present condition compensates him for his systematic method of labelling, arranging, and proving all the plants of which it is composed. Never is a plant planted without having a neat oval zinc label bearing its number corresponding to that in the book being placed to it. Had this important matter been neglected (as it too often is) a great part of the interest of the collection would have been lost, and quite one-half of the plants would be subjects of doubt and useless speculation, so far as their names go, at various times throughout the year. The plan of the garden is also well conceived; first, near the house, comes the large rockery, then a broad border runs round the lawn and pinetum, supplemented by occasional beds for distinct classes of plants; and another sunk rockery for dwarf plants is constructed at the further end of the garden; add to this the large trial ground, at present containing small specimens of all the rarest Coniferæ, &c., and we have a garden well arranged both for the plants and for those who wish to admire them. Beside the rockery is a bed containing all the varieties of Laurel, many of them being very distinct, the variety Cerasus lusitanica azorica having thick blackish-green leaves; C. camelliæfolia, curious curled foliage; and C. latifolia, resembling the Indiarubber plant in growth more than the common Laurel.

On the rockery we find Bambusa aurea 10 feet in height greener than in summer; B. Ragamowski, broad and solid-looking; B. Maximowiczii, and B. Fortunei, beautifully variegated; a few Hepaticas still in bloom. The evergreen British Ferns, such as the varieties of Scolopendrium (one beautifully crimped mass of S. vulgare crispum 3 feet across), Polystichum, Polypodium, Lomaria spicant looking as clean and bright as ever, while Helleborus orientalis, H. abchasicus multiflorus, and many others, had already flowers open, and were smothered with well advanced buds, which will probably receive a check before long as a punishment for their precocity. Still bearing its pretty Marigold-like flowers is Tagetes Parryi, and near it Iberis Pruiti, 2 feet across, covered with pale lilac flowers, and Myosotis elegantissima, beautiful with its coloured leaves. Crowning one of the peaks is a fine purple form of Veronica Andersoni, while still displaying flowers are several varieties of Menziesia, Erica, Calamintha alpina, Alyssum argenteum, A. saxatile, Aster Reevesii and other Asters, Diplopappus Parryi, Veronica spicata, Potentilla colorata with the most brilliant carmine flowers, mule Pinks, and Rubus rosæfolius coronarius.

Noticeable in the rockery for their beautiful foliage are large tufts of Stobea purpurea var. alba, Thymus corsica, T. montana, T. stricta, dwarf Veronicas, patches of Draba, Saxifraga Valdensis, Linaria genistifolia, and many other beauties, all looking very happy in their comfortable nooks. The broad border

(which has a good hard bright gravel walk in front of it, with massive Ivy-covered arches at intervals) contains the stouter growing plants. It is well arranged to present a bright aspect at all times by planting the evergreen and deciduous plants so as to be mingled in something like order, some old-fashioned Roses being very lovely; one (Rosa Stanwellii?), which bore many heads of irregularly formed double blush flowers, pleased me much better than any of the new hybrid-perpetuals. In addition to the ordinary herbaceous plants in these large borders are fine Rhododendrons, Sedums, Andromedas, Gaultherias, Vacciniums, Pernettyas, Hypericums, Berberis, and a great quantity of other rare shrubs, the foliage of many of the Berberis being as bright as flowers.

The lower rockery is devoted to mossy Saxifrages, and plants of a like habit, each of which by its own arrangement displays a wonderful piece of Nature. The shrubbery and pinetum are well stocked with a good collection of principally rare things, mingled with Pampas-grass, the Hollies being especially fine, a grand Libocedrus decurrens 20 feet high, perfect; and another of Podocarpus koraiana, lovely. In front of the house is the variegated plant garden, which contains many grand foliage plants I had never seen before, the whole forming a most interesting place, and one from which the owner and his family seem to get a great deal of pleasure.

The garden-house, covered with that little known Hedera algieriensis variegata, and its porch with Travellers' Joy, is very picturesque and beautiful. *James O'Brien, Harrow-on-the-Hill.*

The Arboretum.

CORNUS CANADENSIS.—In reference to your interesting notice of Cornus canadensis in the *Gardeners' Chronicle* for Oct. 28 (p. 565), it may be well to state that the name of "Baked Apples and Pears," applied to it in Collinson's note, is probably an error. "Bake Apple" is the common name used here to designate the fruit of Rubus chamæmorus, which grows abundantly down to the sea-level in several parts of Nova Scotia and Cape Breton, and fruits freely. The "berries" are brought to the Halifax market, and sold as "Bake Apple"—the only name, indeed, by which they are known here. In the highlands of Scotland they are called Avrons, and in books Dewberries. The Cornus canadensis is very abundant in Nova Scotia, often covering roadside banks, and producing plentifully its clusters of bright coral-red fruit; but the fruit is not edible. It is called "Pigeon Berry," and is commonly used for personal decoration, for which purpose it is not excelled by any fruit known to me. I should be glad to know the date, actual or probable, of the note in which Collinson refers to the Cornus canadensis growing "all about Halifax," &c.; also when and where Collinson probably got his first plant or seeds of C. canadensis. *George Lawson, Dalhousie College, Halifax, Nova Scotia, Nov.* 15.

CASTANEA CHRYSOPHYLLA.—At p. 435 of vol. xiv. may be found a notice of this most interesting Californian tree, along with many others that flourish in the beautiful grounds at Tortworth Court. This Chestnut is unquestionably one of the most distinct and handsome evergreen trees that has been introduced during the present century. Not attaining more than what may be described as a small or medium height, it is essentially a species that admits of being introduced to the lawns or shrubberies of gardens of limited extent, as well as where the grounds are extensive, and on this account is the more valuable. It has small handsome foliage, bright green on the upper surface, and almost as yellow beneath as the best varieties of the golden Fern (Gymnogramma chrysophylla). The noble owner of Tortworth—who, we understand, is an enthusiastic lover of trees—may be congratulated upon possessing what we suppose to be the finest specimen in Europe, and, so far as we know, the first that has borne fruit in England. The seeds, excepting those so kindly forwarded to us, have, we believe, all been sown, and with Mr. Shingles' care and experience will stand an excellent chance of growing, and in this way being the first of a race raised from English raised seeds, representing a species likely to become a favourite with all who take an interest in arboriculture. Accompanying are Mr. Shingles' remarks upon it. *T. B.*

"Amongst the evergreen trees and shrubs that have been introduced into this country this is one of the handsomest; and the fact that it has stood uninjured through the late severe winters much enhances its value as a decorative tree. The specimen growing in the arboretum here, in a somewhat sheltered position in a sandy loam resting on the Old Red Sandstone, is possibly the finest to be found in Great Britain; it is 22 feet high, and 15 feet through. It has annually borne quantities of sterile burrs, with a miniature Chestnut about the size of a very small Pea. But this year, and for the first time, it has produced fertile burrs with perfect fruit. The leaves are dark green above, with a rich golden powder beneath, and when moved with a gentle breeze produce a most charming effect rarely seen. It inhabits California and Oregon, where it is seldom found more than 6 feet high, but in the Cascade Mountains of Oregon it is said to attain a height of from 30 to 50 feet. It will be most interesting if any of your readers will report through the medium of your columns their acquaintance with this beautiful tree; also, if this is the first instance known to them of its having produced fertile fruit in this country. I may add that the plant in question was purchased from the Messrs. Veitch directly after its introduction into this country. *Thomas Shingles, Tortworth Court, Gloucester.*" [We have seen it in fruit at Combe Wood, but whether the seeds ripened we do not know. Perhaps Messrs. Veitch will oblige by telling us. ED.]

CRATÆGUS CARRIÈREI.—This tree was raised from seed of C. mexicana, which it surpasses in vigour, foliage, and flowers. The latter expand in spring, are at first white, subsequently flesh-coloured. The fruits resemble Cherries in form, size, and colouring (bright red), but the principal merit is its persistence throughout the winter. A leafless tree laden with orange or crimson fruit is certainly a first-class decorative plant. The tree is very hardy, since it endured the winter of 1879-80 unhurt. It is grafted on the Hawthorn, and is introduced into commerce by MM. Baltet, of Troyes.

AMARYLLIS AUTUMN BEAUTY.—One of the most beautiful of the Amaryllid family. We lately saw a nice plant of it in flower in Messrs. Veitch's nursery, with from four to five flowers upon a spike. The flowers are of a crimson hue, deeply veined with lilac.

Orchid Notes and Gleanings.

WORK IN THE HOUSES.—Some of the spring-flowering Dendrobiums that finished up their growths early in the season, and have been at rest for a couple of months, will now be commencing to show their flower-buds up the sides of the bulbs, and if the pseudobulbs are strong, and have been well ripened, they ought to produce flowers from every joint. When these plants arrive at this stage they require to be very carefully watered; in fact, very little, if any, will be required for another month, as a sudden saturation at the root just at this stage of development would most likely turn many of the embryo flowers into growths. Later batches of this section, and also the raceme-flowering kinds, such as D. thyrsiflorum, must be kept as quietly at rest as possible in a temperature of 50° to 55° with a dry atmosphere. There are not many Dendrobes that flower during the winter season, but D. bigibbum and D. superbiens—though not first-rate kinds—are worth growing for late autumn flowering, and these will be succeeded by D. macrophyllum, which is well worth growing. The next two months are the most critical in the year for any plants that are in growth, and any that are now in this state should be grown as quickly as is consistent with maintaining them in health. It is not difficult to detect at this season of the year whether a plant is getting attenuated through being subjected to too much heat and moisture. Where this is seen to be the case a slight reduction in the temperature should take place, which will produce better ripened growth. These remarks apply to such plants as Sobralias and the few Dendrobes that make their growth during the winter months. They are also applicable to imported Orchids of any kind that were started at the end of summer or early in autumn, and are now just getting into growth. These, in addition to being kept moving as quietly as possible, must be very carefully watered, otherwise some of the tender growths may get rotted, and thus throw the plants back for a couple of seasons. All the Aërides and Vandas will need close attention in the matter of watering during the dull season. Avoid keeping them either too wet or too dry at the root. The former



FIG. 126.—CYPRIPEDIUM INSIGNE, VAR. MAULEI. (SEE P. 717.)

will soon induce disease, especially if the temperature of the house gets low, and the latter practice carried to excess will lead to the loss of the foliage at the base of the plants. Where these have to be grown in the same house the Vandas must be placed at the coolest end, as a temperature of 55° to 60° is sufficient to maintain them in perfect health during the winter. One of the best winter Orchids now showing flower is Phaius grandifolius. This should be grown in quantity, as it is one of the few Orchids that will stand being used for room decoration without injury. Where it is used for this purpose it should be prepared by keeping it cooler for a few days before taking it into the room, and while there should be kept drier at the root. Any shy flowering Orchids, such as Schomburgkia tibicinis, Eriopsis biloba, Epidendrum bicornutum, and Cyrtopodiums, must be specially treated at this season of the year, by placing them on dry elevated shelves, maintaining a dry but moderately warm atmosphere around them, and giving only sufficient water at the roots to keep them from excessive shrivelling. A couple or three months of this treatment will thoroughly ripen the bulbs, when a good show of flower will follow. *J. Roberts, Gunnersbury Park Gardens.*



Fig. 127.—Cypripedium insigne, var. punctatum violaceum.

Cypripedium insigne punctatum violaceum and C. insigne Maulei.—Well known as the superior merits of the former variety have always been to the few who have been lucky enough to obtain it true, so many have expressed an opinion that it is nothing but C. insigne Maulei that we are glad to receive from R. P. Percival, Esq., of Birkdale, Southport, a properly authenticated flower of each, taken from strong plants grown on precisely the same conditions. So vastly superior is C. insigne punctatum violaceum to the other variety that we could not refrain from having drawings made of them (figs. 126, 127) in order to set the matter at rest once for all. The variety under notice came to this country as a stray seedling-like plant among some imported Orchids in the year 1855; chance and its own distinct appearance favoured it, and it was carefully tended. On blooming it amply verified the good opinion formed of it, as the flowers, although borne on a small plant, were of a better shape and more brightly and distinctly marked than those of any other variety. Mr. O'Brien, in whose care it was, jealously nursed and guarded it, but it was not until about the year 1869 that any of it was parted with, and soon the sale of it had to be stopped, as Mr. Dominy (who was one of the first to recognise its merits) and a few more who were waiting for the plant would soon have taken the stock in spite of the rather prohibitory prices. The alternate selling and withholding of the plant according as the stock increased or decreased no doubt has often caused C. Maulei to be passed off for it, as indeed in after years, when C. insigne punctatum violaceum became more plentiful, it may sometimes have found its way into gardens as C. Maulei, and hence the confusion. In small plants the error is not so easily detected, but when both are grown strong there is scarcely any comparison, particularly in point of size of flower, as a glance at our illustrations will prove. The confusion in the names of this section of C. insigne was further confounded some few years ago by the introduction of the variety called Chantinii, which was nothing but C. insigne Maulei. Although at present C. insigne punctatum violaceum may sometimes be found under that name, there is no doubt that C. insigne punctatum is distinct, and one of the finest of Cypripediums, and Mr. Percival has no cause to regret the forty odd guineas he gave for it.

Odontoglossum crispum.—In Messrs. Jackson's collection at Kingston the show of flowers promises to be unusually fine in a week or two. A good many of the most vigorous plants are suspended from the roof of a low span-roofed plant-house, and the flower-spikes are both strong and plentiful. The varieties vary a good deal. We noticed one fine variety with four spikes, and as many as twelve flowers to a spike. This variety is beautifully marked with clear spots. O. Andersonianum has two branching spikes; this variety is sweet-scented, and is extremely vigorous. Upon the whole the condition of the collection is remarkably satisfactory, and the show of flowers about Christmastide will be worth going a long way to see.

Arpophyllum giganteum.—A fine specimen of this rare Orchid is now showing flower in Messrs. Jackson's collection at Kingston. It is the same variety that Mr. Carson used to grow at Nonsuch Park a dozen or fourteen years ago. It has a broader leaf, throws up a much finer spike of flower, and blooms more freely than the small-leaved variety which is commonly cultivated.

Lælia autumnalis atro rubens.—Go when one will there is always something interesting to be seen in Messrs. Veitch's Orchid-houses, but a specimen of the above plant having seven flowers upon one spike is a sight that excites one's admiration for these flowers to the highest degree. The flowers are of a purple hue, the labellum being of a rather deeper purple than the sepals and petals, and the throat is white.

Sophronites grandiflora.—Whoever thinks of cultivating Orchids should make this pretty little plant one of their first purchases. This is the natural season for the plant to flower, and its scarlet blooms are the brightest objects in the Orchid-house at the present season.

Saccolabium Blumei.—Messrs. Heath & Son, Exotic Nurseries, College Road, Cheltenham, have kindly forwarded me an unusually grand, and at the same time very curious, inflorescence of this plant. The superior half of the flower has not a single petal, all the flowers being trisepalous, and with a lip not superior to that organ in the petalliferous flowers. It belongs to the Saccolabium macrostachyum, Lindl. Finally, we may learn whether those things are constant or merely varieties of one protean type. *H. G. Rchb. f.*

Dendrobium Leechianum ×. — From Mr. Swan, gr. to W. Leech, Esq., Fallowfield, Manchester, come several blooms of this free-flowering and very desirable hybrid, which was figured and described at p. 256 of our last volume. A spike of four flowers, Mr. Swan informs us, was taken from a bulb that has produced eighteen blossoms, yet which is little more than 1 foot in height. The stock of plants at Oakley consists of eighteen, which are either in bloom or showing flower; and though some of the flowers before us have been open five weeks, they are still bright and fresh. A fine spike of the lovely Calanthe Veitchii superba also came to hand in the same box.

Odontoglossum luteo-purpureum (*Lindl.*) radiatum (*Rchb. f.*)—A very charming specimen of this is in flower just now with Messrs. Heath & Son, Exotic Nurseries, College Road, Cheltenham. An old bulb produced twin bulbs, and between the two stands a very fine deeply coloured inflorescence, the flowers being of very strong good texture. It would be interesting to know (of course I got but a sketch and half the inflorescence) whether in all probability the peduncle belongs to one of the bulbs, or whether it is the product of an especial break which would be quite gorgeous. *H. G. Rchb. f.*

Phalænopsis, with which one house at Rendlesham is mostly occupied, continue to thrive admirably; the house in which they are grown, like the others devoted to Orchid culture at Rendlesham is a low span, constructed so as to give all the light possible, and standing away from everything that could intercept it. The plants are hung well up to the roof, with air on at all times in all weathers; it is admitted freely through openings in the walls at both sides, beneath the side stages. The temperature as near as may be is kept at 70° in the night in summer, and 65° by night during winter. Under such treatment the leaves attain more than ordinary substance, lasting proportionately long. All the kinds seem to do well. Of P. amabilis, P. grandiflora, and P. Schilleriana, there are numbers of splendid examples; the largest, P. grandiflora, is just upon 2 feet from point to point of the leaves. The scarce P. Portei has six good leaves, the biggest 9 inches long, by 3¼ broad. Cattleya superbiens, hung up in the same house close to the roof, keeps on year after year blooming freely, and gaining additional strength. A couple of plants of Vanda Denisoniana are doing finely. *T. B.*

Notices of Books.

Vines at Longleat: *their History and Management.* By William Taylor. *Journal of Horticulture* Office.

This is the title of a little book on the Vine, by Mr. William Taylor, who in a brief chapter at the commencement gives, as it were, a key to his work, and then proceeds to detail his practice in simple and concise language that all may understand. Mr. Taylor is so well known as one of the most successful cultivators of the day, and especially as a cultivator of the Grape Vine, that a record of his practice, in which he has not scrupled to chronicle failures as well as successes, renders the book more valuable and interesting than it otherwise would be to those who are in search of information upon the subject upon which it treats. Every chapter in the book has a direct bearing upon its successor, and, indeed, the little *brochure* in this respect is entitled to the highest praise, coming from the pen of a practical gardener. Upon the great structural capacity of the vinery at Longleat, which necessitates certain departures from ordinary practice, it is not our intention to dwell, believing—indeed knowing—as we do, that such structures are rather the exception than the rule. We will, therefore, confine our remarks more especially to the "cultural points" set forth by Mr. Taylor, as it is these that are of greatest general importance. The chapters upon drainage, water supply, and partitioning the borders contain valuable information, and may be perused with advantage by Vine growers. Mr. Taylor's system of trellising may answer well in his own, or similar cases, but surely it is not necessary to train Vines at 4 feet from the glass. Giving full consideration to the evils resulting from trellises being too near the glass as referred to by Mr. Taylor we would rather recommend as a general rule that Vines be trained at a maximum distance of from 18 inches to 2 feet from the glass than at 4 feet. "We do not," writes Mr. Taylor, "find that plants become drawn in such a place as the Crystal Palace, neither do my Strawberry plants become drawn during forcing, though they are from 4 to 8 feet from the glass." We consider there is no analogy whatever between the class of plants grown at the Crystal Palace and the forcing of the Vine or the Strawberry; and we should be surprised to find many first-rate cultivators endorsing this statement. Admitting air from above the foliage is good in principle. Mr. Taylor, arguing as to temperature, states with much force that there is often as much as 8° difference between the surface of the ground and a height of 4 feet above it, but in the case of a vinery the parallel hardly seems a strong one, as the volumes of heat ascend to the highest part of a house first; so that if there is a clear foot of space between the leaves of the Vine and the glass there seems no possibility of injury from extremes of temperature, and as a matter of fact there is none. The chapters upon border making, raising the plants, and planting supply the most exhaustive details of culture in a lucid style and afford sound practical instructions. We are bound to add, however, that but few Vine growers will think it necessary to plant their Vines at 7 feet apart. In regard to early training Mr. Taylor rather deviates from the usual practice, but the principle he recommends is in the main sound. The next chapter on "the first pruning" is not so intelligible; there is a laboured attempt made to prove that Vines strike root so freely at either end that—to use Mr. Taylor's own words—rootless heads are as good as headless roots, meaning thereby that the top of a Vine cut off and rooted is as good as its lower portion after a certain time (three years). This theory hardly tallies with experience, because the portion of the Vine that is already furnished with fibrous roots should, in the natural order of things, have a long start of the rootless top. Mr. Taylor further says the Vine's principal storehouse is not in its roots, but in its stems and branches. Exactly; but what is the primary source of supply? Why, of course, the roots and the leaves, which collect the food for the stems and branches. The general instructions given with regard to pruning, the eradication of insects, and other routine treatment are of the most trustworthy character, and are detailed with much minuteness and exactitude. The author's experience is in favour of the extension system, and a great many others will coincide with him who have the means of carrying it out, but where variety is required from small houses it is not always convenient nor desirable to fill a house with only one or two kinds of Grapes. Mr. Taylor gives useful information relative to exhausted Vine borders, and suggests a simple remedy—the addition of lime, to soils where that desirable element is known to be deficient, in preference to making new, and it must be admitted, in many cases expensive borders. The chapter in which Mr. Taylor treats upon this part of his subject, as well as the subsequent one upon temperatures, may be read by amateurs, and indeed by all grades of gardeners, with interest as well as profit, as link after link of the whole chain of practical evidence is unravelled in a manner that can only be accomplished by a practitioner of long experience. It may, however, be taken as a broad rule that Grapes take nearer six weeks to stone in than three weeks, as stated by Mr. Taylor.

Upon the subject of air-giving Mr. Taylor is singularly exhaustive and clear, but we should prefer leaving air on all night in the case of an east house at midsummer rather than risk the chance of any assistant attending to it as early as 4.30 A.M.!

The remaining chapters of the book elucidating Mr. Taylor's curriculum of general practice, especially that referring to "sustained fertility," cannot but be of service to many who cannot obtain suitable soil for love or money, and who are often at a loss to know what to substitute for it. With the exception of a few points, which probably affect the author only under his own peculiar circumstances, we can fully recommend the book as a carefully written and trustworthy guide, giving sound practical information upon every subject bearing upon the culture of the Grape Vine.

A History of British Birds. (Van Voorst.)

The fifteenth part of the fourth edition of Yarrell's celebrated book has just been issued by Mr. Van Voorst. With this number the second volume is completed, and the third commenced. A change of editorship is also announced, Mr. Howard Saunders taking up the work in place of Professor Newton. It is needless to reiterate commendations either on text, illustrations, or typography. Concerning the carrier or homing pigeon, we are told on the authority of Mr. Tegetmeier that thirty years ago only a few birds returned home the same day in the Belgian pigeon races of 300 miles, while now, by careful selection, it is unusual for any of the prizes in a 500 mile race not to be won on the very same day that the birds are flown. Thus, in the great Belgian race of 1882, which took place from Monceux, south of Bordeaux, to Brussels, a distance of 510 miles, 1674 birds were liberated at 4.12 A.M., the first bird reached home at 4.37 P.M., his speed having been about 1300 yards per minute. One hundred and fifty birds were back the same day. The faculty possessed by these birds is not merely instinctive, but due to training; hence the best bred birds will be lost if taken untrained 100 miles from home.

—— *Amateur Work Illustrated*, is the title of a monthly serial published by Messrs. Ward, Lock & Co., and ably edited by the author of *Every Man his Own Mechanic*. We are glad to observe from the volume before us, that our anticipation, formed after the appearance of the first few parts, that it would meet a distinct want, in providing a medium for enquiry, and for the diffusion of sound practical knowledge and advice, turns out to be correct. Among the legion of amateurs possessing a turn for mechanics, or work of some kind, very many often come to grief in their work for the want of a little sympathetic instruction and guidance. The amount of useful knowledge which this volume contains, on subjects ranging from the manufacture of an organ to the mixing of a pail of whitewash, is something surprising; and it would be hard to find a more sensible Christmas present for a youngster in search of a hobby, or a volume more interesting and useful to amateur mechanics in general.

—— *Flora of Italy.*—The *Compendio della Flora Italiana*, published under the editorship of Professor Gibelli, has now reached its 720th page and 88th plate. The genera are illustrated by small but clear engravings.

British Moss Flora.—Dr. Braithwaithe's excellent *Moss Flora* has now reached its 8th part, and its 20th plate. The care with which this work is prepared is as remarkable as ever; even pre-Linnean synonyms are given.

The Flower Garden.

BEDDING PLANTS.—The recent weather has been very trying to the store plants in pits and frames, particularly to the late cuttings, which have not yet become well-rooted, and they will require great attention in the constant removal of all incipient signs of mould and decay. In the case of the plants potted from the flower beds, all decaying foliage must be removed, and mouldy shoots shortened with a sharp knife. At the same time, as the prevalence of a damp and stagnant atmosphere is the principal cause, and at all times most inimical to the plants, it must be checked by free ventilation at every favourable opportunity, particularly on fine mornings, when it may have become necessary to water any which may have become over-dry. It should be borne in mind that in such succulent things as the whole tribe of Scarlet Pelargoniums, dryness at the roots, when not carried to excess, is not so much to be dreaded as the moisture, and therefore in addition to plenty of ventilation a little heat should be put on at the same time to assist in keeping all the surroundings dry. Unless in the case of frosty nights, when it cannot be avoided, heat should not be shut up with the plants and all apertures closed, as it will make them tender and promote a spindling and attenuated growth, when the great object is to keep them dwarf. Light, heat, and ventilation under proper control appear to be the only means by which these results can be secured. We may, however, observe that a certain amount of heat in the soil is an absolute necessity to the rooting processes, and therefore all late struck cuttings and late potted plants should be indulged with the warmest ends of the pits or whatever structures may be available for the purpose of wintering these and kindred plants.

MIXED HERBACEOUS BORDERS.—Everything here should now have become quite dormant, and the whole of the old flower-stems should be at once removed to the rubbish-heap. If it is not deemed advisable to lift the plants and deeply trench up the borders and renovate them with manure and new composts it will be found a very good thing to stir the surface and cover the whole with well decomposed manure. If a good dressing of soot can be spread over previously so much the better as it will help to keep in check the slugs which are greatly destructive to the young growths. The experience of last winter was a caution in this way; there was never frost enough to drive them from their usual haunts, and they were more numerous and destructive than I ever remember.

PROTECTION TO TENDER PLANTS.—The occurrence of severe frost a short time back reminds us of the necessity of applying a slight protection to various semi-tender plants the roots of which should be guarded from severe frost by covering them with a sufficient quantity of some light dry material such as cinder ashes, which can be heaped up in a conical form with a broad base, and is one of the most efficient protectives I know of. It is less liable to be disturbed by the birds than cocoa-fibre, or leaf-mould, while the shape of the cone is calculated to throw off heavy rains and tends to preserve a dryness and warmth to the roots which it takes a very low temperature indeed to reach. By this means fine plants of Dielytra spectabilis may be secured, also Salvia patens, if left in the open ground, may be so preserved; Acanthus graminifolius, Gunnera scabra, Tritoma Uvaria, grandis, and intermedia; Lilium auratum, and the varieties of speciosum and japonicum; all of which will be the better for a little extra covering. Although most of them will pass through such a winter as that of last year with impunity, yet, as such winters are the exception, it is always best to be on the safe side, and the more so as the covering may be easily removed as soon as the growth is likely to commence in the early spring.

TRELLISES, &c.—Advantage should be taken of mild weather to prune and regulate climbers on trellises and conservatory walls by tying out at once all that are perfectly hardy, but the tenderer sorts, such as the varieties of Ceanothus, will be better only partially fastened, so as to facilitate the application of mats or other protection in very severe weather, at

the same time a good mulching of manure over the roots of all such plants will be found very useful. *John Cox, Redleaf.*

The Pine Stove.

The present is a quiet time in this department. Attend carefully to temperatures and ventilation. Bottom-heat temperatures ought to be carefully watched and regulated. With hard firing at night the bottom-heat is apt to rise too high; this should be checked by turning off the valves at 10 P.M. Let all atmospheric moisture be supplied by damping only, with the aid of steaming troughs, but as all the troughs will not be wanted in use during the dull time of winter—a portion of them may be removed altogether, or even be turned upside down over the pipes; this will prevent any moisture depositing itself in the centres of the plants. Keep up the heat during the day in the divisions where fruiting plants are swelling, and let the air be given from 10.30 to 12 A.M. After this time close the houses early, so that a maximum temperature of 85° may be reached by 1 to 2 P.M. with the aid of every gleam of sunshine. Start the fires early, so that this suitable and acquired temperature does not recede too rapidly. Where fruits are colouring keep the atmosphere a little drier, but ripen them as quickly as possible in a brisk but moderately dry temperature. The first batch intended for early fruiting should be placed together ready to commence forcing by January 1. They may comprise about one-half of Queens, and the remainder of Smooth Cayennes and Charlotte Rothschilds in equal numbers. Where Envilles or other varieties are required they may also be started at the same time. Look into the centres of any young or succession plants in frames or leaky pits, and remove the water either by moving the plants altogether, or turning the tops of the plants down. Keep up a good reserve of fermenting materials ready to meet all emergencies. Also keep up a good supply of coverings to place over the glass during the night, and which should be properly secured against wind and weather. *D. Wilson, Castle Hill.*

Grapes and Vineries.

The earliest vinery, if started on November 1, will now be on the move, and should be kept at a night temperature of 55°, with a rise of 10° by day; and let the heat be raised to day temperature early, so that the forcing is done in the daytime when there is plenty of light. Admit a little air on the back ventilators when the temperature reaches 65°, and close the house early in the afternoon with plenty of atmospheric moisture. Syringe the rods whenever they are dry in the early part of the day until they are well broke, when it can be discontinued. Keep the evaporating pans filled with weak manure-water, and turn over the fermenting materials on inside borders every morning, adding fresh dung and leaves as the heat declines. Examine the border, and if dry, water thoroughly with clear tepid water at a temperature of 85°, doing it in the early part of the day. Where the outside borders are covered with fermenting materials examine them, and add fresh dung and leaves as the heat declines, to keep the temperature steady, and then replace the shutters to throw off the rain. Vines that are to be started now can be treated as advised in previous Calendars. Hamburghs that are wanted to be kept as long as possible will keep as well cut in the fruit-room as on the Vines, and the house can then be thrown open to give the Vines a longer period of rest. Do not prune them for some days after the fruit is cut, but keep them as cool as possible some time before pruning. Where the fruit has to be kept on the Vines keep a dry atmosphere, with an abundance of air on bright days. After a succession of damp days it is a good plan, on the first bright day, to give a little extra fire-heat and air to dispel the damp, turning off the heat early, so that the pipes will cool down before the house is closed in the afternoon. Look over the bunches every few days for decayed berries. Succession houses can be pruned as the leaves fall off, and the wood and glass be thoroughly washed, and the Vines cleaned and tied down ready for starting. After pruning, the inside borders must not be allowed to get dust-dry, but only use sufficient water to keep the roots healthy. Keep the back and front ventilators constantly open, only closing them in severe frosty weather. Muscats will this mild weather require very little fire-heat to keep the night temperature at 50° to 55°, and must be used with great caution. Give air on the back ventilators on all favourable occasions, but very little front air will be required, and that only on the brightest days, when the wind is warm and dry. If front air is admitted when the wind is cold it will turn the berries brown, and spoil both their appearance and flavour. Do not use water at the roots after this if the berries will keep plump without it; and if it is required, do not give the border a soaking, but only sufficient to prevent the berries shrivelling. Late varieties of Grapes for keeping through the winter must have a dry atmosphere, with plenty of air when the external atmosphere is light and buoyant, and be kept nearly close on wet and foggy days. Use only sufficient fire-heat to dispel the damp, and keep a sharp look-out for decayed berries. The earliest pot-Vines can now be kept at a night temperature of 55°, with a rise of 10° by day, increasing the temperature as growth proceeds. Keep the roots well supplied with tepid water, and if the pots are plunged, add fresh material to keep the heat steady, and close the house early in the afternoon with plenty of atmospheric moisture. *Joshua Atkins, Lockinge Gardens, Wantage.*

The Hardy Fruit Garden.

Continued wet weather prevents rapid progress from being made with pruning and nailing, and every favourable opportunity must be seized for accelerating such work. Figs will require to be got in readiness for matting up at an early date, and it will be well to proceed with the pruning at this time, in order to simplify the process of bundling the branches. All strong sucker-like growths from the base of the tree (where not required to fill bare spaces) can be removed; also the shoots that were closely stopped beyond the fruits in the summer, and are not now needed for extension or other furnishing purposes. It is quite necessary, before commencing to prune Fig trees on the open wall, to thoroughly consider the object to be attained by the operation in conjunction with the particular mode in which a crop is produced under the adverse circumstances of our unsuitable climate, where the general crop on the growths of the current year is destroyed by cold long before it can reach maturity, and where the only possible crop results from buds that are not sufficiently forward to be advanced beyond the embryo state when the winter sets in. Every care must, therefore, be taken to preserve all shoots with such buds, and to remove all others not so furnished that are not required to supply the frame of the tree. Where pruning is done indiscriminately, or simply to "trim" the tree, more harm than benefit must necessarily result, and a "let-alone" policy will certainly present superior results.

After finishing the necessary pruning, loosen the remaining ties on the larger branches, and tie them together in small bundles, which can be successively brought up to the centre and secured with strong cord. Fill all the spaces between the branches with some dry material, such as hay or bracken, and thatch with straw, finishing off with a mat to secure a tidy appearance, and to prevent the other protecting materials from being disturbed by wind. Excessive growth is a frequent cause of unfruitfulness in Figs on walls, and this is generally caused by a too free root-run in an over-rich medium. Lifting the roots, and replanting near to the surface in poor soil, in which old mortar rubbish, or some similar substance that has a tendency to dry the site, has been freely incorporated, will generally prove effectual in promoting the production of more suitable growth, and in perfecting its ripening. Sites that are unsuitable for the cultivation of other fruits by reason of their deficiency of soil may be profitably utilised for the growth of Figs. In making any fresh plantation it will be well to depend principally upon Brown Turkey, but plants of Brunswick, Negro Largo, White Marseilles, Osborn's Prolific, and others, may find a place.

The foliage of Vines has been so far injured by frost as to be of no further utility in finishing the plumping-up of the buds, and pruning can therefore be proceeded with as opportunity offers, especially as the withered unripe foliage clinging to shoots looks dismal and untidy. The amount of pruning required must necessarily be regulated by the state of the wood as to ripeness. Cut back young canes to a portion that is fairly ripened, and prune the laterals on the older rods to the lowest eye that promises to break strongly. It is not advisable to prune Vines on walls as closely as is done in houses, as the season rarely permits such thorough ripening of the wood as to leave any promise of fruitfulness from undeveloped buds.

Strive to keep the walks and borders tidy in this department by the removal of all leaves as they accumulate, also by the clearing away daily all prunings that have been made. Use planks to stand upon in all pruning and tying operations on walls or borders, to prevent puddling the ground when in a damp state, to say nothing of the comfort to the feet of the operator, and keep a sharp look-out for scale and other insects as the work proceeds, using such remedies as the state of the case demands. *R. Crossling, Penarth Nurseries.*

The Kitchen Garden.

NOTES ON VEGETABLES.

Asparagus Forcing.—No subject connected with garden management is of more importance at the present season than that of Asparagus forcing. Large demands and limited supplies are the constant murmurings of those who have spent their lives in the garden in one capacity or another. Before the first pheasant is knocked over in the home preserves the gardener receives an order from the cook for so many hundreds of Asparagus, and this order may be repeated two or three times a week, wholly irrespective of the extent of the garden, or the condition of the Asparagus plants. Unfortunately for the poor gardener, he cannot manufacture Asparagus as a mechanic would a chair or a table, though he is ofttimes blamed because he cannot! He knows full well that unless plants are strong the produce will be unfit for table, or it may happen that owing to changes in the garden the stock of plants of mature age are barely sufficient to supply a few dishes at the ordinary season. But in order to stave off the evil day a number of roots must be forced, and the small stock gradually grows less, until at last there is no other alternative but to call a halt. It must be obvious to every practical mind that the rate at which we force Asparagus is utterly inconsistent with modern notions of economy. To tear up plants ruthlessly by the roots that require at least three years to come to maturity for a single crop is downright extravagance upon the face of it. Logically—and compared with our cheese-paring economy in cultivating other kitchen garden crops—it is ludicrous; not alone because of the waste of the roots, but because, from lack of space, it is impracticable to keep up the supply from average-sized gardens, already cropped to death to make ends meet. The end must and will come soon. We can see clearly—knowing the rate at which this choice vegetable is consumed in winter, and the increasing demand for it—that a more economical system of forcing must be adopted. We have seen many systems tried, but none seems to our mind to be so good as that adopted in the Royal Gardens, Frogmore. The plants are forced in the following way:—The beds are made upon the ordinary system, about 42 yards long by 6 feet wide, and are enclosed by pigeon-holed walls from 3 to 4 feet deep. There is a wooden frame fixed permanently over each bed, and when forcing is commenced glass lights are put upon these frames. The heat is supplied by means of hot-water pipes—a flow and return 4-inch pipe, one placed above the other in each alley between every two beds. The alleys are 2 feet in width. The pipes are warmed by a small boiler especially attached to them at the bottom of the ground, and the small cost of the apparatus is a mere nothing compared to the saving in plants and labour in a few years. There are eight beds in all, four of which are forced every alternate year. The advantages of the system must be patent to all, and the subject is worthy of careful consideration at this season.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Dec. 4	Sale of Dutch Bulbs, at Stevens' Rooms; and at the Auction Mart, by Protheroe & Morris
TUESDAY,	Dec. 5	Sale of final portion of Nursery Stock, at Osborn's Nursery, Sunbury, by Protheroe & Morris (three days)
WEDNESDAY,	Dec. 6	Sale of Plants and Dutch Bulbs, at Stevens' Rooms.
THURSDAY,	Dec. 7	Sale of Imported Orchids from Mr. Sander, at Stevens' Rooms. Linnean Society, at 8 P.M. Papers: 1. Tasmanian Plants in South Australia; J. G. Otto Tepper. 2. New and little-known Collembola; G. Brook. 3. Lichens collected by Dr. Maingay in Eastern Asia; Dr. Nylander and Rev. J. M. Crombie. 4. The Genera and Species of Chalcidinæ; W. F. Kirby.
FRIDAY,	Dec. 8	Chrysanthemum Exhibition at Aberdeen. Sale of Natural History Specimens, at Stevens' Rooms
SATURDAY,	Dec. 9	Sale of Plants and Dutch Bulbs, at Stevens' Rooms.

THE COLORATION OF FLOWERS is one of those subjects in which a gardener naturally takes great interest, and concerning which he has, or should have, much valuable information to give. On this account it becomes our duty to call the attention of our readers to a work *On the Colours of Flowers*,* by Mr. GRANT ALLEN, the more so because, if we can by no means adopt all Mr. ALLEN'S conclusions, we are yet grateful to him for having done his best to render popular a somewhat abstruse subject, and to interest the general public in some of the speculations and inferences which occupy so much of the attention of naturalists now-a-days. When, some year or two since, we first met in the daily journals with the productions of a writer whom we now know to have been Mr. GRANT ALLEN we were struck with their freshness and with the boldness with which he adduced certain phenomena as illustrations of the principle of evolution. It was pleasant to find the subject taken up in so readable and pleasant a form, and, as we said at the time, we rejoiced at the advent of a writer who by the clearness and elegance of his style had found a way to interest the "general reader" in matters which are usually relegated to the consideration of professed naturalists exclusively. It is evident, however, that a fluent writer may do considerably more harm than good, if he ride his hobby too hard and rashly venture upon the consideration of large subjects with an inadequate personal knowledge of the elements of the subject. A great theory is so seductive that it is apt to tempt beginners to attempt to run before they can properly walk, to lead them to look at facts superficially and from one point of view only, to jump at conclusions and revel in false inferences. It is for this reason that the leaders in science are wont to look coldly on theories when propounded by amateurs or by young naturalists of limited experience. GOËTHE'S great generalisation, for instance, received but scant attention from the magnates of science at the time it was first propounded, though it was destined afterwards to produce so profound an influence on science, and its validity, even now, is scarcely affected in principle, however much modern researches may have made modification in detail desirable.

Mr. ALLEN starts with the notion that the petals of a flower "are in all probability enlarged and flattened stamens, which have been set apart for the special work of attracting insects," and he fortifies his position by citing a letter of DARWIN'S containing words to the same effect. The idea is that the primitive flowers had no petals, but that in course of time some of the stamens were altered in character, deprived of their anthers, and expanded into petals for the allurement of insects, as before said. Two things strike us with reference to this—first, that we do not know what the primitive flowers were. It is mere speculation at present to suppose that the Firs and Pines with their, in some respects, simple floral organisation were the actual progenitors, though they certainly were the predecessors of the more highly adorned flowers of recent times. It may have been so, but there is no more proof of it than there is that the convenient morphological abstractions which with, as it appears to us, great inconsistency, Mr. ALLEN figures as diagrams of "primitive" monocotyledonous and dicotyledonous flowers, really represent the ground plan of the primordial flowers. As he elsewhere speaks of these as "fully evolved," it may be that the use of the word "primitive" is a mere slip of the pen, though at p. 7 he goes on to say that originally all monocotyledons had a trinary, all dicotyledons a quinary arrangement of their parts, an assumption for which he gives no evidence.

We find Willows and Birches for the first time in the cretaceous rocks, and in the same group we meet with Proteads and Pandanads as well as Figs, Oaks, Walnuts. But what evidence is there to show that Willows or Birches, or any other plant in that early period, gradually flattened out some of their stamens so as to form petals? We do not say the thing is impossible, but we do say that this is at present a matter of pure assumption. When we get to the Tertiary system we find almost all the existing great groups represented as occurring simultaneously without any direct evidence of their development one from the other. We cannot doubt that they were the modified descendants of previously existing plants any more than we can doubt that the men and women of the nineteenth century are the modified descendants from those of the first, but at present it is not possible, except in a very few cases, to trace the line of descent. We are not able as a general rule to trace the pedigree and to indicate the successive modifications which have resulted in the production of groups of plants now characterised by the existence of petals; but we are able to trace the evolution, the development, the metamorphoses, whichever term be preferred, of the individual plant, and the homologies or essential points of affinity of its several parts. Moreover, it is admitted by all evolutionists that the history of the individual furnishes the key to that of the group. Here, then, we have the means of testing Mr. GRANT ALLEN'S theory. Let us first of all say that his is no new theory. Two instances occur, as we write, and many more might doubtless be found by searching the literature of the subject. Towards the end of the last century JUSSIEU stated his opinion that Passion-flowers had no petals, the organs so-called being in his opinion appendages to the stamens. And again, quite lately, the petals of some Mallows and of the Primrose have been stated to be, not distinct organs, but outgrowths from the stamens; so that Mr. GRANT ALLEN is by no means singular in the position he takes up. This, however, is a matter of little consequence: it is far more important to ascertain how far it is true. If, then, we fall back upon the evidence we already have on the matter, we find that the popular opinion which puts the petals in order before the stamens is borne out by the great mass of the facts of evolution or progressive development. It is not universally the case, but it is generally so, that the petals precede the stamens in order of development. Certainly they do so in Passifloreæ, and certainly they do so in some Malvaceæ and Primulaceæ. A glance into the literature of the subject is sufficient to show that Mr. GRANT ALLEN in this case is putting the cart before the horse, and attempting to destroy or ignore what years of observation have established as to the real "homologies" or essential structural identity of the various foliar and floral organs. Flowers can and do exist, says the author, without petals, and that is, of course, true; but (if not parasitic) can they exist without the previous production of leaves? There can be but one answer to that question. As the leaf preceded the petal, so the petal precedes the stamen in the order of development. It does not follow, of course, that the petal shall be highly developed. It may be so if the object is to secure the visits of insects; or, on the other hand, it is conceivable that it may degenerate, or rather that its growth may be arrested, as in the so-called petalless flowers of Violets, or in those numerous cases in which, as in the Spiræa bullata mentioned in last week's issue, the stamens, though formed later, yet overtake the petals in their growth. In fact, in discussing this part of his subject, Mr. GRANT ALLEN seems to take useful hypotheses as established verities. He speaks of specialisation, enhancement, adaptation, as infallible indications of superiority of organisation. But the morphologist can easily show that specialisation and adaptation, so far from always or necessarily indicating superiority in form and lateness of origin in point of time, are the outcome of arrest of development—of a check to progress, rather than an advance. The flower of a Composite, for instance, shows many indications of absolute defect from arrest of development, and in so far is imperfect, rather than highly developed. Again, Mr. ALLEN is not free from the very prevalent idea that substitution is the same thing as evolution or as degeneration. Thus we find him attributing the production of bulbs on the top of the flower-stalk of Allium vineale to degeneration of the flowers. That there may be no mistake we quote the author's words:—"In Allium vineale and some others the flowers often degenerate so far as to become small caducous bulbs. Here degeneration is the only possible solution of the problem presented by the facts." We venture to think, while fully admitting the existence of degeneration, that in this particular case it has nothing whatever to do with it.

Throughout the whole book the author seems so enamoured of his notion that the petals are "derived" from flattened and abortive stamens that he has neglected one, and, as we think, under the circumstances, the most important line of evidence—that afforded by the investigation of the manner in which flowers actually grow. We cannot in this place follow the argument, from evolution as we understand it, further as regards form, but, as regards colour, we may take another opportunity of adverting to the matter, merely stating here that Mr. ALLEN lays down the proposition that yellow was the primitive colour, as it still is, in his opinion, that of the simplest flowers, and that as organisation progresses other tints are assumed till the most highly organised flowers are blue; hence the want at present of blue Roses, Tulips, and Dahlias, is a mark of imperfect evolution, and hence the foundation of our hopes that such may be evolved in the future by the aid of the gardener.

We do not think that Mr. ALLEN'S speculations as to the origin of the colour of flowers have any better basis than those relating to the origin and form of their parts, and we miss—what we have a right to expect under the circumstances—any adequate explanation of the structural arrangements and physical phenomena on which colour in flowers really depends, and without which Mr. ALLEN'S speculations are not likely to ensure much attention from those best qualified to give an opinion on the subject.

As this is a point wherein the experience of the florist is specially valuable, we shall not enter into the discussion of the matter at the end of an article, but reserve our remarks upon it till a future occasion.

* Macmillan & Co.

—— PALERMO BOTANIC GARDEN.—Professor Baron TODARO has issued another *fascicle* of his *Hortus Botanicus Panormitanus*, a publication of folio size, in which the new or rare plants that flower in the Palermo Botanic Garden are described and illustrated. In the present part a description of Arachnites fuciflora, A. lunulata, as well as coloured

plates of Aloe elegans, a panicled species with yellow flowers, and Agave applanata, are given.

—— CEPHALOTAXUS FORTUNEI.—A correspondent of the *Gardeners' Monthly* notes the formation of fruit on a bush of this plant which hitherto has only produced male flowers, so that the species is, at any rate, sometimes monœcious, as also is the Gingkgo. These facts are adduced in support of Mr. MEEHAN'S opinion, that the male flowers generally appear before the female, although branches which bear female flowers as they become weakened by age bear male flowers only.

—— PODOCARPUS NERIIFOLIA.—In the winter garden at Kew this handsome and very interesting Conifer is now bearing a good crop of fruit, the large fleshy receptacles of which, varying in colour from pale yellow-green, orange-red, to deep red-purple, form a striking contrast to the deep dark green ample foliage. P. neriifolia is a native of Nepal, and was many years ago introduced to Kew by Dr. WALLICH. It is stated that the large fleshy receptacles are eaten by the Nepalese.

—— MUSA ENSETE.—In the *Lyon Horticole*, M. L. BOISSAC, a gardener at Lausanne, describes his method of growing Musa Ensete. If the results are correctly given they seem worthy of record, and if they have proved so successful with the non-edible M. Ensete, perhaps it would be worth while trying the same plan with M. Cavendishii, and the other edible ones. M. BOISSAC grows his plants in soot and loam, in the proportion of one-third of the former to two-thirds of the latter. He says "I have a two-year-old plant, the leaves of which have attained a length of nearly 3 yards (2 m. 50) in length, by three-quarters of a yard in breadth."

—— HORTUS BELGICUS.—We are glad to learn, from the *Illustration Horticole*, that this catalogue of plants cultivated in Belgium, drawn up by Prof. MORREN and M. DEVOS, is now completed, and will be published by the Federation of the Horticultural Societies of Belgium.

—— THE AMSTERDAM EXHIBITION, 1883.—We are requested to state, for the information of intending exhibitors in the sections in which horticultural sundries are included, that December 16 next is the last day upon which the British agents to the exhibition, Messrs. HAYNE & HEATH, 104, Newgate Street, E.C., can receive applications for space.

—— ECHEVERIA RETUSA.—One of the most useful of winter flowering plants for forming single lines on plant stages, or for grouping in masses in sitting-rooms. Mr. JONES' stock, at Frogmore, has been grown from cuttings or offsets during the past season. The plants are uniformly furnished with three branching flower-spikes, and will continue in good condition for decorative purposes during the winter months.

—— BEGONIA INSIGNIS.—This old-fashioned and most useful of all the Begonia tribe for decorative purposes in winter is grown "bush fashion;" several hundreds of plants are laden with blossoms which droop gracefully over the pots, and make good material for furnishing. The plants are all of nearly equal size, and are one of the brightest features at present in the Royal gardens, Frogmore.

—— PRIMULAS.—With the exception of the double white variety that is now coming into flower, Primulas are grown for spring use. The plants fill several low pits at Frogmore, and are kept near to the glass. They are grown in pots from 6 to 8 inches in diameter, and the stock, which consists of 1200 plants, is exceedingly vigorous and healthy.

—— EARLY HELIOTROPE.—Those who cultivate plants of this annually obtain fair results during the autumn and early part of the winter, but to have flowers in quantity a few plants should be planted out in a forcing or intermediate house, where a temperature of from 55° to 60° is maintained throughout the winter. In the early Peach-house at Frogmore there are large plants trained against the back wall that are quite covered with flower-buds, which, when the heat is increased a little by-and-bye, will supply unlimited quantities of cut flowers. The stems of the plants are as thick as ordinary Vines, and are pruned back every autumn much in the same way as Vines or Peaches are. Even in a cool structure a good-sized plant will continue to produce blooms nine months out of the twelve.

—— THE SCHOOLMASTER ABROAD.—The following letter (the names and addresses of the writer and



FIG. 128.—CHALFONT PARK: THE RESIDENCE OF J. N. HIBBERT, ESQ. (SEE P. 714.)

his previous employers alone being suppressed), is copied word for word and letter for letter from the original. The schoolmaster is, and has been, abroad with a vengeance as far as our young friend is concerned. No matter what the abilities (from a gardening standpoint pure and simple) of such a man may be, he must be very heavily handicapped in the struggle for a livelihood in the gardening profession, and in all probability would have to content himself with the lowest rungs of the ladder. "Sir I should like To git in to the gardens if their his A viganse if not I should be glad if you wood be so kind To let me now when their Is or if you wood place to Leet me now if you now of Anny one wint to take A hunder garnder I ham come up from devon sheir I have been woking for —— in —— I wis Long with him nearly 3 year I ham A young man age. 21. If you wood pilice to do me A faver Sir I should be Glad of it as I ham A Stringer up heir."

—— MONOLAENA PRIMULÆFLORA. — This very pretty Melastomad was introduced to this country from New Grenada by Mr. W. BULL, rather more than a dozen years ago. A good illustration of it was given at p. 734 of our volume for 1870, and it was figured in the *Botanical Magazine* in 1870, and alluded to as follows:—"Whether for the number and delicate tints of its flowers, or the brilliancy of the green upper and purple under surface of the leaves and petioles, it certainly may take rank with the best plants of its class." The bright pink blossoms, with white eye and yellow anthers, measure about 1 inch across, and are borne on rather short peduncles in twos or threes. Plants flower freely in small pots, and are easily managed in a warm house. Nice examples are now flowering at Kew.

—— STERNBERGIA LUTEA is a very old inhabitant of our gardens, having been grown both by PARKINSON and GERARD. It is one of the few hardy plants which flower at the present dull and somewhat inclement season of the year. It has fine dark green foliage and large bright deep yellow Crocus-like flowers, which are freely produced when the bulbs are planted in porous loam in any warm sheltered border. Some commentators regard this plant as the Lily of the field mentioned in Holy Writ. S. lutea is now in flower at Kew and elsewhere near London.

—— COSMOS BIPINNATUS VAR. PARVIFLORUS is a charming Composite, which makes a splendid pot-plant for greenhouse decoration during the winter months. The finely-cut light green foliage and the elegant flower-heads with lilac or purplish-flushed rays, produce a fine effect. Some excellent examples about 2 feet in height, and bearing a large number of flower-heads, are amongst the most beautiful of the flowering plants now to be seen at Chiswick.

—— VIBURNUM ODORATISSIMUM is a handsome evergreen shrub, a native of China and Japan. In fragrance its flowers are scarcely inferior to those of the well-known Olea fragrans, and at the present time its cymes of bright coral-red berries are very showy. In the winter garden at Kew one or two fruiting examples are conspicuous enough. Although probably not so hardy as some of the deciduous Viburnums from Japan, as V. plicatum for instance, it would most likely do well against a wall. When it was first introduced, some sixty years ago, to this country, it was treated as a stove plant.

—— VIOLETS.—These are grown at Frogmore in low pits facing the south, heated with one flow and return hot-water pipe. The Marie Louise variety is now producing loads of flowers, and will be succeeded by the Neapolitan, which is a greater favourite, but does not come into flower before the early spring. Over 2000 plants of each are grown, and about 1200 plants are grown in pots.

—— WINTER STRAWBERRIES IN POTS.—Considerable difference of opinion exists as to the best method of protecting Strawberries in pots in winter, but a plan adopted by Mr. JONES in the Royal Gardens, Frogmore, coincides so exactly with our own views upon the subject that we think it worthy of recording. The plants are set upon a hard bottom by the base of a wall or elsewhere, in rows, and between every two rows of pots a thick layer of dry bracken is laid, which protects the pots from frost, leaving the crowns of the plants fully exposed to the weather, as if the plants were planted out. This is a natural mode of protection, and is all that is really necessary. Mr. JONES grows 11,000 plants in pots, beginning the season with La Grosse Sucrée, which is forced in preference to Vicomtesse Hericart de Thury, in consequence of its size. We have rarely seen finer plants or larger crowns, and this applies not only to a few hundreds of plants but to the whole stock.

—— HABROTHAMNUS ELEGANS.—In the large greenhouse at Frogmore there is an arch at one of the entrances covered with one of these fine old creepers. The plant has evidently seen several summers, and is allowed to grow naturally, and its drooping panicles of red flowers are something out of the common in the dull month of November.

—— HETEROCENTRUM ROSEUM.—Only in gardens where large supplies of cut flowers and plants for furnishing are required is this beautiful old plant to be seen at the present day. It is a stove plant, is easily cultivated, grows to a good height—say, from 3 to 4 feet high—and bears numerous panicles of lovely pink flowers. It has a beautiful effect in the plant stove at Frogmore, where it is associated with well-flowered plants of Salvia splendens.

—— GLOXINIAS AS WINTER DECORATIVE FLOWERS.—Zonal Pelargoniums are now becoming common winter decorative plants, and probably they will soon be seen largely grown in houses where sufficient warmth can be given. The brilliant display made by these Pelargoniums at the last South Kensington meeting seemed for the moment to carry us back to the exhibition of the Pelargonium Society last July, for even then, when the zonal section were in the heyday of their beauty, scarcely were the plants shown in more luxuriant bloom or finer trusses of flowers staged. This rich display, however, scarcely prepared us for the finely grown and flowered plants seen in the Staines Town Hall some ten days later, not shown by a CANNELL or a LITTLE, but by a single-handed gardener, whose specimens in various other classes, as well as those under notice, told of a capable hand. The gardener is Mr. SIMS, gardener to J. W. PIMM, Esq., Staines, and his plants of Henry Jacoby, Shirley Hibberd, White Clipper, and Vesuvius, and the doubles Wonderful and Guillion Mangilli, each about 2 feet over, dwarf, and full of flower, were specimens of which any gardener might well have been proud at any time, but still more so now. The interest which attaches to these hitherto unwonted associates with Chrysanthemums was materially distracted by the long row of some three dozen Gloxinias which fronted them, and which, besides showing a superb strain, were admirably flowered. It was unfortunate that no one, not even the secretary of the show, could at the time of our presence in the Town Hall give any information as to who had staged these very beautiful tender flowers. The plants were all in 48's, were splendidly leaved, and each one carrying from three to five blooms, full of buds, and which would in sufficient warmth continue to bloom finely all through the winter. It was most noteworthy that although the outer temperature was cold, and the hall anything but warm, the plants after four hours' exposure to the temperature did not seem to flag or suffer; and it was obvious that the spectacle of a fine lot of Gloxinias in bloom late in November was not due to excessive forcing.

—— PLANT NAMES.—An ordinary furniture sale-catalogue is obviously not a publication in which we have a right to expect strict accuracy of nomenclature in the case of whatever plants may be included, but, at the same time, license should not be so extended as to prevent the reader from understanding what he reads. A catalogue from a well-known London firm is before us which may be described as a regular puzzler. Here are a few extracts:—"Twelve heuimarla various, ten ephihlam, some in bloom; a fine stifinbacker" (unfortunately it is not stated whether this is in bloom or not, and so we cannot ascertain the natural order of this plant, which seems allied to the stickelbacks); "one ciralagea, and two abutlans, a pair of racina, two cholodendums, a pair of very fine adiantun folianses," so fine that their names are honoured with small capitals, as if they were more worthy of attention than "ten fine cyclopœdiums," which does not say much for the cyclopœdiums, which are perhaps out of date, at any rate they are eclipsed not only by the adiantun in question, but by "a grand specimen of Caldendium ponsillatum with fine foliage." What's that? We give it up, consoled by the fact that there is promise of relief for our exhaustion by "Captain WARNER'S patent cooking apparatus and interior fittings;" yes—we make a bid for the interior fittings and the "copper bed-warmer with long handle."

—— "THE GARDENER."—It is announced that the publication of this periodical will be discontinued after the present number.

—— CLEVEDON COURT, SOMERSET.—The residential portion of Clevedon Court, Somerset, the seat of Sir ARTHUR H. ELTON, was entirely destroyed by fire on Monday last. The Court was one of the few old manor houses that continue to be used as such. Dating from the time of EDWARD III. it was restored in the Tudor period, and though it had since been restored and altered, many of the old rooms and offices were perfect. The south front, with its traceried windows, quaint gables, and variously ornamented window shafts, has been saved, with the entrance porches and grand hall. The pictures and valuables were brought out on the lawn. A good many of the books were saved, together with some valuable title-deeds and ancient manuscripts. The damage is estimated at about £20,000. The building was insured.

—— BELGIAN GARDENERS' BENEVOLENT INSTITUTION.—One result of the recent visit of Belgians to this country, and of their presence at the annual festival of the Gardeners' Royal Benevolent Institution, has been the formation of a similar institution in Belgium. We ought rather to say that steps have been taken to establish it, but we can hardly doubt of its success.

—— CHRYSANTHEMUMS.—The annual display of Chrysanthemums brought together by Messrs. JACKSON & SON, of Kingston-on-Thames, in the show-house facing Clarence Street, has this year been finer than usual, and this is saying a good deal considering their former efforts. The White and Golden Beverleys arranged alternately, and trained to the wires of the roof with their heads drooping, were, at the time of our visit, a striking instance of what may be done with the Chrysanthemum by the exercise of a little foresight. The white and golden flower-balls looked exceedingly pretty because they were trained naturally, and not tied stiffly to stakes as they usually are. New varieties are being constantly added to the collection as they are found to be meritorious, but the finest flowers, as far as size and form are concerned, are still the well known exhibition sorts. The flowers that appeared to be of exceptional merit consisted of Fulton, Père Delaux, Soleil Levant, Mons. Delaux, Criterion, Fulgore, The Sultan, and Cry Kang. Dr. Sharpe was the showiest reflexed flower in the collection, and we could do with a great many more of the same type of flowers of various colours for ordinary decorative purposes.

—— WHITE BROOM.—Few people seem to be aware that the white Broom, Genista alba, is so useful for forcing, or how much it is appreciated by ladies for their hair. The plants do well under the same treatment as Deutzias, Syringas, and such-like, and may be brought into flower early in the spring months.

—— CHRYSANTHEMUM "LA PURETÉ."—Examples of this fine variety seen in Messrs. JACKSON'S nursery at Kingston, during the past week, struck us as being the very best thing in cultivation for general purposes of cutting for bouquet or wreath making. Grown in small pots it makes a lovely edging to a group of plants, nor indeed if we tried could we name anything more appropriate for an amateur's greenhouse. It is a white pompon, and is well named La Pureté.

—— PRIMULAS.—We lately received from Messrs. CANNELL & SON, of Swanley, a box of Primula blooms of the most delicate shades of colour, large size and good substance. In this collection we recognised various shades of white, crimson, and one that we regard as a very good thing—a purple-shaded flower, although the form is capable of improvement. Another remarkably pretty thing is of a pink shade, with white fringed edges. Some of the reds are very bright in the eye; indeed, these are striking flowers,

and must be real gems when well grown into good sized plants.

—— An Edinburgh Gardener and his Wages.—Lord Adam recently gave judgment in the Court of Session, Edinburgh, in an action at the instance of Charles McKechnie, a gardener, against William Bertram, Kersewell, Carnwath, in which the pursuer sued for £27 5s. as a balance of wages. Pursuer alleged that he entered the service of the defender as gardener in September, 1881, at a yearly wage of £55, with a free house and vegetables. In June last he was dismissed, he said, unwarrantably, upon three days' warning. Gardeners, he maintained, are yearly servants, and he claimed that he was therefore entitled to be paid from the time he left till the expiry of the twelvemonth.—In defence it was stated that the pursuer was dismissed on account of inefficiency and negligence, and particularly with regard to the management of hothouses and vineries.—His Lordship held that the pursuer was entitled to payment of wages down to Martinmas, amounting to £23 9s., and expenses, but, as the action should have been brought in the Sheriff's Court, the latter must be modified.

—— Tamarisk germanica vera.—Apart from being so suitable for seaside planting, the Tamarisk has a gracefulness of habit about it that few other plants possess. In a shrubbery composed of the most formal habited plants, a specimen or two of the Tamarisk affords a relief to the eye, which invites a closer inspection of the plant; and the feathery shoots, so well adapted for filling tall glasses in conjunction with such things as Leycesteria formosa and the white plumes of the Pampas-grass, are most effective for purposes of indoor furnishing at this season. Much may be done now in the way of indoor decoration with richly coloured leaves and various hues supplied by members of the Conifer family. The plant above referred to, in addition to being handsome in a shrubbery, is also worth growing for supplying shoots for various purposes of decoration during the autumn and winter months.

—— The Weather.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending Nov. 27, issued by the Meteorological Office, London:—The weather has continued very cloudy and unsettled, with frequent showers of rain, sleet, or hail. The temperature, which has been several degrees higher than during last week, has exceeded the mean in all districts, the excess over central, southern, and south-western England being 3°. The maxima were generally high for the season, and were registered at most stations on the 22d or 23d. In the Midland Counties the thermometer rose to 60°, in "Ireland, N.," to 58°, and in the east and south of England to 57°. The minima occurred either on the first or last day of the week, and varied from 27° in "Scotland, E.," and 30° in the east and north-east of England to 36° in "England, S.W." The rainfall has been slightly less than the mean in "Ireland, S.," "England, N.E.," and "England, E.," but more in all other districts. In the east of Scotland, the north-west of England and north of Ireland, the excess was considerable. Bright sunshine showed a further decrease in duration in most parts of the kingom, the percentages ranging from 35 in "England, S.," to 10 in "Scotland, W." Depressions observed:—Several depressions, more or less deep and important, have again travelled over our islands and the North Sea in a south-easterly or easterly direction; and as the barometer has been comparatively high over France and Spain and low in Scandinavia, westerly to north-westerly winds have prevailed during the whole period. In force the wind was generally moderate or fresh, but in many exposed places it blew strongly, and at times increased to a fresh gale.

—— Gardening Appointments.—Mr. Alfred Jones, late General Foreman at Melton Constable, as Gardener to A. H. Smith-Barry, Esq., Marbury Hall, Northwick, in succession to the late Mr. White.—Mr. Letts, who has been seven years Gardener to the Earl of Zetland, at Upleatham, Marske-by-the-Sea, has now taken charge of the more extensive establishment at Aske, near Richmond, Yorkshire, Lord Zetland's principal seat. Mr. F. Nicholas, Mr. Letts' Foreman, succeeds him at Upleatham.

FRUIT NOTES.

Notes on Apples in Yorkshire.—Permit me to say a few words in reply to Mr. Culverwell at p. 629, and then I have done with this matter, as in my opinion it is of no further interest to readers of the *Gardeners' Chronicle*. To begin, I have not thrown up, nor threatened to throw up, as Mr. Culverwell terms it, the sponge. I do not usually do this unless fairly beaten, which I venture to say in this case has not yet occurred. As to disliking criticism, I can only say I have always courted it, both at home and abroad, and have learned many valuable lessons therefrom. My only reason for mentioning unworthy motives was that I interpreted the word "serious," as used by Mr. Culverwell in his first note, to mean one of three things, viz., that what I first wrote was either untrue, carelessly written, or had been wrongly inspired. I venture to say that neither of these charges has yet been proved. My idea in giving the list of Apples at first was, not so much to meet the wants of those of your readers who wanted to prepare stations for a few small Apple trees as of that class who want to plant Apple trees as standards without much expensive preparation of the soil where they intend planting. If the selection given was small in comparison to the number of varieties planted, that was not my fault. It was a fact, nevertheless, and deserved to be *Chronicled*. As to the Apples at Bolton Hall (which I only mentioned in a general way, to bear out my argument as to favourable local conditions or otherwise), I may mention that I have seen fine Ribston Pippins there in Mr. Hall's time. In the Hampshire garden I alluded to, the same variety was, some years ago, nearly dead with canker. As Mr. Culverwell has mentioned the Pears at Bolton, I would just like to remark that the finest crop of Pears I have yet seen "north of the Trent" was at Bolton in the autumn of 1876, and the individual fruits were in many cases fine too. This was previous to the cycle of wet, sunless, and more or less fruitless seasons we have had in the North of late. *H. J. Clayton, Grimston.*

Abercairney Seedling Grape.—I am pleased to see Mr. Ward drawing the attention of Grape growers to this fine late-keeping Grape. The berries, when the Vine is well grown, take on a beautiful bloom, and will compare favourably with those of the Alicante in almost any respect. If anything it does not set so freely as Alicante in a late vinery, and the berries, as a rule, are not quite so uniform. The Vine is a vigorous grower, and I can vouch that if grafted upon Lady Downe's, and if it receive cool night temperatures, the Vine is soon likely to have a wider spread reputation than it hitherto has had. *G. Drummond, Wilton Park.*

The King Apple.—I have delayed responding to my friend Mr. Culverwell's hint for information respecting the origin of the King Apple until I had seen Mr. Abbott, of Knaresborough, who informed me that he did not raise it, but that his father was the first person to introduce it into this district about sixty years ago, probably before the late Mr. May was born, though his father most likely got it from Mr. Abbott's father. I quite forgot to ask Mr. Abbott if he knew who his father got it from; but he told me that the greatest weight they grew the fruit was 23 oz. It soon became a well known sort in this locality, its size and beauty attracting attention, and as numbers of the visitors to Harrowgate would see samples of the fruit it soon became famous. The display of King Apples among the baking Apples at the local autumn show is really a very fine and interesting sight. Some localities in Yorkshire are famous for their King Apples. There resided for many years in the village of Great Ouseburn, about four miles from here, a gentleman farmer who grew some very fine fruit of the King Apple. For several years he used to exhibit at the local shows, and pretty generally got the 1st prize. The gentleman has been dead some years, but his widow still lives at the place, and King Apples are sometimes still exhibited from there. *M. Saul, Stourton.* [King Apple is mentioned in the *Fruit Manual* as a synonym (and the only one) of Warner's King. Can any of our readers say by whom Warner's King was raised, and when it was sent out? Ed.]

HOME CORRESPONDENCE.

The Royal Horticultural Society's Committees.—I wish that your correspondent "X." (p. 692), of the *Gardeners' Chronicle* of to-day, had signed his name, that we might know how far he is acquainted with the practical working of the Royal Horticultural Society's committees. [We can testify that our correspondent is well acquainted with the matters on which he wrote. Ed.] From internal evidence I infer that if he has served on either of them he has not been a very regular attendant. Having had a long spell on the Fruit Committee, and having been a close attendant, though for a shorter time, on the Floral Committee, I should like, with your permission, to answer some points of "X.'s" note. He writes:—"When, as has been shown, out of perhaps twenty members present, only some five or six will vote upon the merits of any specimen, words fail to paint the contempt which must be felt for the ignorance or indifference of the non-contents:" I presume he means the non-voters. This is strong language; but is it reasonable? I hear it constantly said, and sometimes say myself, "I don't know these plants, and shall not vote." Why should they vote if there are enough present who do know them, and there is no suspicion of unfair bias for or against the exhibitor? "X." objects to "speciality men." I believe in them. It is the old story of "knowledge is power." The rest of the committee press for information from the "speciality men," and are a good deal, though not wholly, influenced by their opinion. Take, for example, the gardeners of the great Orchid growers on the committee, Mr. Moore for Ferns, &c., Mr. Little for Cyclamens, some of the great growers (now we have lost Dr. Denny) for Pelargoniums, Mr. M'Intosh for Pelargoniums and for Lilies; and I, too, can speak feelingly as to Lilies, as I have more than once been urged to take more responsibility with them than I at all liked. There are few all-round men in the world like Mr. Green, who knows all plants from alpine to stove. Until there are more of these, I believe "speciality men" to be an essential element in fair judgment. "X." writes:—"Such statements as to the working of the committees as were made in these columns last week." I presume he refers to p. 657. This note, though I thought I had read my *Gardeners' Chronicle*, had escaped notice. Allow me to make a few remarks upon it. It may be desirable to have an award higher than a First-class Certificate for plants of especial merit, though not great enough to have the very extraordinary honour of a medal recommended; but I cannot agree with the writer as to the objection to plants of different ranks all having First-class Certificates. At an animal show a pig has a 1st prize as well as a racehouse, but this does not involve any comparison between them. The writer of the note instances Chrysanthemums. The Temple Gardens show how popular these are. If I had to name the most popular flower in this and the neighbouring districts, which means a considerable area, and the one in which there is greatest rivalry among the gardeners, and as to which news of any good novelty would be most eagerly sought after, I should say the Chrysanthemum. For one owner of a garden who knows anything of Orchids there are a thousand who take pleasure or pride, or both, in their Chrysanthemums. The question of the number of certificates awarded has always been a puzzling one. At one meeting none may be exhibited worthy of this honour; at the next there may be many as to which there could be no question. We all know "so many men so many opinions." I have heard more than once competent members of the Floral Committee find fault with the number of certificates awarded, and in the next breath regret that one has not been given to some plant they are taken with. Quite lately, in one of your contemporaries, a correspondent speaks of an "unusual anxiety to certificate all plants they possibly could," and then finds fault with them for not certificating one more. As this is a good test case, and I can speak with knowledge, having been in the chair, though not voting, I will say a few words on it. Six varieties of Pernettya mucronata obtained First-class Certificates. Any one reading this, and not having seen the plants, must have thought this ultra liberal, while those who did see them knew the awards were deserved. Your remarks (p. 648) exactly describe these Pernettyas as "an interesting selection of seedling varieties, remarkable for the beauty of colouring of their berries, which ranged from white to maroon almost black." I thought I knew something of this section of hardy plants, but the effect of seeing them was to make me order two collections, one for each garden, of about fifty varieties, and at this time of year visitors consider these beds the most telling things we have, and ask for the name and address of the grower. Large committees, composed of the different elements which constitute the horticultural world—nurserymen, professional gardeners, and amateurs—are above suspicion of undue influence:

would this be the case with smaller bodies? One alteration I should like to see made, to meet a constantly recurring difficulty—the question of novelty. I think there should be two forms of First-class Certificates, one for plants, new and of great merit; another for plants of great merit, not new, but known only to a few. Cultivators want their attention to be called to them as well as to the first, but the certificates should express that the plant is or is not new. I am glad to be able to agree with one suggestion in "X.'s" note, and this I cordially do, "that eminent horticulturists from the country who happen to be present should be invited to take a seat at the table, though of course without a vote." [Why without a vote? ED.] I will now bring this perhaps too long note to a close, and being perfectly unbiassed in the matter, with no trade or professional interest, and while grudging the time taken from my own gardening to attend the committee meetings yet feeling this well repaid by information got there, I shall vote against any rash changes being made in the arrangement or working of the committees which on the whole work very well. We cannot expect the perfect order kept at the Scientific Committee under its eminent chairman, but when the chairman of the Floral Committee has to check any tendency to gossip and to discuss the merits of plants not under consideration, he is always supported by the great majority of the committee who I believe are only anxious that the work shall be done well and conscientiously, and without waste of time. *G. F. Wilson.*

The late Kingston Chrysanthemum Show.—I was much surprised on reading the account of the Kingston and Surbiton Chrysanthemum Society's Show in your paper, to hear that Mr. W. Tunnington was "coolly ignored," and treated with disrespect by the authorities. I was present the greater part of the time the show was open, and must say I neither saw nor heard of Mr. Tunnington being treated in any way different to other exhibitors, whom it has always been our endeavour to treat with all due courtesy and respect, being fully aware how much of the success of a show depends on them. I consequently think there must be a misunderstanding somewhere, which, if your reporter will be more explicit, can be easily cleared up, and so remove from us a stigma I feel confident we do not deserve. *T. Jackson, Hon. Sec., Fife Road, Kingston-on-Thames.* [It was on the marked manner in which Mr. Tunnington was "not treated in any way different to other competitors" that, under the circumstances, our Reporter felt justified in commenting. ED.]

A Three-Coloured Celeriac.—Under this heading, what is announced as a "most remarkable novelty," is being offered by Mr. Chr. Lorenz, of Erfurt. It is described as resembling in general "the old well known soup Celery, but its vigorous leaves, of a deep glossy green, are richly and most elegantly streaked with silver-grey hue in the midst of the leaflets and decorated with a broad creamy-white edging." It is further stated that the variegation is intensified in autumn by reason of the petioles taking on a violet-red tint, so that the plants become a true quadricoloured form, and that the proportion of variegated plants is at least 80 per cent. from seed. If the plant is of any value at all it will be for winter bedding; but it may be reasonably presumed that, hardy as it undoubtedly is, it would go down before severe frost following close on rain; or, if not destroyed, it would be materially injured. There is a tendency now-a-days to think that every variegated plant must be of value as a decorative agent in the garden, but this is by no means the case. We are obliged to Mr. Lorenz for the use of the accompanying illustration of his novelty (fig. 129).



FIG. 129.—APIUM GRAVEOLENS TRICOLOR, HORT. LORENZ.

The Divining Rod.—Having referred to several passages in ancient authors, in which the Aqueduct Virgo is mentioned, I can find nothing in any of them which can possibly be an allusion to the divining-rod, though the name is perhaps suggestive of virga, a rod or twig. As far as I can understand the obscure language of Pliny, the aqueduct was so-called because supplied with virgin water—water which has no visible outlet, until drawn off by the duct. This aqueduct is still in use, and is a tunnel through a water-bearing stratum, receiving constant accessions during the first part of its course. The Roman engineers were far too practical and skilful to pay any attention to divining-rods in finding water. I have searched out many passages in ancient authors about divining-rods, but the only one which might have any reference to the modern sense of the word is the passage which speaks of the "lituus" of Romulus, and this passage by no means makes it clear how the instrument was used. The earliest mention of the divining-rod occurs in a writer of the fifteenth century. The divining-rods of the ancients were of two kinds—1st, the magic wonder-working staff or wand, such as was used by the Egyptian magicians, by the Homeric Circe, by Prospero in the *Tempest*, by the fairies of fable. The "Virgula divina" which Cicero wished for to supply him with victuals without any trouble, was evidently of this kind. Second: Rods used in "Rhabdomancy," a mode of ascertaining the Divine will by means of rods or wands. There is an interesting note on this custom in the article "Divination," written by Canon Farrar in Smith's *Bible Dictionary*. The earliest recorded instance of it was the presentation of the rods of the twelve tribes when Aaron's rod budded. It was practised by other nations besides the Jews, in ancient as well as more recent times. These two uses of the rod were quite distinct from those of the divining-rod of the middle ages. Cicero whilst refuting divination by the inspection of the entrails of slain victims, says, "I admit that there are many things in the laws of Nature which are imperfectly understood, but I ask, what connection can there possibly be by any conceivable law of Nature between the liver of a fat bull, which I sacrifice, and the fact that I am about to inherit a fortune from some unknown source?" In the same way it may be asked, How can we conceive it possible that a person who is not a diviner as long as he has his hands in his pockets, suddenly becomes a diviner whenever he takes a chance bit of forked stick into his hands? I do not deny the stories of the wonderful success of some of these diviners, or that there are many degrees of skill in water finding, but I deny that the divining-rod has anything to do with the finding. Is it recorded that the Newtons, or the Herschells, or the Charles Darwins of the day were ever deceived by these diviners? The performances of one Aymar in France at the end of the 17th century are notorious—how he used to find murderers or hunt them out of the kingdom, by touching the spot where the murder was committed with the rod, to give it the scent, which might be many days old, and then following its lead, like that of a bloodhound! These performances were abundantly attested by magistrates, judges, and ecclesiastics; but this Aymar broke down altogether when called upon to perform before a scientific committee in Paris. Common sense has already exploded and discredited these uses of the divining-rod, and belief in its efficacy as a water-finder will be discredited also when common sense has become a little more common. It is a curious question, too, why divinity should haunt particular counties, and why Wiltshire and Somersetshire should be famous for these diviners. It is significant, however, of the honour in which they are held in their own country that in the Somersetshire vernacular they are called "Jowzers," *i.e.*, chowsers! Still they find a sufficient number of *volentes decipi* to earn a living. *C. Wolley Dod, Edge Hall, Malpas, Nov.* 25.

Holly Berries.—These have been generally plentiful this year, but I notice they are going rapidly, though the weather has by no means been exceptionally severe. It does not seem, in fact, that abnormal weather has much to do with the food of birds. As the seasons come round, and hips, haws, or Holly berries ripen, they seem down upon them be the weather what it may. Their diet seems more determined by the season than by the weather. No doubt a good many birds that live on a mixed diet are perforce driven by stress of weather to live wholly on berries or haws during very severe weather, but the real berry-eating birds eat them so soon as ripe, be the weather as it may. *D. T. Fish.*

Roses and their Winter Protection.—To-day (November 22), whilst reading your leader in the *Gardeners' Chronicle* of the 18th ult., respecting the transplantation of trees, &c., and coming to the last clause, I find the following remark, "that probably the most efficient protection of Roses against the expected severities of the coming winter is to transplant them at once, or lay them in by the heels till next spring." The latter was exactly what I did with a batch which came in during November, 1881. The roots were covered with a little stable litter. Towards the end of March they were cut down, planted, and watered in; during the early stages of growth they were frequently syringed. They grew and flowered beyond my expectation. The plan was so thoroughly successful that I took careful note, and resolved to "print it." It is a singular coincidence, that my first batch for the season—a very fine lot from the Messrs. Perkins, of Coventry—came in yesterday, the 21st, and were laid in by the heels, and protected by litter exactly the same as those of last year, when my eye happened to fall upon your corroborative statement, and which advice is so thoroughly sound and wholesome that any one giving the plan a first trial would be certain to give it a second. *Wm. Miller, Combe Abbey Gardens.*

Jerusalem Artichoke.—I am quite unable to dispute learnedly as to the origin of the term Jerusalem Artichoke. I can only say that for some forty years I have always taken it as undisputed that "Girasole" had been corrupted into Jerusalem. I have accepted it just as one does that the "Goat and Compasses" is a corruption of "God encompasses us;" that the "Bull and Mouth" means "Boulogne Harbour," and so on of half-a-dozen other tavern signs. Turning to Loudon's *Encyclopædia*, I read under the head "Helianthus tuberosus," "The epithet Jerusalem is a mere corruption of the Italian word *girasole* (*girare*, turn; *sol*, sun)." Also in the *Treasury of Botany*, edited by Lindley and Moore, the same statement is made, and it is added, "Under this name it is said to have been originally distributed from the Farnese Garden at Rome soon after its introduction to Europe in 1617." Taking advantage of this discussion about the shadow, perhaps you will

allow me to say a word as regards the substance of the tuber. Why is it that this most excellent vegetable is so little cultivated in this country? I rarely, I might say never, see it on any table except my own, and yet all who eat it there rejoice in it. It is easily grown, and produces good returns as a crop. As a basis of soup it is delicious. In the *Treasury of Botany* the writer says, "Since the failure of the Potato crops the Jerusalem Artichoke has been strongly recommended as a substitute for that vegetable; but notwithstanding all that has been said and written in its favour, it is still far from common, and by no means esteemed as much as it deserves to be." Artichokes appear to have been largely consumed in this country until the Potato became plentiful. Parkinson (see *Treasury of Botany*), writing in 1629, states that they were then so common in London "that even the vulgar began to despise them." If you agree with me as to the virtues of this tuber, you might, with your authority, advise amateur gardeners to do something for their own benefit, as I have done, in annually securing a good winter supply of it. *W. O. M.* [We have often suggested that plants shold be flowered under glass so as to secure seed, and thus possibly to obtain improved varieties, but no one has acted on the suggestion that we know of. Ed.]

A Green Broccoli.—I have at present in my small experimental vegetable garden a rather curious specimen that I can best describe as above, and that I should like to ask if any of your readers are in the habit of growing, and if so, what is their experience of it? It is not merely a green-purple nor a green-white, nor can I say it is a sprouting Broccoli, as in the centre is a perfectly formed head about 3½ inches in diameter, and likely to be five or six. It came up with Carter's Purple Sprouting Broccoli, but is perfectly distinct, and unknown to me, though you or your readers may know it. Would you kindly say? *W. J. Murphy, Clonmel.*

POTATOS AT BINGLEY HALL.

At the annual display of the Birmingham Agricultural Exhibition Society, held at Bingley Hall during the past week, Potatos were as usual very largely represented. The competition here is mainly confined to the farming interest, and it is all the more gratifying to note the very great improvement in the produce shown during the last few years. Farmers being the real cultivators of Potatos for the great mass of the people, encouragement to them to bestow increased care on their cultivation cannot but be acting beneficially to all. This is not only the way to improve the Potato, but to make its improvement manifest. Seldom have we seen finer examples than those shown here by Mr. John Perry, Acton Pigott, Condover, Shrewsbury, who obtained the Silver Medal offered by Mr. Ottley, Birmingham, for the best dish of Potatos in the show—the 1st prize and 5 guineas offered by Messrs. Sutton & Sons, Reading, for twelve distinct varieties—the 1st prize and 2 guineas offered by Messrs. Webb & Sons, Stourbridge, for eight varieties—and four other 1st prizes. Every example shown was almost without a blemish, reflecting very great credit on the cultivator, who is to be congratulated on his great success. In the collection of twelve distinct varieties we noted Avalanche, Beauty of Hebron, Blanchard, Breadfruit, International, Mr. Bresee, Pride of America, Schoolmaster, Triumph, Trophy, and Vicar of Laleham. In the collection of eight varieties appeared Woodstock Kidney, Grampian, Purple King, Pride of America, Magnum Bonum, Mr. Bresee, &c. In the class for six varieties Woodstock Kidney, Matchless, and Schoolmaster were specially good. In the class for two varieties, one white and one coloured, there were many fine exhibits, Mr. Perry winning with Cosmopolitan, a beautiful new white kidney, raised by Mr. Dean, and certificated by the Royal Horticultural Society last year; and Mr. Bresee, very handsome if not high in quality. Mr. George Ashley, Irlam, Manchester, was a good 2d with Vicar of Laleham and Magnum Bonum. For Lapstone Kidney the 1st prize was awarded to Sir F. Smythe, Bart., Acton Burnell, Shrewsbury. Regents were well shown, the 1st prize being awarded to Mr. George Dunkley, Little Houghton, Northampton. His Grace the Duke of Portland, Clipstone Park Farm, Mansfield, carried off 1st honours in the classes for Scotch Champion and any white-skinned long variety, and round variety not provided for in any of the other classes. For Schoolmaster the competition was very keen, and most of the examples staged were very fine—Mr. C. W. Howard, Bridge, Canterbury, being awarded the 1st prize.

The most attractive and finest dish of Potatos in the show was undoubtedly Mr. Perry's Cosmopolitan, to which the Silver Medal was awarded; the other varieties coming into competition with it being Schoolmaster, Woodstock Kidney, and Lapstone. The most prominent variety was no doubt Vicar of Laleham, which appeared in almost every collection. This prominence is due greatly to the fact of its purple colour—there being very few purple-skinned Potatos. Schoolmaster was very frequently exhibited and always very handsome, and Magnum Bonum likewise seemed to be a general favourite. The absence of the coarser American sorts, which in former years have been far too conspicuous was most noticeable. Of new Potatos, in addition to Cosmopolitan, we were pleased to note, amongst others, Dean's Avalanche, a very promising variety.

Reports of Societies.

The Liverpool Horticultural Association's Show: *Nov.* 24.—The postponement of this exhibition for a few days was very disappointing to many strangers who travelled a long distance to be present at the show on Tuesday, and had in consequence to return without seeing it. The attendance, however, was good in spite of the drenching rain that fell at intervals throughout the day, and the exhibition on the whole was a great success. It was undoubtedly superior to the two previous shows held by this Society, and those competent to judge pronounced it the best autumn show of the year. There was a falling off in the classes devoted to stove and greenhouse plants, but those devoted to cut blooms of Chrysanthemums were well filled, and the quality and quantity of the blooms surpassed on the whole those of previous years. There were 1000 blooms entered, and 886 of that number were staged with scarcely a faulty flower amongst them. The incurved flowers were the great attraction of the exhibition, while the Japanese were far ahead of any before staged in St. George's Hall, and marked the rapid strides that have been made in their cultivation during the past few years in this neighbourhood. Those neatly trained Chrysanthemums in pots, which are generally seen in better condition in Liverpool than any other exhibition in the kingdom, were scarcely equal to the standard of past years, not being quite so neat or the flowers so fine. This was most marked with the large flowering varieties, while the 1st prize collection of pompons, staged by Mr. C. Finnigan, were remarkable examples of cultivation.

The display of fruit was large and of excellent quality, considering the unfavourable season, especially the Apples and Pears. The Grapes were all that could be desired as far as the size of the bunches was concerned, but many lacked size of berry and finish.

Cut Flowers.—The incurved Chrysanthemum blooms, as before stated, were the great feature of the exhibition. The blooms throughout were of large size and substance, possessing that depth and breadth of petal so conspicuous in the blooms of Liverpool growers. The competition was good, and in many instances very close, especially in the class for twenty-four blooms. There were three exhibitors, and Mr. F. Roberts, gr. to W. D. Holt, Esq., West Derby, gained the premier award, having only one point to spare over the 2d prize collection, which was staged by Mr. G. Mease, gr. to W. Nicol, Esq., Aigburth; Mr. T. Leadbetter, gr. to R. N. Dale, Esq., Bromborough Hall, took the remaining prize. The 1st collection contained grand blooms of Mr. Howe, Golden Empress, Empress of India, Mr. Bunn, grand; Mrs. Heale, Mr. Cullingford, Jardin des Plantes, very fine; Barbara, White Venus, Refulgens, Hero of Stoke Newington, Princess Teck, and White Beverley. Mr. Mease had splendid flowers of Novelty, John Salter, Mr. Howe, Princess of Wales, Queen of England, Emily Dale, Mrs. Haliburton, and a remarkable bloom of Hero of Stoke Newington. There were six competitors in the class for eighteen, and the competition was again very close, Mr. J. Jellico, gr. to F. H. Gossage, Esq., Woolton, took the lead with superb flowers of Pink Venus, Lady Slade, Mr. Bunn, Princess of Wales, Empress of India, and others similar to those named in the preceding class. Mr. F. Foster, gr. to J. Brancker, Esq., Wavertree, and Mr. J. Warrington, gr. to T. Bright, Esq., Aigburth, were awarded the remaining prizes in the order named, both showing well. In the class for twelve blooms from which exhibitors in the two classes enumerated were excluded, Mr. Brantingham, gr. to S. Still, Esq., Claughton, was 1st, with a fine box of blooms. Mr. G. Burden, gr. to G. Cockburn, Esq., Oxton, followed closely. Messrs. W. Todd, gr. to J. W. Cropper, Esq., Aigburth, and R. G. Waterman, gr. to A. Tate, Esq., were placed equal 3d, several excellent stands being left out. In the corresponding class for twelve Messrs. T. Leadbetter, G. Mease, and Foster, were the prize-takers in the order named, Mr. F. Roberts being awarded an extra prize.

Japanese kinds.—In the class for eighteen blooms, Mr. G. Mease was 1st, with a beautiful stand of very fresh blooms of good colour. His best blooms were Curiosity, Fair Maid of Guernsey, Elaine, Soleil Levant, The Khedive, Criterion, Apollo and Mad. Andiguier. Mr. F. Roberts was a close 2d, having fine flowers of Bronze Dragon, Bismarck, and Hiver Fleur. Mr. W. Wilson, Gateacre, was 3d. Mr. J. Jellico took the lead for twelve blooms, Mr. Brantingham and Mr. R. G. Waterman being 2d and 3d respectively.

For twelve Anemones, not less than six varieties, Mr. J. Jellico was again 1st, showing Gluck, Bijou, Lady Margaret, Mr. Goderaux, and Acquisition. The same exhibitor was well ahead for twelve reflexed flowers, staging King of Crimsons in beautiful condition; Dr. Sharp, Mrs. Forsyth, lilac and golden Christine were also good. The pompon cut blooms need no special comment.

Bouquets were not numerous but good, Mr. C. Rylance, Ormskirk, gaining the premier award in the nurserymen's class; Mr. G. Downes, florist, 97, Lodge Lane, being 2d. In the local class Messrs. J. Agnew, G. Leadbetter, and W. Evans were the prize-takers. Mr. J. Phythian, gr. to D. Walker, Esq., Forest Lawn, West Derby, was deservedly 1st in the class for one epergne suitable for table decoration. On the whole these exhibits were too heavy, a fault too prevalent in the arrangement of cut flowers.

Trained Chrysanthemums in pots.—In the class for six large flowering kinds, Mr. C. Finnigan, gr. to W. Burnyeat, Esq., Huyton, was well ahead with good well-flowered, neatly-trained specimens of Mrs. Dixon, Prince of Wales, George Glenny, Hero of Stoke Newington, and Golden Empress of India. Mr. Gowan, gr. to J. Cunningham, Esq., Mossley Hill, was the only other exhibitor. For four plants Mr. S. Whitfield, gr. to J. T. Cross, Esq., Beechwood, Aigburth, was 1st with fair plants of Beverley, Fingal, and Mrs. Dixon. The last mentioned exhibitor was 1st in the class for six pompons, with, without doubt, the finest trained plants in the exhibition. The plants staged were very fresh and profusely flowered examples of white and golden Cedo Nulli, Aigle d'Or, St. Michael, and Mrs. Hutt; Mr. S. Whitfield was the other competitor, and was awarded the 2d prize with good plants, the blooms being smaller and less numerous. For four plants Mr. Finnigan was again to the front, staging similar varieties to those in his previous collection, except a beautiful small white variety named Snowball; Messrs. J. Hurst, gr. to W. B. Bowering, Esq., and W. Bustard were placed equal 3d. For one standard Mr. E. Green took the lead with a fine specimen of Mrs. Dixon. The same exhibitor and Mr. Gowan were the competitors for one pyramid, both staging well-grown plants.

Stove and Greenhouse Plants.—These were scarcely so conspicuous as at past exhibitions, except the Crotons staged by Mr. W. Mease, gr. to C. W. Newmann, Esq., Wyncote, Allerton, which were remarkable examples of cultivation. In the class for six plants, not less than three in flower, there were three collections. Mr. Mease was a long way ahead, showing well Croton Disraeli, 6 feet through, and well coloured; Gleichenia Mendeli, about the same size, and in excellent health; Centropogon Lucyanus, about 7 feet through, and well bloomed; Azalea Ambroise Verschaffelt, Bouvardia Vreelandi, and a good Thrinax elegans. Mr. A. R. Cox, gr. to W. H. Watts, Esq., Allerton, was 2d, his best plant being Croton angustifolius. For four plants, two flowering and two foliage, Mr. W. Mease was again 1st, with Crotons Williamsii and majesticus, about 7 feet through each, and in splendid condition. His flowering plants were a large pot of Calanthe Veitchii and Azalea amœna; Mr. J. Hurst was 2d, his best plant being Phœnix rupicola.

For three Palms, or Cycads, there were only two exhibitors, and Mr. Thrupp took the lead, followed closely by Mr. Whitfield. For one plant the last-named exhibitor was 1st with a large specimen of Kentia australis, Mr. Thrupp being the other competitor. Epiphyllums were well represented, and the plants staged were of large size, and remarkably well bloomed. Mr. P. Barber, gr. to Mrs. Barnsley, Aigburth, was 1st; Mr. Vaughan, gr. to R. Coltart, Esq., 2d; and Mr. Bustard, gr. to J. Lewis, Esq., 3d. For one plant the competition was keen, and Mr. Barber and Mr. E. Green, gr. to J. Woolwright, Esq., Aigburth, were placed equal 1st. Messrs. Vaughan and Thrupp took the remaining awards in the order as named.

Primulas were fair, some seven exhibitors staging for the prizes offered for the best six plants. The plants were large and moderately well flowered. Mr. Brown, gr. to G. Webster, Esq., Upton, was 1st with the most brilliant-coloured specimens; Messrs. E. Green and J. Phythian 2d and 3d. Standard Mignonettes were good. Mr. W. Evans, gr. to Mrs. Lockett, took the lead, followed by Messrs. J. Hurst and W. Bustard.

Table plants were small and neat, especially the 1st prize lot staged by Mr. G. Park, gr. to R. A. Ffarrington, Esq., Wigan. His most striking plants were Croton angustifolius, Pandanus Veitchii, Geonoma gracilis, and Dracæna Guilfoylei. Mr. S. Agnew, gr. to Mrs. Watts, was a close 2d, and Mr. Thrupp a good 3d. Mr. E. Green was the principal prize-taker for Poinsettias, and Mr. J. Phythian for Roman Hyacinths, neither being as good as are generally seen in Liverpool.

Ferns.—There were only three exhibitors in the class for six stove and greenhouse varieties. Mr. J. Stephenson, gr. to Mrs. Horsfall was well 1st, showing Adiantum excisum, 4 feet through; A. formosum, A. farleyense, good; and a large Davallia Mooreana, 7 feet through. Mr. Gore, gr. to T. Holder, Esq., Princes Park, 2d, with a good plant of Cibotium regale. Mr. J. Gore was 1st for one Tree Fern, showing Dicksonia antarctica; and Mr. G. Leadbetter, gr. to T. S. Tinnis, Esq., Huyton, 2d, with the same variety; Mr. J. Phythian 3d, with Alsophila australis.

Orchids.—The schedule only provided four classes for these plants, but for the prizes offered the plants exhibited were not only of better quality, but more numerous than we have before seen them in St. George's Hall. For three plants (distinct), Mr. J. Wilson, gr to J. E. Reynolds, Esq., Sandsfield Park, West Derby was 1st, having well flowered plants of Dendrobium heterocarpum, Odontoglossum Londesboroughianum, and O. Alexandræ; Messrs. W. Moss, gr. to W. Holland, Esq., and J. Edwards, gr. to S. Walker, Esq., were placed equal 2d, the former showing Lælia anceps, and the latter Masdevallia tovarense. Mr. J. Edwards was 1st for one plant, with a good Odontoglossum Alexandræ, Mr. J. Wilson 2d with the same variety, and Mr. J. Gore 3d. For two Calanthes Mr. Moss took the lead with very fine plants, and Mr. J. Stephenson was 1st for one plant.

Fruit.—For the collection of twelve dishes Mr. J. H. Goodacre, Elvaston Castle, Derby, took the lead, followed closely by Mr. Hannagan, gr. to R. C. Naylor, Esq., Hooton Hall, Chester. The former staged two fair Pines, Grapes—Gros Colmar, well-coloured large berries, but small in the bunch; Barbarossa, and Alicante, good in every respect, but rather small in the berry; while Golden Queen and Mrs. Pince were good; a small fruit of Read's hybrid Melon; Pears—Glou Morçeau, Beurrè Diel; Apple—King of the Pippins, &c. The second collection contained good Alicante and Gros Colmar Grapes, Conqueror of Europe Melon, good Duchesse d'Angoulême, Beurre Diel, and Glou Morçeau Pears. There were four exhibitors in the class

for six dishes (Pines excluded). The last-named exhibitor was 1st, having good Muscat of Alexandria Grapes, Ribston Pippin and King of the Pippins Apples, and good Pears—the same as in his 2d prize collection. Mr. W. Mease was 2d, having good Durondeau Pears, and the same variety of Grapes. Mr. W. Evans was 3d, with rather inferior Grapes, his other dishes being good.

For two bunches of black Grapes (Muscat flavour), Mr. J. Kelley, gr. to Messrs. Reynolds & Co., was 1st, with good examples of Mrs. Pince; Mr. W. Roberts, gr. to T. Harrison, Esq., Gateacre, 2d; and Mr. J. Stephenson, 3d, both showing the same variety. There were fourteen competitors in the class for two bunches of black (any other variety). Mr. F. Fergusson, gr. to Mrs. Patterson was 1st, with large well finished bunches of Barbarossa; Mr. W. Lewis, gr. to T. Hardy, Esq., Kimberley, Notts, 2d, with Gros Colmar, a fine well coloured bunch, with berries of a very large size; and Mr. W. Wilson, Gateacre, 3d. Seven lots were staged in the class for two bunches of white Grapes (Muscat flavour); and Mr. G. Middleton, gr. to R. Pilkington, Esq., Rainford Hall, was 1st, with well finished Muscat of Alexandria; Mr. W. Roberts 2d, and Mr. F. Elcock, gr. to W. H. Dixon, Esq., 3d. For two bunches of any other variety of white Grape there were six lots staged. Mr. Wallis, Keele Hall, was 1st, with beautiful examples of Golden Queen; Mr. W. Mease followed, with White Tokay[illegible]; and Mr. J. Hurst 3d. For four varieties of Grapes (distinct) there were eight competitors. Mr. Lewis secured the premier position with a large bunch of Barbarossa, Gros Colmar, and a Muscat Hamburgh; Mr. J. Wallis was a good 2d, having smaller but well finished bunches; Mr. C. Finnigan being the remaining successful exhibitor.

In the open class for a collection of eight dishes of Pears Mr. Goodacre was 1st, with grand dishes of Gros Calabasse, very large; Marie Louise, Beurré Diel, large; Beurré Clairgeau, Doyenné du Comice, Duchesse d'Angoulême, Napoleon, and General Todtleben. Mr. Hannagan was placed 2d, having good Glou Morçeau and Hacon's Incomparable; Mr. J. Lowndes being 3d. Mr. W. Mease was successful in the corresponding class for four dishes with Marie Louise, remarkably fine; Beurré Bachelier, and Beurré Diel; Messrs. Hannagan and Lowndes were 2d and 3d in the order named. For one dish (local) Mr. W. Evans was 1st, with Beurré Diel; Mr. Hannagan 2d, with Marie Louise; and Mr. W. Mease 3d with Winter Nelis; sixteen dishes were staged in this class. For one dish of stewing Pears (open), Mr. Goodacre was 1st with large fruits of Catillac, Mr. J. Kelley 2d with the same variety, and Mr. W. Gardiner, gr. to S. E. Shirley, Esq., 3d.

Apples, considering the season, were plentiful and very fine; there were six collections staged in the class for six dessert kinds—Messrs. Hannagan, Gardiner, and Goodacre, being the successful competitors. The 1st collection comprised Blenheim Orange, King of the Pippins, good; Golden Reinette, Fearn's Pippin, and Ribston Pippin; Mr. Gardiner showing well Cox's Pomona, Adam's Pearmain, and Baxter's Pearmain. In the corresponding class (local) for three dishes Mr. S. Whitfield was 1st, with good Wyken Pippin, Blenheim Orange, and Ribston Pippin—Messrs. W. Evans and Hannagan being 2d and 3d. For one dish Mr. Foster took the lead. For eight dishes of kitchen varieties Mr. Hannagan was 1st, with grand dishes of Alfriston, Warner's King, Dumelow's Seedling, Hawthornden, and Yorkshire Greening. Mr. Gardiner was 2d with superb dishes of Cox's Pomona and Blenheim Orange, and Mr. Goodacre 3d—five collections being staged. In the local class for four dishes Mr. T. Johnston, Higher Bettington, was 1st, having D. T. Fish, very large; and Rylance's Surprise. Mr. Hannagan 2d, having good Mère de Ménage, Messrs. Johnston, Whitfield, and Evans, were the prize-takers for one dish.

Miscellaneous exhibits.—Mr. Swan, gr. to W. Leech, Esq., Oakley, Fallowfield, staged a new hybrid Dendrobium named Leechianum, raised by him between D. nobile and D. heterocarpum. The specimens exhibited were covered with blooms of an immense size, and were the admiration of all who saw them. The judges awarded Mr. Swan a First-class Certificate, which was well deserved. Messrs. R. P. Ker & Sons, Aigburth Nurscry, contributed a large assortment of small decorative foliage and flowering plants; the Horticultural Company (John Cowan), Garston Vineyard, a similar group; Messrs. Cannell & Sons, Swanley, Kent, collections of zonal Pelargonium blooms and Salvias, in their usual neat style—amongst the latter Mons. Issachen was very striking; Messrs. J. Dickson & Sons, Newton Nurseries, Chester, a box of Euonymus radicans variegata (new), also a collection of Pernettyas; Mr. C. Rylance, Ormskirk, a collection of Apples; Mr. W. Lewis, a large well finished bunch of Barbarossa Grape, for which an extra prize was awarded.

The chairman, Mr. Richardson, Curator, Botanic Gardens, and the able committee of gardeners, deserve congratulating upon the able manner in which the exhibition throughout was conducted.

Ealing Horticultural Society.—The annual autumn exhibition of this flourishing suburban society is always a pretty one, and certainly the one held at the Drill Hall, Ealing Dean, on the 22d ult. was if possible even prettier and certainly much brighter than its fellows. The show is always rich in decorative groups of plants, and on this occasion the whole of the large elevated platform was well occupied by a fine lot of plants most effectively arranged by Mr. Smith, gr. to T. Pye, Esq., and well merited the first place in the miscellaneous class. Other fine groups came from Mr. Hudson, gr. to H. J. Atkinson, Esq., Gunnersbury House, who exhibited his customary excellent taste in arrangement, his plants including Palms, Dracænas, Crotons in rich colour, Calanthes, Narcissi, Solanums, Chinese Primroses, &c. Mr. Hunt, gr. to C. N. Peal, Esq., Ealing, had a very bright group, as also had Mr. Chadwick, gr. to E. M. Nelson, Esq., Hanger Hill; and from Mr. Fountain, gr. to Miss Wood, also of Hanger Hill, came a capital group of Ferns and Mosses. From the trade growers came capital collections, Mr. H. B. Smith, of Ealing Dean, having a superb lot of his giganteum compactum Cyclamen, of splendid form and quality. Messrs. C. Lee & Sons, Ealing, set up not only a fine group of Chrysanthemums in pots, but sent also some eight dozen fine cut flowers. Messrs. Fromow & Sons of Turnham Green had a grand group of large flowered Chrysanthemums in pots. A better has hardly been seen this season, and being neatly faced with small Palms, Crotons, and Grevillea robusta, had a telling appearance. Mr. Weedon, Ealing, and Mr. R. Dean, both exhibited collections, the first of excellent plants, and the latter some thirty dishes of good Potatos. There were numerous collections of plants in the various classes — large flowered pompons and Japanese Chrysanthemums, Chinese Primroses, Solanums, Stove and Greenhouse plants, and various other things, all materially helping the show. The chief competitive feature of the exhibition was the open class for twenty-four blooms, eight of them to be Japanese. Five growers competed, and the best lot came from Mr. C. Herrin, gr. to J. N. Hibbert, Esq., Chalfont Park, Gerrard's Cross, who had in his boxes fine blooms of Baron de Prailly, Grandiflorum, Mons. Ardene, Fair Maid of Guernsey, Madam Andiguier, and Meg Merrilies, Japanese; and Empress of India, Jardin des Plantes, Prince Alfred, Princess Beatrice, Barbara, and Cherub, all fine, amongst his incurved flowers. A good lot came from Mr. J. Baird, gr. to C. Dane, Esq., Ealing, who was 2d. The general quality was so good, that prizes were awarded to each of the exhibitors. Amongst other cut blooms, which were many and very good, the bunches of pompons were perhaps the best. Mr. Nye's gardener had a fine stand of dozen kinds, comprising Marabout, Charles Dickens, St. Thais, Adele Presette, Alexandria, Mdlle. Marthe, Mrs. Anstie, St. Michael, Madame Montells, Mustapha, and the pretty white Bijou d'Horticulture. Mr. Baird had the best six pompon bunches, and Mr. R. Dean was 2d, both having Marabout, Mdlle. Marthe, Adele Presette, &c.

There were not less than sixteen competitors for the prizes for four dishes of Potatos, offered by P. McKinlay, Esq., Mr. Wright, gr. to G. Greenfield, Esq., Hanwell, coming 1st with Fillbasket, Schoolmaster, Beauty of Hebron, and Magnum Bonum—a cottager, Jas. Wilson, Jun., coming 2d with Blanchard, Vicar of Laleham, International, and Holborn Favourite. The samples were all remarkably fine and good. In the class for three dishes another cottager was 1st with handsome samples of Schoolmaster, International, and Vicar of Laleham. There were eleven entries in that class. The best cooked kidney Potato shown was Magnum Bonum, and the best round Radstock Beauty, both admirably served up by the same cottager. Collections of six kinds of vegetables were largely shown, Mr. Stone, gr. to W. Mead, Esq., Ealing, having the best lot. Mr. Wardle, gr. to C. Cunner, Esq., Twyford Abbey, had in dishes of Blenheim Pippin, Nelson Codlin, and Pott's Seedling, the best kitchen Apples; and in Margil, King of the Pippins, and Blenheim Pippin, the best dessert kinds. Some wonderful samples of Beurré Bachelier Pear, not for competition, were sent by Mr. Garland, gr. to C. B. Bensley, Esq., Greensford; and Mr. Baird had some good Black Alicante and Bowood Muscat Grapes.

The cottagers' vegetables were as usual wonderfully good.

Staines District Chrysanthemum Society.—This is a newly formed Society, and held its first show in the Staines Town Hall, a new and capacious building, on the 23d ult. If the beginning is to be accepted as an augury of its future the shows to come will soon occupy a high position. It is in the expansion of societies and exhibitions of this sort that we see how fast and wide is a love for the Chrysanthemum spreading, and in time we may look to find an autumn exhibition of this grand hardy flower in every small town in the kingdom. As is usual in the arrangement of these shows, the groups of plants in flower were arranged round the sides of the hall, and the fact that not less than eight of these, and all showy and good, were in competition shows at once that there is no lack of growers of the popular autumn flower in the district. The best group, carrying a lot of fine blooms, and the plants effectively arranged, were sent by Mr. Thatcher, gr. to H. L. Benwell, Esq., Thorpe; Mr. Hutchings, gr. to C. Ashby, Esq., Staines, taking 2d place also with an excellent lot of plants; and Mr. H. Craile, gr. to G. F. Yeo, Esq., Staines, was a good 3d. Some extra prizes were awarded in this class. Large-flowered dwarf-trained plants were but moderate, as might be expected at a first show, and yet curiously enough the four large-flowered standards sent by Mr. Sims, gr. to J. W. Pimm, Esq., Staines, were so good that we have not seen better this autumn. They consisted of Refulgence, St. Patrick, Venus, and the Japanese Elaine. Mr. Craile showed for the 2d place four hardly less meritorious plants. Mr. Sims had in St. Michael and Mr. Murray the best pair of standard pompons, and they were, if not large, at least capitally grown and flowered. There were also some pyramid plants, but these in one case were too stiffly tied, and in another, and, of course, the most effective plants, had all the blooms tied to one face.

As we have remarked elsewhere, zonal Pelargoniums, for which a class for six plants was included, were finely represented, there being several collections. Mr. Sims' beautiful plants occupied a prominent place on the platform, and others, including a capital but less trained lot, came from Mr. J. Cox, gr. to F. Neville, Esq., Staines, the white and scarlet forms of Vesuvius being superbly flowered. There were numerous good Chinese Primulas, Mr. Sims having the best half-dozen, young and well flowered. Mr. H. Jemmett, gr. to H. C. Paice, Esq., Egham, had the best six Solanums, well-berried plants; and Mr. Riddick, of Egham, was 1st with six pots of Mignonette, dwarf, full of bloom, and admirably grown. There were some half-dozen collections of this sweet-scented plant staged. Cyclamens were in moderate form, the best coming from Mr. Jemmett. Cut flowers were fairly good, but the competition in the open classes for twenty-four incurved and twenty-four Japanese flowers was poor. Mr. Thatcher had the best twenty-four incurved flowers, a moderate lot, and was also 1st with a similar sample of Japanese. A very good twenty-four incurved blooms in the limited class came from Mr. H. Gray, gr. to Griffith Thomas, Esq., Englefield Green. Mr. Hutchings was 2d in that class, but had the best twenty-four Japanese blooms; whilst Mr. Cox had the best twelve incurved blooms. There was also good competition in the Anemone and pompon varieties. Good Apples came from Mr. Sims, whose 1st prize four dishes were fine Small's Admirable, Beauty of Kent, Ribston and Blenheim Pippins. The best dessert Pears were Beurré Diel and Maréchal de la Cour, and came from Mr. Hutchings, Mr. Thatcher coming 2d with fine Duchesse d'Angoulême and Uvedale's St. Germain. In good bunches of Madresfield Court, Mr. Craile had the best black, several other bunches being staged. Some good vegetables in collections of six kinds came from Mr. Springthorpe, gr. to H. Palmer, Esq., Egham, and others; and Mr. Marcham, gr. to the Count de Morella, Virginia Water, staged twelve kinds of capital quality, but not for competition. Mention must be made of a fine lot of stove and greenhouse plants staged by Mr. Sims, as also a telling group of Chrysanthemums from Mr. Nichol, gr. to W. Burchell, Esq., Laleham, both not in competition. A very pleasing feature of the show was a dinner-table laid and decorated for twelve persons by Messrs. Smith & Larke, of Ashford—Chrysanthemums and Maidenhair Ferns being almost exclusively employed in the floral decorations, which were greatly admired, and it is hoped will stimulate ladies in the district to arrange epergnes and vases at the shows in years to come.

Wellingborough Floral and Horticultural: *Nov. 17 and 18.*—This was to a large extent a Chrysanthemum show, and the spacious Corn Exchange was filled to overflowing with highly creditable collections of plants and cut flowers; fruit and vegetables being well represented. The plants especially, and, indeed, all the exhibits, were a marked advance on those of last year; and it is a matter for great regret that the shows will have to be discontinued for lack of support.

The best six plants of large flowered Chrysanthemums were staged by Mr. Hilburn, gr. to C. J. K. Woolston, Esq., Wellingborough—nice compact well grown and bloomed specimens of medium size; Mr. T. Clayson, gr. to W. Woolston, Esq., was 2d, with good specimens. In the amateurs' class for the same number nice examples were staged by Mr. T. Clayson, who was 1st; 2d, D. Dulley, Esq. Many of the specimens in the foregoing classes bore from forty to fifty well developed flowers. There was a class for six plants grown naturally without any tying down, and here Mr. Hilburn was again 1st, with good examples well grown and flowered: and the same exhibitor had the best group of plants to fill a space of 50 feet, and very showy and pretty they were; Mr. T. Clayson was 2d. With six excellent naturally grown plants, Mr. Dulley was well in 1st in the amateurs' class. Japanese varieties were a pleasing feature, and the company appeared to admire the large and gaily-coloured flowers immensely. Mr. Hilburn had the best six plants. Strange to say no pompon varieties as plants were forthcoming, nor were there classes for cut blooms of these. The best twenty-four blooms of large flowered incurved Chrysanthemums came from Mr. Hilburn, Mr. T. Clayson being 2d. Mr. Hilburn had also the best twelve blooms, Mr. Clayson being again 2d; and the former was the only exhibitor of twelve Japanese Chrysanthemums. In the amateurs' class for twelve cut blooms of incurved Chrysanthemums, Mr. D. Dulley was 1st, and Mr. T. Clayson 2d. In the class for twelve cut blooms of any kinds of Chrysanthemum the order was reversed, Mr. Clayson taking 1st place. In this division Mr. John Martin had the best twelve cut blooms of Japanese varieties.

Collections of plants greatly helped the show. I then class for collections of twelve specimens some capital subjects were staged, and the two groups were admirably displayed at the upper end of the hall. Here Mr. Hilburn was well ahead with very fine examples of Cyathea Smithii, Dicksonia antarctica, Dracæna australis, Latania borbonica, Areca sapida, Encephalartos villosus, Camellia alba plena, &c.; 2d, Mr. Jas. Hibberd, gr. to C. Watkin, Esq., who had a very fine Cycas revoluta, Thrinax elegans, Pandanus Veitchii, Caladium esculentum, &c. Mr. Hilburn had the best six Ferns, and Mr. C. Hibberd the second best; an extra prize was awarded to Mr. D. Percival. In the amateurs' class for six Ferns, Mr. D. Percival was 1st, and J. W. Sharman, Esq., 2d. The class for six plants of any kind brought a pretty group from Mr. Clayson, who had two excellently flowered specimens of the crimson Celosia pyramidalis, Epiphyllum truncatum, Platycerium alcicorne, and others; 2d, Mr. J. W. Sharman. There were classes for Chinese Primulas, and a good lot of plants was also staged for table decorations and bouquets.

Mr. D. Percival had the best two bunches of Grapes, staging excellent examples of Gros Colmar and Mrs. Pince's Black Muscats; Mr. Clayson was 2d, with good bunches of Mrs. Pince and Raisin de Calabre; and Mr. D. Dulley was placed equal 2d with two good bunches

of Gros Colmar. Mr. Percival had the best collection of fruit in the open class, staging Gros Colmar and Mrs. Pince Grapes, and fine Pears and Apples. In the amateur class Mr. J. Dulley had the best collection of fruit, showing Lady Downe's, Raisin de Calabre, and Gros Colmar Grapes, Pears, and Apples.

In the cottagers division there was a good display, a few of the plants of Chrysanthemums being especially well grown; they also showed capital culinary and dessert Apples, which, though not numerous, were yet very good.

The Birmingham Chrysanthemum Exhibition took place on Wednesday and Thursday, Nov. 22 and 23, in the Town Hall. Although a good exhibition and well attended, the specimen Chrysanthemums generally were not up to the usual standard, but there were notable exceptions, especially Mr. Dyer's nine plants, which took the 1st prize in class 1, and Mr. J. Crook's excellent six plants, which took the 1st prize in class 2. The specimen pompons were very fine plants, but were not fully open. In the cut-flower class Mr. G. A. Everett took the 1st prize with an excellent lot, and Mr. Thomas Tonks exhibited well in this class. Two stands of Japanese varieties, exhibited by the two growers just named, were very fine indeed, and were much admired. In the classes for ornamental flowering plants, Mr. Walter Jones, gr. to C. E. Mathews, Esq., and Mr. Dyer, gr. to Walter Showell, Esq., were in the front rank with well-grown specimens, Mr. Jones' lot being especially good, Chinese Primulas were plentiful, and as usual fine. Mr. Tomkins' two celebrated varieties, Princess Louise, and Marquis of Lorne, standing out conspicuously. Mr. Stacey, gr. to S. Eaton, Esq., and Mr. G. Caldicott, gr. to W. Mathews, Esq., taking the leading prizes.

The fruit department of the exhibition was restricted this season in the display of Apples and Pears, a circumstance easily accounted for, but it was a matter of surprise to many to see so many dishes of really fine well coloured fruits. Mr. W. Gardiner, gr. to S. E. Shirley, Esq., Stratford-on-Avon, took the 1st prize for twelve dishes, with a fine lot consisting of Belle du Bois, Yorkshire Greening, Warner's King, Roundaway, Magnum Bonum, Cox's Pomona, Hawthornden, Ribston Pippin, Cox's Orange Pippin, Rivington Pippin, Blenheim Orange, very fine Margils, and Adam's Pearmain. Mr. W. H. Bannister, of Bristol, was a capital 2d. Pears were poor, but the black Grapes throughout the show were remarkably good, as also the Muscats.

Messrs. H. Cannell & Sons, Swanley, sent a very fine display of cut blooms of single and double Pelargoniums, and several Salvias of considerable beauty and merit. Mr. Hans Niemand, of the Royal Nurseries, Birmingham, contributed a most tastefully arranged group of plants, including several splendid pure white Cyclamens of great size and substance; and Messrs. Pope & Sons, of the King's Norton Nurseries, sent a quantity of exceedingly well done very dwarf Zonal Pelargoniums and Ferns, and other plants. Messrs. Perkins & Sons, Coventry, sent, not for competition, two large and beautiful wreaths, a cross of white Camellias, and other flowers and Maidenhair Ferns. Some first-class bouquets were exhibited as well as many other things which have not been enumerated.

Obituary.

LIVERPOOL papers record the death, in his sixty-third year, of Mr. Thomas Whalley, seedsman, of St. George's Crescent, in that city. Mr. Whalley was very much respected throughout the Agricultural districts of Lancashire and Cheshire, and with his father had been connected with the trade of Liverpool for nearly a century.

MR. GEORGE WAILES.—The death of this gentleman, at his residence at Gateshead, in his eightieth year, is announced. Mr. WAILES, as we learn from a local journal, was one of a famous band of young naturalists, of whom, in the days of few and dear publications, there were several in the provincial towns, and who did good service by establishing museums and developing a taste for natural history among their townsmen. Joshua Alder, Albany Hancock, William Hutton, and W. C. Hewitson, may be mentioned as a few among the associates of Wailes, who made Newcastle famous. Mr. Wailes was an active member of Philosophical Societies, Field Clubs, and the like. His special peculiarities lay in the direction of entomology, botany, and gardening. In this latter connection his memory will be handed down to posterity in the name Wailesia attached to a genus of Orchids by Lindley. At one time he was a frequent correspondent of this journal, and to the last took great pride in his garden. Alpine plants and Orchids were his pet subjects of predilection—in themselves affording evidence of his good taste.

MR. HENRY WINTHROP SARGENT, whose death at his country seat of "Wodenethe," on the Hudson River, is announced, was, perhaps, the only American who has exclusively, and without other occupations, devoted by far the best part of his life to the enjoyment and study of the art of living in the country, and to the practice of horticulture. Such lives are not uncommon in England; they are rare amid the struggles of our newer civilization. Chance took him to the neighbourhood of Newbury, the home of Downing. A similarity of tastes made the two men intimate; and Mr. Sargent received from his friend his earliest lessons in landscape gardening, of which Downing was a master, and his first knowledge of trees. He was an apt scholar; Wodenethe under his hand became one of the most beautiful and instructive gardens of the English school; and its master, during a full quarter of a century, the most widely known and famous of American gardeners. Wodenethe was not a great place, and its master wisely resisted that insatiate greed for land which has destroyed so many estates; and was content to look on without owning one of the fairest views the Hudson even can afford. Mr. Sargent published with copious notes two editions of Downing's classical treatise on landscape gardening, and a useful guide to the finest country seats and gardens of Great Britain; but his writings are not a criterion of his reputation or his influence, to which may be directly traced the best inspirations of modern American gardening. Mr. Sargent was particularly interested in the introduction and cultivation of exotic trees, and his experiments and studies in this direction have been of great and lasting value to the country. "Wodenethe" has been the grave of thousands of trees, but they have not died in vain, and much of our knowledge of the power of the trees of other parts of the world to adapt themselves to our climate is due to Mr. Sargent's enterprise and zeal. No disappointments discouraged his enthusiasm or checked the energy that has made his garden a Mecca to the student of the art of gardening or the lover of trees. *Boston Daily Advertiser, Nov.* 13.

—— Died on November 19, at Newton Court Gardens, Mrs. W. CARMICHAEL, wife of Mr. Carmichael, gardener, of Newton (late of the Royal Gardens, Sandringham). Mrs. Carmichael was well known to and gardeners for her genial hospitality. At her funeral on the 24th horticulture was well represented by Messrs. Low, of Euston Park; MacArthur, of Elvedon; Palmer, of Drinkstone; Grieve, of Bury; and D. T. Fish, of Hardwicke.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, NOV. 29, 1882.

Month and Day.	Barometer. Mean Reading Reduced to 32° Fahr.	Barometer. Departure from Average of 18 years.	Temperature of the Air. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years	Hygrometrical Deductions from Glaisher's Tables 6th Edition. Dew Point.	Degree of Humidity. Sat. = 100.	Wind. Average Direction.	Rainfall.
Nov	In.	In.	°	°	°	°	°	°			In.
23	29.29	—0.39	55.0	51.0	4.0	53.0	+11	34	83	W: SW	0.15
24	29.19	—0.52	52.5	44.2	8.3	47.4	+ 5	84	1 4	78	W. S.W.	0.15
25	29.14	—0.55	47.5	42.5	7.0	43.4	+ 1	83	0.3	85	S.W.: W. S.W.	0.01
26	29.27	—0.43	48.0	39.5	8.5	43.1	+ 1	53	6 3	77	S.W.	0.00
27	29.64	—0.06	43.5	34.0	9.5	38.6	— 3	03	2 4	78	W:NW. W.N.W.	0.00
28	29.88	+0.18	41.5	33.0	8.5	37.5	— 4	1	30.1	75	N.W.	0.00
29	29.53	—0.14	46.0	32.3	13.7	41.0	— 0.7	29.0	62	W.N.W.	0.31
Mean	29.43	—0.27	47.7	39.2	8.5	43.4	+ 1.8	36.7	77	S W	0.62

Nov. 23.—Fine bright morning, deep blue sky; dull and overcast afternoon, gusts of wind at times. Slight rain falling occasionally. Heavy rain at night.
— 24.—A dull overcast day, fine from 1 to 2 P.M., blue sky between clouds. Dull and nearly overcast at night.
— 25.—Fine day till 2.30 P.M., then dull and overcast. Dark clouds passing, drizzling rain in early part of evening. Fine night.
— 26.—Fine and bright till 1 P.M., dull and overcast afterwards. Cool bright evening.
— 27.—Fine bright day till 3 P.M. Slight rain at 4 P.M. Cold and windy night.
— 28.—Fine bright day, cold and windy. Cloudy night, cold.
— 29.—A dull, overcast, wet rainy day and night.

LONDON: *Atmospheric Pressure.*—During the week ending November 25, the reading of the barometer at the level of the sea decreased from 29.69 inches at the beginning of the week to 29 38 inches by 3 P.M. on the 20th, increased to 29.86 inches by 3 P.M. on the 21st, decreased to 29.50 inches by 3 P.M. on the 22d, increased to 29.59 inches by 9 A.M. on the 23d, decreased to 29.28 inches by midnight on the 23d, increased to 29.71 inches by midnight on the 24th, and was 29.29 inches by the end of week.

The mean reading for the week at the level of the sea was 29.49 inches, being 0.34 inch lower than last week, and 0.39 inch below the average of the week.

Temperature.—The highest temperature in the week was 55°, on the 23d; on the 21st the highest temperature was 43°. The mean of the seven high day temperatures was 48°.9.

The lowest temperature in the shade in the week was 34°, on the 20th; on the 23d the lowest temperature was 51°. The mean of the seven lowest temperatures was 40°.

The greatest range of temperature in one day was 14°.5, on the 22d; the smallest was 4°, on the 23d. The mean of the seven daily ranges was 8°.9.

The mean temperatures were—on the 19th, 41°.7; on the 20th, 39°.5; on the 21st, 39°.2; on the 22d, 48°.7; on the 23d, 53°; on the 24th, 47°.4; and on the 25th, 43°.4; of these the first three were below their averages by 0°.1, 2°.2, and 2°.5, respectively, the last four being 7°, 11°.3, 5°.8, and 1°.8 respectively above their averages.

The mean temperature was 44°.7, being 7°.3 higher than last week, and 3° above the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun, was 87°, on the 19th. The mean of the seven readings was 75°.4.

The lowest reading of a minimum thermometer with its bulb placed on grass was 26°, on the 21st. The mean of the seven readings was 32°.1.

Rain.—Rain fell to the amount of 0.66 inch during the week.

ENGLAND: *Temperature.*—During the week ending November 25 the highest temperatures were 59° at Sunderland, 56°.1 at Bristol, and 56° at Truro, Cambridge, and Sheffield; the highest temperature at Bolton was 52°.5, at Brighton 53°, and at Nottingham 53°.8. The general mean was 55°.1.

The lowest temperatures in the week were 25° at Hull, 25°.1 at Nottingham, and 26° at Leeds; the lowest temperature at Truro was 42°, at Plymouth 38°.2, and at Brighton and Blackheath 34°. The general mean was 31°.8.

The greatest ranges of temperature in the week were 29° at Hull and Leeds, and 28°.7 at Nottingham; the least ranges were 14° at Truro, 16°.8 at Plymouth, and 19° at Brighton. The general mean was 23°.3.

The mean of the seven high day temperatures was highest at Truro, 52°.3, at Plymouth 51°.6, and at Sunderland 50°.5; and was lowest at Hull 47°, at Bolton 47°.3, and at Bradford 47°.5. The general mean was 49°.1.

The mean of the seven lowest temperatures was highest at Truro, 45°.6, at Plymouth 42°.7, and at Blackheath and Liverpool 40°; and was lowest at Hull, 32°.6, at Wolverhampton 35°.6, and at Nottingham 36°. The general mean was 38°.4.

The mean daily range was greatest at Hull, 14°.4, at Sunderland 14°, and at Wolverhampton 13°; and was least at Truro, 6°.7, at Liverpool 8°.4, and at Blackheath and Plymouth 8°.9. The general mean was 10°.7.

The mean temperature was highest at Truro, 48°.7, at Plymouth 47°, and at Blackheath 44°.7; and was lowest at Hull, 39°.6, at Bolton 41°.5, and at Wolverhampton 41°.9. The general mean was 43°.5.

Rain.—The largest falls were 3.11 inches at Bolton, 1.90 inch at Liverpool, and 1.53 inch at Bradford. The smallest falls were 0.42 inch at Cambridge, 0.34 inch at Sunderland, and 0.58 inch at Hull. The general mean was 1.10 inch. At Bolton rain fell on every day; the largest fall was on the 22d, equal to 0.78, and the smallest was 0.20, on the 24th. Rain fell on every day in the Midland Counties, and four on six days at most other stations.

SCOTLAND: *Temperature.*—During the week ending November 25, the highest temperature was 54°.2, at Edinburgh. The highest temperature at Perth was 40°. The general mean was 50°.4.

The lowest temperature in the week was 27°.6, at Aberdeen; at Leith the lowest temperature was 33°.1. The general mean was 30°.2.

The mean temperature was highest at Leith, 42°, and lowest at Perth, 33°.7. The general mean was 39°.5.

Rain.—The largest fall was 2.73 inch, at Greenock, and the smallest fall was 0.55 inch at Dundee. The general mean fall was 1.47 inch.

JAMES GLAISHER, F.R.S.

Variorum.

TURNIP CULTURE.—The following conclusions are drawn from the experiments of the Sussex Association for the Improvement of Agriculture :—

"We were fortunate," says Mr. Jamieson, "in procuring in Sussex a poor but fine sand, blackened to the depth of about 1 foot by the organic matter which characterises 'soil.' The underlying yellowish-white sand (on the Greensand formation) contained mere traces of plant food—what it had originally contained having been drawn up by means of the roots of grass, &c., to the soil above. The black sandy soil was entirely removed, thus exposing the sand, fine and moist, but almost destitute of plant food. The surface was then laid off in plots about 7 feet square, and the sand within these squares was dug out to the depth of 1 foot ; this mass of whitish sand was piled up in one large heap in such a way as to be well mixed, and it was then replaced in the several beds. Do not let it be said that this was not a natural or suitable medium to grow plants in, for when manured judiciously it yielded 20 tons of Swedes per acre !

"By merely preparing a good seed-bed, and sowing good Swedish seed, the plants grew a short time, struggled to exist, but, failing to find nourishment, died without getting much beyond the germinating stage.

"When we gave a mixture containing all the essential ingredients of plant life, with the exception of phosphate, the plants survived during the whole season, but failed to bulb, or produced only pitiable bulb resemblances. These when weighed, and calculated to an acre, gave the produce as half a ton.

"When, however, we added to the above mixture a moderate quantity of phosphate, and that in the form which had formerly been stated as "having no effect" on plants (viz., coprolite powder, *i.e.*, the natural insoluble mineral phosphate), the plants throve well, bulbed well, and the produce amounted to about 20 tons per acre.

"When other phosphates (bone-ash, superphosphate, steamed bone-flour) were used, in quantities containing precisely the same quantity of phosphorus as was given in coprolite, the produce was almost identical, the lowest about 20, the highest under 23 tons per acre. Duplicate plots of each manure corresponded with satisfactory closeness."

Enquiries.

He that questioneth much shall learn much.—BACON.

COTTON SLAG.—I should be much obliged if one of your correspondents could tell me the name and address of the maker of a non-conducting substance called, I believe, "cotton slag," which is placed on hot-water pipes. I saw some in use at South Kensington at the Smoke Preventive Exhibition. *Thorne.*

HOOIBRENKIA MAGNIFICA.—Two correspondents—one from Vienna—ask for information about this plant. We have no personal knowledge of it, but we are informed by one of our correspondents that the plant is apparently synonymous with Staphylea colchica.

Answers to Correspondents.

BOOKS : *Subscriber.* 1, Paxton's *Botanical Dictionary*, published by Bradbury, Agnew, & Co. ; 2, Loudon's *Encyclopædia of Plants* is published by Longmans & Co.—*C. Palmer.* We know that one part is in the press, but when it will be published we cannot say. You should write to the author.

CHRYSANTHEMUMS : *James Villiers.* Incurved sorts for exhibition—Queen of England, Empress of India, Princess of Wales, Mrs. Heale, Prince Alfred, Refulgence, Beauty, Mr. Brunlees, Empress Eugènie, Mrs. Haliburton, Lady Hardinge, and Jardin des Plantes. Incurved varieties for training—Mrs. George Rundle, Mrs. Dixon, George Glenny, Prince Alfred, Lady Talfourd, Princess Teck, Lady Hardinge, Mr. Gladstone, Mr. Bunn, Mrs. Haliburton, White Venus, and Hero of Stoke Newington. Japanese flowers for exhibition—Fair Maid of Guernsey, Bouquet Fait, Triomphe du Châtelet, Curiosity, Baron de Prailey, Madame C. Audiguier, Comtesse de Beauregard, Comte de Germiny, Criterion, Thunberg, Garnet, and L'Incomparable.

COCOANUT-FIBRE REFUSE : *Mr. Beechwood.* The refuse is used in gardens as a plunging material both out-of-doors and under glass, and as a mulching for summer bedding plants and half-hardy plants, or any requiring their roots to be protected from frost in winter. It is useless as a manure, and would do more harm than good to light soils, but would help in improving the texture of heavy ones.

ERRATUM.—At p. 684, col. *c*, 27th line from the top, for "Aussen" read "Sussex."

NAMES OF FRUITS : *H. H.* Your Apple is Golden Pearmain.—*William Hay.* 1, Forge ; 2, King of the Pippins.

NAMES OF PLANTS : *R. M.* must send better specimens. The worst bits he could find are not the best to send.—*G. B.* Zenobia pulverulenta, a variety of Z. speciosa. Yes, send good specimens, not more than four at a time, and address them to the Editor, not to the publisher.—*H. A.* Marica cœrulea.—*S. N.* 1, Luculia gratissima ; 2, Centropogon Lucyanus ; 3, Strobilanthes isophylla ; 4, Schauera virginea (we should be glad if you could send us a good specimen for the herbarium) ; 5, may be Heeria rosea, but specimen is too poor ; 6, Ouvirandra fenestralis.—*D. B. Crawshay.* 1, Epidendrum cochleatum ; 2, Epidendrum stenopetalum.

SPRING FLOWERS : *S. Jones.* The wording of the schedule—*i.e.*, "Collection of thirty-six spring flowering hardy plants in flower"—is very vague, but we should think there can be no doubt the committee mean hardy herbaceous and alpine plants, and any one showing those only could not be disqualified. Forced Rhododendrons should be rigorously excluded from such a class, as also Lily of the Valley and Spiræa, or any other plant forced into bloom out of its natural season. It is a pity the committee did not make their meaning clearer, as they could very easily have done.

*** Correspondents are specially requested to address, post-paid, all communications intended for publication to the "*Editor*," and not to any member of the staff personally. The Editor would also be obliged by such communications being *written on one side only of the paper* and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Letters relating to ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the Publisher, and* not *to the Editor.*

☞ FOREIGN SUBSCRIBERS sending Post-Office Orders are requested to send them to the Publisher of this journal, 41, Wellington Street, Covent Garden, and to make them payable to William Richards, at the post-office, Drury Lane, London, W.C.

CATALOGUES RECEIVED.

CLARK BROTHERS & Co., 65, Scotch Street, Carlisle—Forest and Ornamental Trees, Fruit Trees, &c.

THOMAS IMRIE & SONS, Ayr—Forest Trees, Conifers, Roses, Fruit Trees, &c.

COMMUNICATIONS RECEIVED.—W. S.—S., Bournemouth.—W. D.—G. Lawson.—H. H., Bournemouth.—J. W. M.—Daniels Bros.—J. J. W.—H. J. C.—A. H.—B. S. W.—C. T.—W. S.—R. H. G.—F. P.—T. B.—C. W. D.—A. W.—I. O. W.—D. C. P. (many thanks, crowded out).—J. C. F.—J. B.—J. S.—Heath & Son.—R. P. G.—D. B. C.—F. A. F.—H. J. Ross.—J. Vander Swaelmen (the flowers arrived in such poor condition that we can make nothing of them).—H. Clack (we cannot undertake to name Florists' Flowers).—J. Seward.—W. T. T. D.—D. T. F.—E. A., Paris.—T. S.—W. E. G.—R. M'L.—T. M.—E. R.—B. S. T.—F. W. B.—F. D.—J. D. D.—D. W., Vienna.—E. J. B.—H. W., Vienna.

DIED, on the 28th ult., Mr. GEORGE HAVELOCK, of the Abbey Wood Nurseries, Lessness Heath, Kent, aged fifty-six. The deceased had been proprietor of the above nurseries for thirty years, and passed away respected and beloved by all who knew him.

Markets.

COVENT GARDEN, November 30.

OUR market is now very quiet, there being little English outdoor fruit on offer. Canadian goods reaching us in first-rate condition, and realising good prices. *James Webber, Wholesale Apple Market.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Aralia Sieboldii, doz.	12 0	24 0
Arbor-vitæ (golden), per dozen	6 0	18 0
— (common), dozen	6 0	12 0
Azaleas, per dozen	30 0	60 0
Begonias, per doz.	6 0	12 0
Bouvardia, doz.	10 0	18 0
Chrysanthems., doz.	6 0	18 0
Coleus, per dozen	4 0	6 0
Cyclamen, doz.	9 0	24 0
Dracæna terminalis	30 0	60 0
— viridis, per doz.	12 0	24 0
Epiphyllum, dozen	18 0	30 0
Euonymus, various, per dozen	6 0	18 0
Evergreens, in var., per dozen	6 0	24 0
Ferns, in variety, per dozen	4 0	18 0
Ficus elastica, each	1 6	7 0
Foliage Plants, various, each	2 0	10 6
Genista, per doz.	8 0	12 0
Hyacin. (Rom.), per pot	1 6	2 0
Marguerite Daisy, per dozen	6 0	12 0
Myrtles, per doz.	6 0	12 0
Palms in variety, each	2 6	21 0
Pelargoniums, scarlet, per doz.	6 0	12 0
Solanums, per doz.	9 0	12 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Abutilon, 12 blooms	0 2	0 4
Arum Lilies, per doz.	6 0	8 0
Azalea, 12 sprays	1 0	2 0
Bouvardias, per bun.	0 6	1 0
Camellias, per dozen	2 0	4 0
Carnations, 12 blms.	1 0	3 0
Chrysanth., 12 bun.	4 0	9 0
— (Fr.) per bunch	0 6	1 6
— white, 12 bunches	6 0	12 0
— 12 blooms	1 0	2 6
Cyclamen, 12 blooms	0 3	0 6
Epiphyllum, 12 blms.	6 0	9 0
Eucharis, per doz.	4 0	6 0
Fuchsias, 12 bunches	6 0	8 0
Gardenias, 12 blms.	6 0	9 0
Heliotropes, 12 sp.	0 6	1 0
Hyacinths (Roman), 12 sprays	2 0	3 0
Lapageria, white, 12 blooms	3 0	6 0
— red, 12 blooms	1 0	3 0
Lilac (French), bun.	8 0	9 0
Lilium various, per 12 blooms	3 0	6 0
Marguerites, 12 bun.	6 0	9 0
Mignonette, 12 bun.	3 0	6 0
Narcissus, 12 sprays	2 0	3 0
—(paper-white), Fr., 12 bunches	2 6	6 0
Pansies, 12 bunches	1 0	3 0
Pelargoniums, 12 spr.	0 9	1 0
— zonal, 12 sprays	0 3	0 6
Primula, double, per bunch	1 0	1 6
Roses (indoor), doz.	2 0	4 0
— (outdoor), doz.	1 0	2 0
— Coloured, doz.	2 0	3 0
Tropæolum, 12 bun.	1 0	2 0
Violets, 12 bunches	1 0	1 3
— French Czar, bun.	1 0	2 0
— Parme (Fr.), bun.	3 6	4 6
White Jasmine, bun.	1 0	1 6

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Apples, ½-sieve	2 6	6 0
— Canadian and American, barrel	18 0	30 0
Aubergines, per doz.	4 0	—
Cobs, 100 lb.	45 0	50 0
Figs, per dozen	0 6	1 0
Grapes, per lb.	1 0	3 0
Lemons, per 100	6 0	10 0
Pears, per dozen	1 0	2 0
Pine-apples, Eng., lb.	2 0	3 0

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.
Artichokes, Globe, per doz.	3 0	6 0
— Jerusalem, bush.	4 0	—
Asparagus (Sprue), per bundle	1 6	—
Beans, Fr. grown, lb.	0 8	—
Beet, per doz.	1 0	—
Bruss. Sprouts, bush.	3 0	4 0
Cabbages, per doz.	1 0	2 0
Carrots, per bunch	0 4	0 6
Cauliflowers, English, dozen	2 0	4 0
Celery, per head, per bundle	0 4	1 0
Cucumbers, each	0 6	1 0
Endive, per score	1 0	—
Garlic, per lb.	1 0	—
Herbs, per bunch	0 2	0 4
Horse Radish, bund.	4 0	—
Lettuces, Cabbage, per dozen	1 6	—
Mint, green, bunch	0 9	—
Mushrooms, p. baskt.	1 0	2 0
Onions, per bushel	3 0	—
— Spring, per bun.	0 6	—
Parsley, per bunch	0 4	—
Radishes, per doz.	1 6	—
Seakale, per punnet	2 0	—
Small salading, pun.	0 4	—
Spinach, per bushel	2 6	—
Sweet Potatos, lb.	0 6	—
Tomatos, per doz.	2 0	4 0

POTATOS :—Magnum Bonums, 100s. to 130s. ; Regents, 90s. to 120s. ; Champions, 80s. to 100s. per ton.

SEEDS.

LONDON : *Nov.* 29.—Messrs. John Shaw & Sons, of 37, Mark Lane, report that there is still an active demand for farm seeds. Red Clover continues strong, and the few samples of fine home-grown seed which appear are eagerly bought. Fine Trefoil is almost unobtainable, and, as a natural consequence, again higher ; the same may be said of Alsike. A further advance is asked for foreign Italian Rye-grass. Rape seed and Canary are held for more money. Hemp seed continues very firm. There is a good trade for blue Peas.

CORN.

At Mark Lane on Monday the colder weather assisted the tone somewhat, and the rates of that day week were supported for both Wheat and flour, but the business concluded was of only small extent. Barley of fine quality was firmer, but secondary and grinding sorts hardly so good as previously reported. Beans advanced 1*s.* the quarter, except Egyptian, which remained unchanged. Maize was firm at the late advance, and Peas remained at previous rates.—On Wednesday but little was done to test quotations. For Wheat and flour rates were not quotably altered ; Barley, Beans, and Peas ruled steady ; Maize was firm from scarcity, and Oats dull of sale.—Average prices of corn for the week ending Nov. 25 :—Wheat, 40*s.* 11*d.* ; Barley, 34*s.* 4*d.* ; Oats, 20*s.* 4*d.* For the corresponding week last year :—Wheat, 45*s.* 4*d.* ; Barley, 33*s.* 6*d.* ; Oats, 19*s.* 11*d.*

CATTLE.

At the Metropolitan Market on Monday very little change occurred in the value of prime cattle, which were scarce. Of the other grades a larger number came to hand, but with colder weather trade was a little more cheerful than on Thursday last, except for plain descriptions, which sold badly. Though still small the number of sheep showed some increase, and with a bad finish in the dead market on Saturday sheep ruled 6*d.* per stone lower. Of calves there were few on offer to affect quotations. Quotations :—Beasts, 4*s.* 2*d.* to 5*s.* 6*d.*, and 5*s.* 8*d.* to 6*s.* 2*d.* ; calves, 5*s.* to 6*s.* 6*d.* ; sheep, 5*s.* 8*d.* to 6*s.* 2*d.*, and 6*s.* 8*d.* to 7*s.* 6*d.*—Thursday's trade was quiet, without any special feature. Beasts and sheep sold very quietly, and inferior breeds were hardly so strong. Calves and pigs were firmer than on Monday.

HAY.

Tuesday's Whitechapel Market report states that large supplies were on offer, especially of Clover, which was lower in price. Hay also was lower. Quotations :—Prime Clover, 110*s.* to 120*s.* ; inferior, 75*s.* to 80*s.* ; prime meadow hay, 88*s.* to 96*s.* ; inferior, 36*s.* to 60*s.* ; and straw, 30*s.* to 44*s.* per load.—There was a large supply on Thursday, and trade was very dull, at drooping prices.—Cumberland Market quotations :—Superior meadow hay, 96*s.* to 110*s.* ; inferior, 65*s.* to 84*s.* ; superior Clover, 110*s.* to 120*s.* ; inferior, 84*s.* to 96*s.* ; and straw, 38*s.* to 43*s.* per load.

POTATOS.

The Borough and Spitalfields Markets reports state that the supplies on offer are moderate and trade steady. Quotations :—Magnum Bonums, 110*s.* to 120*s.* ; Regents, 90*s.* to 100*s.* ; Champions, 80*s.* to 90*s.* per ton ; German reds, 5*s.* to 5*s.* 3*d.* per bag.—The imports into London last week were as follows :—20,660 bags from Hamburgh, 100 Rouen, 1602 Bremen, 965 Boulogne, 4187 Harlingen, 2 Stettin, 290 sacks Rouen, 50 St. Nazaire, 5 baskets Amsterdam, and 5 bags from Ostend.

COALS.

The following are the prices current at market during the week :—Bebside West Hartley, 15*s.* ; East Wylam, 17*s.* 6*d.* ; Ravensworth West Hartley, 15*s.* ; Walls End—Hetton, 18*s.* 6*d.* ; Hetton Lyons, 16*s.* 6*d.* ; Hawthorn, 16*s.* 9*d.* ; Lambton, 18*s.* ; Wear, 16*s.* 6*d.* ; South Hetton, 18*s.* 6*d.* ; Tees, 18*s.* 6*d.* ; Thornley, 17*s.* 9*d.*

Government Stock.—Consols closed on Monday at 102⅛ to 102¼ for delivery, and 102$\frac{1}{16}$ to 102$\frac{3}{16}$ for the account. Tuesday's and Wednesday's final figures were 102 to 102⅛ for both delivery and the account. On Thursday the closing prices were 102⅛ to 102¼ for delivery, and 101$\frac{15}{16}$ to 101$\frac{31}{32}$, ex div., for the account.

TO THE TRADE ONLY.

TEA ROSES—TEA ROSES.

40,000 splendidly grown, extra strong and healthy TEA ROSES, of all the leading kinds, still left, in 4½-inch pots.

Purchasers' Selection .. £3 3s. per 100 | Purchasers' Selection .. .. £30 per 1000
My own Selection .. £2 16s. per 100.

DOUBLE WHITE PRIMULAS.

Strong Plants, in 4½-inch pots, to bloom this Winter, 10s. per dozen, 70s. per 100.

The above Prices are subject to 10 per Cent. Discount for Cash. CATALOGUES free.

C. WILSON, SUMMERHOW NURSERIES, KENDAL.

JAMES DICKSON & SONS

Have much pleasure in recommending the following plants as

"GREAT ACQUISITIONS":—

NEW CUPRESSUS LAWSONIANA, Var. "SILVER QUEEN" (Dickson).

The finest silver variety, of free growth and compact habit.

Awarded a First-class Certificate of Merit at the International Exhibition, Carlisle, 1877.

"The most distinct variety of its class we have ever seen." *Gardeners' Magazine.*

"The spray has an attractive appearance, and is certainly not defective in vigour." *Journal of Horticulture.*

"A distinct and beautiful addition to the variegated forms, of the same character as the variety known as Albo-spica, but more diffusely variegated and of brighter colour." *Gardeners' Chronicle.*

Price, 3s. 6d., 5s., and 7s. 6d. each; Large Specimens, 10s. 6d. to 21s. each.
Per dozen, 36s., 48s., and 72s.

NEW HARDY EUONYMUS RADICANS, "SILVER GEM" (Dickson)

An exceedingly beautiful and greatly improved form of the well-known variegated E. radicans with broad, rich, silver-banded leaves. The variegation is of purer white than any of the other Euonymus, and it has the further advantage of being perfectly hardy. For Winter Gardens it is unequalled.

"The leaves are larger, bolder, and the variegation clearer and more defined than in the common form. We saw it both under glass and in the open air, and were struck with its distinctness." *Gardeners' Chronicle*, Sept. 30, 1882.

Price, 3s. 6d., 5s., and 7s. 6d. each; 36s., 48s., and 72s. per dozen.
Standards, 7s. 6d. to 10s. 6d. each.

WHITE CLOVE CARNATION, "DUCHESS OF WESTMINSTER."

A splendid variety, with vigorous constitution, extremely floriferous. The flowers are of the purest white, medium sized, not too full, with smooth even petals of unusual substance, while the buds remain unsplit to the last.

"Spotless purity, smoothness and substance of petal, with excellence of form, are combined in its flowers before us. We have never seen any white Carnations more charmingly beautiful, and the flowers are also highly perfumed." *Journal of Horticulture*, Aug. 31, 1882.

Price, 10s. 6d. per pair.

USUAL ALLOWANCE TO THE TRADE.

New CATALOGUE (No. 280) of FOREST TREES, EVERGREENS, ORNAMENTAL TREES, FRUIT TREES, ROSES, and HARDY PLANTS, is now published, and will be forwarded, FREE, on application.

JAMES DICKSON & SONS,
"NEWTON" NURSERIES, CHESTER.

AUTUMN PLANTING.

THE LAWSON SEED AND NURSERY COMPANY (LIMITED),

EDINBURGH,

Respectfully invite the attention of intending Planters to their large Stocks of

SEEDLING and TRANSPLANTED FOREST TREES,

ORNAMENTAL TREES and SHRUBS, FRUIT TREES, ROSES, &c.;

And will be glad to submit Special Offers upon application.

NEW LETTUCE,



COOLING'S LEVIATHAN COS.

We have pleasure in introducing this new Lettuce, and believe it to be a decided improvement on all Winter Cos varieties; we feel sure it cannot fail to be a great acquisition.

It has been severely tested for two seasons with existing varieties of Cos Lettuces, by ourselves and several well known authorities, and from its distinctive character and the very favourable reports received we have determined to distribute it.

The LEVIATHAN COS is remarkable for the immense size to which it grows, the broadness of its leaf, its extreme hardiness, and its being the last of all Winter Lettuces to run to seed.

STOCK VERY LIMITED.

Retail Price, in Sealed Packets, 1s.

Trade Price on application.

To show the distinct character of this New Lettuce, we select the following from many Reports and Testimonials received:—

From Mr. W. H. WARD, *Head Gardener to the* Right Hon. the Earl of Radnor, *Longford Castle.*

"I am happy to state that subsequent results have more than justified the favourable opinion I had formed of your broad-leaf Lettuce, inasmuch as the heads remained whole and firm for a week or ten days after the old Bath Cos and other well-tested varieties had gone to seed. I, therefore, have no hesitation in pronouncing it on this account, and also on account of its fine size and robust constitution, as the finest Winter and Spring Lettuce that I am acquainted with."

From Mr. J. HORSEFIELD, *Head Gardener to the* Right Hon. Lord Heytesbury.

"Your new Lettuce has been submitted to an impartial test, and in my opinion it is a decided improvement on the origina Bath Cos. It is quite an acquisition, and richly deserves to be sent into commerce."

From Mr. W. G. PRAGNELL, *Head Gardener to* C. D. W. Digby, Esq., *Sherburne Castle.*

"I have grown your broad-leaf Cos Lettuce; it is a good strain, and I like it very much."

From Mr. G. T. MILES, *Head Gardener to the* Right Hon. Lord Carrington.

"The Lettuce you sent here for trial was excellent in every way."

From "JOURNAL OF HORTICULTURE," *Aug.* 3, 1882.

"NOTES ON VEGETABLES.—A packet of Lettuce seed was sent me by Messrs. Cooling, of Bath, with a request that I should give it a fair trial and report to them accordingly, it being at the time stated to be a selected variety from the Bath Cos, and of which, it may be added, there are so many types. Respecting the particular variety under notice, I can honestly say it is a decided improvement on the Bath Cos, being much broader in the leaf, more crisp, and of larger size. That it will be extensively grown when its merits are well known, and when it is distributed, there cannot be a doubt."

The following Firms have already secured a supply:—

Mr. JOHN CARTER	Keighley.
Mr. R. COOPER	Southwark St., S.E.
Messrs. DICKSON, BROWN & TAIT ..	Manchester.
Messrs. JAMES GARAWAY & Co. ..	Bristol.
Messrs. HURST & SON	Houndsditch, E.
Messrs. HOWDEN & Co.	Inverness.
Messrs. NUTTING & SONS	Barbican, E.C.
Messrs. SUTTON & SONS	Reading.
Mr. E. W. SERPELL	Plymouth.
Messrs. J. & R. THYNE	Glasgow.
Messrs. VILMORIN & Co.	Paris.
Mr. JOHN WALKER	Thame.
Messrs. WATKINS & SIMPSON	Exeter Street, W.C.
Messrs. WAITE, NASH, HUGGINS & Co.	Southwark St., S.E.
Messrs. G. & W. YATES	Manchester.

GEO. COOLING & SON,
SEED MERCHANTS, BATH.

SPECIAL OFFER OF NURSERY STOCK.
Small Transplanted Evergreens.
CUPRESSUS LAWSONIANA, 9 to 12 in., 12s. 6d. per 100.
,, ERECTA VIRIDIS, 1-yr., 1-yr., 15s. per 100.
RETINOSPORA PLUMOSA ARGENTEA, 4-yr., 25s. per 100.
THUIA LOBBII, 1 to 1½ ft., 16s. per 100.
,, OCCIDENTALIS, (American Arbor-vitæ), twice transplanted, 6s. per 100, 50s. per 1000.
,, ORIENTALIS (Chinese), twice transplanted, 6s. per 100, 50s. per 1000.
,, ,, AUREA, 9 to 12 in., bushy, 50s. per 100.
BERBERIS AQUIFOLIA, twice transplanted, 6s. per 100, 50s. per 1000.
,, DARWINII, twice transplanted, 6s. per 100, 50s. per 1000.
,, ,, 1 to 1½ ft., 12s. 6d. per 100.
HOLLIES, common, 1-yr., 2-yr., fine, 4s. per 100, 30s. per 1000
,, common, twice transplanted, 6s. per 100, 50s. per 1000.
BROOM, common yellow, 1-yr., transplanted, 6s. per 100, 40s. per 1000.
,, white Portugal, 1-yr., transplanted, 10s. per 100, 80s. per 1000.
SPIRÆA PALMATA, strong crowns for forcing, 6s. per dozen.
APPLES, Standards, strong, 4-yr., 12s. per dozen, 80s. per 100.
,, Standards, strong, 3-yr., branched, 9s. per dozen, 63s. per 100
In quantity, Blenheim Orange, Cox's Orange, Lord Suffield, Wellington, Warner's King, &c.
PEARS, Standards, strong, 4-yr., 9s. per dozen, 70s. per 100.
,, strong, 3-yr., branched, 6s. per dozen, 30s. to 40s. per 100.
,, Maiden,
Including all the leading kinds.
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YEWS, English, 1½ to 2, 3 to 3½, 3½ to 4 ft.
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PRIVET, oval-leaved, 1½ to 2, 2½ to 3½ ft.
COTONEASTER SIMMONDSII, 4 to 4½ ft.
RHODODENDRON PONTICUM, bushy, 12 to 15 in., 1 to 1½ ft., 1½ to 2 ft., and larger.
SPRUCE FIR, extra transplanted, 15 to 21 in., 2 to 2½ ft.
CEDRUS DEODARA, 2, 3, 4, to 5 ft.
CUPRESSUS LAWSONIANA, 6 to 7 ft.
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,, ,, GRACILIS, 3 to 3½ ft.
CHESTNUTS, Horse, 6 to 8 and 10 to 16 ft., stout, transplanted.
LIMES, 8, 9, 10, to 13 ft., stout, transplanted.
POPULUS CANADENSIS NOVA, 8, 9, 10, to 16 ft., stout, transplanted.
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PINE, Austrian, extra transplanted, and very stout, 1 to 1½, 1½ to 2, 2 to 2½, and 2½ to 3 feet.
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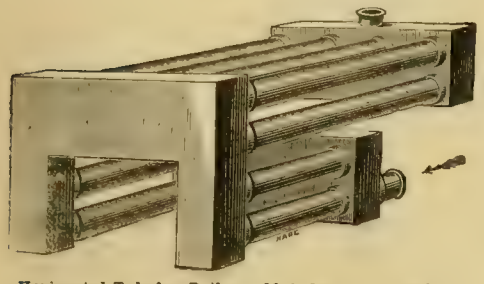
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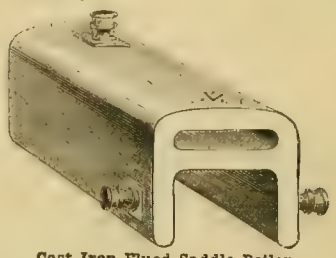
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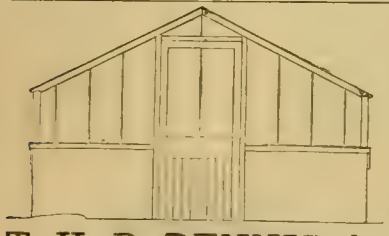
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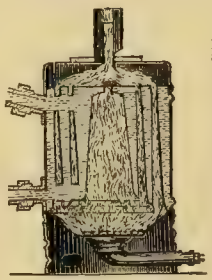
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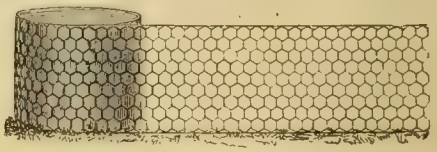
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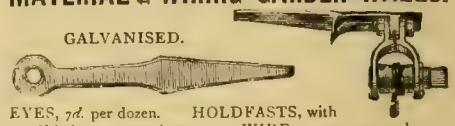
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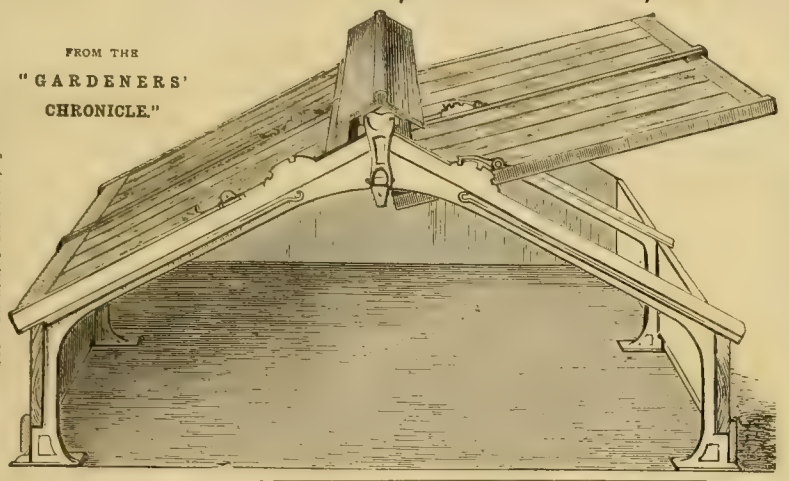


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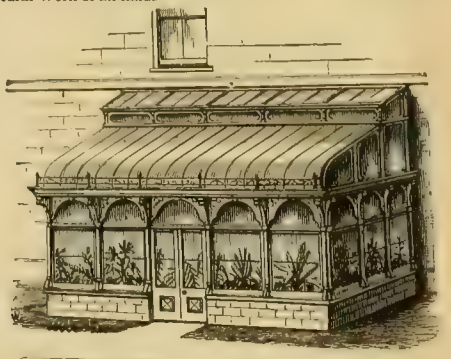


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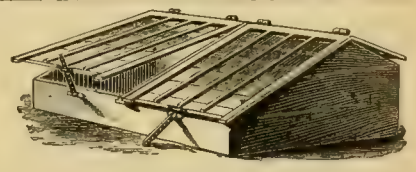
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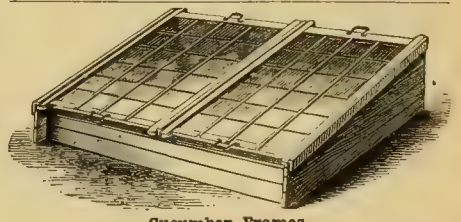


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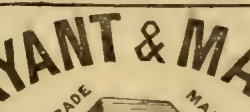
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From the GARDENERS' CHRONICLE.—"*Report of the Fruit Committee of the Royal Horticultural Society, April* 11, 1882.—Mr. Charles Kershaw, of the Slead Syke Nurseries, Brighouse, sent samples of a very good seedling Rhubarb, which the committee seemed to think well of."

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THE

GARDENERS' CHRONICLE.

Established 1841.

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WANTED, a quantity of common BEECH, 2 to 3 feet. State quantity and price to
J. KELLETT, Nurseryman, 10, Market Street, Manchester.

WANTED, SPRUCE FIRS, for Christmas Trees, from 3 to 15 feet. Must be well furnished. Also CUT EVERGREENS. State particulars to
The LIVERPOOL HORTICULTURAL COMPANY (John Cowan), Limited, The Vineyard, Garston, near Liverpool.

WANTED, 1000 SWEET BRIERS (or less quantity), 2½ to 3 feet, suitable for potting; also 50 Dwarf NIPHETOS, in 60's. Lowest cash price.
CARTER PAGE and CO., 53, London Wall, London, E.C.

WANTED, GREEN BOX, well-grown plants, 5 to 6 feet.
E. COOLING, Derby.

WANTED, Extra Strong Crown Bob and Ironmonger GOOSEBERRIES.—Samples and prices to W. FISHER, Hornington Cross Nurseries, Burton-upon-Trent.

CARTERS' ILLUSTRATED CATALOGUE of Sterling Vegetables and Floral Novelties for 1883, has now been posted to their Trade Customers. Should it have miscarried, another copy will be sent on application to
JAMES CARTER and CO., 237 and 238, High Holborn, London, W.C.

GILBERT'S CHOU DE BURGHLEY is one of those things that leaves all others of the Brassica tribe far in the rear, in fact a "march onwards" which seldom occurs. Enclose stamp and addressed envelope for particulars. Seed, 2s. 6d. per packet. The Trade supplied on literal terms.
R. GILBERT, Burghley Gardens, Stamford.

SPRUCE.—SPRUCE.—SPRUCE.—A large lot to dispose of; grown expressly for Christmas trees—1½, 2½, 3½ to 4 feet.
EDWIN H. BLAND, Old Nurseries, Fordham, Soham.

Continental Seeds.

O. KNOPFF and CO., Erfurt (Established 1832) offer their well-known FLOWER SEEDS to the Trade. For CATALOGUES, &c., apply to
BECK and POLLITZER, 211, Upper Thames Street, E.C.

Gardenia intermedia.

CLEAN HEALTHY PLANTS, in 5-inch pots, to flower this winter, 2s. each, 18s. per dozen; nice plants in 60's, 9d. each, 6s. per dozen. A few large plants, about 4 feet, which will be full of flowers this winter; price on application. CATALOGUE free.
W. M. CROWE, Boleyn Nursery, Upton, Essex.

Seeds of Clivia.

IMANTOPHYLLUM MINIATUM, from the best large-flowered brightly coloured varieties, 12 seeds, post-free, 5s. 6d.; 100 seeds, post-free, 22s.
E. PYNAERT VAN GEERT, Brussels Gate, Ghent, Belgium.

Special Offer to the Trade.

SINGLE DAHLIA SEED, saved from all the best named varieties, including whites, and our novelties for next year—a finer and better strain we feel sure does not exist—20s. per ounce, or in retail (2s. 6d.) packets, price of which may be had on application to
KEYNES and CO., Salisbury.

CAPE FLOWERS.—This season's, finest selected, 10s. per 1000. Samples free.—MOYSES STEVENS, 22, Stockbridge Terrace, Victoria Street, W.

CANNAS, for Parks and Large Gardens. Special offer of extra strong roots.
Selected, in 10 varieties .. 21s. per 100, 180s. per 1000.
All varieties, mixed .. .. 12s. per 100. 105s. per 1000.
Orders now booked as long as stock lasts.
HOOPER and CO., Covent Garden, London, W.C.

Special Offer.

CEDRUS DEODARA, fine plants.
3 to 4 feet, 15s. for 12, 60s. for 50, 110s. for 100.
4 to 5 feet, 18s. for 12, 70s. for 50, 130s. for 100.
THOMAS PERKINS and SONS, 34, Drapery, Northampton.

Tea Roses.

THE LIVERPOOL HORTICULTURAL COMPANY (John Cowan), Limited, The Vineyard and Nurseries, Garston, near Liverpool, have a splendid stock of TEA ROSES in all the leading varieties.
LIST free. Price to the Trade on application.
Also a large stock of GRAPE VINES.

To the Trade.

CHRISTMAS ROSES.—Splendid quality, well set with buds, per 100, 30s., 40s., and 50s.
DEUTZIA GRACILIS, fine forcing plants; SPIRÆA JAPONICA, LILY of the VALLEY crowns, LILIUM LANCIFOLIUM, LILIUM AURATUM, GLADIOLUS BRENCHLEYENSIS, extraordinarily fine, and low in price.
SANDER and CO., St. Albans.

Roses—Roses—Roses.

MESSRS MITCHELL and SONS beg to offer the Trade and others an unusually fine stock of Standard Hybrid Perpetuals and Dwarf Teas, of all the leading kinds. Prices on application.
Piltdown Nurseries, Uckfield.

LAPAGERIA ALBA, well-rooted plants, 10s. 6d., 15s. and 21s. A few extra specimens, size and price on application.
LAPAGERIA RUBRA, superb, 7s. 6d., 10s. 6d. and 15s. A few extra-sized specimens, size and prices on application.
W. HOWARD, Southgate, N.

Special Offer to the Trade of

LEICESTER SEEDS which may be had on application to
HARRISON and SONS, Seed Growers, &c., Leicester.

Lilies and other Bulbous Plants for Autumn PLANTING, ORCHIDS, &c.

THE NEW PLANT and BULB COMPANY beg respectfully to invite an inspection of their CATALOGUE, No. 60. Post-free on application.
Lion Walk, Colchester.

Vines.—Vines.—Vines.

B. S. WILLIAMS has much pleasure in intimating that his stock of VINES is unusually fine this year, the Canes being very strong and well ripened. For List of Prices see B. S. W.'s BULB CATALOGUE for 1881.
Victoria and Paradise Nurseries, Upper Holloway, London, N.

SALES BY AUCTION.

Monday Next.

FINAL SALE of DUTCH BULBS this season, together with a Consignment of LILIUM AURATUM from Japan, English-grown LILIES, &c

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Mart, Tokenhouse Yard, City, E.C., on MONDAY NEXT, at half-past 11 o'Clock precisely, 3000 very fine bulbs of LILIUM AURATUM, and Two Cases of LILIUM species, from Japan, a splendid assortment of hardy English-grown LILIES and BULBS, 500 bulbs of GLOXINIA CRASSIFOLIA, LILY of the VALLEY CROWNS from Berlin, and 500 lots of first-class HYACINTHS, TULIPS, and other bulbs from Holland.

Catalogues at the Mart, and 8, New Broad Street, E.C.

Important Sale of about 300 Choice Double Camellias

and AZALEA INDICA, compact plants, 1 to 3 feet, beautifully set with bloom-buds; GREENHOUSE PLANTS in variety, 400 handsome Standard and Dwarf ROSES, selected FRUIT TREES, hardy CONIFERÆ, SHRUBS, AMERICAN PLANTS, DUTCH BULBS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION the above at the City Auction Rooms, 38 and 30, Gracechurch Street, E.C., on TUESDAY, December 12, at 12 o'Clock precisely.

On view the morning of Sale. Catalogues had at the Rooms, and of the Auctioneers, 8, New Broad Street, E.C.

Tottenham.

No Reserve. TRADE CLEARANCE SALE.

MESSRS. PROTHEROE AND MORRIS are instructed by the Proprietor to SELL by AUCTION, on the Premises, The Nurseries, White Hart Lane, Tottenham, ten minutes' walk from the White Hart Lane Station, on THURSDAY NEXT, December 14, at 12 o'Clock precisely, the WHOLE of the STOCK IN TRADE, including a large quantity of extra strong Dwarf ROSES, FERNS, and other GREENHOUSE PLANTS, GLASS ERECTIONS, FRAMES, and numerous effects.

View day prior to the Sale Catalogues on the Premises, and of the Auctioneers, 8, New Broad Street, E.C.

Lilium auratum.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Mart, on MONDAY, December 18, an importation of 8000 Bulbs of LILIUM AURATUM, from Japan, English grown LILIES, &c.

Catalogues at the Mart, and 8, New Broad Street, E.C.

Monday Next.

5000 LILIUM AURATUM, just received from Japan.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY NEXT, December 11, at half-past 12 o'Clock precisely, an importation of 5000 Bulbs of LILIUM AURATUM, just received from Japan in the finest possible condition; also rare English-grown Lilies, a few lots of CAMELLIAS and Indian AZALEAS in bud; a consignment of HARDY PLANTS from Germany, and a great variety of choice named BULBS from Holland.

On view morning of Sale, and Catalogues had.

Tuesday Next.

CATTLEYA MOSSIÆ.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY NEXT, December 12, at half-past 12 o'Clock precisely, by order of Messrs. Shuttleworth, Carder & Co., a grand importation of CATTLEYA MOSSIÆ (autumn-flowering varieties), in fine masses and fine condition, with good eyes and healthy leaves; HUNTLEYA VIOLACEA, ODONTOGLOSSUM CRISPUM (ALEXANDRÆ), in fine masses, good condition, and the best variety; CATTLEYA MOSSIÆ, and LYCASTE SKINNERI, &c., all in the best possible condition.

On view morning of Sale, and Catalogues had.

Wednesday Next.

HARDY PLANTS and BULBS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, December 13, at half-past 12 o'Clock precisely, First-class Standard, Half-Standard, and Dwarf ROSES, including all the leading varieties from well-known English nurseries; Variegated HOLLIES, FRUIT TREES, Specimen CONIFERS, Hardy HERBACEOUS PLANTS, &c.; also a consignment of choice named Double and Single HYACINTHS, TULIPS, CROCUSES, NARCISSUS, GLADIOLI, LILIUMS, and other BULBS from Holland.

On view morning of Sale, and Catalogues had.

Thursday Next.

CATTLEYA SPECIES, sent home as autumn-flowering Mossiæ, and just to hand, per S.S. "Severn," in grand masses and condition. MASDEVALLIA RACEMOSA (Grossi), a truly superb new Masdevallia, producing orange-yellow flowers, from five to ten on spike, all open at one and the same time.

MR. J. C. STEVENS has received instructions from Mr. F. Sander to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, December 14, at half-past 12 o'Clock precisely, the above fine ORCHIDS, together with a fine lot of ODONTOGLOSSUM ALEXANDRÆ, collected in flower, and other importations.

On view morning of Sale, and Catalogues had.

Odontoglossum Alexandræ and the rare O. VEXILLARIUM SUPERBUM.

MR. J. C. STEVENS will include in his SALE on THURSDAY NEXT, December 14, at his Great Rooms, 38, King Street, Covent Garden, W.C., six specimen extraordinary varieties, from the original importation of Veitch, by Chesterton—nineteen flowers on a spike, flowers measuring upwards of 4 inches in diameter.

On view morning of Sale, and Catalogues had.

Notice to Florists, Nurserymen, Gentlemen, &c.

LAND, WELL ADAPTED for the above purposes, and within 1 mile of Hampton and Fulwell Railway Stations, S.-W. Ry., is offered for a short time only on the following very liberal terms:—

Price of the frontage for building purposes, 300 feet deep, 60s. per foot

If on lease for 99 years for building purposes, 3s. per foot.

The Purchaser of 100 feet frontage to have the option of purchasing 1 acre plot for £250, or taking the same on lease.

A large portion can remain on mortgage if desired.

Apply to Mr EMBLETON, Suffolk House, New Hampton, and 49, York Road, S.E., close to Waterloo Station.

WANTED TO RENT, on Lease preferred, quantity of GLASS, suitable for Cucumber Growing, &c. W. B., 15, Osborne Villas, St. Michael's Park, Bristol.

Park Estate, Barnet, Herts:

The Property of the British Land Company (Limited)

TO NURSERYMEN, SEEDSMEN, FLORISTS, MARKET GARDENERS, and OTHERS.

FOR SALE, by PRIVATE TREATY, Three Enclosures of valuable FREEHOLD LAND, Tithe Free and Land Tax redeemed, situate within a few minutes' walk of Barnet and Oakleigh Park Stations on the main line of the Great Northern Railway, from whence there are frequent trains to Broad Street Station on the North London Railway, and to Moorgate Street, Ludgate Hill, King's Cross, and Victoria, on the London, Chatham, Great Northern, and Metropolitan Railways. Lot A. contains 3a. 3r. 31p.; Lot B. contains 2a. 3r. 10p.; Lot C. contains 3a. 1r. 8p. The property being within easy access of the London Markets, it is well worth the attention of persons desirous of acquiring land for Nursery or Market Garden purposes. There is an excellent stream of water running through the land. The purchase-money may be paid by a deposit of 10 per cent., and the balance by half-yearly instalments—5 per cent. interest being charged on the balance unpaid: but the whole or any part may be paid off at any time without notice. Free Conveyance will be given on the Vendors' Title being accepted.

Plans, Price, and further Particulars, may be obtained on application to the Auctioneer, at the Offices of the British Land Company (Limited), 25, Moorgate Street, E.C.

To Gardeners.

HAMILTON PALACE GARDENS.

THE TRUSTEES on the ESTATE of Francis Davidson are prepared, with consent of the Commissioners of His Grace the Duke of Hamilton, to SUBLET the GARDENS attached to Hamilton Palace. A large sum has been spent by Mr. Davidson on improvements since he entered into possession, and the whole gardens are in excellent condition. The Vineries and Greenhouses are extensive, and the former are stocked with highly productive Vines of the best sorts. The lease is a very favourable one, and has six years still to run. The Lessee will be required to take over Mr. Davidson's Stock, Plant, &c., at a valuation, and in addition the Trustees will expect a sum for the improvements made by him that are still unexhausted.

Further information and orders to see the Gardens will be given by the subscribers, and offers will be received by them up to Tuesday, 26th prox.

The Trustees do not bind themselves to accept the highest or any offer.

CRAWFORD AND HERON, Agents for Trustees.
104, West Regent Street, Glasgow, Nov. 25, 1882.

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 8, New Broad Street, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

Order from your Seedsman

LAXTON'S NEW BEANS, JOHN HARRISON and GIRTFORD GIANT.

Particulars in previous Advertisement, or post-free from THOMAS LAXTON, Bedford.

GREEN HOLLIES.—Several hundreds of the above for Sale, from 5 to 7 feet high, well furnished, transplanted stuff. For particulars apply to A. BARKER, The Gardens, Hindlip, Worcester.

Splendid New Distinct Deep Pink Semi-Double ZONAL PELARGONIUMS EMILY CASBON.

CASBON AND SON beg to announce that the above distinct Pelargonium will be ready to send out the first week in March, 1883. Full description, with opinions of the Press, and prices post-free on application.

CASBON AND SON, Florists, Millfield, Peterborough.

APPLES, Standard and Pyramid; PRIVET and HAZEL, 3 ft. to 4 ft; QUICK, 2-yr., fine. Price per 1000 to

CHAS. AND J. W. TOWNSEND, Nurserymen, Fordham, Cambridgeshire.

New Rose.

CHARLES BONNET, with Twenty-four Strikings of this valuable Rose, to be disposed of. The trees are vigorous, remontant, and without thorns. For particulars apply to

Mons. CHARLES BONNET, Professor d'Arboriculture, Suisse, or Mdlle. BONNET, 58, Alma Villas, Silver Hill, Hastings.

FOR SALE, Eight large CAMELLIAS, in pots and tubs, from 7 to 14 feet high, well set with buds; all good sorts, whites and various colours. Price, £23. Apply, S. BROOKS, The Gardens, Calthorpe Towers, by Rugby.

ROSES.—Strong, healthy, well-rooted, best named show varieties, 7s. 6d. per doz., 27s. for 50, £2 10s. per 100. Standards, 18s. per doz.

SWEET VIOLETS, full of bud. New York, the best double, 2s. 6d. per doz.; De Parme, Double Red Russian, Belle de Chatenay, Odoratissima, 3s. 6d. per doz.

LIST of Roses, and twenty-six varieties of Violets, with directions for cultivation, 1½d. Address

Mr. R. W. BEACHEY, Fluder, Kingskerswell, Devonshire.

ABIES DOUGLASII, 10 to 12 in., transplanted, 16s per 100.
ABIES DOUGLASII, 3 to 3½ feet, transplanted, 50s. per 100.
" " 4 to 5 feet, 75s. per 100.
ESCALLONIA MACRANTHA, 1 foot, 10s. per 100.
CEDARS Red, 8 to 12 inches, 1-yr. transplanted, 10s. per 100.
CUPRESSUS LAWSONIANA, 2½ feet, 30s. per 100.
PINUS INSIGNIS, 3-inch pots, 7s. per 100.
" NORDMANNIANA, 6 to 8 inches, 12s. per 100.
CEDRUS DEODARA, 4 to 5 feet, 18s. per dozen.
" " 6 to 7 feet, fine, 36s. per dozen.
PICEA NOBILIS, 4 feet, 60s. per dozen.
" " 5 feet, 70s. per dozen.
THUIA LOBBII, 2½ to 3 feet, 60s. per 100.
" " 4 to 5 feet, 12s. per dozen.

Catalogues free on application.

GARLIES MITCHELL, Nurseryman, Stranraer.

Order from your Seedsman.

LAXTON'S SANDY PRIZE ONION, AND OTHER NOVELTIES.

Particulars in previous Advertisement, or post-free from THOMAS LAXTON, Bedford.

To the Trade.

FERNS.—FERNS.—FERNS.—The following are all good stuff, in 60-pots:—Lomaria gibba, Pteris serrulata, P. cretica alba lineata, Polystichum plumosum, Doodia media, 20s. per 100, £9 per 1000; A. cuneatum, 25s. per 100; Lastrea aristata variegata (new), 35s. per 100; Chellanthes elegans (the Lace Fern), 35s. per 100. Prices of 48's stuff on application.

W. M. CROWE, Boleyn Nursery, Upton, Essex.

Special Offer to Nurserymen and Planters.

P. J. PERRY, NURSERYMAN, Banbury, offers:—
ALDER, 4 to 6 feet.
BEECH, 3 to 10 feet.
BROOM, 2 to 6 feet.
CHESTNUTS, Scarlet, 10 to 16 feet; stems, 1 to 1½ foot in circumference.
HOLLIES, Gold and Silver Variegated, 2 to 4 feet.
" standards, 5 to 12 feet.
LARCH, 1½ to 5 feet. | ELM, English, 6 to 12 feet.
LIME, 6 to 9 feet, 10 to 12 feet, 12 to 15 feet.
" Red-twigged, from layers.
PICEA NORDMANNIANA, 2 to 7 feet.
FIR, Scotch, 2 to 3 feet.
" Spruce, 18 inches to 2 feet 6 inches.
THUIA GIGANTEA, 5 to 6 feet.
YEW, common, bushy stuff, 2 to 5 feet.
" Golden, 1 to 2 feet 6 inches.
" Irish, 10 to 15 feet; 4 to 5 feet in diameter at 3 feet from the ground.
LAUREL, Portugal, 2½ to 3½ feet.
ROSES, standard, dwarf and pot; including most of the leading sorts.
GENISTA FRAGRANS, in 48-pots, 8s. per dozen.
CHRYSANTHEMUMS, in 32 and 24-pots, chiefly large flowered variety, 15s. per dozen.
GREVILLEA ROBUSTA, in 48-pots, 7s. 6d. per dozen.
FERNS, in variety, chiefly Adiantum cuneatum, Pteris cretica, Asplenium in variety, in 48-pots, 15s. per dozen.
PELARGONIUMS, young plants, to pot, 4s. per dozen.
GERANIUMS, Zonal, well-grown, full of bud, in 24-pots, 20s per dozen.
ARALIA SIEBOLDII, in 60-pots, 3s. per dozen.
AZALEA INDICA, full of bud, in various sizes, from 30s. to 36s. per dozen.

Prices and samples on application.

GRAPE VINES.—All the leading kinds in finely ripened canes, details on application to FRAS. R. KINGHORN, Sheen Nurseries, Richmond, S.W.

ANEMONE JAPONICA ALBA and ROSEA.—JAMES CARTER AND CO. offer a splendid stock of these beautiful late summer and autumn-flowering plants. They should be in every garden.

Price 9d. each; per dozen, 7s. 6d.

CARTERS', 237 and 238, High Holborn, London, W.C.

WILLIAM EVANS, SEEDSMAN to the Council of Agriculture, Montreal, Canada.

Exporter of RED and ALSIKE CLOVER, TIMOTHY SEED, PEAS, BEANS, OATS, &c.

Samples and prices on application.

Cable address:—W. EVANS, Montreal.

ROSES.—ROSES.—ROSES. — Fine trees, well-rooted, Standards and Half-standards, comprising nearly all the leading sorts, 15s. 6d. per doz., including package. Strong MANETTI STOCKS, 30s. per 1000. Dwarf BRIER STOCKS, from cuttings, 35s. per 1000. Remittance to accompany all orders.

W. MEADMORE, Market Place, Romford, E.

CUPRESSUS LAWSONIANA, 4 to 5 feet.
THUIA LOBBII, 3 to 4 feet.
PINUS STROBUS, 3 feet.
THUIA ELLWANGERIANA, 1½ to 2 feet.
ABIES MENZIESII, 3 to 5 feet.
EVERGREEN PRIVET, 3 to 4 feet.

Good plants, and well-rooted. For prices, apply to THOMAS WOODFORD, The Nurseries, Atherstone.

Bulbs—Bulbs—Bulbs.

LILIUM AURATUM, received from Japan. Per case (unopened), containing 108 bulbs, 44s., packing included. The bulbs measure from 7 to 9 inches in circumference. Samples will be sent upon receipt of six stamps for each bulb. Terms cash from unknown persons.

SEGERS AND CO., Bulb Growers, Lisse, near Haarlem, Holland.

LAPAGERIA ALBA (the best White variety), from 10s. 6d. each: RUBRA (the best Crimson variety), from 7s. 6d. each; a few extra strong plants, price on application to

R. H. VERTEGANS, Chad Valley Nurseries, Edgbaston, Birmingham.

R. H. V.'s pocket CATALOGUE of Herbaceous and other Hardy Plants free on application.

THE NURSERIES, DUMFRIES. (Established 1787.)

Our Stock, which is one of the largest in Scotland, comprises FOREST, FRUIT, and ORNAMENTAL TREES, DECIDUOUS and EVERGREEN SHRUBS, ROSES, GREENHOUSE PLANTS, &c.; also a very large and splendid Stock of THORN QUICKS, for Hedging and for Filling up Gaps.

The Trees and Shrubs are of all ages and sizes, and are well adapted for extensive planting or giving immediate effect in the formation and improving of Ornamental Parks, Pleasure Grounds, &c. Prices on application.

THOMAS KENNEDY AND CO., Seed and Nursery Establishment, Dumfries.

SPIRÆA PALMATA:
The largest stock for forcing in the world.
LAURUS CAUCASICA:
The finest Laurel ever introduced.
RHODODENDRONS:
All kinds and all sizes.
STANDARD RHODODENDRONS:
You may select from thousands
HARDY TREES, SHRUBS, ROSES, &c.
For general planting, acre after acre.

Intending planters are invited to come down and see the stock. The Nursery is ten minutes from Sunningdale Station, S.-W. Railway.

CHARLES NOBLE, Bagshot.

6000 Grape Vines.

THE LIVERPOOL HORTICULTURAL COMPANY (JOHN COWAN), Limited, The Vineyard and Nurseries, Garston, near Liverpool, have a splendid stock of VINES, grown from eyes this year, suitable for present planting.
CATALOGUE free. The Trade supplied.
Also a large stock of TEA ROSES.

To the Trade.

HOME-GROWN VEGETABLE and FIELD SEEDS.

H. AND F. SHARPE will be pleased to make special offers of their fine selected stock of SEEDS, raised this season with the utmost care and attention. The quality is very fine, and the prices will be found unusually low.
Seed-Growing Establishment, Wisbech.

FRUIT TREES.—Standard, Pyramid, 2-yr. and Maiden APPLES, PEARS, and PLUMS, also Purple and Weeping BEECH, 6 to 14 feet; HORSE CHESTNUTS, 12 to 17 feet. Price per 100 or 1000 on application to WILLIAM FLETCHER, Ottershaw Nursery, Chertsey, Surrey.

Standard Roses and Planes.

WM. RUMSEY has still a fine stock of the above (home-grown). Prices (moderate) on application.
Joyning's Nurseries, Waltham Cross, N.

JAMES DICKSON AND SONS, Inverleith Nurseries, Edinburgh, have large stocks to offer of:—
ASH, 3 to 4 feet.
ALDER, 3 to 4 feet.
ELDER, 3 to 5 feet.
HAZEL, 1½ to 2 feet.
LABURNUM, 4 to 5 feet.
LIMES, 5 and 6 to 8 feet.
POPLAR, Black Italian, 6 to 8 feet.
SYCAMORES, 3 to 4 feet.
THORNS, 2 to 4 feet.
WHINS, 1-yr. 1-yr. transplanted.
LARCH, 2 to 3 feet.
FIR, Scotch, 9 to 15, 18 to 24, and 24 to 30 inches.
PINUS MARITIMA, 2 to 3 feet.
,, LARICIO, 12 to 18, 18 to 24, and 24 to 30 inches.
FIR, Spruce, 9 to 15, and 12 to 18 inches.
LARCH, Seedling, Scotch, Austrian, and Corsican PINES, DOG ROSES, &c.
Seed Warehouse, 32, Hanover Street.

SURPLUS NURSERY STOCK on land that must be cleared owing to expiration of lease.
ALDER, 2 to 3 feet, 20s. per 1000.
FINE, Austrian, 6 to 12 inches, 30s. per 1000.
DEUTZIA CRENATA, fl.-pl., 3 to 4 feet, 10s. per 100.
HAZEL, 2-yr., 8s. per 1000.
CHESTNUT, Horse, 8 to 10 feet, 25s. per 100; 10 to 12 feet, 30s. per 100.
LARCH FIR, 2 to 3 feet, 25s. per 1000.
GORSE, for Covert Planting, 2-yr., 5s. per 1000.
SNOWBERRIES, 2 to 3 feet, 21s. per 1000.
FIR, Spruce, 2-yr. and 2-yr., 6s. per 1000.
ELM, Huntingdon, 8 to 10 feet, 40s. per 100.
MAPLE, Norway, 8 to 10 feet, 20s. per 100.
SYCAMORE, 2 to 3 feet, 20s per 1000.
GUELDRES ROSES and WEIGELAS, 3s. per dozen.
VINCA, common, for planting banks, &c., 25s. per 1000.
All clean grown and well rooted.
THOMAS PERKINS AND SONS, 34, Drapery, Northampton.

TO THE TRADE.—Single DAHLIA SEED, choicest mixed: and Paragon, Crimson, Yellow, Magenta, and other colours separate. Also Rollisson's Telegraph and Veitch's Tender and True CUCUMBER SEED. Carefully selected stocks. Prices on application.
GEO. COOLING AND SON, Seedsmen, Bath

LARCH.—Transplanted, extra strong and well-rooted, 2 to 3 feet, and 3 to 4 feet.
Special offers to the Trade.
J. SLATER AND SONS, The Nurseries, Malton, Yorkshire.

FLOWERING SHRUBS, in great variety, such as Hydrangeas, Lilacs, Deutzias, Spiræas, Cytisus, Broom, Pyrus, Berberis, Double Cherry, Scarlet Hawthorns, Gueldres Rose, &c., 8s. per dozen, 50s. per 100.
Descriptive LIST on application.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Special Cheap Offer.

ISAAC MATTHEWS AND SON are prepared to make a special offer to the Trade and Large Buyers. Samples and Price List on application:—
ASH, Common, 3 to 4 feet, 4 to 5 feet.
,, Mountain, 3 to 4 feet, 4 to 5 feet, 5 to 6 feet, 7 to 8 feet, 8 to 9 feet.
OAK, English, 1½ to 2 feet.
POPLAR, Black Italian, 3 to 4 feet, 4 to 5 feet, 5 to 6 feet.
SYCAMORES, 2 to 3 feet.
CHESTNUTS, Horse, 9 to 10 feet, 10 to 12 feet.
ELDER, Golden, 2 to 3 feet.
THORN QUICK, strong, 3-yr., 4-yr., strong.
HOLLIES, Hodgins', maderensis, Golden Queen, Silver Queen, Old Silver, myrtifolia, ovata, Shephardii, common Green, in all sizes.
LAURELS, Common, 12 to 18 inches, 1½ to 2 feet, 2 to 2½ feet, fine.
CUPRESSUS, in variety, from 1½ to 7 feet.
RETINOSPORA PLUMOSA, 1 foot, bushy.
YEWS, English, 18 to 24 inches, 2 feet, 2½ feet, 2½ to 3 feet.
AZALEA Pontica, 4 to 6 inches.
RHODODENDRONS, Hybrid and Pontica, 3 to 4 inches, 4 to 6 inches, 6 to 9 inches, 9 to 12 inches, 12 to 15 inches, 15 to 18 inches, 1½ to 2 feet, 2 feet; ditto, choice named sorts, bushy, in 100 varieties.
,, CUNNINGHAM'S WHITE, 9 to 12 inches, 12 to 15 inches, 15 to 18 inches.
,, CAUCASICUM PICTUM, 9 to 12 inches, 12 to 15 inches, 15 to 18 inches.
RHODODENDRON STOCKS, strong.
PANSIES, in 100 varieties.
IVY, Irish, 4-yr., strong.
The Nurseries, Milton, Stoke-on-Trent.

Special Culture of

FRUIT TREES and ROSES.—A large and select stock is now offered for sale. The Illustrated and Descriptive CATALOGUE of Fruits, post-free for threepence. The Descriptive CATALOGUE of Roses post-free.
THOMAS RIVERS AND SON, The Nurseries, Sawbridgeworth, Herts.

4000 Azaleas, Camellias, Ericas, and Epacris. 4000

AZALEA INDICA, in best varieties, for forcing, including Whites, well set with buds, 24s., 30s., and 42s. per dozen, £8 to £15 per 100.
AZALEA MOLLIS, good bushy stuff of these invaluable plants for early forcing, in all shades of colour, 21s., 30s., and 40s. per dozen, £8 to £15 per 100.
HEATHS and EPACRIS, best varieties, well set with flower, 18s and 24s. per dozen.
CAMELLIAS, in best varieties, including Whites, 25s., 30s., and 42s. per dozen, £9 to £15 per 100.
CATALOGUE free.
W. M. CROWE, Boleyn Nursery, Upton, Essex.

CEDRUS DEODARA. — "The Indian Cedar."—Beautiful specimen trees, frequently transplanted and well-rooted, offered at the undermentioned low prices, to effect a clearance:—
5 to 6 feet, 48s. per dozen | 7 to 8 feet, 72s. per dozen
6 to 7 feet, 60s. per dozen | 8 to 10 feet, 84s. per dozen

ABIES DOUGLASII.—One of the most noble trees grown, well-rooted specimens:—
6 to 7 feet, 3s. 6d. each; 36s. per dozen
7 to 8 feet, 4s. 0d. each; 42s. per dozen
8 to 9 feet, 5s. 0d. each; 60s. per dozen
The above-named trees are highly suitable for Avenues, Lawns, Shrubberies, or Woods, and the opportunity of purchasing on such terms rarely occurs.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

GEORGE DAVISON begs to offer to Planters the following well-grown TREES, at a great sacrifice, in consequence of wishing to retire from business:
ABIES DOUGLASII, 4 to 8 feet.
CEDRUS DEODARA, 3 to 6 feet.
ARBOR-VITÆ LOBBII, 7 to 10 feet.
ASH, 1½ to 2½ feet, 200,000 (Hop-pole Planting).
AUSTRIACA FIRS, well transplanted, 2 to 4 feet.
BEECH, 6 to 7 feet.
CUPRESSUS LAWSONIANA, 7 to 9 feet.
HORSE CHESTNUTS, 7 to 9 feet.
LARCH, fine, 2 to 5 feet, 400,000.
LAUREL, colchic, caucasica, and rotundifolia, 20,000.
,, Portugal, 2 to 3 feet.
QUICK, transplanted, fine, 2 to 4 feet, 500,000.
ROSES, Standard and Dwarf, H.P. and Teas, many thousands.
SILVER FIR, 3 to 5 feet.
SCOTCH FIR, 1½ to 2½ feet.
SPRUCE, 2 to 5 feet.
THUIOPSIS BOREALIS, fine specimens, 5 to 9 feet.
FRUIT TREES—APPLES, fine, tall, for Orchards, many thousands (speciality).
Price on application to
The White Cross Nurseries, Hereford.

ROSES.—ROSES.—ROSES.—50,000 to select from, in all the leading sorts, in fine strong plants, including both Standards and Dwarfs; also extra strong Maréchal Niel, Climbing Devoniensis, Cheshunt Hybrid, Madame Berard, Reine Marie Henriette, from 12 to 15 feet long, in pots, and other Teas in pots, fine for forcing.
Price and LISTS post-free.
THOMAS HORSMAN, Rose Mount Nursery, Ilkley, Leeds.

SPECIAL OFFER OF NURSERY STOCK.
Small Transplanted Evergreens.
CUPRESSUS LAWSONIANA, 9 to 12 in., 12s. 6d. per 100.
,, ERECTA VIRIDIS, 1-yr., 1-yr., 15s. per 100.
RETINOSPORA PLUMOSA ARGENTEA, 4-yr., 25s. per 100.
THUIA LOBBII, 1 to 1½ ft., 16s. per 100.
,, OCCIDENTALIS (American Arbor-vitæ), twice transplanted, 6s. per 100, 50s. per 1000.
,, ORIENTALIS (Chinese), twice transplanted, 6s. per 100, 50s. per 1000.
,, ,, AUREA, 9 to 12 in., bushy, 50s. per 100.
BERBERIS AQUIFOLIA, twice transplanted, 6s. per 100, 50s. per 1000.
,, DARWINII, twice transplanted, 6s. per 100, 50s. per 1000.
,, ,, 1 to 1½ ft., 12s. 6d. per 100.
HOLLIES, common, 1-yr., 2-yr., fine, 4s. per 100, 30s. per 1000.
,, common, twice transplanted, 6s. per 100, 50s. per 1000.
BROOM, common yellow, strong, transplanted, 6s. per 100, 40s. per 1000.
,, white Portugal, strong, transplanted, 10s. per 100, 80s. per 1000.
SPIRÆA PALMATA, strong crowns for forcing, 6s. per dozen.
APPLES, Standards, strong, 4-yr., 12s. per dozen, 80s. per 100.
,, strong, 3-yr., branched, 9s. per dozen, 63s. per 100
In quantity, Cox's Orange, Lord Suffield, Wellington, Warner's King, &c.
PEARS, Standards, strong, 4-yr., 9s. per dozen, 70s. per 100.
,, Maidens, strong, 4-yr. per 100.
Including all the leading kinds.
APRICOTS, MOORPARK, dwarf Maiden, strong, 9s. per dozen, 70s. per 100.
PEACHES, Maidens, strong, 9s. per dozen, 70s. per 100.
BLACK CURRANTS, transplanted, strong, 12s. 6d. per 100.
HOLLIES, common, bushy, 1 to 1½ ft., 15 to 24 in., 2 to 3 up to 6 to 7 ft.
LAURELS, common, 1½ to 2 and 2 to 2½ ft.
,, Portugal, 1½ to 2, 2 to 2½, 2½ to 3 ft.
YEWS, English, 1½ to 2, 3 to 3½, 3½ to 4 ft.
AUCUBAS, bushy, 1½ to 2, 2 to 2½ ft.
PRIVET, oval-leaved, 1½ to 2, 2½ to 3½ ft.
COTONEASTER SIMMONDSII. 4 to 4½ ft.
RHODODENDRON PONTICUM, bushy, 12 to 15 in., 1 to 1½ ft., 1½ to 2 ft., and larger.
SPRUCE FIR, extra transplanted, 15 to 21 in., 2 to 2½ ft.
CEDRUS DEODARA, 2, 3, 4, to 5 ft.
CUPRESSUS LAWSONIANA, 6 to 7 ft.
,, ,, ERECTA VIRIDIS, 2 to 2½ ft.
,, ,, GRACILIS, 3 to 3½ ft.
CHESTNUTS, Horse, 6 to 8 and 10 to 16 ft., stout, transplanted.
LIMES, 8, 9, 10, to 12 ft., stout, transplanted.
POPULUS CANADENSIS NOVA, 8, 9, 10, to 16 ft., stout, transplanted.
THORNS, flowering, Standards, of sorts.
Prices of above on application, also Price LISTS of General Stock.
W. C. SLOCOCK, Goldworth Old Nursery, Woking, Surrey.

Large Quantity of

FIRST-RATE NURSERY STOCK, all transplanted within 2 years, to be cleared at nominal prices. Send for LISTS to
F. W. AND H. STANSFIELD, The Nurseries, Pontefract, Yorkshire.

NOTICE.
SELLING OFF OF NURSERY STOCK.

EWING & CO.,
EATON, near NORWICH.

Great Reduction in Price for Cash Payments, viz
15 per Cent. for Cash before delivery.
10 per Cent. for Cash within One Month of date of invoice
5 per Cent. for Cash within Three Months of date of invoice
After Three Months no discount can be allowed.

Among other things the following are in stock in great quantity and of fine quality:—
MARÉCHAL NIEL ROSE, on Brier stock, short standards, 1½ to 2 feet in stem, 2s. 6d. each, 24s. per dozen; half standards, 2 to 3 feet in stem, 3s. to 4s. 6d. each, 30s. to 36s. per dozen.
PRIVET, Broad or Oval-leaved, fine, transplanted, 1½ to 2 feet, 8s. per 100; 2 to 3 feet, 10s. per 100
PURPLE BEECH, best dark broad-leaved variety, 4 to 5 feet, 12s. per dozen, 75s. per 100; 5 to 6 feet, 18s. per dozen, 120s. per 100; 6 to 8 feet, 24s. per dozen.
NUTS and FILBERTS, best varieties, very fine bushes, 4s. to 12s. per dozen, 25s. to 75s. per 100. Cheaper by the 1000
HORSE CHESTNUTS, splendid stout trees, extra transplanted, 10 to 12 feet, 12s. per dozen, 75s. per 100; 12 to 14 feet, 18s. per dozen, 120s. per 100.
Ditto, Scarlet-flowered, 6 to 8 feet, 18s. per dozen; 8 to 10 feet, 24s. per dozen; 10 to 12 feet, 36s. per dozen.
SEAKALE, extra fine planting roots, 10s. per 100; forcing roots, 15s. per 100; good small roots, 50s. per 1000.
ASPARAGUS, fine planting roots, 2s. 6d. to 3s. 6d. per 100, 20s. to 30s. per 1000; forcing roots, 5s. to 10s. per 100.
Trade Terms on application.

ROSES, well rooted, many-shooted, truly named, of matured growth, and of the best kinds.
DWARFS, R. S. & Co.'s selection, 8s. per dozen, 60s. per 100.
STANDARDS, 21s. per dozen.
Descriptive LIST on application.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

8000 Winter-Flowering Carnations. 8000

TWELVE WELL-ROOTED PLANTS, in six best varieties, by post, 4s.; larger, in 54's, 6s. per dozen, 42s. per 100; in 48's, 15s. and 18s. per dozen, £5 and £6 10s. per 100 See CATALOGUE.
W. M. CROWE, Boleyn Nursery, Upton, Essex.

STEPHANOTIS FLORIBUNDA.—Good plants in 48's, 2s. each, 18s. per dozen, £7 per 100. Prices of larger on application.
W. M. CROWE, Boleyn Nursery, Upton, Essex.

Planting Season.

R. AND A. MORRISON, The Nurseries, Elgin, N.B. (Established 1822), invite the attention of Planters to their extensive Stocks of Seedling and Transplanted FOREST TREES, ORNAMENTAL TREES and SHRUBS. They have a very large and healthy Stock of Seedling and Transplanted LARCH and SCOTCH FIR, which they guarantee as true native, being the produce of Seed collected by them in the North of Scotland.
CATALOGUES and Samples on application.

GRAPE VINES and ORCHARD HOUSE TREES in POTS.—GRAPE VINES, extra strong, short-jointed and well ripened; Planting Canes, 3s. 6d. to 5s. each; extra strong Fruiting Canes, 7s. 6d. to 10s. ORCHARD HOUSE TREES, fruiting in pots, consisting of Peaches, Nectarines, Apricots, Plums, Cherries, Pears, Apples, and Figs. Descriptive Price LIST for 1d. stamp.—RICHARD SMITH AND CO., Nurserymen and Seedsmen, Worcester.

DEUTZIA GRACILIS, and strong QUICK for Hedging. Prices and samples on application to WILLIAM FLETCHER, Ottershaw Nurseries, Chertsey.

ROSES AND FRUIT TREES. — Fine Pyramid APPLES and PEARS of the hardiest and best cropping varieties only, 6s., 9s., 12s., and 18s per dozen. Dwarf trained trees, 24s. and 30s. per dozen, all with splendid fibrous roots.
PLUMS and CHERRIES, Pyramids, 12s., 18s., and 24s. per dozen. Dwarf trained trees, 30s. per dozen.
RED and BLACK CURRANTS, 2s. and 3s. per dozen.
RASPBERRIES, 1s. 6d. and 2s. per doz., 8s. and 10s per 100.
STRAWBERRIES, 2s. 6d. per 100. CATALOGUES free.
LA GRIFFERAIE ROSE CUTTINGS for Stocks, 1s. per 100, 7s. 6d. per 1000, cash.
DWARF H.P. ROSES, all the leading varieties, 7s. per doz, 50s. per 100. CATALOGUES free.
WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

Kent, the Garden of England.

GEORGE BUNYARD AND CO. beg to say that their TRADE CATALOGUE of Surplus Stock may be had on application to
The Old Nurseries, Maidstone.
Specialites:—Kent Standard Cherries, Kent Cob Nuts, Red and Black Currants, Mulberries, Damsons, Roses, Standard and Half Standard Aucubas, Purple Beech, Limes; Ash, 2 to 4 feet; Larch, 3 to 5 feet; Sycamore, 2 to 4 feet; extra strong Quick, &c.

New Forcing Plants, Staphylea colchica.

PAUL AND SON offer nice plants of this companion to the Deutzia gracilis, and other forcing shrubs. Established, in pots, 30s. per dozen.
The Old Nurseries, Cheshunt, N.

Camellias in pots, set with Bloom.

PAUL AND SON can supply well furnished plants, 30s., 42s., and 60s. per dozen; in good healthy condition. The Old Nurseries, Cheshunt, N.

5000 Cyclamen persicum. 5000

ALL from the finest procurable strains, good plants in 60-pots, 3s. 6d. and 5s. per dozen, large, 10s. per dozen, for early flowering.
W. M. CROWE, Boleyn Nursery, Upton, Essex

Ferns a Speciality.

The largest stock in the greatest number of varieties of

EXOTIC AND BRITISH FERNS

In the Trade, suitable for STOVE and GREENHOUSE cultivation, for Outdoor Ferneries, and other purposes. Special LIST free on application. Illustrated CATALOGUE *6d.*

W. AND J. BIRKENHEAD, Fern Nursery, Sale, near Manchester.

SPECIAL OFFER TO NURSERYMEN AND PLANTERS.

WM. WISEMAN & SON,

NURSERYMEN, ELGIN, N.B.,

Offer many millions of guaranteed true Native Highland Scotch FIR and LARCH SEEDLINGS and transplanted, of all sizes.

Having an exceedingly large stock, we are now offering them at two-thirds the prices usually quoted, with 15 per cent. off for cash.

The above being all grown on high and exposed ground, are consequently hardy, and cannot fail to give every satisfaction.

Prices with Samples on application.

Orders now Booked for true Native Scotch FIR SEED on reasonable terms.

THE

LARGEST ROSE GARDENS IN ENGLAND.

CRANSTON'S NURSERIES.

(Established 1785.)

EXTRA STRONG ROSES,

in 8-inch pots, for forcing.

HYBRID PERPETUALS, TEA SCENTED, and NOISETTES:

HALF-STANDARD ROSES,

HYBRID PERPETUALS, TEA SCENTED, &c.

List of Sorts and Price on application to

CRANSTON'S NURSERY and SEED CO.

(LIMITED),

KING'S ACRE, HEREFORD.

RICHARD SMITH & Co. WORCESTER

SEVENTY-FOUR ACRES of FRUIT TREES.—Apples, Pears, Plums, Cherries, Peaches, Nectarines, Apricots, and other Fruit Trees, as Standards, Dwarfs, Pyramids, Bushes, Cordon and Trained Trees in great variety, all full of vigour, and warranted true to name. Descriptive Price LIST, containing a sketch of the various forms of Trees, with Directions for Cultivation, Soil, Drainage, Manure, Pruning, Lifting, Cropping, Treatment under Glass; also their Synonyms, Quality, Size, Form, Skin, Colour, Flesh, Flavour, Use, Growth, Duration, Season, Price, &c., for *1d.* stamp.

LIST of all the EVERGREEN FIR TRIBE, suitable for Britain, giving size, price, popular and botanical names, derivations, description, form, colour, foliage, growth, timber, use in arts, native country, and size there, situation, soil, and other information, with copious index of their synonyms. Free by post for six stamps.

LIST OF STOVE and GREENHOUSE PLANTS, comprising the best selections of Camellias, Azaleas, Ericas, Epacris, Ferns, &c., free for *1d.* stamp.

LIST of EVERGREEN and DECIDUOUS SHRUBS, RHODODENDRONS, STANDARD ORNAMENTAL TREES, CLIMBING and TWINING PLANTS, with their generic, specific, and English names, native country, height, time of flowering, colour, &c., and general remarks, free for *1d.* stamp

ALL KINDS of GARDEN SEEDS, of first quality. BULBS, MUSHROOM SPAWN, TOBACCO PAPER, ARCHANGEL MATS, and other GARDEN REQUISITES. See LISTS, which may be had on application.

RICHARD SMITH & Co. WORCESTER

J. FIDLER, MARKET GARDENER, 87, King's Road, Reading.

Has to dispose of 500 stools of LINNEUS RHUBARB for Forcing, or can be divided into eight or ten plants for planting-out. Price, from 1*s.* to 1*s.* 6*d.* per stool, cheaper by the 100. Also young roots for planting-out, from 4*s.* to 6*s.* per dozen. Also 200 plants of ROYAL ALBERT, the earliest, high in colour, which I consider the best in cultivation, at 6*s.* per dozen.

Planting Season.

ANTHONY WATERER begs to invite attention to the following well-grown and properly rooted NURSERY STOCK:—

AUCUBA JAPONICA, 1½, 2, and 3 feet. Thousands.
BOX, Green and Variegated, 2, 3, 4, 5, 6, and 7 feet. Thousands.
YEWS, English, 2, 3, 4, 5, 6, 8 to 10 feet. Thousands.
" Golden, all heights up to 10 feet, and various shapes—Globes, Pyramids, &c. Thousands.
" Irish, 5, 6, 7, to 10 feet.
JUNIPERS, Chinese, 5, 6, 7, to 10 feet.
PICEA PINSAPO, 5, 6, 7, to 10 feet.
" NORDMANNIANA, 5, 6, 7, to 10 feet.
SPRUCE FIRS, well furnished, 3, 4, 5, 6, and 7 feet. Many thousands.
" Black, 3, 4, and 5 feet.
SPRUCE, Hemlock, 4, 5, and 6 feet.
WEARE'S ARBOR-VITÆ, 4, 5, 6, and 7 feet.
HOLLIES, common Green, of all heights, up to 10 feet. Thousands.
" Green, of sorts, such as LAURIFOLIA, MYRTIFOLIA, HODGINS', ALTACLARENSE, Yellow-berried, &c. An enormous Stock.
" Variegated, from 3 to 5, 6, 7, 8, and 10 feet.
" Waterer's, beautiful Specimens.
" Golden Queen, up to 10 feet. Hundreds.
" Silver Queen, up to 10 feet. Hundreds.
" Perry's Weeping Standards and Pyramids.
" Golden Weeping Standards and Pyramids.
The Stock of Hollies of various kinds comprises many thousands, and affords a choice quite unequalled.
CUPRESSUS LAWSONIANA ERECTA VIRIDIS, 3, 4, 5, 6, 7, and 8 feet. Thousands.
" " GRACILIS, 3 and 5 feet.
" " ARGENTEA, 3 and 5 feet.
" " LUTEA, hundreds of fine plants, 3, 4, and 5 feet high.
RETINOSPORA PLUMOSA AUREA, 3, 4, and 5 feet.
" OBTUSA AUREA, 4, 5, 6, and 7 feet.
" PISIFERA AUREA, 3 and 4 feet.
THUIOPSIS DOLABRATA, 3, 4, 5, and 6 feet. Hundreds.
BEECH, Purple, 6 to 10 and 12 feet. Thousands.
LIMES, 10, 12, 14, 15, and 16 feet. Thousands.
PLANES, 10 to 20 feet.
MAPLE, Norway, 10 to 15 feet.
CHESTNUT, Horse, 10 to 16 feet.
" Scarlet, 10 to 16 feet.
POPLAR, CANADENSIS NOVA, 10 to 16 feet. Thousands.
OAKS, Scarlet American, 10 to 12 feet.
ACER DASYCARPUM, 10 to 16 feet.
" SCHWEDLERII, 10 to 12 feet.

And a vast and Miscellaneous Stock of Flowering DECIDUOUS SHRUBS and EVERGREENS, which intending purchasers are respectfully invited to come and see.

Knap Hill Nursery, Woking, Surrey.

ZONAL GERANIUMS,

DOUBLE and SINGLE, IN BLOOM.

HUGH LOW & CO.

Offer the above, in 48 pots, in many varieties, at **30s. per 100.**

CLAPTON NURSERY, LONDON, E.

GARDEN SEEDS.

FARM SEEDS.

CHARLES SHARPE & CO.,

SEED GROWERS,

SLEAFORD,

Having now completed harvesting their SEEDS, will have much pleasure in sending SPECIAL OFFERS on application, with Samples if desired.

TO THE TRADE.

A very large quantity of fine

Half-Standard and Dwarf-Standard ROSES,

Of all the leading sorts, to offer cheap.

Apply to—

BENJAMIN R. CANT,

THE CHAMPION ROSE GROWER,

COLCHESTER.

NEW AND RARE ORCHIDS.

PHALÆNOPSIS SPECIOSA (Rchb. f.).
See *Gardeners' Chronicle*, April 30, 1881.
THRIXSPERMUM BERKELEYI (Rchb. f.)
See *Gardeners' Chronicle*, April 29, 1882.
AERIDES EMERICII (Rchb. f.).
See *Gardeners' Chronicle*, November 4, 1882.
PHALÆNOPSIS TETRASPIS (Rchb. f.).
See *Gardeners' Chronicle*, April 30, 1881; and
D. FORMOSUM BERKELEYI (Rchb. f.).
Recently named; not yet described.

All the above plants were collected by Lieut.-Col. Berkeley, the original discoverer, and are guaranteed true to name.

A limited number of these NEW ORCHIDS for DISPOSAL.

For particulars apply to

The GARDENER, Warmington Vicarage, Oundle.

BULBS.

Illustrative Descriptive List free on application.

SPECIMEN TESTIMONIAL (UNSOLICITED):—

"*March* 10, 1882.—Crocus, &c., in borders, purchased and planted last autumn, are making a fine show, and giving every satisfaction. Hyacinths in pots have been very fine and much praised, having spikes of bloom 9 *inches in length and so close that they appeared to be solid.* Tulips have been very fine and highly praised. Hyacinths in border now showing very strong bloom."

RICHARD SMITH & CO.,

SEED MERCHANTS and NURSERYMEN,

WORCESTER.

The Largest Rose Gardens in England.

CRANSTON'S NURSERIES

(ESTABLISHED 1785).

ROSES ON OWN ROOTS.

A large quantity of very fine plants of Hybrid Perpetuals, Bourbons, Hybrid Chinas, &c. List of varieties, with prices, on application.

CRANSTON'S NURSERY and SEED CO.

(LIMITED),

KING'S ACRE, HEREFORD.

SEAKALE—SEAKALE.

VERY LARGE.

ANY QUANTITY.

Apply to the Grower for Particulars.

W. BAGLEY,

MILLSHOT FARM, FULHAM, S.W.

A DOUBLE FIRST-CLASS CERTIFICATE,

The Highest Honour ever bestowed by the Royal Horticultura Society, was awarded to the

ENGLISH RAISED SEEDLING ROSE,

DUCHESS OF CONNAUGHT (NOBLE),

now being sent out at 10s. 6d. each.

CHARLES NOBLE, Bagshot.

110 SPECIMENS OF

CHOICE NEW ZEALAND FERNS,

Artistically Mounted and Correctly Named.

Messrs. PARTRIDGE & COOPER

Have received a Consignment of these unique Collections from New Zealand, and have them on View, for Sale, at

192, FLEET STREET, E.C.

THEY SHOULD BE SEEN BY ALL LOVERS OF FERNS.

Suitable for Christmas Presents, Or as Illustrated Catalogues to the Trade.

GEO. JACKMAN & SON,

(ESTABLISHED 1810,)



Cultivators of

FRUIT and FOREST TREES,
Evergreen and Flowering
TREES and SHRUBS,
ROSES, RHODODENDRONS,
Conifers and Hardy Climbers.

THE CLEMATIS

A SPECIALITY.

Descriptive Priced Catalogues free.

WOKING NURSERY, SURREY.

Fruiting Pines.

THE LIVERPOOL HORTICULTURAL COMPANY (John Cowan), Limited, The Vineyard and Nurseries, Garston, near Liverpool, have a fine stock of the above, which they are in a position to offer at low prices; they are principally Queens, Smooth Cayenne, and Black Jamaica.

CABBAGE, CAULIFLOWER, LETTUCE PLANTS, &c., Autumn sown, best varieties, in any quantities. LIST, and printed copy of many recent (1882) Testimonials, on application. Prices moderate, no charge for packages.—EDWARD LEIGH, Dunsfold, near Godalming.

Heaths for Winter Flowering.

JOHN FRASER, The Nurseries, Lea Bridge Road, Leyton, Essex, has to offer a fine stock of ERICA HYEMALIS and ERICA GRACILIS. The plants are very good, and the prices, which are very low, may be had on application.

TO LARGE BUYERS AND THE TRADE.

ELMS, English, grafted, straight stems, 10 to 12 feet.
SYCAMORE, 10 to 12 feet.
CHESTNUT, Horse, 8 to 10 feet.
BEECH, Purple, 6 to 8 feet.
APPLES, Standard, very fine.
CURRANTS, Black and Red.
ROSES, Standard and Half-Standard.
CUPRESSUS LAWSONIANA, 4 to 5 feet.
LIGUSTRUM OVALIFOLIUM, 3 and 4 feet.
LAUREL, Portugal, 12 to 18 inches.
FIR, Larch, 2 to 2½ feet, and 4 feet.
FIRS, Spruce, 2 feet

A large quantity of the above to offer. Prices on application.
WANTED, a few thousands of PRUNUS MIROBOLANA, 2-yr. seedlings.
GEORGE SWAILES, The Nurseries, Beverley, Yorks.

Special Offer to the Trade.

W. BALL AND CO. have the pleasure of offering the undermentioned:—

APPLES, Standards, straight stems, good heads, 55s. per 100.
" Pyramids, well furnished, our selection, 60s. per 100.
" Dwarf-trained, our selection, 120s. per 100.
PEARS, Standards, straight stems, good heads, our selection, 65s. per 100.
" Pyramids, our selection, 75s. per 100.
" Dwarf-trained, our selection, 120s. per 100.
CURRANTS, Black, extra strong, 10s. per 100, 80s. per 1000.
" Red, extra strong, 10s. per 100, 80s. per 1000.
ROSES, Standards, our selection, good heads, and well-rooted, 90s. per 100.
" Dwarfs, very fine, our selection, 30s. to 35s. per 100.
ALDER, very strong, well rooted, 5 to 6 feet, 25s. per 1000, 6 to 7 and 8 feet, 35s. per 1000.
BEECH, very strong, 2 to 2½ feet, 22s 6d. per 1000.
HAZEL, 3 to 4, and 4 to 5 feet, 30s. per 1000.
LARCH, Fir, 1½ to 2½ feet, 20s. per 1000.
CHESTNUT, Horse, fine heads, 6 to 7 feet stems, 60s. per 100.
SYCAMORE, 3 to 4 feet, 25s. per 1000; 5 to 6 feet, 40s. per 1000.
FIR, Scotch, 2 to 2½ feet, 25s. per 1000.
PRIVET OVALIFOLIUM, strong, 1½ to 2 feet, 40s. per 1000.
ARTICHOKES, Green Globe, strong, 20s. per 100.
ASPARAGUS, 1-yr., extra strong, equal to 2-yr., 10s. per 1000.
SHALLOTS, very fine, 12s. per cwt.

Bedford Road Nursery, Northampton.

New Seedling Apple, The Queen.
FIRST-CLASS CERTIFICATE.

SALTMARSH AND SON are now supplying strong maiden trees of this excellent variety, without which no collection, however small, will be complete, at 3s. 6d. each; also a few strong 2-yr. pyramids, on Crab and Paradise stocks, at 5s. to 7s 6d. each. Price to the Trade on application.
The Nurseries, Chelmsford, Essex.

APPLE TREES with MISTLETO growing on them. Price from 7s. 6d. to 21s. each.
RICHARD SMITH AND CO., Nurserymen, Worcester.

LARCH, extra fine, clean, 2½ to 3½ feet, 25s. per 1000. SCOTCH FIR, 1 to 2 feet, 15s. per 1000. AUSTRIAN PINE, 1 to 2 feet, 25s. per 1000, all well rooted.
W. JACKSON, Blakedown, near Kidderminster.

To the Trade.

EDWARDS' VICTORIA KIDNEY POTATO.—First-class Certificate Royal Horticultural Society, November 3, 1881. Price per Cwt on application to OLDROYD AND CO., Shrewsbury.

CHRYSANTHEMUMS, best and newest only, Cuttings, buyer's selection, 1s. 9d. per dozen, 10s. per 100. For the grand new varieties and Marguerites, see CATALOGUES, 1 stamp.
WM. ETHERINGTON, Manor House, Swanscombe, Kent.

MANETTI RODS for cuttings, each rod will make from two to four cuttings, 12s. per 1000. Package free for cash with order.
KIRK ALLEN, The Rosery, Fen Drayton, near St. Ives, Hunts.

CHRISTMAS ROSES.—Fine clumps, full of Flower-buds. Samples and prices on application.
THOMAS S. WARE, Hale Farm Nurseries, Tottenham, London.

STOCK, EAST LOTHIAN.—Purple, White, Scarlet, and Crimson. Price on application.
IRELAND AND THOMSON, Seedsmen and Nurserymen, Edinburgh.

FRUIT TREES—Must be Cleared.

HUGH LOW & CO.,

Having to give up several Acres of Land by Christmas, offer a quantity of small, dwarf-trained

PEACHES, NECTARINES, APRICOTS, PLUMS, and CHERRIES,

Selection left to themselves, at £5 per 100.

CLAPTON NURSERY, LONDON, E.

TUESDAY NEXT.

CATTLEYA MOSSIÆ,

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY NEXT, December 12, at half-past 12 o'Clock precisely, by order of Messrs. SHUTTLEWORH, CARDER & Co., a grand importation of CATTLEYA MOSSIÆ (Autumn flowering var.), in fine masses and fine condition, with good eyes and healthy leaves; HUNTLEYA VIOLACEA, ODONTOGLOSSUM CRISPUM (Alexandræ), in fine masses, good condition, and the best variety; CATTLEYA MOSSIÆ, and LYCASTE SKINNERI, &c.; all in the best possible condition.

On view morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

THURSDAY NEXT.

CATTLEYA SPECIES.

Sent home as autumn flowering Mossiæ, and just to hand per SS. "Severn," in grand masses and condition.

MASDEVALLIA RACEMOSA (Crossi).

A truly superb new Masdevallia, producing orange-yellow flowers from 5 to 10 on spike, all open at one and the same time.

MR. J. C. STEVENS has received instructions from Mr. F. SANDER, St. Albans, to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, December 14, at half-past 12 o'Clock precisely, the above fine Orchids, together with a fine lot of ODONTOGLOSSUM ALEXANDRÆ collected in flower, and other importations.

On view morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

DOUBLE PINK BOUVARDIA, "PRESIDENT GARFIELD," a handsome and beautiful variety. Good plants, price 5s., 10s. 6d., 15s., and 21s. each, from JAMES CARTER AND CO. Trade price per dozen on application, with sample plants.
CARTERS', 237 and 238, High Holborn, London, W.C.

NEW APPLE, SCHOOLMASTER.
First class Certificate, R.H.S.

The best Apple introduced for some years.

A large and handsome fruit, of splendid quality, either for cooking or dessert, and suitable for the most exposed situations. See *Florist and Pomologist* and *Herefordshire Pomona* for illustrations. Strong Maidens, 7s. 6d. each, of the principal Nurserymen. Liberal Trade terms. Coloured plate, price 6d. Particulars post-free from
THOMAS LAXTON, Bedford.

HORIZONTAL TRAINED FRUIT TREES.—For extra sized Horizontal Trained Pears, which will cover bare walls, and come into bearing at once.
PYRAMID APPLES and PEARS and ESPALIER APPLES, extra transplanted, and in fruiting condition.
AUCUBA JAPONICA, beautifully coloured and very fine.
AUCUBA VERA, thickly set with berries.

Through trucks to any part of the United Kingdom. Plants and trees added to compensate for freight. Apply to
GEORGE SMITH, The Dell Nursery, Rock Ferry, Cheshire.

Gardenias.

MESSRS. JOHN STANDISH AND CO.'S Stock of GARDENIAS was never so extensive or good as it is this season. They have thousands of plants to select from, in all sizes, from fine specimens in 18-inch pots to small plants in 60's. All clean and healthy, and to a large extent well set with buds for winter-flowering. VERY REASONABLE Prices will be quoted on application.
Royal Nurseries, Ascot, Berks.

TWO HUNDRED THOUSAND HERBACEOUS and ALPINE PLANTS for Borders, Rockwork, &c. See Descriptive LIST, giving colour, height, time of flowering, &c., free by post for 1d. stamp.
Selection of 100 good showy varieties for 25s.
R. SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

PLANTS FOR POTTING AND FORCING:—

AZALEA MOLLIS, with from 10 to 30 buds
" a selection of the best hardy kinds, including PONTICA, NARCISSIFLORA, well budded.
KALMIA LATIFOLIA, nicely grown plants with flower-buds on wellnigh every shoot
RHODODENDRONS, well budded and the best varieties for the purpose.
DEUTZIA CANDIDISSIMA, fl.-pl., established in pots.
HYDRANGEA PANICULATA GRANDIFLORA, very strong.
ANDROMEDA PULVERULENTA or SPECIOSA.

These can be obtained in satisfactory plants and at fair prices from
ANTHONY WATERER, Knap Hill Nursery, Woking, Surrey.

Fulham Forcing Seakale.

JAMES CARTER AND CO. have again been enabled to secure a quantity of magnificent crowns of this, the finest Kale sent into Covent Garden Market. Trade price and sample hundred on application.
237 and 238, High Holborn, London, W.C.

R. AND G. NEAL, NURSERYMEN, SEEDSMEN, and CONTRACTORS, Wandsworth Common, S.W., respectfully invite an inspection of the large and varied Stock of SHRUBS, FOREST, ORNAMENTAL, FRUIT and ROSE TREES grown at their Nurseries, which are now in fine condition for transplanting. All plants delivered free by own vans, within 6 miles of the Nursery. Builders supplied at Trade Prices. CATALOGUES on application.

The Nurseries are within 1 mile of the Clapham Junction and Wandsworth Common Stations.

EIGHTY THOUSAND CLEMATIS, in Pots, of all the finest double and single varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants.
Descriptive LIST on application.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

FRANCIS BELL, NURSERYMAN, Easingwold, offers:—

2,000,000 SCOTCH LARCH, 1½ to 2 feet, 2 to 3 feet, 3 to 4 feet.
200,000 SCOTCH FIR, 1 to 1½ foot, 1½ to 2 feet.
200,000 QUICKWOOD, 2 to 3 feet.

The above are recently transplanted, with good leads and roots. For particulars apply as above.

To the Trade.
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H. and F. SHARPE'S Wholesale LIST of SEED POTATOS is now ready, and will be forwarded on application. It comprises the best varieties in cultivation, of the finest quality, free from disease, and selected specially for seed purposes. The prices will be found exceptionally low.
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ROSES of 1881, of above-named classes, 18s. to 24s. per dozen, in pots.

CHOICE ROSES.—Tea-scented, Hybrid Tea, Noisette, China, and Bourbon, 18s. to 24s. per dozen, strong plants in pots.
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Standard and Dwarf Roses.

W. B. ROWE AND CO. (Limited) have to offer a few thousands of the above, which are unusually fine; they also call particular attention to the large stock of FRUIT TREES—Standards, Pyramids, Dwarf trained and very fine Horizontal Training Apples and Pears
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FOR FIRST-CLASS TRUE SAMPLE OF

"EARLY SUNRISE" PEAS,

at very reasonable Prices, Growers and Merchants should apply to the Raiser,

MR. JOHN DAY, ASH, SANDWICH, KENT.

H. BRASSEY, Esq., M.P., has returned £50 PER ACRE from this sort this year sown before Christmas, 1881, and podded in June.

A fine lot of selected GOLDEN TANKARD MANGEL SEED.

ESTABLISHED 1795.
GOOD SEEDS
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SNOW-WHITE MIGNONETTE—JEFFERIES' SNOW-WHITE MIGNONETTE.

Price, 2s. 6d. per Packet.

This Mignonette is offered as a sterling novelty, being entirely distinct from any other. The spikes are PURE WHITE, freely produced around a central stem of great size. For growing in pots and for bouquets it will be found invaluable as a PURE WHITE flower.

From Mr. J. MUIR, Gardener, Margam Park.
"The new white-flowering Mignonette which you are about to distribute for the first time is a good one. While in London last July I saw all the best Mignonettes on trial at Chiswick, and a splendid lot they were, but none of them equalled your white one in size and purity.

From Mr. T. SHINGLES, Tortworth Gardens.
"Your snow-white Mignonette is a great improvement both for purity and substance, and doubtless will become a general favourite."

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"Your snow-white Mignonette is indeed a beautiful thing. Its pure white blossoms make it very desirable, and different to anything of the kind which I have seen. I am glad to see its trusses of blossoms so strong and compact."

From Mr. W. SCOTT, Cirencester House Gardens.
"Your snow-white Mignonette I consider exquisitely perfect in form and colour, free from any red tinge—a variety which will doubtless be extensively cultivated when it becomes known."

From Mr. ORPETT, Gardener, Further Barton.
"I have seen your snow-white Mignonette growing. It is pure white, of free branching habit, quite distinct, very desirable as a white flower for cutting."

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"Your snow-white Mignonette is a decided novelty, a really pure white, and of good habit."

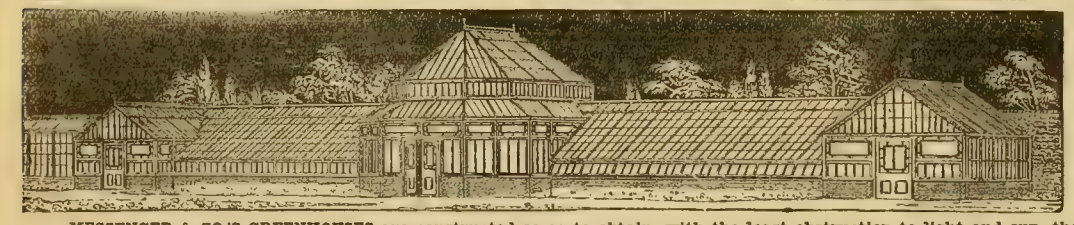
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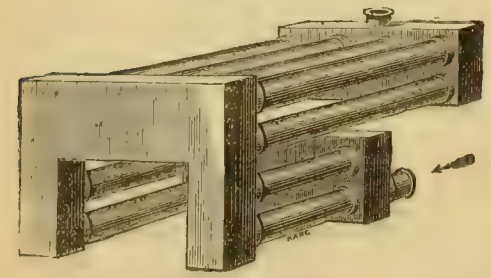
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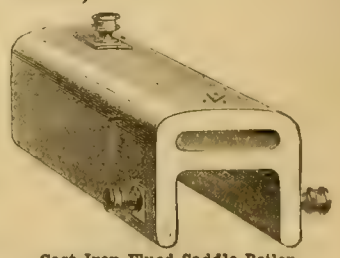
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Price 3d., Post Free 3½d.

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VIOLET, NEW DOUBLE MAZARINE BLUE.—This variety is very robust in habit, the flowers are large and perfectly formed, very fragrant, and perfectly produced. It is the finest Ultramarine-Blue Double Violet in cultivation. Price, each, 2s. 6d. ; per dozen, 24s ; from JAMES CARTER AND CO , 237 and 238, High Holborn, London, W.C.

STRAWBERRIES.—Strong roots for present planting and for fruiting next year, 4s. per 100. Descriptive LIST and price for plants in pots for forcing on application. — RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

EUCHARIS AMAZONICA, large pots, with fine healthy flowering bulbs. Price on application. HY. GODFREY, Nurseryman, Stourbridge.

CHESTNUT (Spanish), Hazel, Ash, Larch, Scotch, Birch, Alder, Willow, and Thorn Quick.—Stout, well-rooted, transplanted. A large quantity to be sold. GEO. CHORLEY, Coaster's Nursery, Midhurst.

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CHRISTMAS TREES.—Thousands from 1½ to 6 ft. Scotch FIR, extra transplanted, 2½ to 4 ft. ; ASH, LARCH, Silver FIR, PRIVET, Dwarf and Standard ROSES, Trained and Pyramid APPLE and other FRUIT TREES, FRUIT STOCKS, &c. QUICK, from 10s. per 1000. Fine Austrian PINE, from 3 to 6 feet. W. GROVE, Nurseryman, Hereford.

SEAKALE, exceptionally fine Roots for Forcing, 2s. 6d. per dozen, 16s. per 100. ASPARAGUS, strong, for Forcing, 12s. per 100 ; specially selected ditto, 16s. per 100. RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

R. H. VERTEGANS' New Double CINERARIAS, the finest in cultivation. The set of 12 distinct varieties will be sent, packing and carriage free, on receipt of Post-office Order for 31s. 6d. VORTIGERN, the finest double crimson, 3 plants showing flower free for 10s. 6d., 1 for 5s Chad Valley Nurseries, Edgbaston, Birmingham.

R. AND A. MORRISON, The Nurseries, Elgin, N.B , offer :—
ABIES DOUGLASII, 1-yr., very fine, from Scotch seed.
SCOTCH FIR SEED, guaranteed True Native, our own collecting, and taken out of cone on our own kilns. Samples and prices on application.

To the Trade.
EASTE'S KENTISH INVICTA PEA.
W. R. HARRISON has a few quarters of the above valuable early PEA to dispose of. Samples and price per bushel on application to W. R. HARRISON, High Street, Maidstone.

CHRISTMAS TREES, &c.
SPRUCE FIR, 3 to 4 to 5 feet, 12s. 6s. per 100.
" " quartered, 3 to 4 feet, 25s. per 100.
CYPRESS and THUIAS, 6 to 8 feet, 1s. to 2s. 6d. each.
COTONEASTER SIMMONSII, 3 to 4 feet, with berries, 10s. per 100.
LARCH, strong, in all sizes, cheap.
W. JACKSON AND CO., Nurseries, Bedale.

Tuberous Begonias.
JAMES KING (the celebrated Raiser of New Coleuses) having taken the above Begonias in hand for several years, has, by careful crossing, succeeded in obtaining a grand strain ; having again made a serious of crosses, begs to offer seed from such in 2s. 6d. and 5s. packets ; price to the Trade on application. JAMES KING, Florist and Seed Grower, Rowsham, Aylesbury.

RASPBERRY CANES. — 200,000 of the celebrated Carter's Prolific (see *Mark Lane Express*, Aug 1, 1881, p. 1044) to dispose of, at £2 per 1000. Samples of 100, 5s., packing included, free at Railway Offices in London : no CHANGE of rail. Payments to accompany Orders. Postal Orders on Knockholt. Apply to ALBERT AND EDWIN BATH, Colgates Farm, Sevenoaks, Kent.

SURPLUS STOCK.
RHODODENDRONS, mixed hybrid Seedlings, selected from various strains to give variety of colour, bushy plants, 2 to 3 feet high, about one half well-budded, 18s. per dozen, £6 10s. per 100.
RHODODENDRON PONTICUM, 12 to 15 inches, bushy, 35s. per 100.
AZALEA MOLLIS, seedlings, twice transplanted, 4 to 6 inches high, from three of the best and most distinct varieties, 25s. per 100.
LILIUM AURATUM, home-grown flowering bulbs, 6s. to 9s. per dozen.
DAPHNE INDICA RUBRA, fine, healthy, green plants, 18s., 24s., to 36s. per dozen.
LIST of other Nursery Stock, in which we abound, and which we now offer at reduced prices, forwarded on application. ISAAC DAVIES AND SON, Nurserymen, Ormskirk, Lancashire.

FOREST TREE SEEDLINGS.
One of the largest and finest stocks to choose from, including over three millions of two Seedling LARCH, with sound leaders—a splendid lot. Samples and prices post-free on application to
PETER S. ROBERTSON & CO.,
NURSERYMEN, EDINBURGH.

SPECIAL OFFER.
CRANSTON'S NURSERY AND SEED CO.
(*LIMITED*),
Having a very large stock of the undermentioned Trees and Plants, will be happy to give special quotations for large or small quantities, to suit all purchasers.

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All recently transplanted.
ABIES DOUGLASII, 2, 3, 4 to 6 feet.
CEDRUS ATLANTICA, 3, 4 to 5 feet.
" DEODARA, 2, 3, 4 to 5 feet.
CRYPTOMERIA ELEGANS, 2, 3, and 4 feet.
PICEA LASIOCARPA, 2, 3, and 4 feet.
PINUS AUSTRIACA, 2, 3, and 4 feet.
TAXUS ELEGANTISSIMA (Golden Yew), 1, 2, and 3 feet.
THUIA ELEGANTISSIMA, 1 to 2 feet.
WELLINGTONIA GIGANTEA, 2, 3, 4, 5, and 6 feet.

ORNAMENTAL EVERGREENS.
ANDROMEDA FLORIBUNDA, 2 feet.
AUCUBA JAPONICA, 1 to 2 feet.
BUXUS (Tree Box) of sorts, 1, 2, to 3 feet.
DAPHNE INDICA RUBRA.
EUONYMUS JAPONICUS.
" " VARIEGATUS.
CERASUS (Laurel), Common, 2 to 3 feet, bushy.
" " CAUCASICA, 2 to 3 feet, bushy.
" " COLCHICA, 2 to 3 feet, bushy.
" " ROTUNDIFOLIA, 1 to 2, 2 to 3 feet, bushy.
LAURUSTINUS, bushy.

STANDARD ORNAMENTAL AND WEEPING TREES.
ACER (Maple) NEGUNDO VARIEGATA, 5 to 6 feet.
" " in variety, 5 to 7 feet.
BETULA (Birch), Weeping.
" " LACINIATA.
" " PURPUREA.
CERASUS (Cherry), Double flowering, 5 to 6 feet.
CRATÆGUS (Hawthorn), Double and Single flowering, 4 to 6 feet.
CYTISSUS (Laburnum), Common, 5, 6, and 7 feet.
" AUTUMNALIS, 5, 6, and 7 feet.
" AUREUM, 5, 6, and 7 feet.
" WILDENI, 5, 6, and 7 feet.
FAGUS (Beech), Purple, 4, 5, and 6 feet.
" Weeping 4 to 5 feet.
FRAXINUS (Ash) AUCUBÆFOLIA, 7 to 8 feet.
" AUREA (beautiful golden bark), 7 to 8 feet.
" Weeping, 6, 8, to 10 feet.
PLATANUS (Plane) OCCIDENTALIS, 5, 6, to 7 feet.
" ORIENTALIS, 5, 6. to 7 feet.
POPULUS (Poplar), Black Italian, 8, 9, to 10 feet.
PYRUS MALUS FLORIBUNDUS, 5 to 6 feet.
QUERCUS (Oak), 8 to 10 feet.
" " Weeping, 6 to 8 feet.
SALIX (Willow), American Weeping, 5 to 6 feet.
ULMUS (Elm), Weeping, 8 to 10 feet.
PYRUS AUCUPARIA (Weeping Mountain Ash), very handsome, 8 to 10 feet.
TILIA (Lime), Weeping, large leaf, 6 to 9 feet.
ÆSCULUS (Horse Chestnut) RUBICUNDA, 8 to 10 feet.
" ALBUM, fl.-pl., 8 to 10 feet.
" FLAVA, 8 to 10 feet.

CLIMBING PLANTS.
AKEBIA QUINATA, strong, in pots.
AMPELOPSIS VEITCHII, strong, in pots.
" HEDERACEA, strong, in pots.
BIGNONIA RADICANS MAJOR, strong, in pots.
CAPRIFOLIUM (Honeysuckle) AUREA RETICULATA, strong, in pots.
" BRACHYPODA, strong, in pots.
ESCALLONIA MACRANTHA, strong, in pots.
HEDERA (Ivy), Irish, very strong, in pots.
" LATI-MACULATA, very strong, in pots.
" DENTATA, very strong, in pots.
" PALMATA, very strong, in pots.
" Variegated, of sorts, very strong, in pots.
CLEMATIS, a large collection, including all the finest varieties.

STRAWBERRIES, SEAKALE, ASPARAGUS, RHUBARB.
Many acres of Fruit Trees, Roses, Forest Trees, &c.
Descriptive Catalogues on application.
CRANSTON'S NURSERY AND SEED CO. (Limited),
KING'S ACRE, HEREFORD.



THE
Gardeners' Chronicle.
SATURDAY, DECEMBER 9, 1882.

HECKFIELD PLACE.

ONE short mile brings you from the Heckfield Lodges at Strathfieldsaye to Lord Eversley's gates at Heckfield Place, but in travelling that short space you have entered a new world. The surface of the country and the great Oaks at Strathfieldsaye denote clay, but the instant you have crossed the road outside the park the Fir trees of Heckfield Heath, which the Duke's statue at the gates appears to survey with eagle eye, proclaim a light soil, such as the Scotch Fir loves. You enter here a new formation, known to geologists as the Bagshot Sands, while the heavy soil of Strathfieldsaye is that of the London Clay. I have before observed that Conifers prefer the Bagshot Sands to the sands of most other formations, probably on account of their porosity. The fertility of soils depends on their porosity. A rich but impenetrable soil may be compared to a strong box locked ; and a poorer soil, whose porosity admits air and moisture to the roots of plants, may yield double the quantity of plant food, because, though it may be only half as fertile as the better land, the extent of surface of the roots that penetrate it is twice as great. The grounds of Heckfield Place are notoriously good for most kinds of timber, yet the soil does not appear to be fertile. It is surprising to find the Oak growing so well on such light land, but the Oak sends its roots deep and spreads them wide, and there are veins of clay here at intervals which serve to feed the Oak. The common Bracken grows 12 feet high here. The Elm does not flourish at Heckfield but, the Conifers are magnificent. Mr. Wildsmith, the enthusiastic gardener at Heckfield — terribly hurt by his accident a year ago, but recovering satisfactorily, I trust —showed me his pets—an Abies nobilis of 55 feet, clothed in purple and fine raiment in the distance, and many others. Happy the gardener who serves a Peer who really loves a garden !

Lord Eversley has been engaged some years in superbly decorating a terrace garden in the artificial and highly ornate style, of which various representations have been given in your columns, and in gradually enlarging the pleasure grounds. My remarks will refer to the latter chiefly. The motto here seems to have been taken from the lips of a northern proprietor, "Be aye stickin' in a tree, Jock!" Every year a portion of the Bracken in the wood beyond this year's boundary is dug under, and in goes a Cryptomeria japonica—a favourite tree at Heckfield, or some other noble specimen, or perhaps a dozen, for Lord Eversley loves trees, and approves of planting a few every year. As the eagle, or the swan, produces offspring every season, so Lord Eversley, by a noble instinct for one so aged, likes to see his trees increase around him, and beget a new crop of the choicest kinds every year. Mr. Wildsmith says there are 30 acres of pleasure-ground : I should have thought the area was greater, and perhaps he has not calculated these annual encroachments, by which the lovely

lawn has been enlarged from time to time. No doubt skilful landscape gardening increases the apparent area of a pleasure garden, still I think that charmed circle lying immediately around the house—bewitched as it has been by magic arts—must include more than 30 acres. But however that may be, the best point of observation for a full view of the beauties of Heckfield Place is at the top of the house. From that highest spot in the garden, sitting on the leads and leaning against a water-tank, or a stack of chimneys, you have a noble view of a true English landscape, stretching over several counties, and every inch of it Lord Eversley's, to admire and be thankful for. It is delightful to learn that one who filled the high office of Speaker of the House of Commons for many years, and retired years ago, can find a zest in life at eighty-nine and perform its duties, not only at Heckfield, where his estate and garden are kept in the best possible order, but in London, where the House of Lords still profits by his experience. He can still enjoy sport, climb gates and stiles, and cross the fields in September with his gun, though I hear he has bought a shooting pony this season, and intends to cut corners a little and ride from field to field, to lessen the walking. These details are strictly connected with gardening, because such prolonged powers must be partly due to innocent and delightful occupations, varied as the seasons, and to pleasures and light toils, such as budding or pruning, amid which the unnoticed years steal away, and leave no scars behind them—hardly any sign of their passage.

A poet might describe the landscape from the roof—I must be content with pointing like a sign-post to that distant line of hills. Mischievous clouds, dry through having drained off their moisture in the Reading Showyard earlier in the week, were struggling to stop the sunbeams, and Hants, and Berks, and Bucks, and Oxon were partly overshadowed, or rather the lights and shades were mixed and moving.

Among the distant points seen from the roof by favour of the sun's occasional gleams are the line of hills beyond Oxford, trees in Windsor Great Park, Finchampsted and Sandhurst church tower, Bagshot Monument, Cæsar's Camp, and that stuck-up and long-reaching Hog's Back, which extends from Guildford to Farnham, and is one of the most conspicuous objects in distant views in many parts of Surrey.

It is time now to descend; I should have come down before but for a consciousness of inability to describe the gardening.

It is probably known to readers of the *Gardeners' Chronicle* that Grape Vines grow here upon their heads. I refer to Lady Downe's Seedling in a spacious span-roofed house, where the Vines were trained down the opposite slant till their tops reached the earth, where they were induced to root; and in some cases they have been cut at the ridge, leaving them growing upside down. The terraces I must leave to Mr. Wildsmith's abler treatment in these columns, as well as the two stately specimens of Chamærops Fortunei (see *Gard. Chron.*, vol. xv., p. 16) flowering at the bottom of a flight of steps by which the terrace is reached from the lawn; and also the mass of beautiful plants, exquisitely arranged, flanking the steps on the left. The lawn, too, curiously troughed by water and sparingly and most tastefully planted within the past thirty years, with its sheet of bright water at the lower end made beautiful by landscape gardening—all these creations and adaptations I must leave the poets and painters to depict.

Here are some notes on the trees. The largest tree is a Beech at the furthest corner between the ground which is still in Nature's hands and that in Mr. Wildsmith's. It measures 23 feet 8 inches in circumference at 5 feet from the base, and on looking up the branches of the old tree are seen to be wonderfully formed for stubborn strength, in keeping with the massive trunk. The Beech flourishes here, and many noble specimens meet the eye. But the same may be said of the Oak, and I do not remember to have seen before two trees that affect such opposite kinds of soil flourishing in such near neighbourhood—the Beech on the higher, poorer ground, and the Oak generally lower down, where the soil is richer, or more moist, or enriched by veins of clay. A Cedrus atlantica by the lake is one of many notable specimens of Conifers; Abies cephalonica, a tree of Mount Enos, measures 75 feet. A Douglas Pine here is specially beloved, and is a fine tree, with very heavy foliage. There are Limes and tufted Chestnuts growing generally off the lawn and pleasure garden, and reached by some of the winding walks in the part which, for the sake of distinction, I have called the domain of Nature. But there is an art which mends Nature, and a wilderness in the precincts of the lawn, with bad weeds, Nettles, Docks, Thistles, would be as intolerable to Lord Eversley as so many recalcitrant Irish M.P.'s. Abies Nordmanniana is another noble specimen, and I cannot forget the fine groups of the Cryptomeria japonica. One of the clumps of Rhododendron, which I did not see in their glory, seemed still in blossom, with some golden flower which I mistook for Broom in the distance—it proved to be the rich foliage of golden Yews.

I shall not attempt to describe the kitchen garden here and the scientific management of "houses" and borders, a small volume would be needed to do them justice. I may add that Heckfield Place is a stately convenient house, and Mr. Wildsmith's residence one of the prettiest of cottages. *H. E.*

New Garden Plants.

PTERIS SERRULATA COWANI, *n. var.*

FRONDS dwarfish, with ramose stipes, the branches shortly oblong in outline, very broad throughout, and rounded at the apex, which is multifid; apices of the pinnæ flabellately crested; lower pinnæ with one or two pinnules occasionally developed on the posterior side.

There are now in cultivation numerous crested varieties of this interesting and useful evergreen greenhouse Fern, varying greatly in stature, as well as in general character. The present seems to be a dwarf form, and distinct from any with which we are acquainted, its chief peculiarities consisting in the ramose stipes, the short broad-ended fronds, the flabellately multifid-crested apices of the pinnæ and terminal divisions, and the tendency to develope a pinnule here and there on the posterior margin of the lower pinnæ. It was sent to us from the Garston Vineyard of the Liverpool Horticultural Company by Mr. John Cowan, and is named in compliment to the energetic manager of that establishment. We believe that Mr. Cowan intends to exhibit plants of it in London at some early opportunity. *T. Moore.*

LASTREA HOPEANA, *T. Moore*: NEPHRODIUM HOPEANUM, *Baker, Syn. Fil.*, 2d ed., 494.

Fronds ovate or subdeltoid, 1 foot long, and 8 inches wide, with a slender glabrous stipes of about 6 inches in length, thin membranaceous in texture, pinnato-pinnatifid; pinnæ sessile, lanceolate, caudate, the lower pair sometimes but not always shorter than the next, all pinnatifid, cut down nearly to the rachis into ligulate falcate acute entire segments, the basal pair much smaller than the rest; apex similar to the pinnæ in form and segmentation, but larger and conspicuously caudate; veins simple, curved, close-set, prominent on the upper surface; sori small close to the midrib; involucre with a deep open sinus, firm, persistent; rachides, both primary and secondary, slightly pubescent.

This is a very elegant Fern, and one well adapted for being grown for decorative purposes, its slender stipes and bipinnatifid fronds cut up into narrow falcate segments, with the caudate apices of frond and pinnæ having an exceedingly light and graceful appearance. The size of the plant, too—1½ to 2 feet high—renders it suitable for flower-stands and vases, and on account of its finely divided fronds it would by no means be inappropriately placed on the dinner-table. The longer pinnæ are about 4 inches in length, with a narrow, caudate apex an inch in length, while the tail or cauda which terminates the frond is 1½ inch long, and gives an elegant finish to the whole. The pinnæ are scarcely an inch wide on the broadest part, and the segments less than half an inch long, and about one-eighth of an inch broad, very regularly and closely placed, so that the sinus between them is acute.

Our specimens are from Messrs. Veitch & Sons, of Chelsea, by whom they were imported from the South Sea Islands. It had previously been collected in the Fiji Islands by Lieutenant Hope, in compliment to whom Mr. Baker gave it the specific name quoted above. *T. Moore.*

LASTREA PROLIFICA, *T. Moore*: ASPIDIUM PROLIFICUM, *Maxim. M.S., Franchet and Savatier, Enum. Plant. Japon.*, ii., 239, 632.

Fronds deltoid, bipinnate, coriaceous, deep green, 6—20 inches high including the stipes, gemmiparous in the axils of the segments and on the margins; pinnæ rather distant, obliquely ovate-lanceolate, the posterior side most developed, narrowing upwards to an attenuated point; pinnules unequal in size and form, usually linear acute, occasionally aristate, somewhat falcate, distinct, the basal ones with a short footstalk, the middle ones adnate and the upper confluent, those on the posterior side of the basal pinnæ ¾—1 inch long, sometimes slightly auricled, often cuneate at the base, above which they are usually crenately lobed; sori large, numerous, disposed in two lines on each side the costa, and covering the whole back of the frond; indusium convex, subcoriaceous, reniform, entire; caudex short, stout, decumbent; stipes fuscous at the base where it is covered with lance-shaped dark brown scales, stramineous (pale green when fresh) above, and there sparsely clothed with brown scales; rachides furnished with linear-lanceolate fulvous scales, the secondary ones often densely clothed with both plain and "cystoid" scales.

This singular and interesting Fern was, we believe, distributed by Maximowicz under the name of Aspidium erythrosorum monstrosum, but subsequently, as published by Franchet and Savatier (*l. c.*), this name was changed to Aspidium prolificum. It appears from the subjoined letter to be also sometimes cultivated as Lastrea Fortunei. We have received garden specimens from three sources. In the course of last year M. Lafosse, of Saint Cômes du Mont, sent fronds for determination to the *Gardeners' Chronicle*, and during the present season we have also met with it in the collections of Messrs. Veitch & Sons, and Mr. W. Bull, of Chelsea. They all agree exactly, so that it may be taken as a well-marked and desirable addition to our hardy evergreen Ferns. It has a short, stoutish decumbent caudex, clothed with dark brown narrow lanceolate scales. The fronds (those grown in the South of Europe) have a stipes of about 6 inches long, and a lamina of over a foot; they are leathery in texture, and triangular in outline, distant in the setting on of the parts; bipinnately almost tripinnately divided at the base, with the upper surface dark green, and the under side furnished with "cystoid" scales. The secondary rachides, which bear pinnules of unequal size and form, are often densely clothed with plain or "cystoid" scales. The pinnules on the upper side are smaller, and set on nearer to the primary rachis; the under surface is closely occupied on every portion with sori, which are covered with reniform indusia these being red in the centre and lead-coloured at the margin. We have besides these, perfectly formed fronds less than 6 inches high, which are soriferous throughout, and also bear several young plants from the buds in the axils of their pinnules.

M. Lafosse informs us that he received the plant some two or three years since, labelled Lastrea Fortunei—a name he has not succeeded in finding in the works of Hooker or Moore. "This precious Fern," he goes on to say, "whatever may be its name and origin, is one of the most interesting ever introduced. I can affirm it by experience. I have collected Ferns for more than twenty years, and especially hardy kinds. I possess a very large proportion of the sorts which have been introduced, and—well, none perhaps has caused me greater pleasure than this. Its hardiness is complete; it has borne the winters of 1879-80 and 1880-81 without any shelter, and not one of its beautiful persistent fronds has been damaged by wind or

snow or frost, though the thermometer has here fallen to 16° Cent. (= F. 3.2). It is vigorous; its young fronds are the colour of burnt sienna, becoming when older of a beautiful green, and covered on their under-side with numerous bright red sori. These fronds are persistent, and attain 20 inches or more in height. Of all the truly hardy Ferns I know, this keeps furthest from the European type. The fronds are as if varnished, stiff, coriaceous, and enduring, but very elegant. I believe I render to your readers a true service in pointing out to them the qualities of this very precious species."

The authors of the *Enumeratio Plantarum Japonicarum* remark of this plant that it is extremely polymorphous, the pinnules being not infrequently dissimilar on the same specimen. Those on the lower side of the pinnæ are larger; in some fronds trilobate or tripartite, the two lower segments borne on a slender petiole, and generally very small, linear or oblong, the intermediate one sometimes more than an inch long; in other specimens the corresponding pinnules are almost sessile, and only dentate, with two little lobes scarcely visible at the base. The anterior pinnules, which are constantly smaller, are in like manner often tricuspidate or hastate, but sometimes oval or lanceolate, and either sessile or petiolulate. The rachis of the pinnæ is sometimes completely covered by narrow brownish-red scales, cystoid scales being more or less abundantly mixed with them, but in certain specimens both sorts of scales are almost totally wanting, and such fronds have a different aspect.

A remarkable peculiarity, which is common to this and some other species, is that of producing leafy buds either in the axil of the divisions of the frond, or less frequently on the margin of the limb, or even in the centre of a sorus. Some individual plants are loaded with these buds, which are very rapidly developed, and produce small fronds, which themselves bear sori conjointly with the mother frond. The abundance of the sori is also very characteristic; all the segments are covered with them from top to bottom, and the margins of the limb are folded back over the sori so as almost completely to cover the side nearest to the edge.

From what has been stated it will have been inferred that Lastrea prolifica is a native of Japan, and such it is. Our description is drawn up mainly from the fronds furnished last year by M. Lafosse, aided by fresh specimens of the mature fertile plant and smaller fresh proliferous fronds kindly provided respectively by Mr. Bull and Messrs. Veitch. *T. Moore.*

PHALÆNOPSIS SPECIOSA, *Rchb. f.*

This plant is very clearly distinct from P. tetraspis, although it is allied to that plant in the same way that it bears a family resemblance to P. Luddemanniana. An experienced eye can, however, see a considerable distinction, even when out of flower, in the character of the leaves and the roots. The leaves in P. tetraspis are of a very dark green, and are of considerable thickness; in P. speciosa the leaves are much lighter in colour, having almost a yellow tinge, and are of less substance, and the roots are less numerous and rather flat. But when we come to the flower, a great difference presents itself. The plant is altogether more floriferous than P. tetraspis; the colour and markings are beautiful, the common form of the flowers having large blotches and streaks of rosy-purple (rose-madder) on a white ground, but scarcely any two plants are alike in their markings. Some flowers are much blotched with deep rosy-purple, showing very little white; others have bars of rosy-purple with some white spaces between. In rare specimens the surface is profusely covered with delicate streaks of light rose.

Besides the type there are two very distinct and well marked forms, which have been provisionally named by Lieut.-Colonel Berkeley, and of which he gives the following description:—

P. SPECIOSA (*Rchb. f.*) VAR. IMPERATRIX (*Hort. Berkeley*).

Plants finer than in the common form, leaves 20 inches measurement, flowers, deep rosy-purple, with no white markings on the sepals and petals, the column only being white, with two yellow spots on the side laciniæ, the petals in this variety are much more rounded ovate;—this is an exceedingly rare plant, only one piece of four plants having been found.

P. SPECIOSA (*Rchb. f.*) VAR. CHRISTIANA (*Hort. Berkeley*).

This is a charmingly distinct variety—quite a surprise. In this plant, instead of the flowers being



FIG. 130.—PHALÆNOPSIS SPECIOSA.

White, blotched and striped with rose-madder.

either blotched or barred with rosy-purple, the sepals and column are rosy-purple, the petals being pure white, giving the plant a most elegant and singular appearance. Sometimes the whole of the flowers on the flower-stem will be the same, but occasionally



FIG. 131.—PHALÆNOPSIS SPECIOSA, VAR. CHRISTIANA.

Back of flower. Sepals rose-madder; petals ivory-white.

Nature forgets her pretty fashion, and an odd petal is also rosy-purple. The flowers of this variety are slightly smaller than in the other kinds, but this is made up for by the variety being more free flowering and of exceedingly graceful habit. There appears to be



FIG. 132.—PHALÆNOPSIS SPECIOSA: COLUMN, LABELLUM, AND POLLEN MASSES MAGNIFIED.

Column white; labellum rosy-purple, with two blotches of yellow on the side laciniæ.

no marked distinction in the form of the leaves. All the varieties are sweet-scented.

All the interesting details given above are due to the kindness of the discoverer of the plant, Lieut.-Col. Emeric Berkeley, who has given me several proofs of a really rare power of observation. With this talent, and having watched the plants on the spot, we may gladly say, "*Eris mihi magnus Apollo.*"

This great and very distinct beauty flowered in July last, and when on my return from Italy I found a very good inflorescence, dried in my absence, kindly sent by Lieut.-Col. E. Berkeley. *H. G. Rchb. f.*

YEWDEN.

WHATEVER a garden may be internally, a good deal of the pleasure to be derived from it depends upon its local associations. An appreciative eye will observe a certain cheerfulness of aspect in broad meadows of rich pasture, in trees that produce abundant leafage, and still more in a lake or river, when either are within view of the garden, or are only a short distance removed from it. A clear, broad sheet of water gives the crowning touch to the grounds surrounding a private garden, but where the sea or river is within view we acknowledge, and rightly so, the superior work of Nature as being the most captivating picture. We introduce these remarks because we are about to write of a garden situated on the banks of the Thames, and in a locality of which every one has either heard or read.

Yewden is situated between 3 and 4 miles from Henley-on-Thames, Bucks, and is the residence of G. C. Schwabe, Esq., whose fine mansion and gardens at Broughton Hall, near Liverpool, are well-known to horticulturists. Before Mr. Schwabe removed to the more genial climate of Bucks, the garden at Broughton was known as a model in the neighbourhood. The fine conservatory, the collections of plants, the dressed grounds, the artificial lake and rustic-work, are not equalled at Yewden, which is an unpretentious residence in the Elizabethan style, with quaint surroundings, but still possessing many picturesque views and rural charms. Could one but reverse the order of things and bring the Lancashire garden to the banks of the Thames, and create access to the river near by the weir by an embowered walk from the garden, what a delectable spot it would be! But we must not dwell upon the impossible. The entrance to the house is on the east side, off the Henley and Great Marlow road. We are struck with a small lake in front of the house, and a rapid flowing stream skirting a belt of trees and shrubs. The lake is connected with the stream, which flows into the Thames, and was formed some time ago for the purpose of breeding trout for the benefit of anglers upon the Thames.

Among the trees and shrubs we noticed specimens of Libocedrus decurrens, Cedrus Deodara, Abies Nordmanniana, Weeping Birch, Laburnums, and other plants and shrubs of a suitable character for the situation. Within the porch at the front a good example of ingenuity is displayed by covering the inside with golden and silver variegated Ivies—the first instance of the kind we remember to have seen. The pleasure-grounds are upon the west side, and are ornamented with specimen trees of the red Cypress, English Yews, Ailantus glandulosa, several beds of Roses grown upon their own roots, walks overarched with Honeysuckles, rambling Roses, Lilacs, and other creepers, and a Yew avenue which is said to have been planted in the time of Queen Elizabeth. This is a quaint-looking feature in the grounds. The avenue is 12 feet wide, and the top of the arch rises to a height of about 20 feet. The trees are kept trimmed of their branches to a height of 6 feet from the ground and then form a dense thicket overhead nearly 10 feet through and rising to the height already mentioned. The outside surface is kept smooth but irregular, tapering to a ridge at its apex. About midway the hedge projects to the north and south, leaving an oval space in the centre. The lawn was originally higher than the base of the house upon this side, but the soil was excavated to a depth of 6 or more feet for a considerable distance, and the new lawn thus made is flanked upon both sides by belts of trees and shrubs and a mixed arrangement of plants for spring flowering. The latter are so arranged as to present a natural looking effect in spring, and they consist of Wallflowers, Stocks, Honesty, Collinsia bicolor, Nemophila insignis, Forget-me-Nots, Candytuft, Saponaria calabrica, Silenes, &c. Quantities of bulbs are planted among these plants which peep up promiscuously from among them, and are said to yield the most charming effects during the spring months. The curving walks, and

the gradations of the green sloping banks, of grass and flowers, give points of interest, and contribute not a little to the attractions of the garden. There is harmony of arrangement and variety as well as simplicity of style apparent in all that has been done by way of improvement, so that no new feature that has been introduced can be said to clash with the quaint style of the house or of its immediate surroundings.

In the glass department flowers are the predominating feature—a blaze of Chrysanthemums and Salvias in one house, two banks of dwarf-grown Chrysanthemums in another, winter-flowering Pelargoniums in a third, and Ferns and Orchids in a fourth. The blue, scarlet, and mauve shades of the Salvias are a great acquisition to our stock of winter-flowering plants, and as grown at Yewden, of dwarf size, they make a rich edging to a group of Chrysanthemums. Chrysanthemums are grown bush fashion, with from ten to a dozen shoots to each plant. The finest examples are of Princess of Wales, which have borne as many as from twelve to eighteen full-sized flowers, perfectly cone-shaped, and of much substance of petal. The incurved and Japanese sorts consist of the best exhibition kinds, and the principal display is in a low span-roofed house specially built for them.

The show is a remarkable one from a cultural point of view, and as representing more fully than any other private collection that we have seen the different sections of the Chrysanthemum genus. If Mr. Owen can grow as many fine flowers upon dwarf bush plants there is no reason why others should not do the same, and we are sure the plants will be found to be more generally useful. But the Chrysanthemum show, good as it is, falls far short, as regards cultural merit, of the grand display of Pelargoniums, which fill a fair-sized house. The collection consists of Cannell's, Pearson's, and Denny's best, besides several Continental varieties—in all over 200 sorts. The plants are grown in 5 and 6-inch pots, and carry from twelve to twenty trusses each, the individual trusses averaging about 6 inches across. The most striking shades of colour struck us as being of the following kinds:—Mrs. Strutt (lilac, with a shade of pink), Walter Scott (dark crimson), Eureka (white), Lizard (salmon), Rosa Bonheur (blueish shade of crimson), Aïda (blush white), Miss Hamilton, Gertrude, John Wakefield (scarlet, with white eye), Mons. de Lesseps, Lucy Bosworth (rose-pink), Mrs. Lindley, and Hetty. The doubles and semi-doubles are equally fine, and are highly spoken of for cutting purposes. These are allowed to flower almost from the rooted cutting. A few of the very best are Gloire de Rouge, M. de Toyheut, Prokop, Daubech, Goliath, Emile Girardin, Guillon Mangeli, E. v. Raspail, and many others.

The Orchids comprise good plants of Phalænopsis, valuable Cattleyas, Dendrobes, and Odontoglossums, and are accompanied by a collection of Ferns for cutting. Those who knew Mr. Owen at Broughton in the hey-day of his glory will not be surprised to hear that his specialities at Yewden are more than usually well done. The summer flowering plants are managed upon the same principle. Two or three classes of plants (as the Gloxinia, tuberous-rooted Begonia, &c.) are selected, and these are well done and in quantity, so that from a floral point of view it is summer at Yewden all the year round!

LIST OF GARDEN ORCHIDS.

(*Continued from p.* 681)

45. CHYSIS.—Lateral sepals adnate to the foot of the column. Lateral lobes of the labellum erect. Column thick, two-winged, produced at the base in a foot. Flowers handsome, several in a raceme. Epiphytical herbs, with rather fleshy stems, sheathed at the base, densely leafy upwards, at length (after the fall of the leaves?) thickening. Leaves rather long, prominently veined longitudinally. About six or eight species, inhabiting Mexico and Colombia.

1. C. AUREA, Lindl., *Bot. Reg.*, t. 1937; *Walp. Ann.*, vi., p. 471; *Bot. Mag.*, t. 3617.—*Var. maculata*, Hook., *Bot. Mag.*, t. 4576; Lem., *Jard. Fleur.*, t. 121; *Fl. des Serres*, t. 671 (both copied from *Bot. Mag.*).—*Var. Limminghii*, Hook., *Bot. Mag.*, t. 5265; *Ill. Hort.* 1860, t. 240 (species); Warner, *Sel. Orch.*, ser. 1, t. 34.—Mexico to Colombia. The original variety was discovered by Mr. Henchman in Venezuela, and sent to Messrs. Low, of Clapton, in 1834; var. maculata was first flowered by Messrs. Lucombe & Pince in 1851 from plants purchased at Mr. Stevens' sale of Colombian Orchids in 1850; and the var. Limminghii was introduced by Ghiesbreght from Chiapas, Mexico. The last variety or species is the showiest of the three. Hort. Kew.

2. C. BRACTESCENS, Lindl., *Bot. Reg.* 1840, Misc., n. 131; *Bot. Reg.* 1841, t. 23 (poor); *Bot. Mag.*, t. 5186; *Flore des Serres*, t. 675; *Ill. Hort.*, ser. 2, t. 398; *Rev. Hort.* 1859, p. 294, with woodcuts.—Mexico. Imported by Mr. George Barker, who flowered it in 1840. Flowers white or yellowish. When well grown this is a showy Orchid. Hort. Kew.

3. C. CHELSONIX, Rchb. f., *Gard. Chron.*, n. s., i., p. 535; *Fl. Mag.*, n. s., t. 297; *Gartenfl.* 1880, p. 153, with a woodcut.—Raised in Messrs. Veitch's nursery, probably from C. Limminghii and C. lævis. Sepals and petals nankeen-coloured, purple-brown towards the tip; lip whitish with violet-purple blotches.

4. C. LÆVIS, Lindl., *Bot. Reg.* 1840, Misc., n. 130; Batem., *Orch. Mex. et Guat.*, t. 31; *Ill. Hort.*, t. 365; Warner, *Sel. Orch.*, ser. 2, t. 14.—Mexico. Imported by Mr. Barker. Flowers large, clear yellow; lip not downy as in the other species.

C. LIMMINGHII = C. AUREA, var. — Dr. Reichenbach states (in *Walp. Ann.*, vi., p. 472, and in his *Beitr. Orch. Centr. Am.*, p. 43) that C. Limminghii, Linden and Rchb. f., is a good species, distinguishable in the dark by the touch from C. aurea; but I am not sure that the plant figured as C. aurea Limminghii is the true C. Limminghii, Linden and Rchb. f., in Otto and Dietr. *Allg. Gart. Zeit.*, 1858, p. 380. Yet there is little doubt that it is the same, and it certainly is the handsomest of the genus.

(*To be continued.*)

WINTER-FLOWERING PLANTS.

WERE it not for the brightness of the Chrysanthemum during the present month the appearance of our plant-houses, as regards flowering plants, would not be an enlivening sight. A few meagre-looking subjects that might be enumerated upon the fingers of one hand is all that the great bulk of country gardens can boast of at this season, notwithstanding the abundance of winter-flowering subjects that we possess, that are both cheap and easily cultivated. Upon a recent visit to Messrs. Veitch's nursery we noticed the following plants in flower, some of them, indeed, being equal in floriferousness to anything we have seen during the season.

BEGONIA MADAME FANNY GIRON.—This is a gem of the first water; the flowers are of a deep shade of scarlet, changing to pink, and the plant comes into flower in the early part of the winter. It is of the same habit as B. insignis, but is a much more profuse flowerer than that variety, and perhaps is unequalled by anything else as a table or room plant at this season. In forming a group of low-flowering plants a back row of this bushy drooping-habited variety leaning a little forward would make a background that would be simply incomparable, supposing the next line to be composed of white Roman Hyacinths or white Primulas, intermixed at intervals with a few shades of pink or purple.

BEGONIA HYBRIDA MULTIFLORA. — Another variety, of exquisite habit, and extremely floriferous in winter. It grows after the fashion of the well-known B. fuchsioides, but is much dwarfer and more bushy, thereby rendering it a most useful decorative subject. The flowers are of a pleasing shade of pink, and in every respect the plant may be recommended as a pretty winter-flowering variety.

JASMINUM GRACILLIMUM.—No plant of modern introduction can be at all compared with this lovely sweet-scented Jasmine (see *Gardeners' Chronicle*, 1881, vol. xv., p. 9). To our mind it is even more beautiful than the Gardenia, which loses its purity of colour in a short time, and is not so pleasingly fragrant. Grown as a bush for the warm greenhouse or conservatory it will always be admired, but it is as a cut flower that ladies will cherish it most. Gardeners who toil year after year to have sweet-scented flowers in winter, and seldom succeed, either for want of means or proper material, should turn their attention to the cultivation of this plant, than which there is nothing more beautiful among all the beautiful flowers that we possess.

ERANTHEMUM LONGIFOLIUM.—This is another good winter flowering plant, and a variety that is scarcely ever seen in private gardens. The flowers are scarlet, bell-shaped, and are well thrown up above the foliage. The plant grows freely, and flowers between November and Christmas.

ERANTHEMUM ANDERSONI.—A distinct variety, bearing beautiful spikes of white-coloured flowers during the present month. The lower lip is purple, mottled, and whether it is used in a cut state or as a decorative subject it is alike beautiful. Our own experience of it is that it looks best dotted about here and there among foliage plants and Ferns where its light-coloured flower-spikes give tone and grace to a collection of stiff-habited foliage plants, or it may be freely used with good effect for any other decorative purpose.

STEPHANOPHYSUM BAIKIEI.—Plants that have a striking resemblance to each other in general appearance are often found to be distinct in their habit or mode of flowering. This is the case with the plant under notice; it flowers after the manner of Centropogon Lucyanus, but, unlike the latter, the flowers are of erect habit though they are equally beautiful.

KNOWSLEY HALL.

(*Concluded from p.* 682.)

WESTWARD from this there is another long detached vinery of Black Hamburgh and Muscat Hamburgh. The roots in the outside border were lifted, and the border re-made, two years ago, and the inside portion was similarly treated last autumn. In this house were the remains of a nice crop. The ground here slopes quickly westward, necessitating the houses to be on different levels. Next comes another large vinery filled with Black Alicante carrying a good crop just beginning to colour. After this are a couple of Peach-houses and another vinery, collectively 210 feet in length by 18 feet wide. In the first of these Peach-houses the trees cover a trellis in front, and the back wall is also occupied with Peaches; all are in excellent condition, the crop gathered. The kinds grown are mostly confined to old well-proved varieties, amongst which may be named Crimson Galande, Royal George, and Bellegarde Peaches, with Elruge and Violette Hâtive Nectarines. The roots are all inside. The second house is a counterpart of the first in size and general arrangement; the crop here, as in the preceding house, was finished. The trees, like the last, are in fine order, full of stout well-matured wood that gives promise of bearing satisfactorily. The vinery adjoining is the second forced, the crop ripe about the middle of May.

At a short distance there are a number of houses devoted to the growth of plants for conservatory and table decoration, as well as for the production of flowers for cutting, which latter part of the gardener's duties, in most establishments, seems to be ever on the increase, until in even the largest places it is no easy matter to keep up with the demand. The first of these is a big hip-roofed structure in which Bouvardias, Tree Carnations, Solanums, and other things of a like description, are grown in quantity; with these also I noticed a number of Cape Pelargoniums, a class of plants which now appear to be making their way to the front, and deservedly so, for the beautiful forms and charming colours present in both the light and dark kinds, so different from any other description of plants, merit much more attention than they have hitherto received except by the few individuals who have formed collections of these most elegant of all Pelargoniums. Next are two span-roofed houses, each about 50 feet long; these are used for forcing pot-Vines to produce the earliest crop, after which follow Cucumbers and Melons.

We now come to a long span-roofed pit used in winter and spring for propagating, and in summer filled with small plants required for table decoration, Ferns for cutting, and a variety of subjects of a like description. Here also was a plant the result of a cross between a Caladium and an Alocasia, bearing long arrow-shaped leaves distinct in appearance, the centre suffused with red. With it was Begonia Louis Chrétien—a handsome high-coloured variety, after the Rex section in form, but with much of the centre colour red where in Rex it is silvery white; Palms, Aralias, Vriezias, and quantities of other things of a like description, go to make up the contents of this useful structure. Then there is another long house filled with Gloxinias, Caladiums, and other plants, mostly of a soft-wooded character, which are grown by the thousand. Yet another of these long houses, principally occupied by winter-flowering plants such as are annually propagated for the purpose. On the back wall there are Roses planted out.

After these there are two large span-roofed houses

filled with a general collection of stove-plants, and a quantity of Orchids; amongst the latter, in the first division, were a number of healthy thriving examples of Vanda Cathcartii, V. suavis, V. cristata, Thunia Bensoniæ, Aerides Fieldingii, Dendrobium Parishii, D. crassinode, D. Wardianum, D. thyrsiflorum, D. Jamesianum; Saccolabium ampullaceum, Cattleya Mendelii, C. maxima, C. Warnerii, C. labiata, C. Trianæ, C. Mossiæ, C. crispa; Lælia purpurata, L. anceps; Cymbidium eburneum, C. Mastersii; Cypripedium Stonei, C. Lowii, C. Parishii, C. concolor, C. niveum, C. hirsutissimum, &c. The above are only a few of those which thrive well along with the usual occupants. In the adjoining house, which is kept at a lower temperature, Orchids are also associated with such of the ordinary kinds of stove-plants as will succeed in an intermediate heat; of these are a number of Odontoglossums, Lycastes, and Masdevallias.

Near to these are the Pine-houses, which are different in construction to the generality of structures for the growth of this fruit, being much wider, which necessitates two beds wherein to plunge the plants, with a path between down the centre, in place of one bed in the usual way. The houses are each 45 feet long by 24 feet wide; the first contains the fruiters, a fine strong lot of plants, calculated to produce heavy fruit, consisting of Queens, Charlotte Rothschild, and Black Jamaica. The internal arrangement has here been recently altered by the addition of a path all round, with a substantial shelf over the hot-water pipes, which affords accommodation for the growth of Melons in pots; these, when placed thinly, and trained over the lower portion of the roof, give a little shade, which is rather beneficial than otherwise to the Pines. The adjoining division, in which the successions used to be grown, has been lately devoted to the cultivation of the best kinds of stove plants, such as Stephanotis, Allamandas, Clerodendrons, Dipladenias, Francisceas, Ixoras, and others of the like character, and a grand lot of Calanthe Veitchii, unusually well done. Early in the season the house was gay with Amaryllis, of which a good stock, named varieties, and also hybrids, are grown, than which few things are more deserving of a place, for they take up very little room, and can be brought into flower in succession, and their handsome blooms are always effective in a conservatory. These were succeeded by a good lot of Gloxinias. A roomy pit is now in use for the Pines, hitherto occupying this house; the alteration has been necessary to provide still more cut flowers and decorative plants, to be still further supplemented by a lean-to house built this summer, for cool Orchids; another long house is occupied with succession Pines, and one with Eucharis amazonica, which is here well managed. This brings us to the Cherry-house, a roomy hip-roofed structure, 50 feet by 20 feet; the trees are planted out in a prepared bed occupying the floor of the house, and are grown bush-shape; the back wall is also covered with Cherries, the trees are in excellent condition, yielding annually fine crops of fruit. Adjoining is the Fig-house, a little larger than the last; the trees are planted out in two rows filling the middle of the house, with others covering the back wall as well; the sorts are Negro Largo, Brown Turkey, and White Marseilles; the whole are in excellent order, bearing yearly a very large quantity of fruit. The last of the vineries contains late kinds, Black Alicante, Lady Downe's, and Trebbiano, carrying a full crop just beginning to colour. The outside roots of these Vines were lifted last February twelvemonths and the border re-made, without any apparent check or interference with the succeeding season's crop. Here were a number of large specimen Azaleas, well set with bloom. The next and last of the number of houses, devoted to the various purposes which I have attempted to describe, is some 120 feet long, containing a double row of Plums, and some Cherries, planted out, with Peaches on the back wall, the trees are about 7 feet high, by as much through; amongst the Plums are Green Gage, Transparent Gage, Ickworth Impératrice, Victoria, Prince of Wales, Coe's Golden Drop, and McLaughlin—the last a very fine variety, not so generally known or grown as it should be. These altogether were bearing a grand crop. To keep them within bounds as to size and to induce fruitfulness a portion of the roots is lifted each autumn. The Peaches in this house also are similarly treated, and the extremities cut back a little, with some fresh soil worked in amongst them. The Cherries consist of Elton, May Duke, Ingram's Bigarreau, Reine Hortense, and Bigarreau Napoleon; of the latter variety there was still a beautiful lot of fruit remaining. The Peaches on the back wall were carrying good even crops.

In the extensive frame ground I remarked a capital arrangement of pits which Mr. Harrison has had made; the back, front, and ends are composed of double Pitch Pine, 1½ and 1½ inch thick, with a cavity between equal to one thickness of the wood. These will, no doubt, be very useful, and keep out a considerable amount of frost. Three of them, each 100 feet long by 8 wide, are already made, and three others of a similar size are to be added.

The enclosed garden is 5 acres in extent, the walls enclosing and intersecting which are naturally very extensive; they are covered with unusually fine trees. Peaches and Nectarines were carrying a good even crop of fruit, the trees in excellent order. Apricots were also good, as likewise Morello Cherries. Apples are only a partial crop, and Pears on walls, as well as those grown in other ways, are all but a total failure. Mr. Harrison informed me that the Pear trees last year begun blooming in January, and most kinds were in full bloom by the end of February; this abnormally early blooming, coupled with the terribly severe weather experienced at the end of April, being enough to account for the almost total absence of fruit. Of Apples and Pears in the open quarters there are a very fine lot of trees, which, like those on the walls, are in excellent condition. A large piece of ground, comprising several acres, outside the walls, is devoted to culinary vegetables, which, in common with all under Mr. Harrison's charge, bears unmistakable evidence of ability and diligent attention. *T. B.*

HOOLE HOUSE, CHESTER.

If you, gentle reader, wish to experience a feeling of surprise and astonishment—a pleasant one, of course, understood—make your way to the garden of Mrs. Hamilton, above indicated. A courteous request to view the garden will in all probability meet with as courteous an answer. Get the gardener to lead you to the garden by some back way, so that you may not see it till it bursts upon you all of a sudden. But you need not trouble about it, for Mr. Thompson understands his business, and will enjoy your surprise almost as much as you will do yourself. No, you need not be afraid that we have spoiled the game and taken the edge off your surprise. It cannot be done. Only wander about as we did in the kitchen garden for a time, then open a door in a wall and look into the garden (see fig. 135, p. 753), and if the organ of astonishment does not vibrate in your cerebrum, why, we shall be as much surprised as we were when we opened that little green door and stepped into the enclosure ourselves. The garden occupies an oblong space of rather more than an acre in extent. It is bounded on three sides by a lofty wall of artificial rockwork, densely clothed with pyramidal Yews, columnar Thuias, and clipped evergreens, between and among which uprise serrated ridges which feebly recal the Simplon pass, and obelisks and pinnacles of rock that in a tame sort of way suggest the "aiguilles" of Mont Blanc, or the Matterhorn itself. "All the Alps in the back garden!" We have heard such an expression many times, but this is the nearest realisation we have met with. We should not commend it for imitation, but the whole thing is on such a large scale that the inappropriateness and Cockneyfied appearance are not nearly so apparent as the description might lead the reader to suppose. The bare peaks represent the alpine zones where vegetation is impossible. Circumstances would very soon make short work of this fiction were care not exercised to maintain it. From these higher summits, down to the level of the paths, slope in graduated order belts of shrubs representing the forest zone (only the trees have an awkward habit of overtopping the peaks), banks of rock hollowed into pockets and niches containing countless hundreds of alpine and rock plants, Saxifrages, Sedums, Androsaces, Ferns and the like. Round the entire area of lawn itself are other low rock mounds similarly clothed with alpines, so that the number of plants here got together must be something prodigious. As our visit lasted only a very short time we shall not venture to mention names. The keeping in order of such a garden must entail endless labour, as the maintenance is excellent. One plant is not allowed to overgrow another, and while formality is to a great extent avoided anything like untidiness is scrupulously prevented. The tufa rocks, which in course of time inevitably get soiled by dirt and the growth of cryptogamic vegetation, are duly cleaned every year, an operation demanding the labour of nine or ten men for as many weeks. "More Cockneyism; the idea of scrubbing rockwork!" Once again, the Cockneyism is in the idea rather than the practice, though we should prefer to see it just before the annual clean up, and the effect is by no means so unpleasing as one would expect. This gigantic rockery is the most remarkable feature of the garden. In some points it may provoke the derogatory criticism of those arrogant personages who are so enamoured of the objects of their own tastes and preferences that they vigorously condemn those of other people, and by implication at least would refuse to others the exercise of their own fancies.

Only less remarkable, and certainly less open to adverse criticism, is the flower garden, enclosed by these rocky barriers. On the well-kept lawn are twenty-six circular beds, each about 9 or 10 feet in diameter, and arranged in three parallel lines. The style of bedding is truly mixed. Pelargoniums are not despised simply because they are bedding plants, but they are worked in with herbaceous perennials, to aid in the general effect. From early spring till late autumn these beds are full of flower; when the bulbs are over the summer flowers come, to be succeeded in their turn by those of autumn. When our visit was made, Carnations and Phloxes, Lobelias and Japan Anemones, Senecios and Pyrethrums, Salvias and Asters, Pentstemons and Francoas, Sunflowers and Campanulas formed the most striking features. Everywhere there was profusion and variety of bloom, everywhere there were traces of successive phases of floral beauty according to the season. Along one border there were 500 to 600 Foxgloves alone, which must have had a superb effect. Much skill, forethought, and labour must be exercised in successfully associating so many plants of such varying habit. Were it not so, the general result would assuredly be a muddle, but no signs of confusion or want of harmony existed. The plants in these circular beds are lifted every third or fourth year, and fresh soil richly manured with cow-dung applied. The order in this garden, considering the nature and variety of the subjects dealt with, is something remarkable, and says much for the zeal of the gardener, but the comparison of this style of gardening with ordinary bedding-out in point of expenditure, labour, and time, must certainly be on the side of bedding-out. On the other hand, the varied beauty, the continually changing, yet ever enduring interest, and the utility as furnishing supplies of cut flowers, are all on the side of these mixed beds.

The usual adjuncts of a garden establishment are not neglected for the sake of this unique flower garden, but, with one exception, they do not call for special remark. One thing, however, does demand chronicling in particular—we allude to a plant of Allamanda Hendersoni growing in a Cucumber-house, and flowering in such profusion that upwards of 2000 (two thousand) flowers were open on one occasion, and in the course of one week nearly a thousand flowers were picked up which had withered and dropped. It might have been thought that the individual blooms would have been small; such, however, was not the case, the flowers being of unusual size and substance. *The Rambler.*

CANADIAN NOTES.

The glories of autumn have passed away with the splendours of the Maple, the Sumach, and the Beech, but we have had till to-day's snow, which has sullied even these beauties, the russet of the Tamarak (Larix americana) setting off the various shades of green from dark to light in the Spruce, Pine, Balsam and Cedar.

The results of our harvest in all descriptions of grain are very good, and with the exception of Barley (which is some of it grown) in very good condition. The crops of Potatos and Turnips, although some of us are highly satisfied, are generally not nearly as well as was anticipated. The price of Potatos, however, is only 2*s.* 6*d.* to 2*s.* 8½*d.*, English currency, for 90 lb.

Grapes in this neighbourhood are nearly a failure, but in the Grape district they have been satisfactory. The acreage in this province is now about 2400 acres, and annually increasing, and the quality of the wine becoming excellent. The sorts of Grapes are frequently Salem, Delaware, Clinton and Concord, and, if possible, Catawba, the Concord being the poorest but the most productive. The vintage has only recently finished, and the yield has been from 2½ tons to 8 tons the acre, according to the circumstances of soil, situation, and treatment. A ton of Grapes (2000 lb.) makes from 100 to 150 gallons of wine, and

sometimes as high as 200 gallons. There has been a public auction of Grapes daily at Toronto during the season, and the prices range from 2*d.* to 3*d.* per pound for common sorts, and up to 5*d.* and 6*d.* per pound for choice qualities.

The Apple crop, which was extraordinarily promising, was very much damaged by a violent storm which swept through the country when the fruit was half formed, and in exposed situations left the trees quite bare, so that the produce, it is feared, will be much under an average. The Plums suffered by frost, and were very scarce.

The prices of grain are very low, and are not expected to rally much for some months to come. *Minesing, Ontario, Canada, Nov.* 14.

LADY DOWNE'S GRAPES.

FREQUENT notices have appeared in our columns of the magnificent crops of Grapes that have been grown by Mr. Thomson at Clovenfords during the past season. It was not alone the extraordinary weight of the crop and its general excellence that excited admiration, but its marvellous regularity in such large structures—200 feet in length, and containing about 4000 bunches—that attracted attention, and the wonderful regularity of the bunches, and their uniformity in shape and size.

Our illustration (fig. 133), which is taken from a photograph of two bunches sent to us by Mr. Thomson, will explain more clearly than words the fine character of the crop. The two bunches, as will be observed, are produced on one lateral or side shoot, which is somewhat against the orthodox advice or instructions "to leave only one bunch on a shoot;" but as Mr. Thomson frames rules for his own guidance, and leaves good bunches, &c., where he can get them, there are scores of similar examples and all perfect. The two bunches under notice weighed exactly 4 lb., and the berries were of a very large size. The compact, cylindrical form of the bunches may be noted; this is owing to Mr. Thomson's cutting off all shoulders, and so trimming away all straggling points before thinning as to form them into this compact and uniform shape—which is much more convenient and desirable for packing and sending to market, though it must be owned, detracts from their appearance.



FIG. 133.—LADY DOWNE'S GRAPES AS GROWN AT CLOVENFORDS: ONE-THIRD REAL SIZE.

The Rosery.

NEW ROSES FOR 1883.—Those were halcyon days, which I am sure the French nurserymen must daily regret, when our English growers (duly impressed with the descriptions which were given of the splendid, magnificent, superb, quite exceptional, &c., flowers, by those whose language so well lends itself to all such descriptions) were wont to secure at once all the novelties which each year heralded, used to work hard at the propagating thereof, striving to eclipse one another both in the size of the new plants and in the number they had to offer, to be doomed in the great majority of cases to grievous disappointment—to find that all the trouble and expense had been thrown away, and that the rubbish heap would have to receive a great portion of them. Moreover, they were subject to the still further annoyance of compaints from those to whom they had supplied plants on the faith of descriptions which, perhaps, the raiser thought correct, but which nobody else did. Now the case is altered—the novelties indeed are produced, perhaps not in quite such abundance; but there is no rush to obtain them, for English growers now depend either on their own personal inspection of the flowers, or on the names of the raisers. The grower who has persistently sent out bad Roses they will have none of—the grower who has been modest in his pretensions and honest in his recommendations they rely on; and now at last the French growers are coming to the conclusion, which we have arrived at long ago over here, that it is impossible to determine on the merits of a flower, however highly praised, until a couple of years has elapsed. Thus M. Charles Verdier, one of the most upright of the French Rose growers, says, in the introduction to this year's catalogue, "I do not particularly recommend any of the novelties of the last two years—the novelties not having been proved in our own nursery, so as to enable us to form any decided opinion upon their merits." This is wise, and I have no doubt these things and the less avidity with which novelties are sought after, will tend to our being less inundated with new varieties.

With regard to English raised Roses there is less danger of our being thus treated, they come more under the personal observation of growers, and the fact that the National Rose Society offers valuable prizes for seedlings at each of its three shows is sufficient to show the lovers of the Rose that if there is anything really good it will probably find a place at one or other of those exhibitions which cover nearly the whole Rose season.

Yet without this there is a certain anxiety to know what new Roses are coming out, and the following list, with the description of the raisers, contains all that I know of up to the present time (Dec. 1):—

Merveille de Lyon (Pernet).—This ought to be *the* Rose of the season, if descriptions are worth anything. The raiser thinks so highly of it that he has 3000 plants ready for sale, and wisely offers them at 10 fr. apiece. It is a child of Baroness Rothschild, and apparently partakes of the foliage and wood of that fine flower, while it is described as much larger and fuller, as it has already obtained in France three 1st prizes; and every Rose grower who knows and values (and who does not?) its respected mother will rejoice to think of a daughter ample and with more *embonpoint* than her mamma. I fear, alas! there are always these little doubts that it will be devoid of perfume.

Of other hybrid perpetuals there are:—

Comtesse de Casteja (J. Margottin fils).—This is described as of a rich deep scarlet, full, perfect imbricated form, opens freely, growth vigorous, a first-class variety; a seedling from Alfred Colomb, and quite as good in a different colour—so says my young friend Jules, and he ought to know; it is the only Rose he sends out. It sounds well, and one can only hope that the performance will not belie the promise.

Adelaide de Meynot (Gonod).—Bright cherry-red, large, full imbricated form; growth vigorous.

Madame Eugénie Labruyère (Gonod).—Salmon, with reverse and petals red; large, full, well formed; growth vigorous.

Mademoiselle Marie Dejat (Levet).—Fine crimson-red; large, full, well formed; growth vigorous.

Comtesse de Paris (Levêque).—Bright rose; large, full, globular, well formed; growth vigorous.

Baron Nathaniel de Rothschild (Levêque).—Bright crimson-red; large, full, fine form; growth very vigorous.

Comtesse de Mailly Nesle (Levêque).—Flesh-coloured, shaded; large, full, well formed; growth vigorous.

Madame Veuve Alexandre Pommery (Levêque).—Pink-rose, shaded with bright rose; very large, full; growth very vigorous.

Madame Olympe Terestchenko (Levêque). — Such names are fearful, and too often are imposed on worthless flowers. Still, what's in a name? Rosy-white or carmine-rose; large, full, well formed; growth very vigorous.

Léon Say (Levêque).—Bright red, shaded with brown lilac-rose (!); large, full; growth very scanty for bedding, and therefore, I suppose, not very good for exhibition purposes.

Madame Rocher (Liabaut).—Fresh satin-rose; large, full, and globular; growth vigorous.

Madame Marie Lagrange (Liabaud).—Brilliant carmine; large or very large, almost full; growth very vigorous.

Alexandre Dupont (Liabaud). — Purple velvety-red, shaded with crimson; very large; growth very vigorous.

Docteur Garnier (Moreau-Robert). — Very light cherry-red; very large, full, and well formed, very free; growth very vigorous.

Gilbert (Moreau-Robert).—Deep velvety-red, shaded with maroon and carmine; large, full; growth very vigorous.

Joachim de Bellay (Moreau-Robert). — Vermilion-red, shaded with scarlet; very large, full, and well formed.

Marguerite de Rosnan (Schwartz).—Pinkish-white, flesh-rose in the centre; very large and well formed; growth very vigorous, in the way of Eugénie Verdier.

TEAS.

Jeanne Abel (Guillot).—Pink-white, yellowish in the centre; medium size, full, and well formed; a seedling from Comtesse de Labouthe.

L'Elégante (Guillot).—Rose, coppery-yellow in the centre; large or medium size, fine form, very chaste colour; quite novel and distinct.

Miss Edith Gifford (Guillot).—Light flesh colour, slightly yellow-salmon-rose in centre changing to white.

This and the preceding Rose have obtained First-class Certificates.

Madame Remond (Lambert).—Yellow, outside of petals capucine; growth very vigorous; a seedling from Comtesse Labarthe and Anna Ollivier specially good for pot culture.

Madame Thérèse Levet (Levet).—Red, shaded with scarlet; large, full; a seedling from Adam; a new colour. If this be what it is described, and it is not a hybrid Tea, it will assuredly mark a fresh departure of colour in this beautiful class.

Madame Eugène Verdier (Levet).—Deep chamois; large and well formed, surpassing all the Gloire de Dijon race up to the present time; a first-class variety.

VARIOUS.

Malmaison Rouge (Gonod).—Bourbon. A sport from Souvenir de la Malmaison; deep velvety-red, of medium size; as good a bloomer as the type; fine variety or cut flowers, growth vigorous.

Madame Fany de Forest (Schwartz).—Hybrid of Noisette, salmon-white on opening, changing to white tinted with rose; large—the largest of the race; growth vigorous.

Madame Viviand Morel (Schwartz).—Hybrid of Ayrshire; carmine-rose, with reverse of petals cherry-red, violet-white (what does this mean?); of medium size, blooming in clusters, of climbing habit; a seedling from Cheshunt Hybrid and an Ayrshire.

Bijou de Lyon (Schwartz).—Polyanthus or multiflora, not perpetual; imbricated form, of the purest white; blooming in clusters as double as La Paquerette, but larger; growth very vigorous.

It will thus be seen that neither Lacharme, Margottin père, nor Charles Verdier—three of our best known French raisers—have any new ones this season. I have not seen any account of Eugène Verdier, but it is not likely that he will be wanting in bringing forward some new varieties; the last is a moderate one for the French raisers, and there ought to be some good Roses amongst them. *Nous verrons.*

Still more moderate, however, is the English list. With the exception of Mr. Bennett's, whose list I have seen, but have not got it by me, I do not see any announcements. *Wild Rose.*

The Arboretum.

PYRUS LATIFOLIA.—Mr. Sadler sends us from the Edinburgh Botanic Garden specimens of this very handsome tree, which is stated to be a natural hybrid between P. torminalis and P. Aria. The tree in question measures 45 feet in total height. The trunk is 12½ feet from the soil to the first branch. The girth of the bole at 3 feet from the ground is over 66 inches, and at 5 feet 63.6 inches. The spread of the branches is 36 feet. The character of the foliage and of the orange-coloured fruit is sufficiently indicated in Mr. Smith's drawing ((fig. 134). The flowers are white and borne in much branched corymbs. The foliage is somewhat intermediate between that of the two alleged parents, and is glabrous above, slightly downy beneath. The inflorescence is that of the White Beam. The fruits also are in colour like those of P. Aria, but double the size, and they do not "blet" like those of P. torminalis. It makes a handsome tree, and should be looked after by planters. As to its hybrid origin there seems to be grave doubt, and we are disposed to agree with Decaisne, who points out that in the forest of Fontainebleau, where this plant was first discovered, no other species but this one grows, while P. Aria, one of the reputed parents, does not exist in the wild state near Paris. Moreover, the plant is reproduced by seed with little or no variation. If, then, the tree be really of hybrid origin, we must go back for many generations (Darwinian time) for its production.



FIG. 134.—PYRUS LATIFOLIA. BERRIES ORANGE.

CORNUS CANADENSIS.—The following notes give part, at any rate, of the information asked for by Mr. George Lawson, in *Gardeners' Chronicle* of Dec. 2, p. 710:—In *Hortus Collinsonianus*, an account of the plants cultivated by the late Peter Collinson, Esq., F.R.S., arranged alphabetically according to their modern names from the catalogue of his garden and other manuscripts, the following paragraph occurs:—There is a memorandum which shows that Mr. Collinson, in 1758, had failed in his endeavours to procure this species, but that he afterwards succeeded appears from a rough drawing made by himself, with the following note:—"Runs in the ground, grows about 6 or 9 inches high; the fruit is of a bright red colour; grows all about Halifax and Newfoundland; called Baked Apples and Pears." At the commencement of the above-mentioned work, Mr. Dillwyn, the compiler, gives classified lists of the trees, shrubs, and herbaceous plants which were first introduced to British gardens by Collinson. In one of these lists Cornus canadensis is stated to have been introduced before 1768, and C. paniculata in 1756.

In Paxton's *Botanical Dictionary* 1774 is given as the date; this is identical with that given in Aiton's *Hortus Kewensis*, from which work it was in all probability copied. Aiton says, "Introd. in 1774, by John Fothergill, M.D." After the names of many plants in *Hortus Collinsonianus* there follow most interesting notes, some of them giving definite information as to exact date of arrival, and naming the correspondents by whom they were sent; also in some instances the exact localities from whence they were obtained. Here is one (a few names in advance of Cornus canadensis):—"Comptonia asplenifolia, Myrica foliis asplenii. Mem. Received from John Bartram, Jan. 22, 1756, three roots of Gale, with

Spleenwort leaves." "It makes a fine tea, and gives a good flavour to beer used as hops." About Cornus canadensis, however, I have not succeeded in obtaining more definite data than those given above. *Geo. Nicholson, Royal Gardens, Kew.*

Orchid Notes and Gleanings.

CATTLEYAS AT PICKERING LODGE, TIMPERLEY.—Not very many years back Cattleyas were the least successfully managed of Orchids. It was not unusual to meet with collections in which the generality of the plants grew satisfactorily, save and except the Cattleyas, and allied Lælias, which often gave unmistakable evidence of a deficiency of living roots, accompanied by the never-failing presence of weak, more or less shrivelled bulbs, and yellow undersized leaves. Less of the treat-all-alike management, especially in the matter of water, combined with the use of less moisture-holding matter in the potting materials, have no doubt done much to bring about the improved state of matters, in these, the most gorgeous of all Orchids. The collection of Cattleyas here stands in the first rank, as regards numbers, rarity, and size of the plants, and unquestionably so in their condition; the strength, particularly in thickness, which the past summer's bulbs have attained, is quite unusual. All the leading divisions are represented by scores of plants, including the rarest forms, many of which are only known amongst a select circle of cultivators, and which, *en passant*, it may be said command prices such as would stagger the uninitiated. Amongst a few of the most noticeable may be mentioned C. Trianæ amabilis, 2½ feet across, supposed to be the only plant in cultivation; C. Warneri, 3 feet across; Lælia purpurata, 3 feet; Cattleya Skinneri, the best form of the Burton-Constable collection, 3 feet; it is not an unusual occurrence to see exceptionally well-grown Orchids, like the Burton-Constable plants, fall off when they have changed hands, but such is the reverse here, as the last bulbs are not only bigger than any of the preceding, but stronger than we have ever before seen. There are many specimens of the leading kinds only a little smaller than the above. The new C. aurea was blooming, and is a very fine thing. The large quantity of plants that go to form Mr. Hardy's collection of Orchids, comprising as it does almost every species and form procurable, are collectively in the best possible condition. The following were in flower:—Cypripedium niveum, C. Spicerianum, C. Sedeni, C. Dominianum, C. Harrisianum, C. Lowii, C. Maulei, C. insigne, C. Roezlii, C. venustum, Cattleya maxima, C. marginata, C. Loddigesii, Dendrobium bigibbum, several varieties; Lælia autumnalis, L. præstans, Masdevallia chimæra, M. tovarensis, three to four flowers on a spike; Mesospinidium vulcanicum, Odontoglossum grande, O. crispum, O. Pescatorei, O. bictonense, O. Uro-Skinneri, Oncidium Forbesii, O. cheirophorum; Phalænopsis amabilis, P. Schillerianum; Vanda cœrulea, V. lamellata Boxalli, and Zygopetalum maxillare.

CALANTHES AT OAKLEY, FALLOWFIELD.—Orchid growers, like people engaged in other pursuits, are not unusually inclined to set store on their plants more on account of the money they cost than for the beauty of their flowers or the freedom with which they are produced. If this were not so, those finest and most useful of autumn blooming Orchids, Calanthe Veitchii and vestita, would be better grown than they are usually. Mr. Swan has a display of their lovely flowers such as it would be difficult to surpass in the whole family of Orchids; these consist of C. Veitchii, with the red and yellow lipped varieties of C. vestita. The plants are grown in pots about 8 inches in diameter, containing several bulbs each; they form a continuous row on each side of a path running through two houses and across the end of one, standing closely, so as to give a dense bank of bloom, the vestitas on one side, and the Veitchii on the other. The effect produced by the hundreds of strong arched spikes is extremely beautiful, to say nothing of their use for cutting, for which purpose they are invaluable. So easily are they managed that any one who has a warm stove may grow them well. There are two distinct forms of C. Veitchii, one much darker and more telling in colour than the other. This latter is being discarded from the Oakley collection. In these Calanthes Mr. Swan has had an instance of that reversion that often takes place in the progeny of plants of hybrid origin; some seedlings, the result of crossing C. Veitchii with the pollen of C. vestita, have turned out true C. vestitas, both the red and the white-eyed varieties, without a trace of C. Veitchii in either form or colour. It may here be stated that C. Veitchii was raised by crossing Limatodes rosea with Calanthe vestita. The collection of Orchids generally continues to thrive well here, both warm and cool species alike progressing in vigour and size.

CHANGES OF TREATMENT.—As we are fast drawing to the close of another year, it may be interesting to note a few changes that have taken place in the treatment of Orchids at some of the leading establishments where the cultivation of these lovely and, it may be added, useful plants is made a speciality. In Mr. B. S. Williams' collection at Upper Holloway we have never seen the plants look so vigorous, healthy, and floriferous. This condition has been brought about by a modification of treatment which is likely to have an important bearing upon the future cultivation of Orchids, and to render them more popular in gardens of all sizes. The great drawback to Orchid growing is the popular belief that they require special houses and special treatment, which entails considerable extra expense in their cultivation from that of other plants. Hence it is that those who love choice flowers and are constantly complaining of having the same things presented to them over and over again, do not make a start in Orchid growing. This prevalent belief cannot be too early dispelled. Perhaps there is no other class of plants in existence that are so accommodating as regards their general requirements, and the numbers of them that might be grown for cutting purposes all the year round are steadily coming to the front. There are so many useful species that succeed so well suspended from the roof of a house grown either in miniature pans or upon blocks, that those who only possess a single plant stove may well undertake to grow a select collection, if for no other purpose than supplying cut flowers. But to refer for a moment to the change of treatment adopted by Mr. B. S. Williams during the past season, the collection of Vandas are the most striking instance of success. More light and air and less shade has been given to the plants, with the result that they are of the most dense green hue, and are showing flower more freely than they have ever done before. Indeed, many of the young plants that are now showing flower are not more than 8 inches in height, and these, be it remembered, are not old stools cut down, but young plants grown from offsets. We counted over a score of Vandas, varying from 8 to 12 inches high, all showing from one to two spikes of flower. The varieties are Vanda suavis, V. Boxalli, V. tricolor, and V. tricolor insignis. Of course the obvious conclusion to be drawn from this fact is, that the plants are better ripened, and are therefore flowering unusually freely. Heretofore the healthy green hue was only to be obtained by using thick shading, but now we have advanced a step, and can boast of health, vigour, and floriferousness from a comparatively cool system of treatment, which brings the cultivation of Orchids within the reach of all. Cattleyas and other species, both large and small, also bear evidence of the same treatment in their colour, vigour, and the number and strength of their flower-spikes. As, however, the demand for cut flowers is the prevailing requirement of the day, we append a few notes of such species as appear most desirable to possess at the present season.

MASDEVALLIA TOVARENSIS.—This charming variety is now flowering in great profusion in Mr. Williams' collection; the flowers are of the purest white, and from three to four flowers are produced upon a single spike. Ladies who require choice flowers for bouquets, or for touching up small glasses for sitting or bed rooms, should grow this in quantity. The plant is found to succeed so well under the most ordinary treatment that there is a rumour afloat that certain enterprising individuals are procuring all the stock they can to grow for market. It will be a strange reflection upon private gardeners if the market grower succeeds in establishing the reputation of this plant for supplying cut flowers before it is barely known in gardens, where there is a large demand for choice flowers every month in the year.

DENDROBIUM SUPERBIENS.—Wherever choice flowers are held in high esteem in winter this charming novelty should find a home. It is one of those useful things which, apart from the transcendant beauty of its flowers, may be grown by almost any one who has the least notion of growing plants. With Mr. B. S. Williams it is the freest flowering variety of its species, and the show of flowers upon little plants grown in small pans and suspended from the roof is a sight which no lover of flowers would easily forget. The plants last in bloom for about three months, and the flowers, which are mauve-magenta, are borne in drooping sprays of from six to nine flowers to each spray. Some of the stronger plants are bearing two spikes of flower from the same growth. Here, then, is a plant which produces the most lovely flowers in mid-winter and which succeeds perfectly suspended from a wire in the plant-stove. Those who contemplate establishing collections of Orchids for supplying cut flowers should always remember that it is best to obtain a goodly number of one species or variety at the commencement.

CŒLOGYNE OCELLATA.—This is a variety of a well known species deserving of notice at the present season. The flowers have a strong smell of Cocoa-nut, and a single plant will perfume a whole house. The flowers are produced in drooping spikes, the sepals and petals are pure white, and there are two orange spots upon the lip, which is also margined with light brown spots.

CYPRIPEDIUM MAULEI, &c.—Our illustrations of C. Maulei and C. punctatum violaceum (see pp. 716, 717), and which were photographed direct on to the wood blocks, have brought us the following communications, to which we willingly give insertion. Mr. Maule is of opinion that the artist "apparently did not get a good flower, for the beauty of C. Maulei consists in the curl or turn over of the dorsal sepal, which is of the purest ivory-white, resembling in its curve that of a bud of Niphetos Rose, and revealing 7—8 bright magenta spots [in addition to the brown ones]. Perhaps to a florist's eye the flat petal may be more pleasing, but those who admire Nature's line of beauty can appreciate the curve. . . . C. albo punctatissimum is a larger, more robust, and coarser flower without the texture or refinement, if I may be allowed to say so, of C. Maulei." M. Godefroy-Lebeuf, writing from Argenteuil, doubts the correctness of our statements as to violaceum punctatum, and adds:—"M. Chantin, the well-known nurseryman, of Paris, sent out C. Chantini some time since. The plant was sold to M. Bertrand, then a great Orchid collector, and a part of the plant was sold to M. le Comte de Nadaillac, who has it still living. There is no difference, in my opinion, between C. Chantini and the plant you figure as punctatum violaceum, of which I have numerous specimens. It is so distinct from C. Maulei, that even when out of bloom we have no difficulty in determining them. In France we have a third form, quite distinct from the common one; it is not so good as Chantini, but much better than ordinary insigne." M. Godefroy sends us four flowers, all different—a little so, botanically—a good deal financially, we suppose, but we should certainly not be surprised to see them all produced from one and the same plant, so slight are the botanical differences, and so insensibly do they shade off one into the other. C. insigne (as sent) measures under 4½ inches across from the tip of one lateral petal to that of the other. The dorsal sepal is over 1½ inch across at the widest part, and its upper half has a narrow white border with numerous spots on the disc, only a few of which are magenta coloured. C. Maulei measures over 4½ inches across the lateral petals, which moreover are of richer colour than in the preceding. The dorsal sepal measures over 1½ inch across, and has a deep white border, and the numerous spots on the disc are brighter in colour. C. insigne var. (Godefroy) measures over 4½ inches from tip to tip of the lateral petals. The dorsal sepal measures 2 inches across, and has a deep white border. Lastly comes C. Chantini with a transverse diameter of nearly 5 inches. The dorsal sepal is very nearly 2 inches across at its widest, and the depth of the white border is considerably greater than in the others, and the spots—indeed the whole coloration of the flower—is deeper and brighter. There is thus a series increasing gradually in size, depth of white margin, and coloration, especially in that of the spots, from C. insigne to C. Chantini or violaceum purpureum.

SACCOLABIUM BLUMEI MAJUS.—Messrs. Heath & Son, of Cheltenham, send us several good spikes of this fine Orchid from Upper Burmah, all somewhat differing from each other, and showing what a great difference there is in the varieties, all of which are very beautiful.

The Kitchen Garden.

All winter crops bear evidence of the mildness of the season, and especially so the autumn-sown Spinach, Cabbages, and Onions, which are much too luxuriant in growth for the time of year. Late plantings of Veitch's Autumn Giant Cauliflowers are still yielding a good crop of nice sized heads, and the supply will be prolonged a few weeks by looking over the plants regularly and cutting all heads that have attained a suitable size, and placing them on their ends on shelves in a cool and dry house, out of the reach of frost. While the plants are being looked over, the Cauliflowers which are not then large enough to be cut should have a few leaves bent over them as a protection from a few degrees of frost. These remarks are also applicable to Broccoli. The stock of Onions, Shallots, &c., should be looked over occasionally, and have any bad ones that may happen ot be amongst them removed forthwith. No opportunity should be lost in pushing forward to a finish any work that may have got in arrear. The rubbish-heap wlil by this time have accumulated to a goodly size, and have been turned over a few times and divided into separate heaps according to the state of decomposition, in readiness for present and future use. Enough Jerusalem Artichokes may be taken up at one time to serve for the week, but in case of frost the ground should be covered with litter, to prevent its being frozen.

Forcing Department. — About the middle of next week the necessary number of hotbeds should be made, where better accommodation does not exist, for the forcing of Potatos, Carrots, Radishes, &c. The beds should be made sufficiently high at the onset to admit of their subsiding a couple of feet during the next few months; after which, in order to retain a moderate heat in the beds, they should be about 4 feet high. When the frames are placed upon the beds it will be necessary to put a little dung and leaves inside them, and over this a couple of inches of rotten dung, then 9 or 10 inches thick of light garden soil and leaf-mould (about three parts of the former to one of the latter), making the bed of soil as near to the glass as will admit of the respective crops completing their growth without coming in contact with it; and this should be in the frames a few days so as to become slightly warmed before proceeding with the planting of the Potatos, which are now starting into growth. These should be planted in rows 1 foot apart and 7 or 8 inches asunder in the row as soon as they have made shoots 2 inches long. Before putting the soil upon the bed tread the latter firmly over, and in doing so allow the centre to be fully high, inasmuch as it is the hottest part of the bed, and consequently the first to decompose and subside. Previous to sowing the Carrot seeds a few shovelfuls of fresh dry soot should be scattered over the surface of the bed and be scratched in with the rake when levelling the soil. Early Nantes Horn and James' Scarlet Intermediate are excellent varieties for early work, and may be sown in rows at from 9 inches to 1 foot apart, and where accommodation of this kind is not plentiful a row of Wood's Frame Radish may be sown between the Carrots, covered with half an inch of sifted soil, and patted with the back of the spade to compress it. At first these frames will require special attention in the way of airing them, and in order to prevent anything like steam arising and becoming pent up in the frames, it will be advisable to leave a little air on them day and night for the present, and subsequently to give sufficient to prevent the occupants from making a weakly growth. See that good successional supplies of Asparagus, Rhubarb, and Seakale roots are introduced into this department at short intervals, and that young Tomato plants are shifted into larger pots before they become pot-bound.

Mushroom House. — I need hardly observe, that so long as the Mushrooms grow sufficiently fast to meet the demand for them, it will not be necessary to turn the hot water on in the pipes, or to apply atmospheric moisture in the house, further than damping the surface of the beds with tepid water, in the event of their getting dry, Since the beginning of October up to the present time we have (excepting seven mornings) had a supply of Mushrooms every morning, and sometimes in the evening also, and during the whole of that time the temperature of the house has ranged from 53° to 58° without the aid of fire-heat until the 1st inst., when the mercury fell to 49°, and the growth of the Mushrooms became less rapid in consequence. This necessitated the turning on of the hot water in the pipes, and the occasional use of the syringe and tepid water in order to maintain a humid atmosphere in the house. As a rule, woodlice are very troublesome and destructive in Mushroom-houses, and the readiest and at the same time most efficient way of eradicating these pests is to pour boiling water out of a long-spouted watering-can along the sides and ends of the beds, especially between the latter and the walls, where they congregate as soon as daylight is let in upon them, and which is the best time to apply the boiling water, that makes short work of them. *H. W. Ward, Longford Castle, Wilts.*

Plants and their Culture.

Stoves.—Propagation of useful ornamental foliage plants may still be proceeded with where a fair average temperature can be maintained. A specially arranged inner pit covered with glass, and a command of bottom-heat, can easily be contrived in the majority of cases. At this season of the year, when the fires are more constantly in work, a good warmth can be had without any unnecessary firing, in which to plunge those cuttings it may be desirable to strike. Bottom-heat is more essential for propagating purposes than for general cultivation; at least, we have found it so in our experience. It is an advantage to be able to keep the young plants plunged for a few weeks after they are removed from the propagating-frame, but when once thoroughly established and in free growth bottom-heat or plunging material does more harm than good. One or two exceptions might be taken to this rule, as in the case of plants that have been reduced at the root, or where division has been resorted to for increase of stock. By proceeding with the propagation of decorative stove plants at this time of the year, the pits or frames that are used for this purpose will be left at liberty in the spring, when all available space will be required for the increasing of the stock of bedding-out plants. Healthy, bright, and clean cuttings of Croton can be struck with ease during the winter; these will then make excellent table plants for next spring and onwards, clothed, as they ought to be, with foliage down to the pot. These will be found far more satisfactory than the stunted, starved plants that have been kept on for a long time in the same pot, the only reasonable excuse for keeping such being in the case of scarce kinds, where every cutting, if ever so small is prized. If propagation were closely followed up, so many scrubby ungainly looking plants would not be seen in our hothouses, such as are frequently to be met with. Pandanus Veitchii will be found to push forth some weakly grass-like growth that is insignificant in appearance just at present, but wait till the same have struck fresh root and are established n 60's, then the full beauty of this plant will be seen in a small state, the variegation and drooping character of its foliage developed thus early rendering it most serviceable for small vases. Dracænas can also be proceeded with both from tops of plants that have become too tall, by side shoots taken off when large enough to handle from plants that have previously been beheaded, from eyes of the old wood cut up, and from the roots. Small growths will at times be found pushing forth from the soil in which Dieffenbachias are grown. These can be severed from the stem of the parent plant without injury, and when well rooted in small pots will be found an excellent change for the dinner-table decorations. Cyperus alternifolius variegatus should be increased by division of those growths that have the greatest amount of variegation. Some parts of a plant of this variety will be frequently found reverting to the normal type, hence the need of the foregoing caution. This same remark may also be applied to the variegated form of Curculigo recurvata. Large pots of Eucharis amazonica that have recently been giving a good supply of flower-spikes may be broken up for increasing the stock if they have become too much crowded for the proper development of the bulbs, or the soil in which they are now growing has become sour and exhausted. In either case shaking-out, re-sorting the bulbs, and potting afresh in various sizes will be beneficial to the future health of the stock. I should not advise this operation to be performed in the case of plants that have not recently flowered; its performance in that case might induce flower-spikes to push up from the stronger bulbs, but these latter would not be so well able to perfect the flowers through loss of roots, likewise causing exhaustion when root-action was somewhat inactive. Pot the bulbs afresh in a soil composed of good fibrous peat and sound turfy loam of about equal proportions, adding silver-sand rather freely. In future shifts the loam might be allowed to predominate. As the foliage will droop for a while after this operation it will be advisable, in order to make the most of the room at command, to support the leaves with sticks for the time being. Imantophyllums, Pancratiums, and Urceolinas will have their blooming period lengthened if grown singly. Young bulbs and offsets should be taken off as opportunity may occur; then when a good stock is secured, part of the same can be retarded, while the other portion is being brought into flower. Plants of Aralias, as A. Veitchii and A. elegantissima, Cupania filicifolia and Jacaranda mimosæfolia, all of which make excellent table or vase plants, should be allowed to become dry at the root, and then be cut down if they are now becoming too tall for use. Propagation should be tried. I have attempted it, but have not yet succeeded, therefore I cannot let out the secret.

Greenhouse Fine-foliage Plants.—Propagation and other work incidental to these should be looked to before other work with the turn of days becomes too pressing. Yuccas, as Y. aloifolia variegata and Y. quadricolor, are frequently seen with long bare stems carrying moderate sized heads. These should be cut off with sufficient bare stem only to hold them firmly in a small pot, say 8-inch, which will be large enough till a free root-action commences, then shifting into a larger size should be seen to as may be necessary. These heads will quickly root with the aid of bottom-heat, in fact, they may be treated like Pine suckers, though not amongst them for fear of white scale, which is very partial to the Yuccas. By this treatment a greater amount of fresh vigour can be thrown into the plants than by potting them into larger pots, should they have been allowed to remain for a few years in the same size, and thereby caused the roots to have become weakly. Large masses of the Phormiums should be divided if they have become unwieldly, securing as much root as possible to each. A vinery just started will suit them till re-established. White scale is frequently found around the axils of the leaves of Agaves, Beaucarneas, Bonaparteas, and Dasylirions; any time that can be spared to dislodge this enemy will have been well spent. For performing it a small stiff brush is about the best thing, with the aid of an approved insecticide, which for these plants can be used at nearly 50 per cent. over printed directions, syringing with clean water afterwards. It is quite possible to err, in keeping these fine plants too much on the dry side during the winter: when they are watered see that sufficient is given to penetrate the entire ball. Propagation of Chrysanthemums is best done early, if the old stools still carrying their flowers are grouped thickly together, thereby causing the young growths to become unduly drawn before being taken off for next year's stock. *James Hudson, Gunnersbury House Gardens, Acton, W., Dec. 5.*

Peaches and Nectarines.

A little gentle fire-heat may now be turned on the early house in the daytime, and when the temperature rises to 55° give a little air. It may, however, be turned off in the evening when the house is closed, for unless we have cold frosty weather heat will not be required at night for a time, the heat given off by the pipes in the daytime being quite sufficient to keep up the desired temperature. Take advantage of the wet stormy weather we are having, and which is so unfavourable for all outdoor operations, to get the second house thoroughly cleansed, as directed in a former Calendar, so as to be ready for starting by the end of this month. The trees in succession-houses may now be finally pruned, but if the directions given have been carried out very little pruning will be required, only here and there a stray shoot where they may have been left rather too thickly requiring to be removed. Trees in late houses are holding their foliage very late this season, no doubt owing to the cold wet sunless autumn we have had; for, although with fire-heat on continually, some leaves are still green and fast, being retarded in autumn to prolong the Peach season, they seem to hold their foliage longer than trees outside which have the frost to assist in stripping them. If the wood is ripe late houses may now be kept as cool as possible. *J. Wallis, Keele Gardens, Dec. 5.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Dec. 11	Sale of Lilium auratum at Stevens' Rooms. Sale of Dutch Bulbs and other Lilies, at the Mart, by Protheroe & Morris.
TUESDAY,	Dec. 12	Royal Horticultural Society: Fruit and Floral Committees, at 11 A.M.; Scientific Committee at 1 P.M. Sale of Imported Orchids, at Stevens' Rooms. Sale of Bulbs and Plants, at the City Rooms, by Protheroe & Morris.
WEDNESDAY,	Dec. 13	Sale of Hardy Plants and Bulbs, at Stevens' Rooms.
THURSDAY,	Dec. 14	Sale of Imported Orchids, at Stevens' Rooms; and of Plants, at the White Hart Lane Nursery, Tottenham, by Protheroe & Morris.
SATURDAY,	Dec. 16	Sale of Hardy Plants and Bulbs, at Stevens' Rooms.

HAVING recently experienced the first winter chill, and with a dreary time still in prospect before us, THE LABOURS OF FORCING seem to be once more a seasonable and appropriate subject. We are accustomed to move so slowly, and think so slowly in matters horticultural, that we hardly realise the march of progress in any department until long after it has taken place. But brighter days are dawning for gardeners and gardening, and as the rising generation of horticulturists read more and think more for themselves, we feel sure the turn of events will prove beneficial to horticulture in all its varied aspects. The labours connected with forcing operations at no very remote date were such as to preclude those who are interested in the commercial side of horticulture from attempting the production of early forced fruits. A great many others, owners of private gardens, would not entertain the idea because of the cost. Viewing the past in the light of present experience the folly of many dogmas propounded in regard to forcing seems inexplicable. The labour question alone has been greatly modified if it has not been altogether changed. The valuable time formerly wasted in barking and dressing Vines is now looked upon as having been worse than a mistake—it was a positive injury in many cases to the Vines, and was useless as a remedy against the evils it was intended to remove.

Cultivators at the present day are more disposed to rely upon rational summer treatment, whereby the roots are supplied with rich food and abundant moisture, conveyed by them to the stems and leaves, and upon a healthy atmosphere for the leaves to live in, than upon any winter dressing to secure immunity from insects. At all events, if Vines are suffering from an attack of red-spider, the gardener is no longer infatuated with the virtue of the sulphur-pot, but looks for the origin of the pest in the condition of the soil or the atmosphere, and applies the antidote at the right time. Again, in regard to warming Vine borders by means of hotbeds, the practice has been generally discontinued; and this, as all practical men know, was one of the heaviest items of labour in early forcing. Thus in two important points the views which were some time back strongly enforced and enunciated by experienced gardeners have either been modified or altogether annulled. Pot Vines are now forced with half the labour that formerly attended that operation. The collecting, mixing, turning, and testing of fermenting materials is now almost a thing of the past in regard to the early forcing of Vines.

We can see in all these changes the result of careful and extended observation. Men are bringing the front of their heads to bear upon the business, they want to know the reason why things are done in certain ways, and they compare it with the action of Nature. If a Vine starts into full growth while its roots are, so to speak, dormant under natural conditions, it is mere folly upon the face of it to draw up a different code of treatment for it when it is forced. We change the season of fruiting, but this is a question of time.

In Peach forcing the progress has been equally satisfactory. Little more than a dozen years ago the pruning of a Peach tree was looked upon as a mysterious art by the young gardener. A young tree must be cut back in a certain fashion, and fruiting shoots must be cut to a certain bud only known to the *chef;* but now we can fill an ordinary trellis with a young tree in two seasons, and have fruit the year after planting.

We have not yet touched upon the question of fuel, which tells so heavily as an item of garden expenditure. Are there not mistaken notions with regard to forcing and the consumption of fuel? Now if we put the question pointedly to any forcing man, as to the expense of forcing a house or two of Vines or Peach trees for the first three months after starting, we wonder what would be his reply. Early crops of Grapes and Peaches are saddled with expense that is never incurred in their production. For the first three months after starting they are given no higher temperature than is required in any ordinary plant-house. It is in the early spring, from the time the bunches are in flower until the crop is ripe, that the expense for fuel is greatest. But the naked truth seldom comes to the surface. A little village of glass may be heated from one large boiler; the early vinery is in one direction, the Peach-house in another, the winter Cucumber-house in another. To obtain the necessary degree of heat in one or more of these structures, it is found imperative to keep the whole apparatus constantly at work: and why? Simply for want of arrangement at the beginning. Were a block of low forcing houses constructed in a sunny sheltered aspect, and were the heating apparatus placed in the centre, the houses requiring the highest temperature in winter being situated close to the boiler, the cost of forced fruit would be reduced by 50 per cent. Winter Cucumbers have, to our knowledge, cost their owner over a guinea each in fuel alone! Could we but abolish the mechanical views entertained of forcing early Grapes, and the like, an infinity of good would accrue. Could we but impress upon market growers that the difference as regards expense between producing a crop of ripe Grapes in June, and producing the same crop a month earlier, would only amount to a mere trifle, the records of the fruit market in the early part of the season would undergo a very considerable change. At present, the comparatively limited quantity of forced fruits, especially Grapes, that finds its way into the market in the early part of the season renders its purchase impossible, except by the very wealthy classes. So long as these things are ruled by the law of supply and demand, so long will the scarce article bring the high price. But let market growers and others contrive to furnish the markets with a fair supply of fruit at a reasonable rate, and there will be found hundreds of purchasers only too glad to pay a fair price for a dish of Grapes or Peaches, who would never think of paying the present fancy prices. We are writing with some knowledge of the wants of the upper classes, and know full well that a slight reduction in the prices of fruit in the early part of the season would be a great stimulus to business, and a great gain to all. There only remains, as far as we can see, one stumbling-block in the way, and that is, that people attach undue weight to the mechanical side of the question, and rely too little upon their own skill and judgment.

—— THE LATE MR. JOAD.—The current volume of the *Botanical Magazine* is dedicated by Sir JOSEPH HOOKER to the memory of the late Mr. GEORGE JOAD, of Oakfield, Wimbledon, "in grateful remembrance of his services to the cause of horticulture, and as a tribute to his worth, his many accomplishments, his extensive and accurate knowledge of hardy plants, his ardour and success in cultivating them, and his liberality in encouraging others in this pursuit, to which he devoted his time, his means, and his opportunities."

—— PEAT MOSS: STABLE MOSS.—Inquiries have been made as to the real nature of the substance which under the name of Stable Moss, German Peat, &c., is used in many stables on account of its property of absorbing ammoniacal gases. On examination under the microscope the more solid lumps are found to consist of Sphagnum cymbifolium, while the accompanying fibres belong to some aquatic plant—in the specimen examined to some species of Potamogeton. There is no doubt that it would advantageously take the place of common English Sphagnum in the cultivation of Orchids. It is a question whether common peat may not have the same absorbent powers. *M. J. B.*

—— CLIVEA GARDENI.—This beautiful Cape Bulb is now flowering in several of the cool houses at Kew. Two years ago it was flowered there as a new species from plants received from the late Mr. NELSON. Since then it regularly makes its appearance at this season. The flowers are orange-scarlet with greenish-yellow tips, and borne in a pendulous umbel, which at once distinguishes it from its nearest ally, the magnificent and popular genus Imantophyllum, which bears the flowers erect or nearly so.

—— POISON!—Some cases of poisoning are recorded in a recent number of the *British Medical Journal*, the details of which are sad enough, but we venture to think that future mischief may be done by the defective nature of the evidence adduced. In two of the cases Mushrooms are alleged to have been the cause of the mischief. In one case a child of two years of age ate raw Mushrooms in the fields, and was found afterwards dead in a ditch. In another a man, who had eaten Mushrooms in such quantities that when ejected they filled a large wash-hand basin, was given up for dead, but by the timely aid of the doctor was restored to life. In the first case we may fairly ask, is it proven that nothing else but Mushrooms were eaten? True the name Agaricus campestris is specified, but before we can lay the blame on the plant we should require to be satisfied that it really was the one named and no other. We do not question the possibility of the occurrence, or even the probability, but we submit that before the character of a usually wholesome esculent is defamed proof should be forthcoming. In the second case it is no wonder that a man who filled his stomach to such an extent was lethargic; but, even admitting that the symptoms narrated were caused by something that had been eaten, why defame the Mushroom? Was there not some other species besides the Mushroom, and which really did the mischief? Most people partake of Mushrooms with impunity, but then they neither eat them raw nor by the large wash-hand basinful. Still "what is one man's meat is another man's poison," and there may be cases in which the usually innocuous Mushroom may act as a poison. Aconite root was the source of mischief in another set of cases. Four boys and one girl were admitted into one of the hospitals suffering from symptoms such, we believe, nothing but Aconite, as far as is known, is likely to produce. The boys picked up the root in the street, or said they did, and suffered extremely; but, thanks to the energetic means employed, they all ultimately recovered. There seems to have been no doubt in this case as to what the root was, but it is not so easy to understand how the boys could have got so deadly a poison. The story about picking it up in the street surely needs sifting, if only for the purpose of preventing such culpable carelessness on the part of some one or other. But the story is, to say the least, improbable. Most of the cases of poisoning by Aconite have occurred from cooks and others—with a stupidity and want of observation that would be inconceivable had it not happened repeatedly—mistaking it for Horse Radish; but dried Aconite root out of a druggist's warehouse must surely be a rare article. One of the four boys said that a fifth boy had given him a piece of the root, which he (No. 5) had picked up in the street, and who had been told (by whom?) that it was a "capital thing to give him an appetite." Boys are not usually deficient in appetite; and it is within our recollection that a number of Drury Lane *gamins* developed a remarkable appetite for syrup of Belladonna. A jar of this compound was placed on the outside of a shop in Covent Garden market, duly corked, but there was a sugary leakage round the cork which attracted the boys' attention and tempted them to remove the cork and partake of the contents of the bottle, with the result that they were taken to the nearest hospital with all the well-marked symptoms of Belladonna poisoning strongly developed. Boys should

not steal, nor tradesmen expose their wares to the chance of felony, and perhaps worse results.

—— Acacia dealbata.—In the conservatory at King's Lodge, Windsor Park, there is the promise of a glorious show of flowers upon this fine old plant, which is trained to horizontal ties fixed to both sides of the roof. There are swarms of buds approaching the opening stage, and the plant continues to bloom all through the winter and early spring. The path which runs up the centre is bordered by two fine hedges (a strange term, but true) of Camellias in excellent health, and there are also large plants of the old Brugmansia sanguinea bearing several of its long funnel-shaped blossoms which are peculiarly interesting at this season. Another good old plant also coming is never missed, and this alone is a consideration at the present day. A few flowering plants in pots brought in about three or four times a year would keep a good sized house, if not brilliant, at least interesting, and at times, as when the Camellias and Roses are in bloom, beautiful.

—— Centropogon Lucyanus.—It is almost a reflection upon horticulturists that this fine plant is only seen in ones or twos, or oftener not at all, in isolated country gardens. The blame rests in a great measure with nurserymen who, because they are well informed themselves, fancy that every one else must be the same; but transport some of these gentlemen to a remote English place, about 6 miles from a railway station, for a period of seven years, and we which especial reference is made is one of the most useful that can be grown by a gardener, its scarlet flowers being produced upon the points of the shoots and surrounded with healthy green foliage, which renders it a pretty ornament for the plant stove, or if it is required for cutting, a single spray furnished with its own foliage will fill a small glass by itself.

—— The Manufacture of Jams.—It would appear that notwithstanding there was last summer a great decrease in the production of fruits from which the more popular jams are manufactured, the supply of these will by no means be diminished in consequence. A leading trade journal (*The Grocer*) sheds a little wholesome light on the wholesale manufacture of



Fig. 135.—The Rock Garden at Hoole House, Chester. (see p. 747.)

into flower, and from 12 to 14 feet high, is Polygala Dalmaisiana, which never looks so well as when it is grown as a natural bush. Here, then, are several old plants which keep up a good succession of flowers for several months of the year, with the addition of a few Roses trained to the roof, and pot plants of the soft-wooded type arranged in front of them. The show of Chrysanthemums was very good a short time ago. We were so struck with the effect produced by these plants that it seems doubtful whether those who have large conservatories to keep gay without corresponding facilities for growing plants in pots would not do better by planting out a number of useful flowering subjects that would look fresh and green at all seasons, and if well selected some of them might be had in flower most months in the year. Besides their natural appearance they also grow so vigorously that a basketful of flowers cut from them venture to think their knowledge would fall considerably behind the spirit of the times during that period. We think there should be exhibitions of winter flowering plants held by nurserymen in the same way as there are exhibitions of Chrysanthemums, Orchids, or anything else. The attention of horticulturists of all grades would then be drawn to plants that are conspicuous for high merit, and a great benefit would be conferred upon all. Those who love flowers and plants, and are liberal patrons of horticulture, are oftenest those who have the least amount of practical knowledge, and who can form little idea of a plant from a single bloom or two grown upon a little plant in a 4-inch pot. We are pleased to see the Messrs. Veitch are doing something in the direction we have suggested, and that their stock of winter flowering plants is being brought together in the form of a collection in houses by themselves. The plant to jams. It states that "it is a mistake to suppose that fruit is absolutely necessary to the manufacture of preserves." The writer of this passage describes a visit to a large jam-producing factory, in which he found that the work was being bravely carried on without the aid of fruit at all. Jams of various kinds were being produced before his eyes—Currant, Plum, Apricot, Strawberry, Raspberry, and Gooseberry—yet neither Currant, Plum, Strawberry, Apricot, Raspberry, nor Gooseberry was in the building. Turnips serve the purposes of the fruits. The flavouring matter was extracted from coal-tar, and the resemblance to Raspberry and Strawberry jam was further produced by mixing the boiling compound with small seeds of some cheap innocuous herb. A common form of sugar is used, and this is the only honest ingredient of the mass. These preserves are offered as made from "this season's fruit." There will therefore be

no lack of jams; but what questionable compounds they are! In Kent there is somewhat extensively grown in the Apple orchards a variety known as the Goff or Orange Goff Apple, a kitchen variety of second quality, a very profuse bearer and with a soft flesh; this Apple is very extensively used in the jam manufactories, and it is said that orders are received by Kentish Apple growers to the extent of 500 bushels at a time for jam purposes. One might be disposed to draw the line at Apples, but Turnips flavoured with something extracted from coal-tar is enough to drive any one to eschew all but home-made jams for ever. Meanwhile it is well to bear in mind that the statement cited is not "evidence," and that turnips are dear in the jam-making season.

—— A STRANGE DEATH.—*The Colonies and India* is responsible for the following account of the fate of an inexperienced traveller in British Guiana:—"This luckless being had, it seems, after taking a refreshing draught from the stem of one of the many water-holding plants which thrive in the forests, qualified his cold refreshment by a 'nip' of rum. Shortly afterwards he died in excruciating agony, and a *post-mortem* examination showed that his internal organs were literally sealed up with indiarubber. He had imbibed the sap of the Mimusops Balata, the juice of which coagulates and hardens in alcohol, and the rum had had its usual effect in the poor man's stomach, with necessarily fatal results." On referring to the *Dictionary of Economic Plants*, recently published by the veteran ex-Curator of the Royal Gardens, Kew, we find the following remarks, which seem to have some bearing on the above. Amongst the several "Cow trees" mentioned by Mr. SMITH is the Cow tree of Para, which is supposed to be a species of Mimusops (M. elata). On incisions being made in the bark a milky juice flows most copiously; it is about the consistence of thick cream, from which, but for a slight peculiar flavour, it can hardly be distinguished. By exposure to the air it thickens and forms an adhesive glue, something like gutta-percha. The well-known action of alcohol on gums has been utilised freely enough in newspaper literature; indeed, similar fatalities to the above have been charged to the account of almost every gum or gutta-producing tree.

—— THE FLORA OF NORTH AMERICA.—In the American *Journal of Science* is an interesting note of Dr. ASA GRAY on the history and progress of the "Flora" or systematic enumeration of the plants of that continent. An interesting sketch of the work done by MICHAUX and PURSH precedes the note relating the progress of evolution of "TORREY and GRAY," which made fair progress up to 1843. After that time professional duties, Dr. TORREY'S death, and other matters retarded the course of development, and it was not till 1878 that in the course of descent, in this case with considerable modification, another instalment was issued. Much remains to be done, and much of what has been done of course, from lapse of time, annexation of new states and territories, and the constant increase of material, needs revision. At present it is estimated that there are 10,000 known species of flowering plants and Ferns in the States — an estimate that may before long have to be raised to 11,000 or 12,000. "Only the experienced botanist can form a just idea of what is involved in the accurate discrimination and co-ordination of 10,000 — 12,000 species, and in the putting of the results into the language and form which may make our knowledge available to learners or to succeeding botanists." The increase of material is embarassing in more than the mere augmentation of bulk. "When one has only single specimens of related species the case may seem clear, and the definition easy. The acquisition of a few more from a different region or other conditions almost always calls for some reconsideration, not rarely for reconstruction. People generally suppose that species, and even genera, are like coin from the mint or bank-notes from the printing-press, each with its fixed mark and signature, which he that runs may read, or the practised eye infallibly determine. But, in fact, species are judgments—judgments of variable value, and often very fallible judgments, as we botanists well know; and genera are more obviously judgments, and more and more liable to be affected by new discoveries. Judgments formed to-day—perhaps with full confidence, perhaps with misgiving—may to-morrow, with the discovery of new materials or the detection of some before unobserved point of structure, have to be weighed and decided anew." Dr. GRAY, then, is not sanguine as to any more rapid rate of progress in future, but points out that the co-operation of Associates is absolutely needed—Associates necessarily few in number—for few can have "the training and the vast patience and the access to herbaria and libraries requisite for this kind of work."

—— JASMINUM SAMBAC.—People who have only whitewashed walls to look at in their plant-houses in winter should try the effect of covering them with the above plant, which flowers continuously in a moderate temperature from now until next March or April. It is behind its great rival, Jasminum gracillimum in one respect, viz., that it does not bear removal as well, and does not last so long in a cut state. But for covering a back wall and loosely trained, as seen in one of Messrs. Veitch's plant-houses, it is, without exception, the most charming of all creepers that flower during the winter months.

—— TOXICOPHLÆA SPECTABILIS.—As a winter-flowering subject this plant is a rarity, and more's the pity, for gardeners who have large demands made upon them for cut flowers. The flowers, which are white, are borne in trusses of various sizes, according to the vigour of the plant, and in a cut state last a long time in water. The trusses individually are formed exactly like the Ixora, and are quite as effective. The terminal truss is, of course, the largest, but several others come away from the axils of the leaves upon plants that have been well grown and the wood well ripened. These make very pretty ornaments for the dinner-table or sitting-room.

—— AGERATUM CUPID.—People who are fond of flowering plants for their sitting-rooms at this time of year may have a very good effect from plants that are looked upon as being only suitable for the open garden. We are, of course, now referring to those having but modest accommodation for plants. We saw the object of this notice in one of the houses at Finsbury Park a few days ago, and its wonderful floriferousness struck us at the time as likely to prove useful to a certain class of plant growers. The plants are from 3 to 4 inches high, and are quite a mass of blue flowers. The cuttings—for they are nothing more—had been inserted in the same pots a few weeks ago, and there is no doubt a band of such plants arranged round a central object of white would have a very pleasing effect. If the variety behaves as well out-of-doors as it appears to do under a glass roof it should have a prominent place in the flower garden.

—— CHINESE RHUBARB.—Some notes on Chinese Rhubarb which lately appeared in the *Medical Press and Circular* are interesting in showing the practice that prevails, even with medicines, in a regular system of adulteration or falsification. The writer says Rhubarb grows wild in all the Northern and Western Provinces, yet nowhere does it seem to be brought under cultivation, invariably being found in a wild state. Several varieties of Rhubarb are indigenous to China, some being of very great value, and others almost worthless. Shensi roots are by far the most esteemed, those coming from the Kanchow district being perhaps the more prized of all. This Rhubarb, the best in the market, can be readily distinguished from other kinds. The roots are large, smooth, and extremely fragrant, whereas those obtained in the province of Szechwan are smaller, rough on the exterior, deficient in flavour, and when cut give out little scent. Best Szechwan Rhubarb commands only about one half the price asked for Shensi Rhubarb, while inferior qualities fetch from one-tenth upwards. In this connection it is interesting to note how strongly many Chinese hold by the belief in the utter inefficacy of roots grown in the Southern provinces, which, according to their theory, are only good to sell to the English barbarians; as a fact, Russian merchants look at no Rhubarb that does not bear on its face evidence of a Northern derivation. In this, unfortunately, they are not imitated by their English rivals, who buy anything that is offered so long as the price is sufficiently tempting or holds out a prospect of additional profit. This points to the necessity of medical men and retail druggists exercising extreme care in the selection of their Rhubarb, and, perhaps more important still, to buy only of persons in whose judgment and honesty they can place entire dependence. Another good quality Rhubarb comes to Tiensing from Hsining in Kansuh, after which town it takes its name. Chungch" Rhubarb is also greatly prized, while Chihuang, Taihuang, and Shanhuang are about as worthless as well can be. It is stated in the paper from whence these notes are taken that without doubt a considerable portion of so-called Rhubarb (of course of inferior qualities) is nothing more nor less than Dock-root. "It is not exactly pleasant to contemplate that the greater part of this rubbish is bought for the English market, but such, nevertheless, appears to be the case. The other producing districts besides those mentioned above are Chinli, Honan, and different parts of Thibet, from whence several very fine varieties, formerly sent overland, *viâ* Kiakta through Russia, are obtained."

—— SPECIMEN FUCHSIAS. — No subject is of greater interest to the soft-wooded plant growers than the history and cultivation of the Fuchsia. To the present race of young gardeners the giant specimens of a dozen or more years ago are all but unknown, and the varieties—most of them, at any rate—that are now cultivated are not particularly well adapted for growing into specimens. Raisers of new varieties of Fuchsias have conferred great benefits upon a certain class of people, and a very large class it must be admitted; but, upon the other hand, if we have gained in size of flower, as we undoubtedly have, we have lost something in habit for certain purposes. This is where variety comes in useful. For instance, many of the old free-growing kinds would cut a sorry figure by comparison with some of the new ones, if size of flower were the only consideration. But there are large conservatories to be filled where the finest variety in cultivation of dwarf habit would look a mere pigmy. For this reason, if for no other, it is desirable not to lose sight of free-growing kinds, at all events until we are furnished with something of equally good habit producing better flowers. Of late years the absence of large Fuchsias from such structures as we have indicated has been most striking to those who remember what the said structures used to be in former days. Plants that may be grown from 6 to 9 feet high in a season are useful, more especially when they are old favourites and beautiful as well. Now is the time to propagate plants for growing into specimens next season. Struck in a gentle warmth, and potted off singly into small pots a week or two hence, they will be ready for starting into growth early in February, a long way in advance of spring-struck cuttings. They should be wintered on a shelf near the glass, and kept partially dry at their roots, but not to an extent that would cause the plants to shrivel or to lose their leaves. In the spring, when they commence to grow, give them a shift into a larger pot, and plunge them in a gentle bottom-heat, and they will make rapid progress. It is a singular fact that when the days begin to get long, and the sun attains its full power, Fuchsias refuse to grow as they do in the early part of the year. Hence the importance of having rooted cuttings to begin with in the spring, instead of waiting until the old plants are started into growth and cuttings can be obtained from them. A few of the good old sorts are Fairest of the Fair, Sir Colin Campbell, Roderick Dhu, Madame Cornellisen, Rose of Castile, and Guiding Star.

—— CLUBBING IN TURNIPS.—Accepting the evidence, given chiefly by M. WORONIN, of St. Petersburg, and Mr. A. STEPHEN WILSON, of Kinmundy, as conclusive that the disease is directly caused by the fungus, Plasmodiophora Brassicæ, and is influenced by the artificial treatment alluded to in this and former reports, the lessons taught, says Mr. JAMIESON, in the report of the Aberdeen Association, seem to imply the following injunctions:—"(1.) Aim at a condition of soil uncongenial to fungoid growth by cultivating deeply and roughly, and only when dry; draining subsoil to break the 'pan,' and otherwise maintaining a moderate circulation of water and air through the soil. (2.) Reducing the supply of food natural to the Turnip fungus (*i.e.*, alternate Potatos or other root with Turnips, thus making an interval of ten or twelve years between two Turnip crops, and, especially, eradicate constantly all plants allied to the Turnip plant, viz., all Cruciferous plants, such as wild Mustard, commonly called Skellach or Runch).

(3.) Apply lime heavily, and mix it uniformly with the soil." Finally, by way of prevention rather than cure—"(4.) Avoiding all vitriolated or 'dissolved' manures. (5.) Providing conditions—both in state of soil and character of plant food or manure—which favour the steady growth of the Turnip without the undue haste that implies subsequent weakness."

—— Phylloxera in Spain.—From a report of the British Consul at Malaga we learn that nearly every vineyard in the province of Malaga, with the exception of the district of La Vega, is more or less affected by Phylloxera, and one vineyard is mentioned in which the Grape crop is reduced from 20,000 arrobas (an aroba = 25 lb.) to 1000. The average loss of crop is estimated at 70 per cent. Twenty-five per cent of the vineyards must now be regarded as lost, and if the depreciation continues at the same rate the whole of the vineyards will be destroyed in five or six years. The disease was first discovered in a vineyard nearly 1200 miles from the nearest known centre of infection. Senor Orneta is of opinion that the only practical remedy in this instance is the introduction of American varieties, which resist the Phylloxera and thrive well in the district. The best kinds of Malaga Vines have been grafted on to American stocks with satisfactory results.

—— Labels.—A new kind of plant-label is being used on the new rockery at Kew. It is a manufactured article, having the colour of Portland cement, and is practically indestructible from wet. Compared with wooden labels that require constant renewal the utility of such an article is at once apparent, even if the original expense is a little greater. The label in question is of two sizes, one being 7½ inches long by 1 in width, and a larger size 10½ inches by 1¼ in width. After painting in the ordinary way the name is written on, and varnished over when dry. This plan has the advantage of preserving the name, while accumulations of dirt can be rubbed off. The size and colour of the label are also points in its favour, seeing that if too large or too conspicuously white the appearance would be very objectionable on account of the great number necessarily employed. If the whole rockery is labelled in this way it will be a great boon to the public, as the name is perfectly legible from the walk, and any one interested in a plant will be able at a glance to read the name. Another new form of label is being used where utility rather than ornament is studied. This consists of a slender iron stand supporting an earthenware tablet, on which the name is printed or painted on horizontally by the manufacturer. For botanical collections this is invaluable, as the name is not liable to become obscure through rusting, as in the case of iron labels; but for private places the first-mentioned kind wil recommend itself. Messrs. Maw & Co., Benthall Tile Works, Broseley, Shropshire, are the makers, although their name occurs only on the larger and more costly kind.

—— Protection for Plants.—Seeing that so many plants are cultivated in the open air that require protection in severe weather, it is not surprising that various expedients have been tried for that end. On the Kew rockery a very simple and apparently efficient course has been adopted. Prunings of evergreen Conifers are inserted in the ground so as to overhang such subjects requiring protection, as Haberlea rhodopensis, Margyricarpus setosus, Eryngium pandanifolium, Himalayan Rhododendrons, Malvaviscus geranioides, Saxifraga ciliata, and others. For deciduous things ashes are very good for protection, but plants that are naturally evergreen are liable to suffer if so protected for a lengthened period. These evergreen branches while affording a great amount of protection, admit diffused light at all times, and the foliage of the plants gets the advantage of atmospheric change when dry weather occurs.

—— Pine Growing at Frogmore.—At one time it was thought probable that Pine growing by the aid of leaves would be wholly superseded by the more modern system of heating by hot-water pipes. This to a great extent has taken place, and a great saving of labour has been effected thereby. But still there are some of the finest examples of Pine growing in the country to be seen where the old-fashioned leaf-beds are retained. In the Royal Gardens, Frogmore, the Smooth Cayennes weigh upon an average 9 lb., and they are as perfect samples in point of finish as we have ever seen. These superior examples are grown upon leaf-beds "planted out," and they generally fruit within eighteen months. We can well remember not more than a dozen years ago when when it was thought imperative to renew these beds twice a year, and a brisk undertaking it used to be in large gardens for about a week. But Mr. Jones prepares a bed, plants out his plants, and without any further labour as regards renewing the bed cuts such specimens as we have referred to. It may be stated that the Smooth Cayenne is the only variety that is treated in this way.

—— Ipomœa Horsfalli.—Were it not for the fact that the Ipomœas are not of much service as cut flowers, their rich clusters of bright rose-coloured blossoms would be among the most charming things in existence at this or any other season. As a stove creeper, however, this quality is not so necessary, as the flowers are produced in numerous clusters, and as one dies away another comes out fresh to take its place. The appearance of a large plant with the clusters of flowers in various stages of development is extremely pretty; there are as many as fifteen buds to each cluster, which look like Blackberries in their unexpanded state, and as the buds show the first symptoms of opening the red pips are singularly striking and effective. We lately saw a fine plant in flower in Mr. B. S. Williams' nursery, Upper Holloway, where the plant is well cared for, and a quantity of young stock is also grown.

—— Anthurium Andreanum.—Messrs. Heath & Son, of Cheltenham, send us a perfect heart-shaped spathe of this fine plant, which measures 5 inches in depth and the same in width.

—— Publications Received.—The Christmas Annual of *Life* (136, Strand). — The Christmas Number of the *Illustrated Sporting and Dramatic News* (148, Strand, W.C.).—*The World of Wit and Humour*, new edition, Part. I. (Cassell). — *The Bow of Strength*, the *Quiver* Annual for 1882 (Cassell).—The *City Press Diary* (Collingridge).—*Practical Hints on How to Grow Roses*. By a Committee of the Sutton Amateur Rose Society (Sutton: Church.) An excellent little pamphlet, on which we shall have more to say on another occasion. —*Siberia in Asia*. By Henry Seebohm (John Murray).—*Life of a Scotch Naturalist, Thomas Edward*. New edition. By Samuel Smiles (John Murray).—*Nature at Home*, from the French of Théophile Gautier, with illustrations by Karl Bodmer (Bradbury, Agnew, & Co.).

—— The Weather.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending Dec. 4, issued by the Meteorological Office, London:—The weather has again been dull and unsettled in all parts of the kingdom, and showers of snow, hail, sleet, or rain very frequent. The temperature has been considerably lower than during last week, the values being below the mean in all districts except "England, S.W.;" in the east and north-east of England the deficit has been as much as 4°. The maxima were usually low, and varied from 44° in "England, N.E.," to 55° in "England, S.W." On Dec. 1 the thermometer did not rise above 35° in London, while at Loughborough and Cambridge the highest reading recorded was only 31°. The minima were generally registered on Dec. 1 or 2, and ranged from 23° in "England, E.," "England, N.E.," and "England, N.W.," to 28° in "England, S.W.," and "Ireland, S." The rainfall has been more than the mean in all districts, the excess in the west of Scotland and south-west of England being rather large. Bright sunshine percentages show a further decrease almost everywhere, ranging from 12 in "Scotland, W.," to 31 in "England, S." Depressions observed:—Barometric pressure over our islands has again been subject to considerable fluctuations, while the direction of the wind has generally varied from S.S.W. to W. and N.N.W. Several depressions have appeared from the westward or north-westward, and traversed our islands in a south-easterly direction, giving us strong S.W. winds or gales as they approached, and N.W. gales or strong squally winds as they disappeared over the North Sea or Germany. The steepest gradients were on the 2d and 4th—the former in the N.W. for S.W. winds, and the latter in the N.E. for S.E. winds.

A WONDERFUL STRAWBERRY.

While our friends the nurserymen and seedsmen are making up their lists of novelties to be sent out next season, we call their attention to the following copy of a circular which has reached us, and which we reproduce *verbatim et literatim*, but without assuming any responsibility for the statements made:—

DISCOVERY OF THE ENGLISH STRAWBERRY WITH BIG FRUITS

REMOUNTING

it is

BEARING FRUITS DURING THE WHOLE YEAR.

"L'ABBÉ THIVOLET"

"A country-priest, M. Thivolet, priest of Chenôves by Buxy (Saône-and-Loire, has just made a discovery which will bring an entire revolution in the strawberries' culture. He has just got by seed plot an English Strawberry (big fruits) which blossoms and bears fruits from spring till frosts. In a hot-house it bears fruits during all the winter, so that now big strawberries may be had during the whole year.

"The fruit of this strawberry-plant is about eleven centimètres round. Its colour is very ruddy and ist pulp blank; its odour is exquisite.

"Its very numerous flowers succeed each other without any interruption. The plants have together fruits, flowers, pimples. The very year running-tendrils give flowers after two months.

"To have a good fructification one ougth to cut the running-tendrils and dung much.

"Thus only kind in the wolrd is destined to take the place of all the other.

"It was gratified with a rosy medal at the horticultural concourse of Chalon-sur-Saône the 18th June o this year.

"Mister the parish-priester of Chenôves has committed the sale of his strawberry to his nepheros MM. Bouillin. These gentlemen who live in the same country as he and are but amateurs cultivate and sell no other strawberries than those.

"The discovery being quite new there wis till no but a limited number of plants, amateurs therefore must hasten if they wish to have any this year.

"Price of one plant of strawberry *returned post-paid*, 10 fr.; 3 PLANS - 25 FR.; Paking, 0 fr. 50 cent.

PAYMENT - MANNER.

"This simplest manner is sending post-money on giving the order or a cheque on 'la Banque de France,' or 'le Crédit Lyonnais.' However as for those persons prefering the recovery at home by the post we shall do so for an augmentation of 1 franc.

GUARANTY OF THE DISCOVERER.

"*I undersigned*, J.-B. Thivolet, *parish-priest of Chenôves, certify all contained in this prospectus is conformable to truth and one may have an entire trust in those who have undertaken the sale of my strawberry. If any body would wish any supplementary particulars, I am ready to give them to him.* "Thivolet,

"Cure de Chenôves, Membre de la Société d'horticulture de "Chalon sur-Saône.

"*To address the all orders to* MM. BOUILLIN *frères à Chenôves par Buxy (Saône-et-Loire) France.*

OBSERVATION.

"To give exactly and very legibily the postal address and "the name of the arrival station."

THE PLANTING SEASON.

Rhododendron Catawbiense.—Those who are now engaged in forming or renovating shrubbery beds and borders would do well to study their colours in planting, and keep in their mind's eye the effect they would like when the natural season of flowering comes round. The varieties in the Rhododendron genus alone are so numerous that it is hard to decide which one would like to plant from a catalogue description. Those who neglected to pay a visit to some good nursery and mark their favourite kinds when the plants were in flower will now feel disappointment at their neglect, but those who grow the plants extensively can always supply the necessary information. The variety above named is one that we have a great fancy for; in a secluded situation the tints of the

flowers are peculiarly delicate and pleasing, especially towards evening, when they are bathed with a heavy dew. The colour of the flowers is light pink to deep rose, and the leaves are of a dark green hue, which adds much to the general appearance of the plant.

COTONEASTER HOOKERI.—Nothing is more important in planting than to be able to select suitable material for certain situations. Given a good soil, a favourable aspect, and an abundance of good plants, and any novice will succeed for a time; but invert the order of things, and you place him in a difficulty from which he cannot readily extricate himself. There are many plants, for instance, that dwindle and eventually die in shaded situations, while there are others that succeed well under the same conditions. In the Cotoneaster so named in Mr. Noble's nursery, and, we presume, in others, we have a plant that will grow freely and produce its rich scarlet berries under almost any degree of shade, and it is a plant which should be more largely cultivated in all gardens. Where people have put the round man in the square hole from want of experience, now is the time to remedy the defect and go in for a better show another season.

COTONEASTER SIMONSII. — From observations made from time to time by one or more correspondents it would appear that the true habit and nature of this plant is not clearly understood. It is a rapid grower and is rather a coarse plant after a year or two's growth. It grows from 12 to 18 inches, and in a rich soil sometimes more, in a season. In large estates in the country it is planted for filling up where new grounds are being laid out, owing to its rapid growth. We have grubbed it up by the cartload and despatched it to the burning heap to make room for better things, after it had reached a height of from 8 to 10 feet. It is cheap and useful for many purposes, and among its other qualities it possesses a great attraction for pheasants, who are very fond of its berries and will leave their own preserves for any home that offers them the luxury alluded to. Those, therefore, who have an interest in their preserves should not forget to plant Cotoneaster Simonsii. We hope no one will plant it with a view of alluring their neighbour's pheasants into their own preserves!

HOLLYHOCK INSECTS.

THE large size of the Hollyhock naturally induces a number of insect enemies to attack it, in addition to the various species of fungoid parasites, several of which have been recently illustrated in the pages of the *Gardeners' Chronicle*. In our issue of September 9 we described the proceedings of the larvæ of a small moth which attack the seed buds of this plant, and we now give figures of two other insects which we have found to be still more injurious.

The first of these is a small pretty beetle belonging to the family Chrysomelidæ, named Haltica (Podagrica) fuscipes by Fabricius, Marsham, &c. It is about one-sixth of an inch in length, and is represented magnified in our lower right-hand figure (fig. 136). It is of a black colour, with the head and thorax orange-red, and the wing-cases high-polished, greenish blue-black, and finely punctured; the legs and antennæ are black, the basal joints of the latter organs being fulvous. The hind legs are not nearly so much incrassated as in most of the Halticæ or flea beetles, of which the Turnip flea beetle is a well-known example. It very closely resembles the Chrysomela Polygoni, Linn., but is shorter in proportion to the size of the body. I have found this insect throughout the summer mostly on Hollyhock plants, completely destroying them whilst of small size at the beginning of May by eating out the whole of the crown of each plant. At a later period of the year, in August, they gnaw holes in the leaves as represented in our upper left-hand figure. I do not know where the eggs are deposited, or where the larvæ are to be found, but suppose the latter feed upon the inner substance of the leaves, forming burrows in the same way as the larvæ of the Turnip flea beetle have been ascertained to injure the Turnip leaves, or the larvæ of the Chrysanthemum or Beet leaf miners form mines in the leaves of those plants. For several years my Hollyhock plants have been almost eaten up by these little beetles.

The other small beetle represented in our lower left-hand figure is one of the small weevils belonging to the genus Apion, named Apion æneum. It is about the same length as the Haltica (the natural size of each being indicated by the small line at the side of each figure), but it is more elongated and Pear-shaped (whence the generic name); it is of a black colour, with the upper surface of the elytra very glossy and brassy-green. The head and thorax are finely punctured, the former with a small oval depression between the eyes and the latter with a similar but larger depression in the middle of the hind-part; the rest of the head and thorax is more strongly punctured; the elytra are more finely punctured, and are longitudinally marked with fine impressed lines.

This insect attacks the Hollyhock plants in a very different manner to the Haltica, by boring into the pith of the stem of the plant, forming longitudinal burrows and making small circular holes for the passage of the insect, as represented in our upper right-hand figure, thus retarding the growth of the plant.

I also obtained from the Hollyhock another species of Apion (A. malvarum), which is ordinarily attached to the Mallows (of which natural family the Hollyhock is a member). It is smaller than A. æneum, and black, without any brassy gloss.

In the month of July I also received from a correspondent a specimen of the small rove beetle (Oxytelus morsitans), which had been found in the wounds

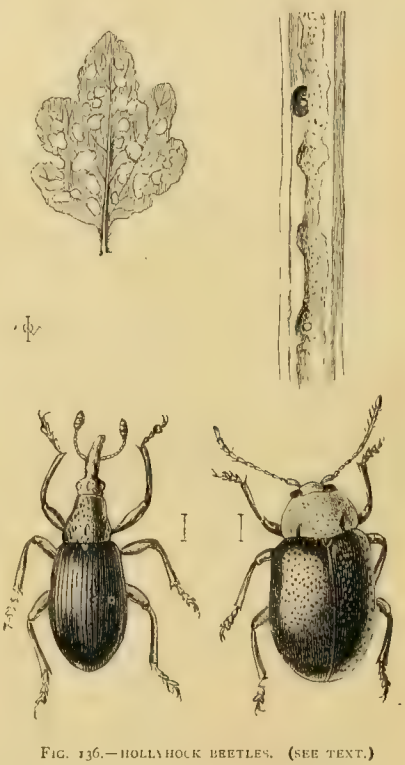


FIG. 136.—HOLLYHOCK BEETLES. (SEE TEXT.)

of diseased Hollyhock stems, from which also I obtained several specimens of a minute semiglobose species of Acarid with a very hard skin and of a chestnut-brown colour. These latter and the Oxytelus were, however, probably only occasional visitors, attracted to the wounds of the plants by the diseased condition of the vegetable tissues. *I. O. W.*

ANEMONE FULGENS.—It is said that the demand for this fine scarlet Wind Flower has been so unprecedentedly large during the past season that it is now quite scarce, and those who grow it in quantities are sweeping the country to get supplies. Its comparative scarcity is traceable to the fact that during the spring of the present year the plant flowered wonderfully well, and it was much praised (as it always deserves to be) in the gardening papers. Thus it was there was such a run on it, and many a garden in which this flower was unknown will be brightened by its presence in the coming winter and spring. But how abnormally active this Anemone is just now! It has sent up leaves, and already flower-stems are succeeding to them; and this activity is general rather than particular. Of many plants it may be said that they have never ceased to grow up to this time, and some cold but not too severe weather would be welcomed as a needful check to precocious vegetation.

HOME CORRESPONDENCE.

The Royal Horticultural Society's Committees.—It is exceedingly disappointing to those who are anxious to see some genuine reforms made in the nature and constitution of the South Kensington committees, and thus extend and enhance the reputation of the Society, to find a gentleman of such undoubted horticultural proclivities as is Mr. Wilson simply falling back upon the old stock theme of threadbare apologists, and asking, not what base of truth there may be in what "X." may say, but "Who is 'X.'?" It is that kind of stolid indifference to external opinion which has always been the bane of public bodies and which has brought so many to grief, and which, if Mr. Wilson, excellent and kindhearted gentleman that he is, is to be taken as the exponent of the views of the Council, threatens also to make ducks and drakes of even the Royal Horticultural Society. I have before said and again repeat that the most important horticultural work being performed by that Society is being done through its committees. Even the very valuable work done at Chiswick depends for its value very much upon the capacity of its Fruit and Floral Committees to estimate and appreciate it; but to the vast body of the gardening fraternity, and to the trade especially, the committees are the most important working portion of the Society's operations, while to the amateur they really represent the whole work of the Society, and are completely indentified with it. They have considerable *prestige*, indeed a *prestige* held by no other horticultural body, simply because they are widely assumed to consist of the best men suited for their particular duties to be found in the kingdom. With respect to some rearrangement and varied working of these committees, even Mr. Wilson thinks some change is desirable, and that point being admitted it is no longer arguable; but it is essentially an unimportant one as compared with the much greater one as to who shall constitute members of the committees. Mr. Wilson does not deny the assertion, not made by me, but still in these columns, that sometimes only five or six members out perhaps of twenty present vote certificates, and country horticulturists who have hitherto held the committees in something like awe will read with astonishment that such is the case. I do not expect that every member should be conversant with every kind of plant brought before it, but if in rare cases there are those few only present who can give an opinion that is held reliable, surely it exhibits wanton indifference on the part of the rest of the members that they do not accept the judgment of their colleagues, and vote accordingly. But it is the disproportionate appointment of speciality men entailing this evil of indifference to plants of which they know little or nothing that is the source of one of the chief evils from which the committees suffer. Life-long services to horticulture, and a wide, general knowledge of things, go for little in selecting members as compared with the mushroom popularity of some specialist, who may know one particular section of plants well, but little or nothing of the vast family outside of his own particular fancy. Your specialist, too, is very often not the best judge as to the merits of flowers or fruits, because he comes to the consideration of them with certain strong biased opinions, and probably will view them from some narrow standpoint rather than from that broad base which would characterise the man who may well be described in horticultural language as an universalist. Mr. Wilson is far from touching the sore when he mentions the names of a Moore, a Little, or a McIntosh. No one wishes to see these gentlemen removed from the committees, and all freely recognise in them knowledge that is rather wider than is the cramped information found in the specialist. It is most important that gentlemen of recognised horticultural status, Mr. Wilson himself included, should be members of these committees. No one quarrels with their inclusion, but no one has given reason why men of absolutely no horticultural status are found on the committees, and whose presence there naturally excludes others who won their spurs in the horticultural world years since, and will not lose them whilst life remains. Mr. Wilson need be under no apprehension that either I or any one else think the committees are subject to undue influences, if in using that term he means corrupt influences. The worst form of influence is that seen in the existence on the committees of not a few weak men, who, having little or no knowledge of what may be before them, are either stolidly indifferent, and thus enable a small minority to vote a certificate, or who will follow a lead that perhaps is not a safe one. The acceptance of my suggestion as to the invitation of distinguished horticulturists, not members of the committees, to a seat at these bodies when visiting South Kensington, seems to be very materially qualified by Mr. Wilson's objection to their power of voting. This is equivalent to saying that "Whilst we recognise in you an eminent horticulturist,

yet we cannot grant you the privilege of giving effect to any opinion you may entertain upon the merits of plants or other objects put before you, simply because you are not one of the permanent elect." Surely no official of the Society will be invited to kiss a gentleman on one cheek, and smite him on the other, as Mr. Wilson thus suggests. I very much doubt whether any distinguished horticulturist would accept so questionable an honour. *X.*

—— In answer to the Editor's query why visitors, if admitted to the committees' meetings, should not vote, I think this would be objected to on several grounds, the principal one being that the committees are appointed judges for the year, their names published, and exhibits sent in on the faith of them. If visitors were allowed to vote there might be cases, where opinions ran even, when their vote might decide the award, although they had never been regularly constituted judges. *George F. Wilson.*

—— I am not the unknown quantity X which Mr. Wilson wishes to discover, but quite an outsider and utterly ignorant of the way in which the Royal Horticultural Society is worked. As such may I ask where I can find an explanation of the principles upon which certificates are given by the Society? It was formerly supposed that they were a reward for any new garden flower exhibited at their meetings, which had especial merit as a novelty, whether it was a species or a variety: but a year or two ago I was told —though, if it is not true, I should be glad to see it contradicted—that a First-class Certificate was given to a common wild British plant, which I had grown in my garden for twenty years—the white variety of Malva moschata, a beautiful flower enough, but no novelty either to gardens or roadsides—but a similar award was refused to that choice and lovely ornament of our spring gardens, Chionodoxa Luciliæ. I think that where bloated monstrosities in Cockscombs and Balsams are preferred in honour to such a gem as this, the discerning public will hardly allow themselves to be guided in their taste by the awards given. *C. Wolley Dod, Edge Hall, Malpas, Dec. 2.* [Chionodoxa Luciliæ was ultimately and not without much persistency certificated by the Floral Committee. At the first time of asking the certificate was refused, on the ground that the materials were insufficient. Ed.]

—— I am of opinion that if the suggestion made by your correspondent (p. 692), and endorsed by Mr. Wilson at p. 723—that eminent horticulturists, not only from the country but from the neighbourhood, who may happen to be present were to be invited to a seat at the table, and also to vote, that the efficiency of the committees would be greatly promoted. I think their presence at the table without a vote would be an anomaly. Eminent horticulturists are generally speciality men, and, as a rule, are met with only on occasions when subjects they have a fancy for are likely to be forthcoming; thus the services of the best authorities on the subjects likely to be most prominent would be secured. I cannot see the necessity of an award higher than a First-class Certificate; it is difficult to conceive how it is possible to enhance such an award. In case any subject should possess some special merit which would not be made sufficiently prominent by that award, I would suggest that such merit be endorsed on the certificate, and that the Society should charge itself with the duty of reporting upon, describing, and setting forth the particular merits possessed by all subjects certificated by its committees, and that such report be duly published for the guidance of the public. *Henry Eckford, Boreatton Park, Baschurch, Salop.*

Gardeners' Royal Benevolent Institution. —Will you allow me to state, in response to numerous inquiries, that out of the eighteen pensioners to be added to the list in January seven persons, who, or their husbands, have been subscribers for periods varying from sixteen to thirty-seven years, will be placed on the list without any election, in strict conformity with Rule No. 6, and that the remaining eleven will be elected by the votes of the subscribers from a list of twenty-three candidates, all of whom, I am sorry to say, seem to be in urgent need of the assistance of the Institution. The amount received from the Pension Augmentation Fund collection, which was closed on November 30, is £602 8*s.* 4*d.*, being an increase of £40 14*s.* 10*d.* over that of last year. I again beg to say that the voting-papers will be in the hands of the subscribers on or about December 16, and that should any subscriber by mischance not receive one, I shall be greatly obliged by a notification to that effect being made to me, in order that the error may be rectified. *Edward R. Cutler, Secretary, 14, Tavistock Row, W.C.*

Azalea rosæflora.—This is a new variety, and quite a departure from the ordinary varieties of A. indica, of which we have so many beautiful kinds. It was imported from Japan some years ago. The habit of the plant is somewhat similar to that of A. amœna. It is free in growth, compact in form, with leaves slightly larger than those of A. amœna. Its chief attraction, however, resides in the beautiful Rose-like blossoms, each blossom retaining its freshness and beauty for several weeks together. We saw examples of it a few days since at Messrs. Jas. Backhouse & Son's, York. A specimen which was about 18 inches high was very conspicuous, with these lovely circular flowers dotted over its even surface. The flowers are rosy-salmon in colour, and nearly 3 inches in diameter; the outer petals are ¾ inch wide, and are all recurved; those near the centre are narrower and shorter, while those in the very centre of the blossom are short and incurved—folding over each other, thus forming a small unopened bud. Judging from the freedom with which the flowers are produced, even on very small plants, the season of the year when they appear, and the probable hardiness of the plant, we doubt not it will prove a most welcome and valuable acquisition. *R. P.*

The Schoolmaster Potato.—The suggestion of Mr. R. Dean at p. 692 is a very good one, that a trial should be made at Chiswick. I shall be pleased to send some to Mr. Barron, if he will favour us with growing them, from the original stock. *Charles Turner, Slough.*

The Currant Bud Disease.—For some years past Black Currants in the West of Scotland have suffered severely from a form of disease known as "Double Bud," which renders the plants fruitless, and consequently unfit for cultivation, and for which no satisfactory remedy seems generally known. Any information regarding it—either cause, prevention, or cure—would be a great boon to gardeners in these districts, very many of whom are at present compelled to destroy the bushes they have, as their only recourse, before putting in fresh plantations, to secure, if possible, a few years' crops, before these new plants go the way of their predecessors. *W. L., Pollokshields, Glasgow.* [The cause of the disease is a mite, illustrated and described from specimens sent from the West of Scotland in 1869, p. 841 (fig. 137). We know of no other remedy than severe pruning and burning, but print our correspondent's letter in the hope of gaining further information. Ed.]

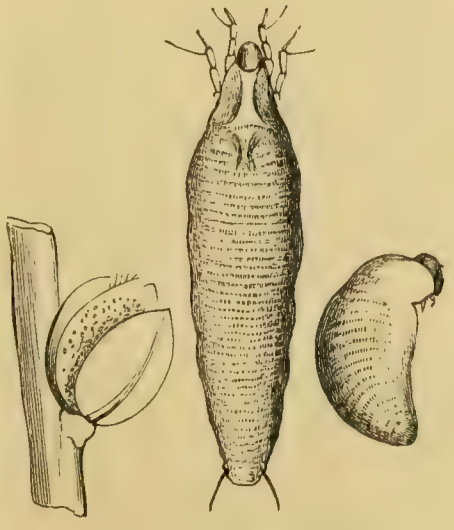


Fig. 137.—The currant bud mite.

Nicotiana affinis.—This plant has proved more hardy here than was at first anticipated. A few plants of it were cut back after flowering through the winter, and were planted out-of-doors in a sheltered position early in June, by which time they were well started into growth; they soon commenced flowering, and continued to do so until the thermometer began to go below 45° at night, when they lost their scent and flowered less freely. The plants, however, survived, and produced a few flowers, until Nov. 18, when we had 9° of frost, which finished them. As one of the plants has lately thrown up some shoots from the roots it may yet prove to be of perennial duration in a proper temperature. I noticed as the weather got cooler the flowers remained more or less open all day. *W. H. Divers, Burghley.*

Cotton Slag, or Slag Felt.—The Cotton slag "Thorne" inquires about in your last issue is, doubtless, Baatsch's Patent Slag Felt, and the address he requires is, The Silicate Cotton Works, Perren Street, Ryland Road, Kentish Town. I made a note of this felt at the Smoke Abatement Exhibition at South Kensington, as likely to be very useful for many purposes in connection with horticultural apparatus and appliances. It is said to be prepared from the refuse from blast furnaces, and is, I think, a wonderful production, the merits of which deserve fuller recognition. For economising heat in hot-water pipes and boilers, for protecting cold-water pipes, &c., from the action of frost, for packing round flues that are liable to overheating, and are in dangerous proximity to wood or other combustibles, and for many similar purposes it is excellent, being, as I have proved, a capital non-conducter of heat and perfectly incombustible. *Geo. Duffield, Winchmore Hill.* [Such things should be advertised. Ed.]

A Novel Manure.—I recently obtained from the cellar of an unoccupied mansion about a peck of the solid excreta of a colony of bats. As the public are promised a large supply of this kind of guano from the caves of Borneo very shortly, it may be interesting to ascertain its value beforehand. I have no means of thoroughly analysing what I have, but will gladly send a sample to any of your readers who would undertake to do so. In the meantime I have discovered that it gives off ammonia very freely when mixed with lime and water, and am also trying it for some soft-wooded plants against equal quantities of Clay's Fertiliser. *A. G. Bridgeman, Marlow.*

The Jerusalem Artichoke.—A friend living in France, to whom I wrote about this name, inquired of M. Vilmorin, of the well-known Paris firm, what was understood in France by "Artichoke de Jerusalem," and whether he did not think the English application of the name to the root of Helianthus tuberosus was connected with Girasole? It will be seen that M. Vilmorin's reply, of which I give the substance, supports the opinion of Canon Ellacombe. "You will find 'Artichaut de Jerusalem' given as a synonym of 'Pâtisson,' the name we give to a Gourd producing small flattened crowned fruit of irregular outline, of which I enclose figures. As for the origin of the name [Custard-Marrow], we know nothing about it. What you suggest with regard to the Topinambour might be plausible enough; but need we generally attach any importance at all to these popular names, which may very likely have been invented to mislead as to the habitat of the plant, or to denote its foreign origin? The Jurusalem Sage is Phlomis fruticosa, a plant of Southern Europe, but commoner in Spain than further east. We also give the name of 'Jerusalem Thorn' to Parkinsonia aculeata, a West Indian Plant. Fancy evidently has a great deal to do with these names. On referring to the *Lexicon* of Littré, we find that Pâtisson is the Cucurbita melopepo of Linnæus, and that its synonyms are 'Artichaut de Jerusalem' and 'Artichaut d'Espagne.'" *C. Wolley Dod, Edge Hill, Malpas, Nov. 30.*

—— With reference to the Jerusalem Artichoke, at p. 660, and to the rejoinder made by the Rev. Canon Ellacombe, at p. 692, I may remark that your correspondent, "W. O. M.," is quite in error in supposing that the Italian name is Girasole Articiocco—Girasole or Giralsole is the name of the Sunflower—Articiocco is not Italian at all, no such word exists in that language. An Artichoke in Italian is Carciòfo, and the Italian name of Jerusalem Artichoke is Tartufi bianchi. *H. J. Ross, Castagnolo, a Lastra, a Signa.*

—— I should like to add a few words confirmatory of what "W. O. M." has said in praise of this most useful and agreeable vegetable, for I have often been puzzled to know why the poorer classes who, in the country at any rate, have garden ground, do not cultivate these Artichokes, which are so easy to grow, and so exceedingly prolific. Once planted in a piece of land they are difficult to eradicate, for the smallest tuber left in the soil will throw up a plant next year; but my experience of the poor classes shows me that they seldom value inexpensive articles, and are, despite School Boards, very prejudiced and unenlightened in many respects. A labourer's wife, who would turn up her nose at Artichokes, which "grew like all along of themselves" in the country, would, if she went to live in a town, and had to pay 4*d.* a pound for them, value them greatly, and say "they was quite a gentry dish." "Palestine soup" is made of them, and they form, as "W. O. M." states, a good basis for various brown soups. I often dress them the French way:—Boil until nearly tender, drain well, sprinkle with salt and pepper, and fry a light brown in butter, or fry them in a well-made batter. Layers of cut Artichokes impart a very nice flavour to veal and ham and chicken pies. I always put a teaspoonful of lemon juice in the cold water into which the Artichokes, after being washed and pared, are thrown to stand in. It makes them beautifully white, and this, if the vegetables are to be dressed in the ordinary way, either plain boiled or mashed, is essential. *Helen Watney, Liss, Hants.*

Centropogon Lucyanus. — This is one of the very best things that can be grown for flowering at this season, sending up as it does vast quantities of bright

rosy-red Æschynanthus-like blooms, which not only show themselves in large clusters at the end of every shoot, but at almost every joint, for when the tops are cut, or cease flowering, the plants break again below and continue more or less gay the greater part of the winter. As the habit of this Centropogon is somewhat loose and spreading, it may be grown either in baskets or pots, in the former of which, suspended from the roof or house, and tied or pegged down a bit, it shows itself off to advantage, and comes all the brighter for the extra exposure it gets. In pots it is necessary to tie it up a little to stakes, when it may be made to make neat, handsome specimens, as it carries plenty of fresh pleasing green foliage right down to its base, from whence the numerous branches emanate from a strong looking crown. To have large plants they should be kept the year over, and when they have done blooming, they should be rested for a month or so by being kept moderately dry, when they may be cut back, shaken out, and repotted. The soil that suits them best is a mixture of loam and peat in about equal parts, to which should be added a good sprinkling of sand to keep it open and porous. To give the plants a fresh start, they must have a brisk moist heat, but very little water at the roots till they get well into growth, when after about the end of May they will succeed best plunged in a pit or frame, where, if shut up early in the afternoon, and treated in the same way as ordinary stove plants during the summer, they will make fine stuff by the autumn, and should then be moved into a house where they can have plenty of light, and a temperature ranging between 60° and 70°. Centropogon Lucyanus strikes freely from cuttings, which should be taken off with a heel, and inserted in sharp sandy soil, and kept close under a bell or handglass till they root. The only insects that appear to affect the plants are green and white fly, the latter of which has been very troublesome with us, and most difficult to destroy. To get rid of the first named is easy enough, but the white appear to be proof against the fumes of tobacco, and flit about on Beans, Bouvardias, Salvias, and Lantanas, on which they increase and spread at a very fast rate. *J. S.*

Trichomanes Hartii.—In reference to the new Trichomanes Hartii, Baker, described at p. 680, I wish to state that the plants were not sent direct to myself, but to George V. Hart, Esq., of 14, Lower Pembroke Street, Dublin, who is a devoted lover and cultivator of Trichomanes, Hymenophyllums, and other rare Ferns. It was to Mr. George Hart that we are immediately indebted for our living plants of this new species, and it was this gentleman who encouraged his brother, Dr. W. H. Hart, who found this species in Sierra Leone, to send home consignments of living plants. *F. W. Burbidge.*

Gloxinias for Winter Flowering.—As all flowers obtainable are acceptable at this dull season of the year, I thought it might be interesting to many of your readers to know that I have now (Nov. 27) a batch of seedlings in full bloom, several of the plants carrying from twenty to twenty-four fully expanded flowers, besides numerous buds, and several of the plants promise to continue flowering up till Christmas, while the colours to all appearance are as rich and varied as any I have seen in flower at midsummer. The plants in question were raised from a packet of seeds sown in March. They were grown on quickly in heat and were showing flower-buds freely by the beginning of July, being then in 4-inch pots, but the family being then about leaving for Scotland they would have been of no service to us, so by way of trial I had all the flower-buds pinched out, gave them a shift into 5-inch pots, and after allowing them time to get established therein, I had them removed to a shelf on the north side of a cool house, where they had just sufficient water to keep them fresh and green. At the beginning of October I had them placed on a shelf in a span-roofed forcing-house, where they were subject to a temperature of 65° to 75°, rising to 80° by sun-heat. The result has been very gratifying, for the plants began to throw up flower-buds freely almost immediately, and from the beginning of the present month they have made our stove quite gay in combination with a useful lot of Gesneras, which have been flowering freely during the same period. From the experience thus obtained, I need hardly say that in future I shall expect to get a batch of Gloxinias in flower for November and December with as much ease as zonal Pelargoniums or Cyclamens. *J. Seward, Ford Manor.*

Schizostylis coccinea. — This brilliant Iridaceous plant has already received many notices, and yet it is not half so much cultivated as its merits deserve, for, whether for furnishing purposes or for supplying cut bloom, it is one of the best things that can be grown, as it is not only exceedingly showy and free, but it comes in at a time when flowers are not over plentiful, and lasts a long time in perfection, continuing to open its blossoms in water when cut almost as well as on the plants. Its hardiness makes it more valuable, and is a great point in its favour, as it may be planted on a border in any warm sheltered part, and there be cut from till Christmas or after. It looks and does best, however, in the greenhouse, in pots, as there, associated with white Chrysanthemums, Bouvardias, Eupatoriums, &c., it makes a fine show. To have them strong for this work, they should be shaken out immediately they have done flowering, and the best offsets selected, and these potted up to grow on again; or if the size of pot is no object, it is a good plan simply to shift the plants, as then there is no check from disturbing the roots. The soil that suits Schizostylis best is a light rich one, such as loam, with a sprinkling of rotten manure and leaf-mould, in which they should be potted somewhat loosely, as then they can ramify freely. The most suitable situation after potting is a cold pit or frame, where they can be plunged and kept during winter up near the glass, so as to have plenty of light and air to prevent them from damping. During the summer the plants do best outdoors, the most favourable place for them then being a half shady border, where, if plunged in litter or some other non-conducting material and well watered with liquid manure, their growth will be rapid. Some plant Schizostylis out and take them up and repot in the autumn, a practice we used to follow, but I never found them so good or satisfactory as those we have now. Our best this year were raised from seed sown in heat in March, five or six of which seedlings were potted at equal distances, in 7-inch pots, and the crowns they made and the stems of bloom they have thrown up are almost as stout and tall as one usually sees with Gladiolus, with which I have been trying to cross the Schizostylis, but have failed. *J. Sheppard.*

Coreopsis præcox.—Is there such a plant as this in cultivation in England? I ask because a friendly nurseryman this autumn asked me whether I could spare him a bit, and my reply was that I had never possessed it or met with it. It may be one of many North American Composites, which gradually die out in English gardens for want of hotter summers. I cannot, however, find it figured anywhere, and it is not included in Pritzel's *Index Iconum*. Out of a large number of nurserymen's catalogues of hardy plants only one contains it, and I have sent for it, but I should like to know what I ought to expect, if any of the readers of the *Gardeners' Chronicle* can tell me. I find that Coreopsis tenuifolia will not live here, though I have raised it from seed. *C. Wolley Dod, Edge Hall, Nov.* 27.

Julia Lagravere Chrysanthemum.—I want to put in a plea on behalf of this, one of the richest coloured and most serviceable Chrysanthemums we have, that it may no longer be regarded as of the large-flowered section, but may be included with the pompons. As a large-flowered kind it is nowhere, for against incurved flowers reflexed ones have no chance—though in my estimation much more pleasing—nor even is it found large enough to class with the reflexed kinds, so that its position is an anomalous one. On the other hand, there are some classed as pompons that produce flowers hardly less large than are those of Julia Lagravere, and certainly many produce blooms far less beautiful. The rich crimson flowers of the variety would be indeed acceptable in any pompon class, whilst the kind would prove a valuable addition to the pompon trained plant section. A collection of half-a-dozen, composed of Julia Lagravere, white and golden Mdlle. Marthe, Adèle Presette, St. Michael, and Marabout would, if well grown, make a formidable group. Were but one or two committees of Chrysanthemum societies, say those of Hackney and Kingston, for instance, to assent to Julia Lagravere being classed as a pompon that assent would soon become universal, and the shows would to that extent be benefited. As a variety to furnish deep coloured flowers for cutting Julia Lagravere is not excelled. The bunches of bloom where the plants are grown in light and without warmth have that rich crimson glow of colour seen in the bunches of blood-red Wallflowers in the spring. As a colour that comes out so richly under gaslight these crimson-flowered varieties merit all possible encouragement. Of the myriads of Japanese mauve-red and pompon kinds, not one gives so deep a crimson hue as does Julia Lagravere, and it is only in King of Crimsons, one of its own somewhat despised section, that a real rival in colour is found. *A. D.*

Sericographis Ghiesbreghtii.—This is a plant of real value for the embellishment of warm greenhouses and conservatories during winter, as it comes in admirably after the first flush of such Salvias as Bruantii splendens is over, and lasts on till the old favourite S. Heeri fills up the gap in the spring. To have the Sericographis stand well in the structures alluded to, it must be grown under moderately cool treatment, when it will be found to bear a temperature of about 55°, in which it will stand and open its Justicia-like flowers, and last a long time in perfection. The way to manage this Sericographis is to put the cuttings in early, and, when struck, to pot and nurse them on by standing them on a light shelf in a stove, so as to keep them short-jointed and dwarf, and when they get well hold of the soil they should be stopped, which will cause them to break and furnish below. The situation that suits them best during the summer is a pit or deep frame, where they can be plunged in half rotten leaves, as then they may be kept uniformly moist at the roots. Although they require some slight shade during very hot sunny weather, the less they have of it the better, as the thing to cause them to flower well is to get the growth firm, which can only be done by air and exposure. *J. S.*

Aster Archer Hind and Asters in General.—Observing a note to the effect that the Aster which I named, and distributed by the name of Archer Hind, has been pronounced at Kew to be A. versicolor, I write to say that there must have been some confusion of specimens. Having for a year or two collected everything I could find in Asters, and having got together about sixty or seventy distinct forms, I have only one which claims the name of A. versicolor, and this is nearly the only Aster about the name of which I find a nearly universal consensus, and which, in its ordinary form at least, could not be mistaken for any other. It has the thickest stems of any Aster, grows about 7 feet high, is very floriferous, and has flowers which come out a dull white, turning after a day or two to pale purple. It flowers early—about the beginning of September here—and though it bears endless division, does not spread much at the base. Aster Archer Hind flowers at least a month later, grows 5 feet high, and bears flowers not nearly so thickly set as those of versicolor, and of a rich purplish-blue, being in fact the bluest Aster I have ever seen. In habit and leaf it much resembles A. novi-belgii, and I have often described it as an Aster with the habit of novi-belgii, and the colour of, but more blue than, amellus. I have three Asters which nearly resemble it both in colour and habit, one was sent me by Miss Jekyll, who calls it Peperharrow, from a village of that name in Surrey, in a cottage garden of which she found it. A second I bought as A. Fortunei: the third was sent me by Mr. Lynch, of Cambridge, as æstivus. Each of these differs from Archer Hind, and from all the others, but there is a family likeness. With respect to the difficulty of naming Asters, it is so great that I have given up trying to get them specifically named. Composites of this kind make up for their unwillingness to hybridise by the readiness with which they vary from seed. Pyrethrum roseum and Chrysanthemum indicum are instances: and I have little doubt that some species of Aster might be made to vary as much as the greenhouse Cineraria. Asters, in spite of their late flowering ripen seed freely, and I have ascertained that it is the practice in some nurseries to raise seedlings as the least troublesome way of increasing stock. As no selection is exercised, the change in the seedlings is generally towards degeneracy: but now and then we may have a choice exception, and it is possible that Archer Hind may be one of these. A very distinct Aster in its characters is A. novæ-angliæ (often wrongly sold and lately described in a gardening journal by the name of novi-belgii); but of this I have eight or ten forms differing either in the shape or the colour of the flower, which varies from bright rose to dark purple. Nearly all the best Asters I have have been "picked up" accidentally, and hardly one has come from a nursery. May I add that I have distributed so many pieces of Archer Hind to those who have written to ask for it that I have no more to give away this season? *C. Wolley Dod, Edge Hall, Malpas, Nov.* 25.

Christmas Roses.—About this time two years ago I was allowed to bewail in the *Gardeners' Chronicle* the fact that I could not grow Christmas Roses. Then much good advice was given to me. Some advised me to plant them very deep: others to plant on the top of a raised mound: others to give them rich strong soil; others very light soil: and I took everybody's advice, and have now succeeded in growing them very respectably. What they seem to hate worst of all things is being in water-logged soil, and next to that, being dried up in summer. Raising them on mounds made with stones gives them perfect drainage, and covering the crown from time to time with some rich compost such as leaf-mould and old riddled manure supplies them with food. As for situation, I find a south wall sheltered from the sun by trees, but neither under their drip nor invaded by their roots, is the best place. In this situation I have had a splendid plant of the variety known as H. niger maximus producing its fine flowers, three on a stalk, for the last month. I wish I knew where to get more of this variety. I find that either some other form is sent for it, or plants with one leaf, and crammed into a pot, are all I can obtain. I would gladly pay five shillings each for large plants out of the open ground, and having not less than five strong leaves. *C. Wolley Dod, Edge Hall, Malpas, Nov.* 28.

THE SMITHFIELD CLUB.

The annual exhibition of the Smithfield Club, held at the Agricultural Hall, Islington, during the past week, was, contrary to expectation, a step in advance of any of its predecessors. The great counter attraction of the Royal pageant at the opening of the New Law Courts seemed to interfere but little with the attendance upon the opening day, as in the afternoon, when H.R.H. the Prince of Wales arrived, the Hall was well filled with visitors, who seemed to evince great interest in the proceedings. The various stands of roots, cereals, and Potatos were exhibited in the gallery by Messrs. Webb & Sons, of Wordsley, Stourbridge; Messrs. James Carter & Co., Messrs. Sutton & Sons, Messrs. Harrison & Son, of Leicester, and several others, whose produce generally was remarkably fine, and was so well arranged by the different firms as to present a striking feature in the exhibition.

Messrs. Webb & Sons had an extensive display of roots arranged in elaborate style upon a groundwork of crimson cloth, in imitation of a panel pattern, in which there was a simple touch of art displayed that attracted much attention. The raised diamond patterns of Yellow Intermediate and Yellow Globe Mangel were perhaps more conspicuous than anything else, and as these were lined with clean, finely grown Carrots, the effect was all the more imposing. The other roots consisted of Mammoth Long Red Mangel, Kohl Rabi, Webb's Imperial Swede, and Devonshire Greystone Turnip, besides many other varieties. Samples of Wheat, Oats, and Barley were also exhibited by Messrs. Webb, and good examples of the Schoolmaster Potato.

Messrs. James Carter & Co. had another large stand, in which the various coloured roots had a fine effect—a fact that was as much due to the skill of the arrangement as to the size, colour, and quality of the roots. In the centre we noticed some beautifully grown, clean samples of Imperial Prize Winner and Pomeranian White Globe Turnips, and Warden Prize Mangel, arranged as if growing in a bed of cocoa-fibre, and the two wings were made up of splendid samples of Mangels, Turnips, and Kohl Rabi — some of the single specimens of Mammoth Prize Red Mangel weighing as much as 46½ lb. The same firm exhibited samples of their natural grasses for laying down permanent pastures in boxes, as showing the genuine quality and character of their seeds immediately after germination; also Potatos and other produce.

Messrs. Sutton & Sons had a large and varied display of roots, including Golden Tankard Mangel, Sutton Champion Swede, White Belgian and Red Altrincham Carrots, wonderfully large, clean, and highly coloured, Potatos and grasses for all soils, besides samples of garden seeds.

Messrs. Raynbird, Caldecot, Bawtree, Dowling & Co., of Basingstoke and Mark Lane, London, exhibit good samples of Mangels, Turnips, and other roots and specimens of Sunflower and compound cake for feeding cattle. Messrs. Alfred Hall & Son, of Westbury, Wilts, also showed a good stand of roots, and Mr. John R. King, of Coggeshall, Essex, a large collection of roots and other vegetables. In this collection the Potatos and Onions were very fine, as were also samples of King's extra triple curled Parsley. Messrs. Thomas Gibbs & Co., Half Moon Street, Piccadilly, showed roots of good quality and large samples of Robinson's Champion Ox Cabbage, some of which weighed 40 lb. The Potatos, Onions, Carrots, and Beetroot on this stand were among the finest in the show.

Messrs. Harrison & Sons, Leicester, exhibited roots that were noteworthy for size and quality, their Normanton Globe Mangel being especially fine. Messrs. Harrison also showed grand samples of Leicester Red Celery, Onions, Potatos, and Carrots; and the same firm had a good display of garden and farm seeds.

Begonia geranioides.—This is a pretty species, and one well worth growing, even in a select collection of greenhouse plants. It has a cluster of root-leaves, from amongst which spring numbers of scapes (about 6 inches in height) bearing numerous white flowers. B. geranioides was introduced from Natal by Messrs. Backhouse some dozen years or more ago. So far this species does not seem to have been much experimented upon by hybridisers, under whose hands some of the old-fashioned favourites of half a century ago have been made to undergo some wonderful transformations. Some well grown examples were lately to be seen in bloom at Kew.

The Poultry Yard.

Eggs in Winter.—While plenty of eggs are valuable at all times, they are doubly so in winter, and those who secure a good supply for home use or sale during the next three months are to be congratulated on the good management of their fowls. Some who are not very well up in poultry matters think that there are breeds specially adapted for laying in winter, and their want of eggs at that season is attributed to their not having the right sort; but we cannot go this length, as we have always found good summer layers to produce plenty of eggs in winter too, providing they are only properly treated. It is the fault of the owners, and not the stock, when eggs are scarce in winter, and those who have to complain of this would do well to give the matter more attention. The very earliest hatched birds are not generally the best winter layers; those hatched in March will begin laying in July and August, and after going on for a time they moult in October, which makes them stop laying, and they do not begin again until spring. Those hatched in May and June seldom lay until October or November, and it is this class which proves the best winter layers amongst the young fowls. With the older ones the same thing is liable to occur. This year some of our hens moulted in June, laid well in August and September, and now they are moulting again, which spoils them for winter laying; but we have others which are only now fairly over the moult—their combs have become big and red, and they will lay from now on for months. Apart from considerations of these kinds, good feeding is the grand secret of winter laying. Half-starved fowls never lay well at any season, but such are absolutely sterile in winter. Barley-meal mixed to a dough with hot water or ale, and given the first thing in the morning, Wheat at mid-day, and Indian Corn the last feed in the afternoon, is the sort of fare we have never found to fail in giving an abundance of eggs in winter, and we would strongly advise those who desire to have plenty of eggs at Christmas to take to this bill of fare at once, adhere to it all winter, and note the result.

Fattening Poultry.—In this we go beyond the cocks and hens, and include the larger tribes, such as ducks, geese, and turkeys, which are now more seasonable, and in greater demand than chickens. The weights of model fat birds is always a question of interest and importance to those concerned in fattening, and for guidance in this the weights of the best birds at the Birmingham show may be taken. At the late show there, weights were in no way less than on previous occasions. The heaviest pair of Aylesbury ducks weighed 20 lb.; white geese, 46 lb.; grey Toulouse, 45 lb.; old turkey-cocks, 38 lb.; and young ones under twelve months, 26 lb. each. These are good weights for show birds, but there is nothing to hinder table ones from being brought up to about the same mark. Professional breeders have many ways of cramming and fattening, but amateurs have not so many devices or appliances in this way, yet they may have birds of better quality than any of the forced ones. Geese, turkeys, and ducks may be allowed to run about the fields, ponds, streams, or yards, and live on any rough diet, until their frames are well developed, but they should be more confined and better fed a number of weeks before being killed. We do not approve of shutting them up in small pens, where they have hardly room to turn round; but a dozen ducks, and half-a-dozen geese or turkeys, are shut in small runs about 12 feet square. Here they are given abundance of barley-meal and kitchen scraps three times a day, and between these meals they have Indian corn and other kinds of grain, besides plenty of green food and water. The food, dishes, and runs are kept clean and sweet, which has a wonderful effect in keeping up their appetites, and this is a great matter, as the more they will eat the better. Some seem to think when fowls are being fattened to be killed any kind of dirty place will do for them, but this is a mistake, as they will never succeed well in such a situation. Turkeys are the most tender of all, and dryness and shelter are beneficial to them at all times. They sometimes take to the trees and roost there, and this makes them very hardy; but those kept under cover fatten the quickest.

Water Fowls in Parks and Pleasure Grounds.—It is generally admitted that ponds and streams add greatly to the beauty and ornament of parks and pleasure grounds, and there are many kinds of plants which can be used to adorn the water, but these are equalled in attractiveness by many kinds of fancy water fowls, which we would like to see oftener in such places. There are no prettier specimens of our feathered tribes to be found in any country than the Mandarin Ducks, and we are glad to see they are being freely imported now. They are yet expensive, as we were asked £4 10s. for a pair the other day by a dealer, but those who can breed from them will be doing good service by increasing them, and there is no doubt they would find this pay well. There are many other kinds of beautiful waterfowls now to be had in quantities which can be strongly recommended to those interested in such. Amongst these we may name the Carolina, Bahama, Indian tree, Brazilian teal and South American whistling tree ducks, Indian bowed geese, black swans, and the noble white ones. These are all birds of the most splendid plumage, only it would take too much of your space to describe them in detail, but any reader wishing further information on any of the breeds may have it on application to *Henwife*.

Notices of Books.

Greater London.—Under this title Messrs. Cassell are issuing in monthly parts a history of the suburbs of London. The text is the work of Mr. Edward Walford, and it is copiously illustrated with woodcuts. We have often heard the remark made, that the suburbs possess no interest, and for those who only see the miles and miles of dreary suburban roads, bordered by lines and lines of houses, appealing to no sympathies except those of their immediate occupiers, the remark is painfully true. But although the speculative builder has done his best to obliterate all that is rural and picturesque in the present he cannot altogether efface the past. True, a guide is necessary to unveil the history and bring to mind the romance of the London suburbs, and such a guide is Mr. Walford. The first part is of interest to the horticulturist, for among other districts it deals with Chiswick, Gunnersbury, and Sion, and considering the general, not special nature of the work, the account is satisfactory, even though in mentioning Lindley as a resident at Acton Green, and specifying some of his many services to botany, no mention is made of what constitutes his most enduring title to fame, his works on the Orchideæ, and although the fine Dicksonias at Gunnersbury are spoken of as two gigantic trees of the Fern kind. Bedford Park, part of which covers the site of Lindley's garden, is mentioned—a curious mixture of pictural and ugly houses in which retrogression rather than progress in matters domestic is the order of the day. Pains have, indeed, been taken to incorporate the most recent information; thus, under Ealing we even find mention of the new barrack—we mean the Helena College, which has been only quite recently opened. The history of each district, and the story of the lives of the eminent personages who have dwelt in it are so lightly and pleasantly told that we counsel dwellers in the suburbs to procure the work, in the full assurance that they will—most of them, at any rate—be as surprised as they will be pleased to find the amount of real interest attaching to neighbourhoods which are usually considered (with a few notable exceptions) as rather less interesting than a turnpike road. We know not, of course, what plan the editor intends to follow, but seeing how greatly even the present condition of the country around London depends on physical configuration, geological character, natural water-supply, and the like, we trust he will not omit to give a popular account of the physical geography of the neighbourhood, with indications of its influence on the numbers, occupation, and general characteristics of the inhabitants before gas, water, and railways had produced so great a degree of uniformity as we now see. The introduction to Messrs. Trimen and Dyer's *Flora of Middlesex* furnishes many of the data for the kind of information we have in view. Adverting to this matter, we may remark in passing that quite recently evidences of glacial action have been seen in the form of drift pebbles and small masses of chalk on the summit of a London Clay hill near Ealing—a geological fact of interest to the farmer or gardener who has to work on the London Clay.

—— *Aunt Judy's Magazine* is so uniformly excellent that it is almost needless to speak of its value as a child's periodical. In the present number is a short tale by Mrs. Ewing, in which some interesting

information is given about Sunflowers, but in such a manner that the child will, as it were "take it in at the pores" unconsciously. The tale is altogether admirable, but we cannot praise the illustrations. The author is a better botanist than is the artist. Bemrose & Sons are now the publishers of this high-toned and most interesting magazine.

—— *Williams' Orchid Album.*—The November number contains coloured figures of Comparettia macroplectron, Odontoglossum cristatellum, Thunia Bensonæ, and Odontoglossum Pescatorei Veitchianum. The descriptions are by Mr. Thomas Moore, the cultural hints by Mr. Williams. No Orchid grower can dispense with this useful publication.

—— *Die Schönblühenden Zwiebelgewächse.*—Under the title "Beautiful Flowering Bulbous Plants" Mr. Rumpler has issued in German a descriptive list of many of the most remarkable bulbous plants, including many plants not properly so called, though generally associated with them. A good index is given, so that although the list is by no means complete it will yet be very serviceable to those who read German. The illustrations are borrowed from various sources, with and without acknowledgment, and are of all sizes, so that the casual reader has no idea of the proportionate size of the flowers, as no scale is given.

Obituary.

WE have to record the death, recently, at Hamilton, Canada, of Mr. PETER MURRAY, aged seventy-six years. The deceased, who had resided with his son for the last twelve years, was for about thirty years gardener to the late Marquis of Breadalbane, at Taymouth Castle, Perthshire, and was known to be an excellent practitioner in all departments of the garden. He was a native of Lanarkshire, and the eldest of eight brothers, two of whom have risen to the position of merchants in Canada.

—— We regret to have to announce the death, on the 6th inst., aged twenty-four, of ELIZABETH, the only daughter of Mr. JOHN SMITH, Curator of the Royal Gardens, Kew. The sympathy of their friends and associates is all that can be offered to the parents in this distressing bereavement, and this they will have in full measure.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, DEC. 6, 1882.

MONTH AND DAY.	BAROMETER. Mean Reading Reduced to 32° Fahr.	BAROMETER. Departure from Average of 18 years.	TEMPERATURE OF THE AIR. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years	HYGROMETRICAL DEDUCTIONS FROM GLAISHER'S TABLES 6TH EDITION. Dew Point.	Degree of Humidity. Sat. = 100.	WIND. Average Direction.	RAINFALL.
	In.	In.	°	°	°	°	°	°			In.
Nov. 30	29.82	+0.09	42.2	36.0	6.2	39.3	— 2.1	34.1	81	N. : N.N.W.	0.03
Dec 1	29.74	+0.01	34.0	29.0	5.0	31.4	—10.3	29.8	93	—	0.00
2	29.82	+0.08	36.0	28.5	7.5	32.4	— 9.4	30.5	88	S.E.	0.00
3	29.17	—0.58	51.1	33.5	17.6	44.4	+ 2.6	42.7	94	S. : S.W.	0.07
4	28.92	—0.85	51.0	38.0	13.0	42.7	+ 0.9	38.1	84	S.W. : W.S.W	0.00
5	28.93	—0.83	39.0	35.0	4.0	36.9	— 4.8	32.1	84	N.W. : W.N.W	0.02
6	29.00	—0.77	38.0	30.5	7.5	33.7	— 7.9	29.3	84	N.W.	0.00
Mean	29.34	—0.41	41.6	32.9	8.7	37.3	— 4.5	33.8	87	N.W.	0.12

Nov. 30.—A dull overcast morning; fine and bright from 12 P.M. Fine night.
Dec. 1.—Dense fog all day and night. Very cold.
— 2.—Dense fog till 2 P.M., dull and overcast afterwards; dull, cold night.
— 3.—Dull and cloudy both day and night.
— 4.—Fine bright day, sun shining brightly, blue sky, cold wind at night. The readings of the barometer were remarkably low; at the height of 150 feet they were below 29 inches all day.
— 5.—Slight fall of snow in morning, dull overcast day and night. The reading of the barometer was 28.89 inches for a great part of the day.
— 6.—Slight fall of snow in morning, dull overcast day. Fine cold night. The readings of the barometer still remarkably low, being mostly below 29 inches.

LONDON: *Atmospheric Pressure.*—During the week ending December 2, the reading of the barometer at the level of the sea increased from 29.29 inches at the beginning of the week to 29.40 inches by 9 A.M., and decreased to 29.39 inches by 3 P.M. on the 26th, increased to 29.85 inches by 9 A.M. on the 27th, and decreased to 29.80 inches by midnight on the same day, increased to 30.14 inches by 3 P.M. on the 28th, decreased to 29.72 inches by 9 A.M. on the 29th, increased to 30.12 inches by 3 P.M. on the 30th, decreased to 29.88 inches by 3 P.M. on Dec. 1, increased to 30.13 inches by 9 A.M. on the 2d, and was 29.84 inches by the end of the week.

The mean reading for the week at the level of the sea was 29.86 inches, being 0.37 inch higher than last week, and 0.04 inch below the average of the week.

Temperature.—The highest temperature in the shade in the week was 48°, on Nov. 26; on Dec. 1 the highest temperature was 34°. The mean of the seven high day temperatures was 41°.6.

The lowest temperature in the shade in the week was 28°.5, on Dec. 2; on Nov. 26 the lowest temperature was 39°.5. The mean of the seven lowest temperatures was 33°.2.

The greatest range of temperature in one day was 13°.7, on the 29th; the smallest was 5°, on Dec. 1. The mean of the seven daily ranges was 8°.4.

The mean temperatures were—on the 26th, 43°.1; on the 27th, 38°.6; on the 28th, 37°.5; on the 29th, 41°; on the 30th, 39°.3; on the 1st Dec. 31°.4; and on the 2d, 32°.4; of these the first only was above its average by 1°.5, the rest being 3°, 4°.1, 0°.7, 2°.4, 10°.3, and 9°.4 respectively below their averages.

The mean temperature was 37°.6, being 2°.9 higher than last week, and 4°.1 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun, was 88°, the lowest reading being 36°.5, on Dec. 2. The mean of the seven readings was 60°.9.

The lowest reading of a minimum thermometer with its bulb placed on short grass was 25°, on the 28th, 29th, and Dec. 1. The mean of the seven readings was 27°.7.

Rain. — Rain fell on two days to the amount of 0.34 inch, of which 0.31 inch fell on Nov. 29.

ENGLAND: *Temperature.*— During the week ending December 2 the highest temperatures were 52° at Truro, 51°.2 at Plymouth, and 50° at Bristol and Hull; the highest temperature at Bradford was 44°, at Bolton 44°.5, and at Nottingham 45°. The general mean was 47°.5.

The lowest temperatures in the week were 22°.7 at Sheffield, 23° at Hull, and 25° at Leicester and Leeds; at Plymouth the lowest temperature was 33°, at Liverpool was 32°.2, and at Truro was 32°. The general mean was 27°.2.

The greatest ranges of temperature in the week were 27° at Hull, 23°.3 at Sheffield, and 23° at Brighton, Bristol, and Leeds; the least ranges were 13°.6 at Liverpool, and 17° at Wolverhampton and Sunderland The general mean was 20°.3.

The mean of the seven high day temperatures was highest at Truro, 49°.8, at Plymouth 49°.2, and at Bristol 44°.2; was lowest at Cambridge and Bradford, 41°.2, and at Sheffield, 41°.3. The general mean was 43°.3.

The mean of the seven lowest night temperatures was highest at Truro, 41°.1, at Plymouth 37°.5, and at Liverpool 35°.6; and was lowest at Hull, 28°, at Nottingham 31°.3, and at Wolverhampton 31°.7. The general mean was 33°.5.

The mean daily range was greatest at Hull, 15°.6, at Plymouth 11°.7, and at Sunderland 10°.8; was least at Liverpool and Bradford, 7°.6, and at Blackheath 8°.4. The general mean was 9°.8.

The mean temperature of the week was highest at Truro, 45°.2, at Plymouth 43°.2, and at Bristol 39°.4; and was lowest at Hull, 35°.6, at Nottingham 36°.4, and at Sheffield 36°.6. The general mean was 38°.2.

Rain.—The largest falls were 1.01 inch at Truro, 0.92 inch at Bolton, and 0.80 inch at Wolverhampton. The smallest falls were 0.21 inch at Bristol, 0.26 inch at Bradford, and 0.29 inch at Sunderland. The general mean fall was 0.52 inch. Rain fell on every day in the week at Truro. The average fall was from four to five days.

SCOTLAND: *Temperature.*—During the week ending December 2, the highest temperature was 45°.8, at Leith. The highest temperature reached at Perth was 36°. The general mean was 33°.

The lowest temperature in the week was 24°, at Dundee; at Greenock the lowest temperature was 31°.2. The general mean was 27°.6.

The mean temperature for the week was 35°.5, being 4° below that of the week immediately preceding, and 8°.2 below that of the corresponding week of 1881; and was highest at Leith, 37°.1; and lowest at Perth, 30°.7.

Rain.—The largest fall was 2 inches, at Aberdeen; the smallest was 0.29 inch, at Perth. The general mean was 0.75 inch.

JAMES GLAISHER, F.R.S.

Enquiries.

He that questioneth much shall learn much.—BACON.

HEATING: *G. H.* asks, How many feet of 4-inch piping will a Trentham Boiler 6 feet 9 inches long and 3 feet 6 inches wide heat efficiently? Will some reader who has a boiler of that size in use kindly state his experience?

SOLFATERRA EARTH. — Can any of your readers, tell me where I can procure Solfaterra Earth?—a substance which some four or five years ago was imported into this country by Messrs. Fairman & Co., 73, Mark Lane, London. These gentlemen have since left Mark Lane, and I cannot trace them. Solfaterra earth, from Puzzuoli, near Naples, is a most wonderful invigorator of plant life. I tried it upon Grape Vines, flowers, &c., and was surprised at its extraordinary efficacy, not only as a valuable vitaliser, but as a powerful insecticide. I am satisfied that it would be a cure for the Potato disease could it be procured at a reasonable price for large quantities. *Vine Grower.*

Answers to Correspondents.

AMPELOPSIS JAPONICA: *S. C. J.* There is such a plant —indeed, A. Veitchii or tricuspidata may possibly be a form of it—but we cannot tell for certain whether the tiny leaf you send belongs to that species, but it is not Rhus toxicodendron. In one of our nurseries we saw the last-named plant labelled Rhus toxicodendron some years ago, but no doubt the error has been rectified. We will reply to the remainder of your question on another occasion.

BOOKS: *F. P.* For Chrysanthemum culture Mr. Douglas' *Hardy Florists' Flowers;* for Tomatos Mr. Iggulden's manual on *The Tomato;* and for Salvias Mr. Cannell's Catalogue.

FUNGUS: *B. Pounsett.* Unusually fine specimens of Peziza melaloma. *M. J. B.*

FUNGUS IN MUSHROOM BED: *E. S.* The large coarse black substance is the early stage of a Xylaria described previously in this journal as Xylaria vaporaria; mixed with it is a mould, or Mucor, found on dung usually—the Hydrophora stercorea.

INSECTS: *W. M.* The beetles found in considerable numbers in weevilled corn, distinguished from the weevils by their larger size, different shape, and greater activity, are Ptinus fur., a common omnivorous beetle. *I. O. W.*

NAMES OF PLANTS: *H. J. Ross.* Goniophlebium appendiculatum.—*F.* 1, Retinospora obtusa; 2, Cupressus, probably torulosa.—*Morley & Co.* We think it is Maxillaria picta, but cannot say for certain without flowers. Cool treatment will suit it best.—*J. O. C.* 1, Gaultheria Shallon; 2, Holboellia latifolia; 3, Pernettya microphylla; 4, Vaccinium buxifolium. — *G. Edwards.* 1, Cratægus Pyracantha, var. Lalandi; 2, C. Pyracantha. We do not know the specific name of the Russian Pyracantha; probably it is only a variety of the common one.—*A. H.* 1, Adiantum concinnum latum; 2, Gomeza planifolia.—*I. & T.* Medicago echinus.—*Douglas.* Euonymus japonicus var. radicans, Callistemon lanceolatus, and Gomeza planifolia.

PASSIFLORA EDULIS: *Grandidilla.* Yes; you can grow and fruit the Passiflora edulis upon the back wall of a vinery without any difficulty. Get a young plant about the time you mention and plant out in a narrow border, in a moderately rich compost, such as you would select for growing Vines. It is important to restrict the roots, in order to get the plant into a fruiting condition early.

PEARS CRACKED: *A. W.* The spores or seeds of the fungus are so minute as to require the highest power of the microscope for their detection. The air in the neighbourhood of your Pear trees is probably at one season of the year laden with these spores, which, falling on the Pear, feed on its juices, and thus, as the outer portions become dried up while the inner is as yet unaffected by the fungus, go on growing, the outer skin necessarily cracks.

PLANT COLLECTOR: *Botanic.* We think your best plan would be to get employment in the Royal Gardens, Kew, for a time, and then feel your way into the channel you seek.

PRIMULAS: *Fish.* Pretty flowers in shape, but no advance in colour upon Chiswick Red, or Swanley Red, both larger sorts.

PROLIFEROUS FERN: *D. B. Crawshay.* The specimen of proliferous Fern sent is part of a frond of Polystichum angulare proliferum, a variety which, under several modified forms bearing separate names, produces young plants freely from the rachis and stipes—not unfrequently as thickly set as in the example you have forwarded. There is nothing novel about it.

STAINING DAMSONS: *X.* Mitchelson is not really a Damson, but a Plum of above medium size, which when fully ripe is of an agreeable but not rich flavour —really a kitchen Plum, a great bearer, and fine for preserving, being of great specific gravity.

TUBEROSES: *H. C. M.* We gather from your remarks that you planted out your Tuberoses last summer, in which case, if they were strong enough to flower they should have done so, and you must not expect them to flower again this winter. Even supposing they did not flower during the past summer or autumn, they will not bloom now, and are of no further use to you. You should purchase new bulbs at once, and pot some up for early flowering in the summer; but if you want them to bloom next autumn defer potting for some time yet.

VINE BORDER: *A Young Gardener.* We would advise you to use the pigeon-manure in a diluted state next season when the Vines are growing. It is a highly stimulating fertiliser, and should be used sparingly. If your Vines are well rooted give them about three good waterings in a season; but in the first place, if you have not had much experience in the use of liquids, test the strength of it upon one or two plants. In case you decide upon using the bone-dust, mix it with loam at the rate of about 1 cwt. to half-a-dozen cartloads of soil. You will, however, succeed better by top-dressing your Vine-border with rich cow-manure, about 3 inches in depth, if the border is old and exhausted.

WINTER OF 1880-81: *Glenny.* The report has been drawn up by the Rev. G. Henslow, but has not yet been made public. We understand the delay arises from the lack of available funds on the part of the Society, but the matter is so important that we trust means will be adopted to secure its publication.

*** Correspondents are specially requested to address, post-paid, all communications intended for publication to the "*Editor*," and not to any member of the staff personally. The Editor would also be obliged by such communications being *written on one side only of the paper* and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Letters relating to ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the Publisher, and* not *to the Editor.*

☞ FOREIGN SUBSCRIBERS sending Post-Office Orders are requested to send them to the Publisher of this journal, 41, Wellington Street, Covent Garden, and to make them payable to William Richards, at the post-office, Drury Lane, London, W.C.

CATALOGUE RECEIVED.

H. BOLLER, Woodfield Road, Harrow Road, W.—Succulent Plants.

COMMUNICATIONS RECEIVED—G. D.—J. Muir.—H. E.—E. R. C.—H. J. C.—F. G.—J. T. W.—J. M. G. N.—J. F. J.—A. F. Paul.—A. J. B. (thanks).—J. S.—Dr. Paterson.—B. B. (next week).—J. H. W.—W. B.—T. M.—C. W. D.—G. H. White.—J. Charlton (too late)—J. N. S.—T. J.—R. K. P.—K. D.—N. E. B. Hants.—W. T. T. D.—G. N.—F. W. B.—S. C. J.—H. C., Geneva.

Markets.

COVENT GARDEN, December 7.

Grapes are now realising better prices, superior samples being nearly off the market. A large cargo of St. Michael's Pines arrived this week, and fetched low prices. Kent Cobs in demand. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	2 6-	6 0	Figs, per dozen	0 6-	1 0
— Canadian and American, barrel	18 0	30 0	Grapes, per lb.	1 0-	4 0
Aubergines, per doz.	4 0-	..	Lemons, per 100	6 0-	10 0
Cobs, 100 lb.	45 0-	50 0	Pears, per dozen	1 0-	2 0
			Pine-apples, Eng., lb.	2 0-	3 0

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, per doz.	3 0-	6 0	Garlic, per lb.	1 0-	..
— Jerusalem, bush.	4 0-	..	Herbs, per bunch	0 2-	0 4
Asparagus (Sprue), per bundle	1 6-	..	Horse Radish, bund.	4 0-	..
Beans, Fr. grown, lb.	0 8-	..	Lettuces, Cabbage, per dozen	1 6-	..
Beet, per doz.	1 0-	..	Mint, green, bunch	0 9-	..
Bruss. Sprouts, bush.	3 0-	4 0	Mushrooms, p. baskt.	1 0-	2 0
Cabbages, per doz.	1 0-	2 0	Onions, per bushel	3 0-	..
Carrots, per bunch	0 4-	0 6	— Spring, per bun.	0 6-	..
Cauliflowers, English, dozen	2 0-	4 0	Parsley, per bunch	0 4-	..
Celery, per head, per bundle	0 4-	..	Radishes, per doz.	1 6-	..
Cucumbers, each	0 6-	1 0	Seakale, per punnet	2 0-	..
Endive, per score	1 0-	..	Small salading, pun.	0 4-	..
			Spinach, per bushel	2 0-	..
			Sweet Potatos, lb.	0 6-	.
			Tomatos, per doz.	2 0-	4 0

POTATOS:—Magnum Bonums, 130s. to 140s.; Regents, 100s. to 120s.; Champions, 100s. to 120s. per ton.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d	s. d.
Aralia Sieboldii, doz.	12 0-	24 0	Ferns, in variety, per dozen	4 0-	18 0
Arbor-vitæ (golden), per dozen	6 0-	18 0	Ficus elastica, each	1 6-	7 0
— (common), dozen	6 0-	12 0	Foliage Plants, various, each	2 0	15 6
Azaleas, per dozen	30 0-	60 0	Genista, per doz.	8 0-	12 0
Begonias, per doz.	6 0-	12 0	Hyacin. (Rom.), per pot	1 6-	2 0
Bouvardia, doz.	10 0-	18 0	Marguerite Daisy, per dozen	6 0-	12 0
Chrysanthems., doz.	6 0-	18 0	Myrtles, per doz.	6 0-	12 0
Coleus, per dozen	4 0-	6 0	Palms in variety, each	2 6-	21 0
Cyclamen, doz.	9 0-	24 0	Pelargoniums, scarlet, per doz.	6 0-	9 0
Dracæna terminalis	30 0-	60 0	Salvias, per doz.	3 0-	12 0
— viridis, per doz.	12 0-	24 0			
Epiphyllum, dozen	18 0-	30 0			
Euonymus, various, per dozen	6 0-	18 0			
Evergreens, in var., per dozen	6 0-	24 0			

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 blooms	0 2-	0 4	Lilac (French), bun.	8 0-	9 0
Arum Lilies, per doz.	6 0-	8 0	Lilium various, per 12 blooms	3 0-	6 0
Azalea, 12 sprays	1 0-	2 0	Marguerites, 12 bun.	0 0-	0 0
Bouvardias, per bun.	0 6-	1 0	Mignonette, 12 bun.	3 0-	6 0
Camellias, per dozen	2 0-	4 0	Narcissus, 12 sprays	2 0-	3 0
Carnations, 12 blms.	1 0-	3 0	— (paper-white), Fr., 12 bunches	2 6-	6 0
Chrysanth., 12 bun.	4 0-	9 0	Pansies, 12 bunches	1 0-	3 0
— (Fr.) per bunch	0 6-	1 6	Pelargoniums, 12 spr.	0 9-	1 0
— white, 12 bunches	6 0-	12 0	— zonal, 12 sprays	0 3-	0 6
— 12 blooms	1 0-	2 6	Primula, double, per bunch	1 0-	1 6
Cyclamen, 12 blooms	0 3-	0 6	Roses (indoor), doz.	2 0-	4 0
Epiphyllum, 12 blms.	6 0-	9 0	— (outdoor), doz.	1 0-	2 0
Eucharis, per doz.	4 0-	6 0	— Coloured, doz.	2 0-	3 0
Fuchsias, 12 bunches	6 0-	8 0	Tropæolum, 12 bun.	1 0-	2 0
Gardenias, 12 blms.	6 0-	9 0	Violets, 12 bunches	1 0-	1 3
Heliotropes, 12 sp.	0 6-	1 0	— French Czar, bun.	1 0-	2 0
Hyacinths (Roman), 12 sprays	2 0-	3 0	— Parme (Fr.), bun.	3 6-	4 6
Lapageria, white, 12 blooms	3 0-	6 0	White Jasmine, bun.	1 0-	1 6
— red, 12 blooms	1 0-	3 0			

SEEDS.

LONDON: *Dec. 6.*—Although the trade for farm seeds has not been so active during the last few days, full prices are maintained all round, in consequence of the apparent scarcity of all descriptions. Red Clover continues without change. Much attention is still devoted to Trefoil, and as the lack of supplies becomes more plain, a further advance is asked; white Clover is also inquired for. The tendency of both foreign and home-grown Italian Rye-grass is against the buyer. Another substantial advance has been established in Canary seed. Hemp seed is also dearer. Linseed is slow. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

At Mark Lane on Monday for the better qualities of English Wheat the previous Monday's rates were about upheld; secondary sorts were unsaleable. Foreign Wheat was not quoted differently, but the market had a flat tone. Former rates were more difficult to obtain for flour, the supply being more than adequate. Barley was a slow sale at unaltered value. Beans and Peas were firm; Oats maintained late value, but sold slowly; and Maize, being very scarce, was firmly held,—On Wednesday there was no movement at Mark Lane, and Wheat was hardly saleable at previous rates. Flour also very dull. Barley and Oats steady but slow. Beans, from scarcity, firm, with sales of retail extent. Oats steady in value, but quiet. Maize rather easier.—Average prices of corn for the week ending Dec. 2:—Wheat, 41*s.* 5*d.*; Barley, 34*s.* 6*d.*; Oats, 20*s.* 7*d.* For the corresponding period last year:—Wheat, 44*s.* 11*d.*; Barley, 33*s.* 3*d.*; Oats, 20*s.* 3*d.*

CATTLE.

At the Metropolitan Market on Monday full supplies of cattle were on offer, but the trade was fairly firm, though not brisk. A fair clearance was effected. Sheep were very short, and best qualities dearer. Prime calves were scarce and dearer; rough very unsaleable.—Quotations:—Beasts, 4*s.* 4*d.* to 5*s.* 6*d.*, and 5*s.* 8*d.* to 6*s.* 2*d.*; calves, 5*s.* to 6*s.* 6*d.*; sheep, 5*s.* 8*d.* to 6*s.* 8*d.*, and 7*s.* to 7*s.* 8*d.*; pigs, 4*s.* to 4*s.* 10*d.* On Thursday there was no feature in the cattle trade. Both for sheep and beasts the demand was quiet at about the above-noted prices, and calves and pigs sold somewhat slowly.

HAY.

Tuesday's Whitechapel Market report states that there were good supplies and a quiet trade at unaltered prices. Quotations:—Prime Clover, 105*s.* to 118*s.*; inferior, 75*s.* to 80*s.*; prime meadow hay, 85*s.* to 92*s.*; inferior, 30*s.* to 60*s.*; and straw, 30*s.* to 44*s.* per load.—Cumberland Market quotations:—Superior meadow hay, 90*s.* to 105*s.*; inferior, 65*s.* to 77*s.*; superior Clover, 112*s.* to 120*s.*; inferior, 80*s.* to 92*s.*; and straw, 38*s.* to 44*s.* per load.

POTATOS.

The Borough and Spitalfields Markets reports state that supplies are moderate, and prices tending upwards. Quotations:—Magnum Bonums, 120*s.* to 140*s.*; Regents, 110*s.* to 120*s.*; Champions, 100*s.* to 110*s.* per ton; German reds, 5*s.* to 6*s.*; ditto blues, 5*s.* 6*d.*; Dutch Rocks, 4*s.* 3*d.*; and ditto reds, 4*s.* per bag.—The imports into London last week were as follows:—12,480 bags from Hamburgh, 1700 Harlingen, 2 Bruges, 946 Boulogne, 1200 Bremen, and 203 Rotterdam, 62 tons Pon Rieux, and 20 boxes from St. Michaels.

COALS.

The following are the prices current at market during the week:—Ravensworth West Hartley, 15*s.*; Walls End—Hetton, 18*s.* 6*d.*; Hetton Lyons, 16*s.* 6*d.*; Lambton, 17*s.* and 18*s.*; Wear, 16*s.* 6*d.*; East Hartlepool, 16*s.* 9*d.*

Government Stock.—Consols closed on Monday at 100⅜ to 101 for delivery, and 101⅛ to 101¼ for the account. Tuesday's figures were 100⅜ to 100⅝ for delivery, and 101⅛ to 101⅜ for the account. The closing quotations of Wednesday were 100⅝ to 101 for delivery, and 101⅛ to 101⅜ for the account. Thursday's concluding figures were 100⅝ to 100⅞ for delivery, and 101⅛ to 101¼ for the account. The above quotations are cash.

REGISTERED DESIGNS.



"The Chatsworth."



"The Balmoral."

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"DEAR SIRS,

"Now that sufficient time has elapsed since the completion of my Greenhouses built by you, to make me appreciate your System of Glazing, I have much pleasure in stating that I am perfectly satisfied with the whole work done; and, to show how strong the buildings are, they resisted the severe gales we had last autumn and this spring. The Houses, which consist of over *thirty-four thousand* (34,000) square feet of glass, did not have a single pane broken during the gale of October 14, 1881. The Heating has been well carried out, and has given me great satisfaction in its working, which consists of 1¾ mile of 4-inch piping. The Pulsometer you have erected works also well; in fact I am very pleased with the large outlay I have made, and shall be glad to testify to your good workmanship to anybody who may be desirous of giving you an order. You are also at liberty to use the above.

"Yours faithfully,

"J. FREEMAN.

"Messrs. ARTHUR DASHWOOD & CO.,
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GUARANTEED TRUE HIGHLAND NATIVE SCOTCH FIR SEED.—We are now Booking Orders for the above on very easy terms. Before purchasing send for prices to
WM. WISEMAN AND SON, Nurserymen, Elgin, N.B.

To the Nursery Trade.

THOS. IMRIE AND SONS' Trade CATALOGUE of FOREST TREES, CONIFERÆ, ORNAMENTAL TREES and SHRUBS, FRUIT TREES, ROSES, &c., can now be had, post-free, on application.
The Nurseries, Ayr, N.B.

FINEST SEEDLING and TRANSPLANTED TREES.

ALDER, 3 to 4 feet, 18*s* per 1000.
ASH, 2 to 3 feet, 16*s*. per 1000.
LARCH, 2-yr., extra, 3*s*. 6*d*. and 5*s*. per 1000.
,, 3 to 4 feet, 26*s*. per 1000; 4 to 5 feet, 30*s*. per 1000.
SPRUCE FIR, 2-yr., £7 per 100 000.
,, 1 to 1½ foot, 10*s*. per 1000; 1½ to 2 feet, 12*s*. per 1000.
SCOTCH FIR, 1 to 1½ foot, 12*s*. per 1000; 1½ to 2 feet, 15*s*. per 1000; 2½ to 3½ feet, 18*s*. per 1000.
PINUS AUSTRIACA, 2-yr., fine, 2*s*. 6*d*. per 1000, or £12 per 100,000.
,, LARICIO, 10 to 15 inches, 20*s*. per 1000; 1½ to 2 feet, 25*s*. per 1000; 2 to 3 feet, 30*s*. per 1000.
THORNS, 1½ foot, 10*s*. 6*d*. per 1000; 2 feet, 12*s*. per 1000; 2 to 3 feet, 13*s*. 6*d*. per 1000.
CRABS, 1-yr., extra, 3*s*. per 1000.
PEARS, fine, 1-yr, 5*s*. per 100.
GARLIES MITCHELL, Stranraer.

CLEMATIS COCCINEA. — Rich coral-red flowers, 1½ inch long and an inch in diameter, perfectly hardy. This is an American variety, which reaches us with a great reputation. Price, 3*s*. 6*d*. each. Trade price on application.
CARTERS', 237 and 238, High Holborn, London, W.C.

To Planters.

JAMES BIRD offers the undermentioned Forest stuff, price on application:—
SCOTCH FIR, 1½ to 2 feet, and 2 to 3 feet.
SPRUCE FIR, 1½ to 2 feet, and 2 to 3 feet.
PINUS AUSTRIACA, 1½ to 2 feet.
HAZEL, 3 to 4 feet.
ROSES, Standard and Dwarf.
The Nurseries, Downham.

Special Offer.

CEDRUS DEODARA.
CRYTOMERIA ELEGANS.
VARIEGATED YEWS.

H. LANE AND SON, having many thousands of the above, well transplanted, can offer them very cheap; also many other TREES and SHRUBS.
The Nurseries, Berkhampstead, Herts.

To the Trade.

SEED SPECIALITIES.

ELCOMBE'S DWARF VICTORIA BEET.—This, without doubt, is the very best Beet in cultivation. Its root is of a dark rich crimson colour, excellent flavour, with rich metallic crimson leaves, surpassing all other kinds for its richness of colouring and effectiveness in the flower garden.

ELCOMBE'S IMPROVED PARSNIP (True Stock Seed).—Very superior, producing handsome shaped roots, free from fibres, and acknowledged to be the best flavoured Parsnip in cultivation.

CUCUMBER—HORTON'S PROLIFIC. — A most prolific kind, very hardy, suitable for summer and winter forcing and open ground culture, fine flavour.
Trade Price on application.
ELCOMBE AND SON, Seed Merchants and Nurserymen, Romsey.

CREEPERS for WALLS, TRELLISES, &c., in great variety. See Descriptive LIST. Most of these plants being in pots, may be moved now.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

CHRYSANTHEMUMS. — We have been awarded Four First-class Certificates for our this season's novelties. Cuttings can now be had of the 20 extraordinary grand new varieties, introduced by us this year, at 1*s*. 6*d*. each, or the set for 20*s*. Well rooted plants can also be had now of all the sorts, at 3*s*. 6*d*. each. See CATALOGUE (gratis) for description. Cuttings of the best older varieties, our selection, from 2*s*. per dozen.
S. DIXON AND CO., Amhurst Nurseries, Auton Street, Hackney, E.; and City Seed Warehouse, 34, Moorgate Street, London, E.C.

H. LANE AND SON have 130 Acres of NURSERY STOCK to offer, in great variety, including:—
EVERGREEN TREES and SHRUBS.—Cedars, Cupressus, Junipers, Piceas, Retinosporas, Thuias, Wellingtonias, Aucubas, Bays, Berberis, Box, Cotoneasters, Hollies, Laurels, Yews, &c.
DECIDUOUS TREES and SHRUBS.—Acers, Ash, Beech, Birch, Chestnuts, Elms, Hawthorns, Limes, Mountain Ash, Planes, Poplars, Sycamores, Weeping Trees, Deutzias, Elders, Forsythias, Gueldres Roses, Lilacs, Ribes, Spiræas, Weigelas, &c.
FOREST TREES.—Ash, Beech, Chestnut, Larch, Scotch, Spruce, and Austrian Firs, Hazel, Oak, Poplar, Quick, &c.
RHODODENDRONS, ROSES, and FRUIT TREES in great variety of all descriptions.
VINES in pots, &c.
CLIMBERS for Walls, &c.—Clematis, Honeysuckles, Ivies in great variety, Jasmines, Wistarias, Virginian Creepers, &c.
CATALOGUE on application.
The Nurseries, Berkhamsted, Herts.

To the Trade Only.

TEA ROSES, on own roots, extra strong, out of 4½-inch pots, £2 per 100, or cash.
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Winter List.

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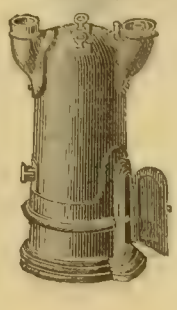
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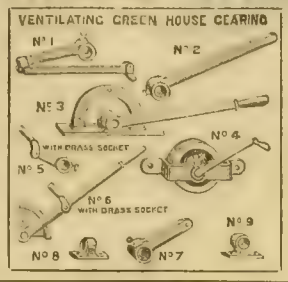
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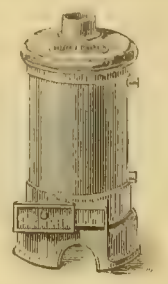


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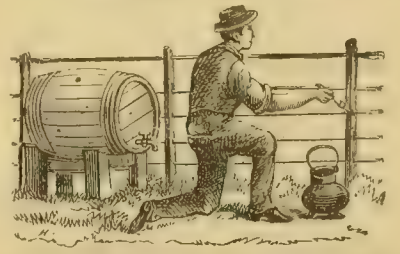
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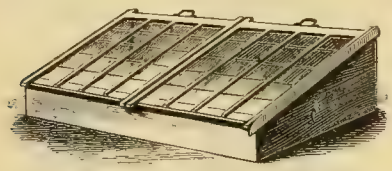
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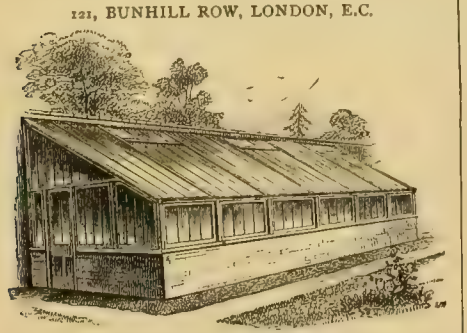
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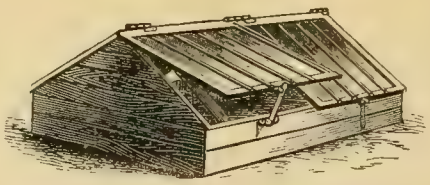
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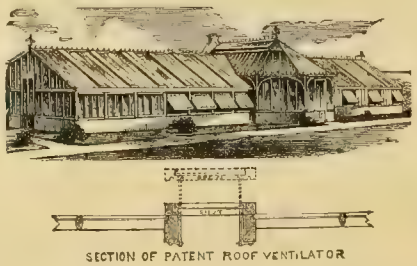
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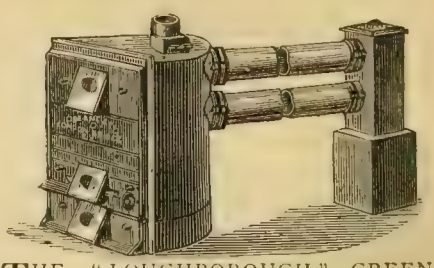
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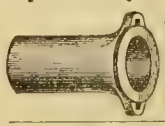


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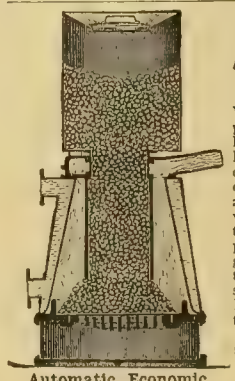
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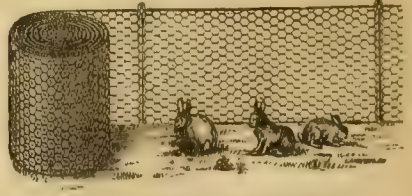
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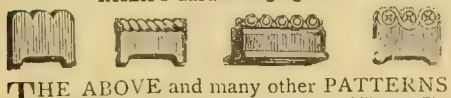
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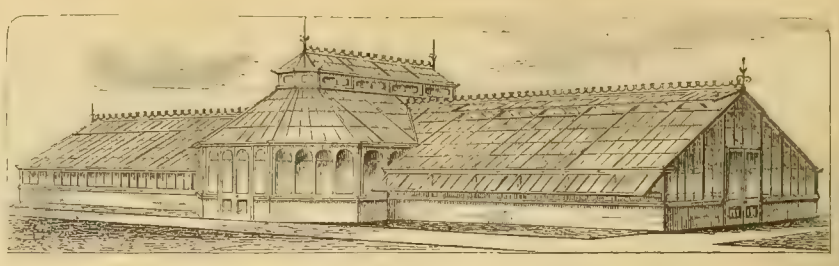
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GARDENER (HEAD).—Married, one son (age 11) ; experienced in every branch, the Forcing of all kinds of Fruit, Flowers, and Vegetables. Can also take charge of Land and Stock, Woods and Plantations, if required, having a good knowledge, acquired on large estates. Five years' first-class character from last place — WM. ARMSTRONG, 3, Grove Terrace, Church End, Finchley, N.

GARDENER (HEAD). — Married, two children (aged 12 and 7) ; has care of about 4 acres of Pleasure Ground and Kitchen Garden, two Vineries, Peach House, Stove, Fern House, Cucumber House, Conservatory, Pits. Had three men and boy under him. — HENRY ARNOLD, Irwell Bank, Eccles, Manchester. Recommended by Mrs. CROWLEY, Normandy House, Alton, Hants.

GARDENER (HEAD WORKING).—Age 48, married, family out ; over twenty years' experience. Leaving through property being sold. Character will bear the strictest investigation. Wife would take charge of Dairy or Poultry if required.—J. LOOSE, Colgate, Horsham, Sussex.

GARDENER (HEAD WORKING).—Age 28, married. Bonus of £5 to any one placing Advertiser in a comfortable situation, where about three hands are kept. Good references. — M. A., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

GARDENER (HEAD WORKING), where several men are employed ; single (sister living with him).—The Misses FEARINGTON, Worden Hall, Preston, have pleasure in recommending a thoroughly honest, sober, and industrious man in the above capacity.—JOHN BIRCH, 59, Milner Street, Acomb, York.

GARDENER (HEAD WORKING).—Age 40, married, no family ; twenty-five years' practical experience in all branches of Gardening, Orchids, Stove and Greenhouse Plants, Early Forcing of Fruits and Flowers of all kinds in large establishments. Fourteen years Head Gardener ; seven men under him in last situation Country preferred. Good character.—E. H. 1, Alexandra Terrace, Penge Lane, Penge, S.E.

GARDENER (HEAD, or SINGLE-HANDED). —Age 24 ; has had practical experience in the various branches of Gardening, Orchids, and Vineries. Trustworthy. Thoroughly respectable. Total abstainer. Eight years' experience. Good references from all preceding situations. — J. T. P. A., Mrs. Holmes, Bath Road, near Hailsworth, Stroud.

GARDENER (good GENERAL) and MANAGER -Has had the Management of a Small Estate. Left only through the place changing hands. Good Grape Grower, &c. Would undertake a rough place to improve it. Twelve years' good character.—A. B., Mr. G. Parfitt, Reigate, Surrey.

GARDENER, where three or more are kept. —Married ; thoroughly practical and confidential. Over twenty years' first-class experience in all branches. The highest recommendations ; over twenty years' personal character. Please address, with particulars, Q. R., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

GARDENER (SECOND). — Age 23 ; has had eight years' experience in good establishment. Good character.—A. MAPES, The Gardens, Beechwood, Lymm Cheshire.

GARDENER (SECOND), where three or more are kept. — Young ; nearly three years' good character. Leaving present situation in consequence of the death of his master. -W. EDMUNDS, Llanwenerth Rectory, Abergavenny, South Wales.

GARDENER (UNDER, or SINGLE-HANDED). —Wife to do Laundry-work if required. Twelve months' good character ; two years' previous. -State wages and particulars to JAMES BROWN, Arundel, St. Mary Church, Torquay.

FOREMAN (age 27).—Mr. PHILLIPS, Gardener and Bailiff to T. G. Barclay, Esq., Lower Woodside, Hatfield, can highly recommend a young man as above.—A. R., Markham Square, Chelsea, S.W.

JOURNEYMAN, in the Houses.—Age 19 ; understands Orchids (cool and hot sections), Stove and Greenhouse Plants, Vines, and Cucumbers. Thoroughly recommended. Total abstainer.—J. R., T. King, The Gardens, Devizes Castle, Wilts.

JOURNEYMAN, in the Houses, in a good establishment. — Age 20 ; good references.—A. C., Bellefields Lodge, Englefield Green, near Staines.

To Gardeners.

JOURNEYMAN (OUTDOORS).—Age 22 ; thoroughly understands his duties. Good character. Very highly recommended.—B. B., 43, Alpha Road, Surbiton Hill, Surrey.

IMPROVER, in a Gentleman's garden.—Age 23 ; can be well recommended.—G. H. MILLS, 2, Ingestre Road, Kentish Town, London, N.W.

To the Seed Trade.

MANAGER, or HEAD SHOPMAN.—Age 30, married ; open to engage with any one wanting the services of a good all round experienced man, both Wholesale and Retail ; also thorough knowledge of Office routine. Can be highly recommended.—G. M., Mr. Fraser, 90, Queen Street, Exeter.

BOOK-KEEPER and CORRESPONDENT.—Age 28 ; eleven years' practical experience in Nursery and Seed Trades. Good knowledge of Nursery Stock. Efficient Book-keeper and Correspondent. Excellent references. —G., *Gardeners' Chronicle* Office, 41, Wellington Street, W.C.

BOOK-KEEPER, SHOPMAN, or some position of Trust —Age 37. —A. B., Mr. Presley, Stationer, Wotton-under-Edge.

SHOPMAN, or leading COUNTER-HAND, in large house.—Thoroughly efficient in all departments. Good address. Best references.—H. L., 45, Chester Street, Cirencester.

SHOPMAN, or ASSISTANT.—Eight years' experience. Good knowledge of the Trade in all branches, also Book-keeping.—J. D., 12, Miller Street, Hamilton, N.B.

SHOPMAN (ASSISTANT).—Age 20 ; six years' experience.—For particulars apply to HENDERSON AND SONS, Den Nursery, Brechin.

SHOPMAN (ASSISTANT.)—A young man with four years' experience in all branches of the Seed Trade, desires engagement.—For particulars apply to DICKSON AND TURNBULL, Brechin.

EPPS'S (BREAKFAST) COCOA.

GRATEFUL AND COMFORTING.

"By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well-selected Cocoa, Mr. Epps has provided our breakfast tables with a delicately-flavoured beverage which may save us many heavy doctor's bills. It is by the judicious use of such articles of diet that a constitution may be gradually built up until strong enough to resist every tendency to disease. Hundreds of subtle maladies are floating around us ready to attack wherever there is a weak point. We may escape many a fatal shaft by keeping ourselves well fortified with pure blood and a properly-nourished frame."—*Civil Service Gazette.*

Made simply with boiling water or milk.

JAMES EPPS AND CO., HOMŒOPATHIC CHEMISTS, ALSO

Makers of Epps's Chocolate Essence.

HOLLWAY'S PILLS and OINTMENT. —Rheumatism and Gout.—These purifying and soothing remedies deserve the earnest attention of all persons liable to gout, sciatica, or other painful affections of the muscles, nerves, or joints. The Ointment should be applied after the affected parts have been patiently fomented with warm water, when the unguent should be diligently rubbed upon the adjacent skin, unless the friction causes pain. Holloway's Pills should be simultaneously taken to diminish pain, reduce inflammation, and purify the blood. This treatment abates the violence, and lessens the frequency of gout, rheumatism, and all spasmodic diseases which spring from hereditary predisposition, or from any accidental weakness of constitution. The Ointment checks the local malady, while the Pills restore vital power.

The extensive Ranges of Metallic Hothouses in the Royal Gardens, Windsor & Osborne, were executed at this Establishment.

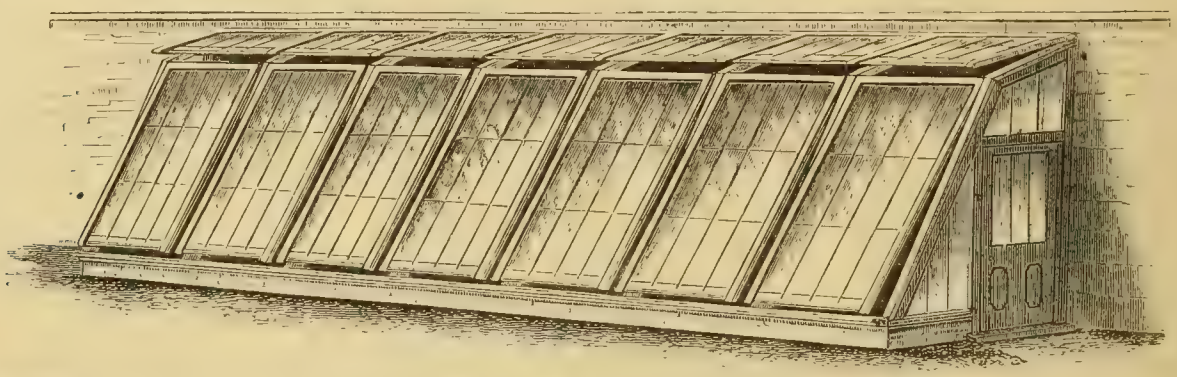
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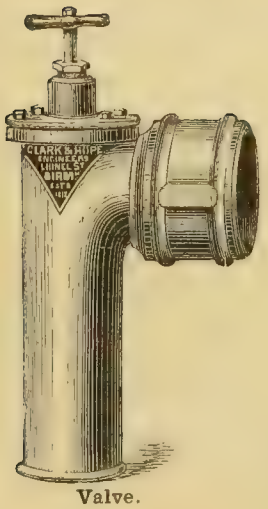
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HORTICULTURAL BUILDER and HOT-WATER ENGINEER,

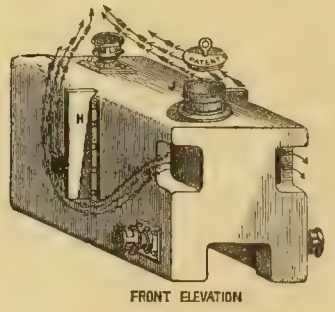
55, LIONEL STREET, BIRMINGHAM.



Peach House or Glass Covering for Garden Walls.

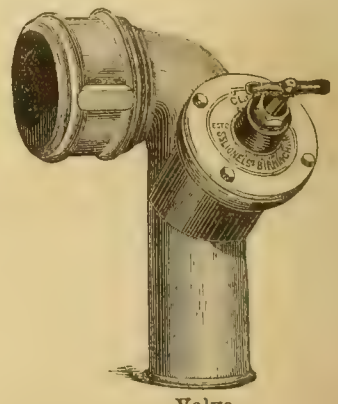


Valve.



FRONT ELEVATION

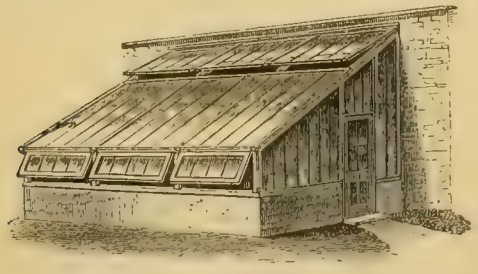
Climax Boiler.



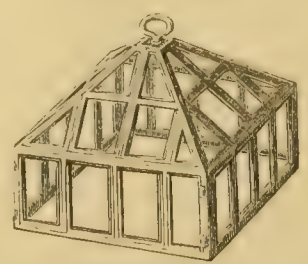
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'ORCHIDS AT HIGHBURY."

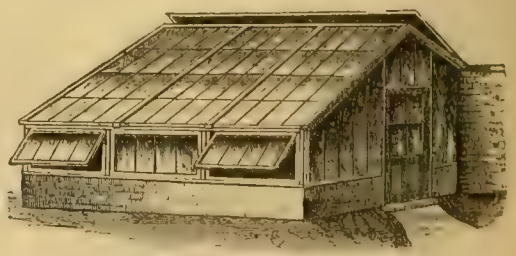
The Extensive Range of Horticultural Buildings, for the Right Honourable Joseph Chamberlain, M.P., alluded to in the *Garden* of August 19 under the above heading, were erected by me. The whole is heated by a Climax Boiler, as above (with 8000 feet of pipe), and all the work being most satisfactory, reference is with pleasure permitted.



Lean-to Greenhouse.



Hand Glasses.



Back-roofed Greenhouse.

Mr. HOPE has pleasure in referring to a Range of Hothouses, with Shedding and Heating complete, erected by him at Lillingstone Dayrell, Buckingham, under Ewan Christian, Esq., Architect, Whitehall Place, London, for which he has received the accompanying unsolicited testimonial:—

"November 21, 1882.

"Sir,—I cannot help writing a few lines to say what very grea satisfaction the Buildings you have put up for me are giving. The work is thoroughly good in every way, and leaves nothing to be desired."

Large Book of Designs, of work actually executed, post-free for sixty stamps, 5s.; Small Book, price, post-free for six stamps, 6d.

BOOK OF WINDOWS POST-FREE.

Editorial Communications should be addressed to "The Editors;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C. Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and Published by the said WILLIAM RICHARDS, at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—SATURDAY, December 9, 1882.

Agent for Manchester—JOHN HEYWOOD. Agents for Scotland—Messrs. J. MENZIES & Co., Edinburgh and Glasgow.

THE

GARDENERS' CHRONICLE.

Established 1841.

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NOTICE to SUBSCRIBERS and OTHERS.
Post-office Orders and Postal Orders should now be made payable at
DRURY LANE.

ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.

DATES of the MEETINGS of the FRUIT and FLORAL COMMITTEES, EXHIBITIONS, and PROMENADE SHOWS in 1883:—

FRUIT and FLORAL MEETINGS.

Tuesday, January 9.	Tuesday, June 26.
Tuesday, February 13.	Tuesday, July 10.
Tuesday, March 13.	Tuesday, July 24.
Tuesday, March 27.	Tuesday, August 14.
Tuesday, April 10.	Tuesday, August 28.
Tuesday, April 24.	Tuesday, September 11.
Tuesday, May 8.	Tuesday, October 9.
Tuesday, May 22.	Tuesday, November 13.
Tuesday, June 12.	Tuesday, December 11.

SHOWS.

Promenade Show	Tuesday, March 27.
Promenade Show	Tuesday, April 10.
National Auricula Society's Show	Tuesday, April 24.
Promenade Show	Tuesday, May 8.
Great Summer Show	Tuesday, May 22. Wednesday, May 23.
Promenade Show	Tuesday, June 12.
Pelargonium Society's Show	Tuesday, June 26.
National Rose Society's Exhibition	Tuesday, July 3.
Promenade Show	Tuesday, July 10.
National Carnation and Picotee Society's Show	Tuesday, July 24.

SINGLE DAHLIA SEED.—A quantity to offer of Paragon, and also fine mixed (cheap).
FRAS. R. KINGHORN, Sheen Nurseries, Richmond, S.W.

CHRYSANTHEMUMS.—Chrysanthemums.—Cuttings now ready of several hundred varieties, our selection, 1s. 6d. per dozen, 8s. per 100. The collection comprises all the new and old sorts worth growing, English or Continental. Japanese varieties, 2s. 6d. per dozen.
WM. CLIBRAN AND SON. Oldfield Nursery, Altrincham.

LAPAGERIA ALBA, well-rooted plants, 10s. 6d., 15s. and 21s. A few extra specimens, size and price on application.
LAPAGERIA RUBRA, superb, 7s. 6d., 10s. 6d. and 15s. A few extra-sized specimens, size and prices on application.
W. HOWARD, Southgate, N.

Special Offer to the Trade.
SINGLE DAHLIA SEED, saved from all the best named varieties, including whites, and our novelties for next year—a finer and better strain we feel sure does not exist—20s. per ounce, or in retail (2s. 6d.) packets, price of which may be had on application to
KEYNES AND CO., Salisbury.

New Rose.
CHARLES BONNET, with Twenty-four Strikings of this valuable Rose, to be disposed of. The trees are vigorous, remontant, and without thorns. For particulars apply to
Mons. CHARLES BONNET, Professor d'Arboriculture, Lausanne, Suisse, or Mdlle. BONNET, 58, Alma Villas, Silver Hill, Hastings.

Lilies and other Bulbous Plants for Autumn PLANTING, ORCHIDS, &c.
THE NEW PLANT AND BULB COMPANY beg respectfully to invite an inspection of their CATALOGUE, No. 60. Post-free on application.
Lion Walk, Colchester.

Roses—Roses—Roses.
MESSRS. MITCHELL AND SONS beg to offer the Trade and others an unusually fine stock of Standard Hybrid Perpetuals and Dwarf Teas, of all the leading kinds. Prices on application.
Piltdown Nurseries, Uckfield.

Tea Roses.
THE LIVERPOOL HORTICULTURAL COMPANY (John Cowan), Limited, The Vineyard and Nurseries, Garston, near Liverpool, have a splendid stock of TEA ROSES in all the leading varieties.
LIST free. Price to the Trade on application.
Also a large stock of GRAPE VINES.

To the Trade Only.
TEA ROSES, on own roots, extra strong, out of 4½-inch pots, £2 per 100, for cash.
LIST on application.
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GILBERT'S CHOU DE BURGHLEY is one of those things that leaves all others of the Brassica tribe far in the rear, in fact a "march onwards" which seldom occurs. Enclose stamp and addressed envelope for particulars. Seed, 2s. 6d. per packet. The Trade supplied on liberal terms.
R. GILBERT, Burghley Gardens, Stamford.

TO OFFER. — Native Highland Scotch PINE SEED (true), collected by us in the best forests in the North. Also many millions of 1-yr. and 2-yr. SEEDLINGS of the above. Samples and prices from
JOHN GRIGOR AND CO., The Nurseries, Forres, N.B.

STRONG QUICK, for Hedging, from 25s. to 50s. per 1000.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

CHRYSANTHEMUMS—380 best sorts, flowered under glass, true to name—none better can be bought. Cuttings, buyer's selection, 1s. 9d. per dozen, 10s. per 100. Plants, 2s. 6d. per dozen, 14s. per 100. For my selection, grand new varieties, Marguerites, &c, see CATALOGUE, 1 stamp.
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To the Trade.
LEICESTER SEEDS are the best that can be obtained. Testimonials arrive here daily. Write for LISTS to
HARRISON AND SONS, Seed Growers, Leicester.

AQUILEGIA GLANDULOSA (True).—Strong flowering plants, 9s. per dozen, free to any railway station in England or Scotland on receipt of cash with order.
JOHN GRIGOR AND CO., The Nurseries, Forres, N.B.

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Particulars and prices on application.

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WANTED, Consignments of Maréchal Niel ROSES, English Neapolitan VIOLETS, EUCHARIS, STEPHANOTIS, GARDENIAS, and TUBEROSES, CALLAS, and CHOICE FRUIT.—W. CALE, Floral Commission Agent, 4, Tavistock Row, Covent Garden, W.C.

Notice to Senders.
WANTED, in quantity, Arum LILIES, EUCHARIS, CHRYSANTHEMUMS, TUBEROSES, GARDENIAS, White CAMELLIAS, LILY OF THE VALLEY, Roman HYACINTHS, White AZALEAS, ORCHIDS, &c. Also CHOICE FRUIT.
WISE AND RIDES, Fruit and Flower Salesmen, Covent Garden, W.C.

WANTED, a few thousand strong BRIER STOCKS, for immediate working. Send sample, stating cash price, to
CHARLES WILSON, Summerhow Nurseries. Kendal.

WANTED, Seedling or Bedded SWEET BRIERS.—Address, stating price, to
WM. WOOD AND SON, The Nurseries, Maresfield, Uckfield, Sussex.

WANTED, SPRUCE FIRS, for Christmas Trees, from 3 to 15 feet. Must be well furnished. Also CUT EVERGREENS. State particulars to
The LIVERPOOL HORTICULTURAL COMPANY (John Cowan), Limited, The Vineyard, Garston, near Liverpool.

To the Trade.
WANTED, a quantity of READING HERO and BEAUTY OF HEBRON POTATOS. State lowest price and full particulars to
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LILIUM AURATUM.—Good, plump, sound bulbs, 4s., 6s., 9s., 12s., 18s. and 24s. per dozen; extra strong, 30s. and 42s. per dozen. All other good LILIES at equally low prices.
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HEPATICA TRILOBA CŒRULEA.
Prices on application.
A. M. C. JONGKINDT CONINCK, Dedemsvaart, near Zwolle, Netherlands.

DOUBLE DAHLIAS.—20,000 Pot Roots of the above, in all the new and leading varieties.
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J. E. KNIGHT, The Nurseries, Wolverhampton.

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Special offer of extra strong roots.
Selected, in 10 varieties .. 21s. per 100, 180s. per 1000.
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Orders now booked as long as stock lasts.
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WILLIAM FLETCHER, Ottershaw Nurseries, Chertsey.

New Single Dahlia Seed.
WARE'S SUPERB STRAIN can now be supplied. Prices to the Trade and Private Buyers upon application. I can still offer POT and GROUND ROOTS in all the leading vars. Descriptive Price LIST on application.
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Heaths for Winter Flowering.
JOHN FRASER, The Nurseries, Lea Bridge Road, Leyton, Essex, has to offer a fine stock of ERICA HYEMALIS and ERICA GRACILIS. The plants are very good, and the prices, which are very low, may be had on application.

CHRISTMAS TREES, very fine, transplanted, 3 feet, 10s. per 100; 5 feet, 20s. per 100.
Cash with order only.
R. CRUST AND SON, Nurseries, Spalding.

LARGE SPRUCE, for Christmas Trees, from 8 to 13 feet.
LAUREL, Common, extra large, 4 to 8 feet, bushy to ground
LARCH, 8 to 12 feet. Price on application.
JOHN CHARLTON, Summervale Nursery, Tunbridge Wells

Special Offer.
CEDRUS DEODARA, fine plants.
3 to 4 feet, 15s. for 12, 60s. for 50, 110s. for 100.
4 to 5 feet, 18s. for 12, 70s. for 50, 130s. for 100.
THOMAS PERKINS AND SONS, 34, Drapery, Northampton.

FIGS, in Tubs.—Splendid Fruiting Trees, 8 to 10 feet in height; also smaller ones in Pots. Names and price on application.
JAMES DICKSON AND SONS "Newton" Nurseries, Chester.

LEICESTER RED CELERY.—Ten thousand packets of this splendid variety are now ready for delivery. Shilling packets, trade price, 6s. per dozen, 42s. per 100. Post-free.
HARRISON AND SONS, Seed Growers, &c., Leicester.

To the Trade.
PEACHES and NECTARINES, fine dwarf-trained, 18s., 24s., and 30s. per dozen.
ELCOMBE AND SON, Nurserymen and Seed Merchants, Romsey.

Special Offer to the Trade of
LEICESTER SEEDS, which may be had on application to
HARRISON AND SONS, Seed Growers, &c., Leicester.

SCHOOLMASTER, the best new Apple, and good for exposed situations. First-class Certificate Royal Horticultural Society. Strong Maidens, 7s. 6d. each; coloured plates, six stamps. Particulars post-free from
THOMAS LAXTON, Bedford.

Order from your Seedsman
LAXTON'S SANDY PRIZE ONION, AND OTHER NOVELTIES.
Particulars in previous Advertisement, or post-free from
THOMAS LAXTON, Bedford.

SALES BY AUCTION.

Monday Next.

5000 LILIUM AURATUM, just received from Japan in fine condition.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY NEXT, December 18, at half-past 12 o'Clock precisely, an importation of 5000 bulbs of LILIUM AURATUM, just received from Japan in the finest possible condition; also 40 roots of NYMPHÆA ODORATA MINOR, the miniature Water Lily, with flowers about 2 inches across, and varying in colour from pure white to deep rose; a consignment of BULBS and PLANTS from Algiers; some nice healthy plants of ARAUCARIA EXCELSA, just received; a great variety of MISCELLANEOUS BULBS and plants, mostly for outdoor culture; and a consignment of BULBS from Holland.

On view morning of Sale, and Catalogues had.

Wednesday Next.

HARDY PLANTS and BULBS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, December 20, at half-past 12 o'Clock precisely, choice named Standard, Half-Standard, and Dwarf ROSES, including Hybrid Perpetuals, Tea-scented, Moss, and others; a few lots of STOVE and GREENHOUSE PLANTS, Hardy HERBACEOUS BORDER PLANTS, and a consignment of first-class BULBS from Holland.

On view morning of Sale, and Catalogues had.

Thursday Next.

CATTLEYA GASKELIANA.

MR. J. C. STEVENS has received instructions from Mr. F. Sander to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, December 21, at half-past 12 o'Clock precisely, a wonderful importation of this grand new CATTLEYA, consisting of masses of unusual size and health; this fine thing has just flowered with Hugh J. Scott, Esq., of Belfast, and may be fairly described as an autumn flowering Cattleya Mendelii; the sale will also contain a splendid importation of ODONTOGLOSSUM ALEXANDRÆ, collected in flower in especially fine varieties, and other importations.

On view morning of Sale, and Catalogues had.

Notice.—Lilium auratum.

MESSRS. PROTHEROE AND MORRIS beg to announce that the SALE of LILIUM AURATUM announced to take place on Monday next, is POSTPONED UNTIL AFTER CHRISTMAS.

Offices, 8, New Broad Street, E.C.

WANTED, an old-established and thoroughgoing FRUIT and CUT FLOWER BUSINESS, in the South of England. Must be doing a good trade, satisfactory proof of which will be required.—Apply, stating full particulars, to A. B., care of Mr. Horsefield, Heytesbury, Wilts.

WANTED TO RENT, on Lease preferred, quantity of GLASS, suitable for Cucumber Growing, &c. W. B., 15, Osborne Villas, St. Michael's Park, Bristol.

Slate Staging.

TO BE SOLD, about 190 feet (linear) of SLATE STAGING, 2 ft. 3 in. wide, 1 in. thick, together with the Cast-iron ornamental Pillars, Wrought-iron Bearers, and Angle Iron for same; suitable for Orchid-houses. In consequence of the houses containing same being required for fruit growing, the above will be sold a bargain.—Apply F. Y., Higher Feniscowles, Pleasington, near Blackburn.

TO BE DISPOSED OF, an old-established SEED and NURSERY BUSINESS, in the Eastern Counties, on exceptionally favourable terms.

For full particulars apply to Mr. H. P. GOULD, Queen Street, Norwich; or Mr C. BATES, 24, Mark Lane, E.C.

To Nurserymen, Market Gardeners, and Others.

FOR SALE, an Old-established BUSINESS, in full working order, together with the necessary Plant, Stock, and Effects. A good Shop, with Residence, well situate, will be let with it if required.

Further particulars apply to Messrs. WOODHAMS AND SON, Auctioneers, Havelock Road, Hastings.

To Gardeners.

HAMILTON PALACE GARDENS.

THE TRUSTEES on the ESTATE of Francis Davidson are prepared, with consent of the Commissioners of His Grace the Duke of Hamilton, to SUBLET the GARDENS attached to Hamilton Palace. A large sum has been spent by Mr. Davidson on improvements since he entered into possession, and the whole gardens are in excellent condition. The Vineries and Greenhouses are extensive, and the former are stocked with highly productive Vines of the best sorts. The lease is a very favourable one, and has six years still to run. The Lessee will be required to take over Mr. Davidson's Stock, Plant, &c., at a valuation, and in addition the Trustees will expect a sum for the improvements made by him that are still unexhausted.

Further information and orders to see the Gardens will be given by the subscribers, and offers will be received by them up to Tuesday, 26th prox.

The Trustees do not bind themselves to accept the highest or any offer.

CRAWFORD AND HERON, Agents for Trustees.

104, West Regent Street, Glasgow, Nov. 25, 1882.

WANTED TO RENT, on Lease, 2 to 4 acres of GROUND suitable for Nursery purposes, with or without a small quantity of Glass, and a convenient Dwelling House thereon, a good Water Supply, and within easy distance of a Railway Station; within 10 or 12 miles of London.

Address, K. B., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

Drawers.

WANTED IMMEDIATELY, a set of SEED DRAWERS for a small shop, new or second-hand.—Apply, Q. R., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

Order from your Seedsman

LAXTON'S NEW PEAS, EVOLUTION and WILLIAM HURST.

Particulars in previous Advertisement, or post-free from THOMAS LAXTON, Bedford.

CABBAGE, CAULIFLOWER, LETTUCE PLANTS, &c., Autumn sown, best varieties, in any quantities. LIST, and printed copy of many recent (1882) Testimonials, on application. Prices moderate, no charge for packages.—EDWARD LEIGH, Dunsfold, near Godalming.

Special Culture of

FRUIT TREES and ROSES.—A large and select stock is now offered for sale. The Illustrated and Descriptive CATALOGUE of Fruits, post-free for threepence. The Descriptive CATALOGUE of Roses post-free.

THOMAS RIVERS AND SON, The Nurseries, Sawbridgeworth, Herts.

LARCH.—Transplanted, extra strong and well-rooted, 2 to 3 feet, and 3 to 4 feet.

Special offers to the Trade.

J. SLATER AND SONS, The Nurseries, Malton, Yorkshire.

TO THE TRADE.—Single DAHLIA SEED, choicest mixed; and Paragon, Crimson, Yellow, Magenta, and other colours separate. Also Rollisson's Telegraph and Veitch's Tender and True CUCUMBER SEED. Carefully selected stocks. Prices on application.

GEO. COOLING AND SON, Seedsmen, Bath

SURPLUS NURSERY STOCK on land that must be cleared owing to expiration of lease.

ALDER, 2 to 3 feet, 20*s.* per 1000.
PINE, Austrian, 6 to 12 inches, 30*s.* per 1000.
DEUTZIA CRENATA, fl.-pl., 3 to 4 feet, 10*s.* per 100.
HAZEL, 2-yr., 8*s.* per 1000.
CHESTNUT, Horse, 8 to 10 feet, 25*s.* per 100; 10 to 12 feet, 30*s.* per 100.
LARCH FIR, 2 to 3 feet, 25*s.* per 1000.
GORSE, for Covert Planting, 2-yr., 5*s.* per 1000.
SNOWBERRIES, 2 to 3 feet, 21*s.* per 1000.
FIR, Spruce, 2-yr. and 2-yr., 6*s.* per 1000.
ELM, Huntingdon, 8 to 10 feet, 40*s.* per 100.
MAPLE, Norway, 8 to 10 feet, 20*s.* per 100.
SYCAMORE, 2 to 3 feet, 20*s.* per 1000.
GUELDRES ROSES and WEIGELAS, 3*s.* per dozen.
VINCA, common, for planting banks, &c., 25*s.* per 1000.

All clean grown and well rooted.

THOMAS PERKINS AND SONS, 34, Drapery, Northampton.

Standard Roses and Planes.

WM. RUMSEY has still a fine stock of the above (home-grown). Prices (moderate) on application.

Joyning's Nurseries, Waltham Cross, N.

FRUIT TREES.—Standard, Pyramid, 2-yr. and Maiden APPLES, PEARS, and PLUMS, also Purple and Weeping BEECH, 6 to 14 feet; HORSE CHESTNUTS, 12 to 17 feet. Price per 100 or 1000 on application to WILLIAM FLETCHER, Ottershaw Nursery, Chertsey, Surrey.

To the Trade.

HOME-GROWN VEGETABLE and FIELD SEEDS.

H. AND F. SHARPE will be pleased to make special offers of their fine selected stock of SEEDS, raised this season with the utmost care and attention. The quality is very fine, and the prices will be found unusually low.

Seed-Growing Establishment, Wisbech.

6000 Grape Vines.

THE LIVERPOOL HORTICULTURAL COMPANY (JOHN COWAN), Limited, The Vineyard and Nurseries, Garston, near Liverpool, have a splendid stock of VINES, grown from eyes this year, suitable for present planting. CATALOGUE free. The Trade supplied.

Also a large stock of TEA ROSES.

ROSES AND FRUIT TREES. — Fine Pyramid APPLES and PEARS of the hardiest and best cropping varieties only, 6*s.*, 9*s.*, 12*s.*, and 18*s.* per dozen. Dwarf trained trees, 24*s.* and 30*s.* per dozen, all with splendid fibrous roots.

PLUMS and CHERRIES, Pyramids, 12*s.*, 18*s.*, and 24*s.* per dozen. Dwarf trained trees, 30*s.* per dozen.

RED and BLACK CURRANTS, 2*s.* and 3*s.* per dozen.

RASPBERRIES, 1*s.* 6*d.* and 2*s.* per dozen, 8*s.* and 10*s.* per 100.

STRAWBERRIES, 2*s.* 6*d.* per 100. CATALOGUES free.

LA GRIFFERAIE ROSE CUTTINGS for Stocks, 1*s.* per 100, 7*s.* 6*d.* per 1000, cash.

DWARF H.P. ROSES, all the leading varieties, 7*s.* per doz., 50*s.* per 100. CATALOGUES free.

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

GRAPE VINES and ORCHARD HOUSE TREES in POTS. — GRAPE VINES, extra strong, short-jointed and well ripened; Planting Canes, 3*s.* 6*d.* to 5*s.* each; extra strong Fruiting Canes, 7*s.* 6*d.* to 10*s.* ORCHARD-HOUSE TREES, fruiting in pots, consisting of Peaches, Nectarines, Apricots, Plums, Cherries, Pears, Apples, and Figs. Descriptive Price LIST for 1*d.* stamp.—RICHARD SMITH AND CO., Nurserymen and Seedsmen, Worcester.

Planting Season.

R. AND A. MORRISON, The Nurseries, Elgin, N.B. (Established 1822), invite the attention of Planters to their extensive Stocks of Seedling and Transplanted FOREST TREES, ORNAMENTAL TREES and SHRUBS. They have a very large and healthy Stock of Seedling and Transplanted LARCH and SCOTCH FIR, which they guarantee as true native, being the produce of Seed collected by them in the North of Scotland.

CATALOGUES and Samples on application.

ROSES, well rooted, many-shooted, truly named, of matured growth, and of the best kinds.

DWARFS, R. S. & Co.'s selection, 8*s.* per dozen, 60*s.* per 100.
STANDARDS, 21*s.* per dozen.

Descriptive LIST on application.

RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

8000 Winter-Flowering Carnations. 8000

TWELVE GOOD PLANTS, in six best varieties, in 54's, 7*s.* 6*d.* per dozen, 50*s.* per 100; in 48's, 15*s.* and 18*s.* per dozen, £5 and £6 per 100.

See CATALOGUE.

W. M. CROWE, Boleyn Nursery, Upton, Essex.

STEPHANOTIS FLORIBUNDA.— Good plants in 48's, 2*s.* each, 18*s.* per dozen, £7 per 100. Prices of larger on application.

W. M. CROWE, Boleyn Nursery, Upton, Essex.

SPIRÆA PALMATA: The largest stock for forcing in the world.

LAURUS CAUCASICA: The finest Laurel ever introduced.

RHODODENDRONS: All kinds and all sizes.

STANDARD RHODODENDRONS: You may select from thousands.

HARDY TREES, SHRUBS, ROSES, &c. For general planting, acre after acre.

Intending planters are invited to come down and see the stock. The Nursery is ten minutes from Sunningdale Station, S.-W. Railway.

CHARLES NOBLE, Bagshot.

THE NURSERIES, DUMFRIES. (Established 1787.)

Our Stock, which is one of the largest in Scotland, comprises FOREST, FRUIT, and ORNAMENTAL TREES, DECIDUOUS and EVERGREEN SHRUBS, ROSES, GREENHOUSE PLANTS, &c.; also a very large and splendid Stock of THORN QUICKS, for Hedging and for filling up Gaps.

The Trees and Shrubs are of all ages and sizes, and are well adapted for extensive planting or giving immediate effect in the formation and improving of Ornamental Parks, Pleasure Grounds, &c. Prices on application.

THOMAS KENNEDY AND CO., Seed and Nursery Establishment, Dumfries.

LAPAGERIA ALBA (the best White variety), from 10*s.* 6*d.* each; RUBRA (the best Crimson variety), from 7*s.* 6*d.* each; a few extra strong plants, price on application to

R. H. VERTEGANS, Chad Valley Nurseries, Edgbaston, Birmingham.

R. H. V.'s pocket CATALOGUE of Herbaceous and other Hardy Plants free on application.

Two Sterling Novelties.

PETTIGREW'S CARDIFF CASTLE CUCUMBER, and CROSSLING'S GLAMORGAN TOMATO. Both exhibited in FIRST PRIZE Collection of Vegetables at the EDINBURGH INTERNATIONAL. Each, 1*s.* 6*d.* per packet, post-free.

The usual Trade terms.

RALPH CROSSLING, Penarth Nurseries, South Wales.

WILLIAM EVANS, SEEDSMAN to the Council of Agriculture, Montreal, Canada.

Exporter of RED and ALSIKE CLOVER, TIMOTHY SEED, PEAS, BEANS, OATS, &c.

Samples and prices on application.

Cable address:—W. EVANS, Montreal.

GRAPE VINES.—All the leading kinds in finely ripened canes, details on application to FRAS. R. KINGHORN, Sheen Nurseries, Richmond, S.W.

ROSES.—Strong, healthy, well-rooted, best named show varieties, 7*s.* 6*d.* per doz., 27*s.* for 50, £2 10*s.* per 100. Standards, 18*s.* per doz.

SWEET VIOLETS, full of bud. New York, the best double, 2*s.* 6*d.* per doz.; De Parme, Double Red Russian, Belle de Chatenay, Odoratissima, 3*s.* 6*d.* per doz.

LIST of Roses, and twenty-six varieties of Violets, with directions for cultivation, 1½*d.* Address

Mr. R. W. BEACHEY, Fluder, Kingskerswell, Devonshire.

APPLES, Standard and Pyramid; PRIVET and HAZEL, 3 ft. to 4 ft; QUICK, 2-yr., fine. Price per 1000 to

CHAS. AND J. W. TOWNSEND, Nurserymen, Fordham, Cambridgeshire.

GREEN HOLLIES.—Several hundreds of the above for Sale, from 5 to 7 feet high, well furnished, transplanted stuff. For particulars apply to A. BARKER, The Gardens, Hindlip, Worcester.

Order from your Seedsman

LAXTON'S NEW BEANS, JOHN HARRISON and GIRTFORD GIANT.

Particulars in previous Advertisement, or post-free from THOMAS LAXTON, Bedford.

RODGER, McCLELLAND AND CO. offer as under, prices, &c., on application:—

SALIX BASFORDIANA, the best of all the red-barked Willows, 5 to 7 feet.
" NIGRA, black bark, 4 to 5 feet.
POPLAR, Canadian, 3 to 4, 5 to 6, and 6 to 8 feet.
LAUREL, COLCHIC, 1½ to 2, and 2 to 3 feet.
BERBERIS DARWINII, 1½ to 2, and 2 to 3 feet.
" STENOPHYLLA, 2 to 3 feet.
" " Hybrid, 1½ to 2 feet.
PINE, Austrian, extra transplanted, and very stout, 1 to 1¼, 1¼ to 2, 2 to 2½, and 2½ to 3 feet.
" Corsican, 1 to 1½, 1½ to 2, 2 to 2½ feet.
PRIVET, oval-leaved, 1½ to 2, and 2 to 2½ feet.
" Common, 1½ to 2, and 2 to 3 feet.
ASH, Mountain, 6 to 8, and 8 to 10 feet.
MAHONIA, 6 to 12, 12 to 18, and 18 to 24 inches.
PINUS EXCELSA, 18 to 24 inches.
CUPRESSUS MACROCARPA, 18 to 24, and 24 to 30 inches.
PICEA NORDMANNIANA, 9 to 12, 12 to 18, and 18 to 24 in.
COTONEASTER SIMONSII, 18 to 24, and 24 to 36 in.
" HOOKERII, 18 to 24 inches.
ESCALLONIA ILLINITA, 6 to 9, 9 to 12, 18 to 30 inches.
" MACRANTHA, 9 to 12, 18 to 24 inches.
" INGRAMMI, 9 to 12, 18 to 24 inches.

76, Hill Street, Newry.

ABIES DOUGLASII, 10 to 12 in., transplanted, 16*s.* per 100.
ABIES DOUGLASII, 3 to 3½ feet, transplanted, 50*s.* per 100.
" 4 to 5 feet, 75*s.* per 100.
ESCALLONIA MACRANTHA, 1 foot, 10*s.* per 100.
CEDARS Red, 8 to 12 inches, 1-yr. transplanted, 10*s.* per 100.
CUPRESSUS LAWSONIANA, 2½ feet, 30*s.* per 100.
PINUS INSIGNIS, 3-inch pots, 7*s.* per 100.
" NORDMANNIANA, 6 to 8 inches, 12*s.* per 100.
CEDRUS DEODARA, 4 to 5 feet, 18*s.* per dozen.
" 6 to 7 feet, fine, 36*s.* per dozen.
PICEA NOBILIS, 4 feet, 60*s.* per dozen.
" 5 feet, 70*s.* per dozen.
THUIA LOBBII, 2½ to 3 feet, 60*s.* per 100.
" " 4 to 5 feet, 12*s.* per dozen.

Catalogues free on application.

GARLIES MITCHELL, Nurseryman, Stranraer.

Standard and Dwarf Roses.

W. B. ROWE AND CO. (Limited) have to offer a few thousands of the above, which are unusually fine; they also call particular attention to the large stock of FRUIT TREES—Standards, Pyramids, Dwarf-trained and very fine Horizontal Fruiting Apples and Pears.
Barbourne Nurseries, Worcester.

NEW ROSES of 1882, in pots.—Vendors' Selection, 30*s.* per dozen; Purchaser's, 36*s.* per dozen. The above comprise all the best English and French raised Hybrid Perpetuals, Perpetual Polyantha, Teas, Hybrid Teas, and Perpetual Moss.

ROSES of 1881, of above-named classes, 18*s.* to 24*s.* per dozen, in pots.

CHOICE ROSES. — Tea-scented, Hybrid Tea, Noisette, China, and Bourbon, 18*s.* to 24*s.* per dozen, strong plants in pots.
Descriptive LIST on application.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

To the Trade.
SEED POTATOS.

H. and F. SHARPE'S Wholesale LIST of SEED POTATOS is now ready, and will be forwarded on application. It comprises the best varieties in cultivation, of the finest quality, free from disease, and selected specially for seed purposes. The prices will be found exceptionally low.
Seed-Growing Establishment, Wisbech.

FRANCIS BELL, NURSERYMAN, Easingwold, offers:—
2,000,000 SCOTCH LARCH, 1½ to 2 feet, 2 to 3 feet, 3 to 4 feet.
200,000 SCOTCH FIR, 1 to 1½ foot, 1½ to 2 feet.
200,000 QUICKWOOD, 2 to 3 feet.
The above are recently transplanted, with good leads and roots. For particulars apply as above.

EIGHTY THOUSAND CLEMATIS, in Pots, of all the finest double and single varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12*s.* to 24*s.* per dozen, strong plants.
Descriptive LIST on application.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

R. AND G. NEAL, NURSERYMEN, SEEDSMEN, and CONTRACTORS, Wandsworth Common, S.W., respectfully invite an inspection of the large and varied Stock of SHRUBS, FOREST, ORNAMENTAL, FRUIT and ROSE TREES grown at their Nurseries, which are now in fine condition for transplanting. All plants delivered free by own vans, within 6 miles of the Nursery. Builders supplied at Trade Prices. CATALOGUES on application.
The Nurseries are within 1 mile of the Clapham Junction and Wandsworth Common Stations.

PLANTS FOR POTTING AND FORCING:—
AZALEA MOLLIS, with from 10 to 30 buds
,, a selection of the best hardy kinds, including PONTICA, NARCISSIFLORA, well budded.
KALMIA LATIFOLIA, nicely grown plants with flower-buds on wellnigh every shoot.
RHODODENDRONS, well budded and the best varieties for the purpose.
DEUTZIA CANDIDISSIMA, fl.-pl., established in pots.
HYDRANGEA PANICULATA GRANDIFLORA, very strong.
ANDROMEDA PULVERULENTA or SPECIOSA.
These can be obtained in satisfactory plants and at fair prices from
ANTHONY WATERER, Knap Hill Nursery, Woking, Surrey.

TWO HUNDRED THOUSAND HERBACEOUS and ALPINE PLANTS for Borders, Rockwork, &c. See Descriptive LIST, giving colour, height, time of flowering, &c., free by post for 1*d.* stamp.
Selection of 100 good showy varieties for 25*s.*
R. SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Gardenias.

MESSRS. JOHN STANDISH AND CO.'S Stock of GARDENIAS was never so extensive or good as it is this season. They have thousands of plants to select from, in all sizes, from fine specimens in 18-inch pots to small plants in 60's. All clean and healthy, and to a large extent well set with buds for winter-flowering. VERY REASONABLE Prices will be quoted on application.
Royal Nurseries, Ascot, Berks.

HORIZONTAL TRAINED FRUIT TREES.—For extra sized Horizontal Trained Pears, which will cover bare walls, and come into bearing at once.
PYRAMID APPLES and PEARS and ESPALIER APPLES, extra transplanted, and in fruiting condition.
AUCUBA JAPONICA, beautifully coloured and very fine.
AUCUBA VERA, thickly set with berries.
Through trucks to any part of the United Kingdom. Plants and trees added to compensate for freight. Apply to
GEORGE SMITH, The Dell Nursery, Rock Ferry, Cheshire.

CHRISTMAS TREES.—Thousands from 1½ to 6 ft. Scotch FIR, extra transplanted, 2½ to 4 ft.; ASH, LARCH, Siver FIR, PRIVET, Dwarf and Standard ROSES, Trained and Pyramid APPLE and other FRUIT TREES, FRUIT STOCKS, &c. QUICK, from 10*s.* per 1000. Fine Austrian PINE, from 3 to 6 feet.
W. GROVE, Nurseryman, Hereford.

FOR SALE, a large quantity of WILLIAM the FIRST PEAS, from the original stock: extra strong SEAKALE, Myatt's Ashleaf POTATOS, PRIVET OVALIFOLIUM, also ROSES and FRUIT TREES. Trade price on application to
JOHN HOUSE, Eastgate Nurseries, Peterborough.

CHESTNUT (Spanish), Hazel, Ash, Larch, Scotch, Birch, Alder, Willow, and Thorn Quick.—Stout, well-rooted, transplanted. A large quantity to be sold.
GEO. CHORLEY, Coaster's Nursery, Midhurst.

STRAWBERRIES.—Strong roots for present planting and for fruiting next year, 4*s.* per 100. Descriptive LIST and price for plants in pots for forcing on application. — RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

SURPLUS STOCK.
RHODODENDRONS, mixed hybrid Seedlings, selected from various strains to give variety of colour, bushy plants, 2 to 3 feet high, about one half well-budded, 18*s.* per dozen, £6 10*s.* per 100.
RHODODENDRON PONTICUM, 12 to 15 inches, bushy, 35*s.* per 100.
AZALEA MOLLIS, seedlings, twice transplanted, 4 to 6 inches high, from three of the best and most distinct varieties, 25*s.* per 100.
LILIUM AURATUM, home-grown flowering bulbs, 6*s.* to 9*s.* per dozen.
DAPHNE INDICA RUBRA, fine, healthy, green plants, 18*s.*, 24*s.*, to 36*s.* per dozen.
LIST of other Nursery Stock, in which we abound, and which we now offer at reduced prices, forwarded on application.
ISAAC DAVIES AND SON, Nurserymen, Ormskirk, Lancashire.

RASPBERRY CANES. — 200,000 of the celebrated Carter's Prolific (see *Mark Lane Express*, Aug. 1, 1881, p. 1044) to dispose of, at £2 per 1000. Samples of 100, 5*s.*, packing included, free at Railway Offices in London: no CHANGE of rail. Payments to accompany Orders. Postal Orders on Knockholt. Apply to
ALBERT AND EDWIN BATH, Colgates Farm, Sevenoaks, Kent.

To Planters.

JAMES BIRD offers the undermentioned Forest stuff, price on application:—
LARCH FIR, 5 to 6 feet.
SCOTCH FIR, 1½ to 2 feet, and 2 to 3 feet.
SPRUCE FIR, 1½ to 2 feet, and 2 to 3 feet.
PINUS AUSTRIACA, 1½ to 2 feet.
HAZEL, 3 to 4 feet.
ROSES, Standard and Dwarf.
The Nurseries, Downham.

R. AND A. MORRISON, The Nurseries, Elgin, N.B., offer:—
ABIES DOUGLASII, 1-yr., very fine, from Scotch seed.
SCOTCH FIR SEED, guaranteed True Native, our own collecting, and taken out of cone on our own kilns.
Samples and prices on application.

R. H. VERTEGANS' New Double CINERARIAS, the finest in cultivation. The set of 12 distinct varieties will be sent, packing and carriage free, on receipt of Post-office Order for 31*s.* 6*d.*
VORTIGERN, the finest double crimson, 3 plants showing flower free for 10*s.* 6*d.*, 1 for 5*s*
Chad Valley Nurseries, Edgbaston, Birmingham.

SEAKALE, exceptionally fine Roots for Forcing, 2*s.* 6*d.* per dozen, 16*s.* per 100.
ASPARAGUS, strong, for Forcing, 12*s.* per 100; specially selected ditto, 16*s.* per 100.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Planting Season.

ANTHONY WATERER begs to invite attention to the following well-grown and properly rooted NURSERY STOCK:—
AUCUBA JAPONICA, 1½, 2, and 3 feet. Thousands.
BOX, Green and Variegated, 2, 3, 4, 5, 6, and 7 feet. Thousands.
YEWS, English, 2, 3, 4, 5, 6, 8 to 10 feet. Thousands.
,, Golden, all heights up to 10 feet, and various shapes—Globes, Pyramids, &c. Thousands.
,, Irish, 5, 6, 7, to 10 feet.
JUNIPERS, Chinese, 5, 6, 7, to 10 feet.
PICEA PINSAPO, 5, 6, 7, to 10 feet.
,, NORDMANNIANA, 5, 6, 7, to 10 feet.
SPRUCE FIRS, well furnished, 3, 4, 5, 6, and 7 feet. Many thousands.
,, Black, 3, 4, and 5 feet.
SPRUCE, Hemlock, 4, 5, and 6 feet.
WEARE'S ARBOR-VITÆ, 4, 5, 6, and 7 feet.
HOLLIES, common Green, of all heights, up to 10 feet. Thousands.
,, Green, of sorts, such as LAURIFOLIA, MYRTIFOLIA, HODGINS', ALTACLARENSE, Yellow-berried, &c. An enormous Stock.
,, Variegated, from 3 to 5, 6, 7, 8, and 10 feet.
,, Waterer's, beautiful Specimens.
,, Golden Queen, up to 10 feet. Hundreds.
,, Silver Queen, up to 10 feet. Hundreds.
,, Perry's Weeping Standards and Pyramids.
,, Golden Weeping Standards and Pyramids.
The Stock of Hollies of various kinds comprises many thousands, and affords a choice quite unequalled.
CUPRESSUS LAWSONIANA ERECTA VIRIDIS, 3, 4, 5, 6, 7, and 8 feet. Thousands.
,, ,, GRACILIS, 3 and 5 feet.
,, ,, ARGENTEA, 3 and 5 feet.
,, ,, LUTEA, hundreds of fine plants, 3, 4, and 5 feet high.
RETINOSPORA PLUMOSA AUREA, 3, 4, and 5 feet.
,, OBTUSA AUREA, 4, 5, 6, and 7 feet.
,, PISIFERA AUREA, 3 and 4 feet.
THUIOPSIS DOLABRATA, 3, 4, 5, and 6 feet. Hundreds.
BEECH, Purple, 6 to 10 and 12 feet. Thousands.
LIMES, 10, 12, 14, 15, and 16 feet. Thousands.
PLANES, 10 to 20 feet.
MAPLE, Norway, 10 to 15 feet.
CHESTNUT, Horse, 10 to 16 feet.
,, Scarlet, 10 to 16 feet.
POPLAR, CANADENSIS NOVA, 10 to 16 feet. Thousands.
OAKS, Scarlet American, 10 to 12 feet.
ACER DASYCARPUM, 10 to 16 feet.
,, SCHWEDLERII, 10 to 12 feet.
And a vast and Miscellaneous Stock of Flowering DECIDUOUS SHRUBS and EVERGREENS, which intending purchasers are respectfully invited to come and see.
Knap Hill Nursery, Woking, Surrey.

J. FIDLER, MARKET GARDENER, 87, King's Road, Reading.
Has to dispose of 500 stools of LINNEUS RHUBARB for Forcing, or can be divided into eight or ten plants for planting-out. Price, from 1*s.* to 1*s.* 6*d.* per stool, cheaper by the 100. Also young roots for planting-out, from 4*s.* to 6*s.* per dozen. Also 200 plants of ROYAL ALBERT, the earliest, high in colour, which I consider the best in cultivation, at 6*s.* per dozen.

CHRISTMAS ROSES.—Fine clumps, full of Flower-buds. Samples and prices on application.
THOMAS S. WARE, Hale Farm Nurseries, Tottenham, London.

APPLE TREES with MISTLETO growing on them. Price from 7*s.* 6*d.* to 21*s.* each.
RICHARD SMITH AND CO., Nurserymen, Worcester.

EWING & CO.,

EATON, NORWICH,

Having given instructions to

MESSRS. PROTHEROE AND MORRIS to SELL by AUCTION, WITHOUT RESERVE, on February 13 next, and following days, almost the whole of their thriving outdoor

NURSERY STOCK,

HEREBY GIVE NOTICE, that they will not be prepared to Receive Orders for TREES, SHRUBS, PLANTS, &c., after the 31st of this month—December 18, 1882.

The remaining portion of the Stock (including the splendid collection of TEA and NOISETTE ROSES in Pots), will probably, so far as the Pot Plants are concerned, be SOLD by AUCTION in May or June next.

4000 Azaleas, Camellias, Ericas, and Epacris. 4000

AZALEA INDICA, in best varieties, for forcing, including Whites, well set with buds, 24*s.*, 30*s.*, and 42*s.* per dozen, £8 to £15 per 100.
AZALEA MOLLIS, good bushy stuff of these invaluable plants for early forcing, in all shades of colour, 21*s.*, 30*s.*, and 40*s.* per dozen, £8 to £15 per 100.
HEATHS and EPACRIS, best varieties, well set with flower, 18*s.* and 24*s.* per dozen.
CAMELLIAS, in best varieties, including Whites, 25*s.*, 30*s.*, and 42*s.* per dozen, £9 to £15 per 100.
CATALOGUE free.
W. M. CROWE, Boleyn Nursery, Upton, Essex.

LARCH, 2 to 3, and 3 to 4 feet, strong, transplanted. A large quantity to be sold.
EDWIN HOLLAMBY, The Nurseries, Groombridge, Tunbridge Wells.

Winter List.

JOHN LAING AND CO.'S New CATALOGUE of Roses, Fruit Trees, Vines, Ornamental and Forest Trees, Shrubs, &c., has been issued to all Customers. Copies gratis on application. Goods all first quality at moderate rates. Address
JOHN LAING AND CO., Nurseries, Forest Hill, S.E.

CHRYSANTHEMUMS. — We have been awarded Four First-class Certificates for our this season's novelties. Cuttings can now be had of the 20 extraordinary grand new varieties, introduced by us this year, at 1*s.* 6*d.* each, or the set for 20*s.* Well rooted plants can also be had now of all the sorts, at 3*s.* 6*d.* each. See CATALOGUE (gratis) for description. Cuttings of the best older varieties, our selection, from 2*s.* per dozen.
S. DIXON AND CO., Amhurst Nurseries, Auton Street, Hackney, E.; and City Seed Warehouse, 34, Moorgate Street, London, E.C.

CREEPERS for WALLS, TRELLISES, &c., in great variety. See Descriptive LIST. Most of these plants being in pots, may be moved now.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

To the Trade.

SEED SPECIALITIES.

ELCOMBE'S DWARF VICTORIA BEET.—This, without doubt, is the very best Beet in cultivation. Its root is of a dark rich crimson colour, excellent flavour, with rich metallic crimson leaves, surpassing all other kinds for its richness of colouring and effectiveness in the flower garden.
ELCOMBE'S IMPROVED PARSNIP (True Stock Seed).—Very superior, producing handsome shaped roots, free from fibres, and acknowledged to be the best flavoured Parsnip in cultivation.
CUCUMBER—HORTON'S PROLIFIC.—A most prolific kind, very hardy, suitable for summer and winter forcing and open ground culture, fine flavour.
Trade Price on application.
ELCOMBE AND SON, Seed Merchants and Nurserymen, Romsey.

To the Nursery Trade.

THOS. IMRIE AND SONS' Trade CATALOGUE of FOREST TREES, CONIFERÆ, ORNAMENTAL TREES and SHRUBS, FRUIT TREES, ROSES, &c., can now be had, post-free, on application.
The Nurseries, Ayr, N.B.

GUARANTEED TRUE HIGHLAND NATIVE SCOTCH FIR SEED.—We are now Booking Orders for the above on very easy terms. Before purchasing send for prices to
WM. WISEMAN AND SON, Nurserymen, Elgin, N.B.

To the Trade.
DECORATIVE PLANTS FOR CHRISTMAS.

W. M. CROWE has a large stock of the following, in excellent condition:—
DRACÆNAS—amabilis, torminalis, stricta, Baptisti, congesta, gracilis.
PALMS—Corypha australis, Latania borbonica, Phœnix reclinata, &c.
Azaleas in flower, Lily of the Valley, Ficus elastica, Aspidistras, Grevilleas, green and variegated Aralias, Ferns in variety. Prices on application. An inspection is solicited.
W. M. CROWE, Boleyn Nursery, Upton, Essex.

110 SPECIMENS OF
CHOICE NEW ZEALAND FERNS,
Artistically Mounted and Correctly Named.

Messrs. PARTRIDGE & COOPER

Have received a Consignment of these unique Collections from New Zealand, and have them on View, for Sale, at
192, FLEET STREET, E.C.

THEY SHOULD BE SEEN BY ALL LOVERS OF FERNS.

Suitable for Christmas Presents,
Or as Illustrated Catalogues to the Trade.

A Double First-class Certificate,
The Highest Honour ever bestowed by the Royal Horticultural Society, was awarded to the
ENGLISH RAISED SEEDLING ROSE,
DUCHESS OF CONNAUGHT (Noble),
now being sent out at 10s. 6d. each.
CHARLES NOBLE, Bagshot.

SEAKALE—SEAKALE.

VERY LARGE.
ANY QUANTITY.

Apply to the Grower for Particulars.
W. BAGLEY,
MILLSHOT FARM, FULHAM, S.W.

The Largest Rose Gardens in England.
CRANSTON'S NURSERIES
(ESTABLISHED 1785).

ROSES ON OWN ROOTS.
A large quantity of very fine plants of Hybrid Perpetuals, Bourbons, Hybrid Chinas, &c. List of varieties, with prices, on application.

CRANSTON'S NURSERY and SEED CO.
(LIMITED),
KING'S ACRE, HEREFORD.

FOREST TREE SEEDLINGS.

One of the largest and finest stocks to choose from, including over three millions of two Seedling LARCH, with sound leaders—a splendid lot. Samples and prices post-free on application to
PETER S. ROBERTSON & CO.,
NURSERYMEN, EDINBURGH.

GEORGE  JACKMAN
WOKING NURSERY,
ESTABLISHED 1810. & SON, SURREY.
Select List of Choice Fruit Trees. Suitable for Large or Small Gardens.
Select List of the Best Varieties of Roses. Dwarfs, Standards, and in pots.
Select List of American Plants. For Peat and Loamy Soils.
Select List of Hardy Trees, Shrubs, and Forest Trees. Suitable for Parks and Private Gardens, and adapted for Belts, Shrubberies, Screens, Covers, &c.
Select List of Conifers. For Lawns and Pleasure Grounds, also for Winter Bedding, Box and Window Plants.
Select List of Hardy Climbers. Including their celebrated Clematises.
Geo. Jackman & Son's Descriptive Catalogue free on application.

THE
LARGEST ROSE GARDENS IN ENGLAND.
CRANSTON'S NURSERIES.
(Established 1785.)

EXTRA STRONG ROSES,
in 8-inch pots, for forcing,
HYBRID PERPETUALS, TEA SCENTED, and NOISETTES;
HALF-STANDARD ROSES,
HYBRID PERPETUALS, TEA SCENTED, &c.

List of Sorts and Price on application to
CRANSTON'S NURSERY and SEED CO.
LIMITED),
KING'S ACRE, HEREFORD.

SPECIAL OFFER TO NURSERYMEN AND PLANTERS.

WM. WISEMAN & SON,
NURSERYMEN, ELGIN, N.B.,

Offer many millions of guaranteed true Native Highland Scotch FIR and LARCH SEEDLINGS and transplanted, of all sizes.

Having an exceedingly large stock, we are now offering them at two-thirds the prices usually quoted, with 15 per cent. off for cash.

The above being all grown on high and exposed ground, are consequently hardy, and cannot fail to give every satisfaction.

Prices with Samples on application.

Orders now Booked for true Native Scotch FIR SEED on reasonable terms.

Ferns a Speciality.
The largest stock in the greatest number of varieties of
EXOTIC AND BRITISH FERNS
In the Trade, suitable for STOVE and GREENHOUSE cultivation, for Outdoor Ferneries, and other purposes. Special LIST free on application. Illustrated CATALOGUE 6d.

W. AND J. BIRKENHEAD, Fern Nursery, Sale, near Manchester.

RICHARD SMITH & Co. WORCESTER

SEVENTY-FOUR ACRES of FRUIT TREES.—Apples, Pears, Plums, Cherries, Peaches, Nectarines, Apricots, and other Fruit Trees, as Standards, Dwarfs, Pyramids, Bushes, Cordon and Trained Trees in great variety, all full of vigour, and warranted true to name. Descriptive Price LIST, containing a sketch of the various forms of Trees, with Directions for Cultivation, Soil, Drainage, Manure, Pruning, Lifting, Cropping, Treatment under Glass; also their Synonyms, Quality, Size, Form, Skin, Colour, Flesh, Flavour, Use, Growth, Duration, Season, Price, &c., for 1d. stamp.

LIST of all the EVERGREEN FIR TRIBE, suitable for Britain, giving size, price, popular and botanical names, derivations, description, form, colour, foliage, growth, timber, use in arts, native country, and size there, situation, soil, and other information, with copious index of their synonyms. Free by post for six stamps.

LIST OF STOVE and GREENHOUSE PLANTS, comprising the best selections of Camellias, Azaleas, Ericas, Epacris, Ferns, &c., free for 1d. stamp.

LIST of EVERGREEN and DECIDUOUS SHRUBS, RHODODENDRONS, STANDARD ORNAMENTAL TREES, CLIMBING and TWINING PLANTS, with their generic, specific, and English names, native country, height, time of flowering, colour, &c., and general remarks, free for 1d. stamp.

ALL KINDS of GARDEN SEEDS, of first quality. BULBS, MUSHROOM SPAWN, TOBACCO PAPER, ARCHANGEL MATS, and other GARDEN REQUISITES. See LISTS, which may be had on application.

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EXTRA CHOICE SEEDS
for Season 1883.
ELLIOTT'S PRIZE COCKSCOMB.—The best variety in cultivation, having been selected with great care for eighteen years. Was awarded a Cultural Certificate for two plants exhibited at South Kensington, August 2, 1876, by the Royal Horticultural Society; and has taken prizes for a number of years at the principal Horticultural Exhibitions in this district. Per packet, 1s. 6d.
ELLIOTT'S SELECTED FRENCH MARIGOLD.—This may be relied upon as being a very superior strain, selected from the best coloured and most perfectly formed flowers. The blooms are very large, and for beauty of marking and variety of colour cannot be surpassed. Per packet, 1s.
ELLIOTT'S "YORKSHIREMAN" CUCUMBER.—A new variety of very excellent quality, being remarkable for its solidity, showing, when cut, almost an entire absence of core. It is a very deep green, of perfect shape, and grows about eighteen inches long. It is a fine exhibition kind, a strong grower, and free bearer. Per packet of Six Seeds, 1s. 6d.
Trade price on application.
G. E. ELLIOTT, Seedsman, 97, Bradford Road, Huddersfield.

TO THE TRADE.

A very large quantity of fine
Half-Standard and Dwarf-Standard
ROSES,
Of all the leading sorts, to offer cheap.

Apply to—
BENJAMIN R. CANT,
THE CHAMPION ROSE GROWER,
COLCHESTER.

GARDEN SEEDS.
FARM SEEDS.

CHARLES SHARPE & CO.,
SEED GROWERS,
SLEAFORD,

Having now completed harvesting their SEEDS, will have much pleasure in sending SPECIAL OFFERS on application, with Samples if desired.

KENT, the GARDEN of ENGLAND
350,000 Fruit Trees, True to Name.
The Largest Stock of Standard Cherries in Britain.—Cherry Orchards are a paying investment.
The Largest Stock of Black Currants. A lucrative market crop.
The Largest Stock of Gooseberries and Red Currants.—These have again returned large profits per acre.
The Largest Stock of Cluster or Farleigh Damsons.—A grower takes 2500 bushels this year (when fruit is short), and sells at 13s. per bushel. A plantation of these will soon buy the ground they stand on.
The Largest Stock of Plums and Gages in Britain.—Many thousands of Standard and Half-Standard Pears and Apples.
The Stock of Garden, Wall, Pyramidal, and Trained Fruit Trees is equally extensive.
The Descriptive Catalogue of Fruits free for two stamps.
The Fruit Trees in these Nurseries are not equalled for vigour, freedom of growth, and abundant fibrous roots. Success in removal is certain.
THE KENT ROSES DO LIVE, because they are wonderfully rooted.
New Descriptive List free by post.
Remarkably fine H.P.'s and Teas, Standards Half-Standards, and Dwarfs.
Evergreens, Hollies, Coniferæ, Forest Stuff —many acres—are in finest order.
GEORGE BUNYARD & CO.,
FRUIT TREE and ROSE GROWERS,
GENERAL NURSERYMEN, FLORISTS & SEEDSMEN,
MAIDSTONE, KENT.
N.B.—Frequent Trains from London by North Kent or London, Chatham and Dover Line.

VIOLETS continue BLOOMING until next March. We have an acre of all the best in cultivation, in splendid vigour, and full of buds. For full particulars send for a CATALOGUE.
NEAPOLITAN, large clumps for cold frames, 20s. per 100; fine plants in 5-in. pots, in flower, 8s. per doz., £2 10s. per 100.
MARIE LOUISE, large clumps ditto, 25s. per 100; splendid plants in 5-in. pots, full of flower, 9s. per doz., £3 per 100.
BLOOMS of SWANLEY WHITE (Double) sent to any address for 8 stamps.
H. CANNELL AND SONS, Home for Flowers, Swanley, Kent.

WEBB'S PRIZE COB and other FILBERT TREES, Calcot Gardens, near Reading.
Apply to Mr. COOPER, F.R.H.S., Calcot Gardens, near Reading, Berks.

FINEST SEEDLING and TRANSPLANTED TREES.
ALDER, 3 to 4 feet, 18s per 1000.
ASH, 2 to 3 feet, 16s. per 1000.
LARCH, 2-yr., extra, 3s. 6d. and 5s. per 1000.
,, 3 to 4 feet, 26s. per 1000; 4 to 5 feet, 30s. per 1000.
SPRUCE FIR, 2-yr., £7 per 100,000.
,, 1 to 1½ foot, 10s. per 1000; 1½ to 2 feet, 12s. per 1000.
SCOTCH FIR, 1 to 1½ foot, 12s. per 1000; 1½ to 2 feet, 15s. per 1000; 2½ to 3½ feet, 18s. per 1000.
PINUS AUSTRIACA, 2-yr., fine, 2s. 6d. per 1000, or £12 per 100,000.
,, LARICIO, 10 to 15 inches, 20s. per 1000; 1½ to 2 feet, 25s. per 1000; 2 to 3 feet, 30s. per 1000.
THORNS, 1½ foot, 10s. 6d. per 1000; 2 feet, 12s. per 1000; 2 to 3 feet, 13s. 6d. per 1000.
CRABS, 1-yr., extra, 3s. per 1000.
PEARS, fine, 1-yr., 5s. per 1000.
GARLIES MITCHELL, Stranraer.

To the Trade.
PLANTS FOR CHRISTMAS DECORATION Sin full bloom, good stuff, ERICA HYEMALIS, 12s., 15s., 18s per dozen; E. GRACILIS, 9s., 12s., 15s. per dozen; E. CAFFRA, large, 18s., 24s. per dozen extra. PRIMULAS, Red and White, equal, 6s per dozen. Package free to London Goods Station for cash with order. P.O.O. on Edmonton Green.
EDWD. SAWYER, Hyde Nursery, Edmonton, Middlesex.

FOR SALE, at Greenock Cemetery, the whole stock of surplus Plants and Shrubs, consisting of the finest HIMALAYAN RHODODENDRONS, LAURELS, and other varieties; ARAUCARIA IMBRICATA, from 3 feet to 25 feet in height; ORNAMENTAL TREES, &c.
The plants are all in good condition, and number upwards of 20 000. They will be sold in Lots to suit purchasers. For further information, apply to
Mr. ROBERT SHERIDAN, Superintendent of Cemetery, Greenock, N.B.

To prevent Disappointment, Order at once,
NEW RASPBERRY,
BAUMFORTH'S SEEDLING,
The Best Raspberry in the Kingdom.
See Testimonials.
Price, 5s. per dozen canes; 35s. per 100.
Extra strong selected, 7s 6d. per dozen.
EDMUND PHILIP DIXON, The Yorkshire Seed Establishment, Hull.

Suitable Christmas Presents.
WILLIAM GORDON, of 10, Cullum Street, London, E.C., offers the following HARDY LILIES at very low prices, as suitable for presents to friends:—
LILIUM AURATUM.—This splendid golden-rayed Lily, from Japan, is offered in exceptionally fine bulbs, at 6d., 9d., 1s., and 1s. 6d. each. Many of my customers wrote last year that they had over forty flowers on one stem.
LANCIFOLIUM (SPECIOSUM) LILIES.— These old favourites are offered in very much improved form, the result of hybridising by those clever gardeners the Japanese.
All Lilies are carefully packed—package and packing free.
SPECIOSUM RUBRUM CRUENTUM.—These Lilies are a great improvement on the roseum and rubrum of Dutch gardens, and throw lovely flowers, colours more distinct, and flowers are larger and more beautiful; they are the original variety from Japan again introduced. 1s. each, 10s. per dozen.
SPECIOSUM ALBUM KRÆTZERI.—The most lovely of the speciosum type, having large flowers, with a well-defined band up each petal of a pea-green colour. This Lily is a very strong grower, and is offered at the low price of 1s. each, 10s. per dozen.
BATEMANNÆ.—New Japanese Lily, growing from 3 to 4 feet; flowers apricot-coloured, and unspotted; a lovely and rare Lily. 1s. each, 10s, per dozen.
CATALOGUE free on application.

TUBEROUS BEGONIAS.— JAMES KING (the Celebrated Raiser of New Coleuses) having taken the above Begonias in hand for several years, has, by careful crossing, succeeded in obtaining a grand strain; having again made a series of crosses, begs to offer Seed from such in 2s. 6d. and 5s. packets; price to the Trade on application.—JAMES KING, Florist and Seed Grower, Rowsham, Aylesbury.

E. P. FRANCIS AND CO. have still to offer strong plants of ADIANTUM WILLIAMSII, in 60's, at 24s. per dozen; ADIANTUM MUNDULUM, in thumbs, at 25s. per 100; LOMARIA GIBBA, in thumbs, at 25s. per 100; ERICA HYEMALIS, very fine, coming into bloom, in 48 and 32 pots, at 12s. and 15s. per dozen.
The Nurseries, Hertford.

AN OFFER NEVER BEFORE MADE.

CHRISTMAS TREES, 11 to 17 feet,
PERFECT SPECIMENS.
ABIES NORDMANNIANA, 10s. 6d. to 21s.
CHARLES NOBLE, Bagshot.

NEW LETTUCE
COOLING'S LEVIATHAN COS.

A vastly improved form of the original Black Seeded Bath Cos Lettuce, remarkable for the immense size to which it grows, the broadness of its leaf, its extreme hardiness, and its being the last of all winter Lettuces to run to seed.

For full description see *Gardeners' Chronicle* for December 2, p. 729.

Retail Price, in Sealed Packets, 1s.
Trade Price on application.

GEO. COOLING & SON,
SEEDSMEN, BATH.

GARDEN REQUISITES.
COCOA-NUT FIBRE REFUSE.
4d. per bushel; 100 for 25s.; truck (loose, about 2 tons), 40s.; 4-bushel bags, 4d. each.
LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack; 5 sacks, 25s.; sacks, 4d. each.
BLACK FIBROUS PEAT, 5s. per sack, 5 sacks 22s; sacks, 4d. each.
COARSE SILVER SAND, 1s. 9d. per bushel; 15s. per half ton, 26s. per ton; in 2 bushel bags, 4d. each.
YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1s. per bushel.
SPHAGNUM MOSS, 8s. 6d. per sack.
MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO CLOTH, RUSSIA MATS, &c. Write for Free Price LIST. **H. G. SMYTH,**
17A, Coal Yard, Drury Lane (late of Castle St., Long Acre), W.C.

COCOA NUT FIBRE REFUSE, newly made, as supplied to the Royal Horticultural Society and principal Nurserymen in England, in sacks at 1s. 3d. each, or 15 sacks, 15s.; 30 sacks, £1 5s., sacks included. Truck-load, loose, 33s.; fifteen bags or more and truck-load free on to rail. Post-office order or cheque with all orders. Established 1872.—J. STEVENS AND CO., "Greyhound" Yard, and 132, High Street, Battersea, S.W.

COCOA-NUT FIBRE REFUSE, best and pure only, 4 bushel bag, 1s. 4d.; 15 bags, 14s.; 30 bags, 25s.; sent to all parts. Truckloads 33s., free to rail.
A. FOULON, 32, St. Mary Axe, London, E.C.

GARDEN REQUISITES as supplied to the Royal Gardens. Cocoa-Nut Fibre Refuse, 1s. 6d. per sack; 10 for 13s.; 15 for 18s.; 30 for 30s.; all sacks included. Trucks (loose), 40s. Selected Brown Fibrous Peat, 5s. per sack; 5 for 22s. 6d. Black Fibrous Peat, 4s. 6d. per sack; 5 for 20s.; sacks 4d. each. Coarse Silver-Sand, 1s. 6d. per bushel. Yellow Fibrous Loam, Leaf-Mould, and Peat-Mould, each at 1s. per bushel. Manures of all kinds. Fresh Sphagnum. Garden Sticks and Labels. Russia Mats, &c. Tobacco Cloth and Paper, best in the market; Cloth, 8d. per lb.; Specialité Paper, imported solely by us, 10d. per lb., 28 lbs. 22s. Write for Price LIST.—W. HERBERT AND CO., Horticultural Stores, 19, New Broad Street, E.C. (turning by Gow's, Fishmonger), one minute from Broad Street Railway Station.

COCOA-NUT FIBRE REFUSE, by Chubb's Patent Process, as supplied to all the Royal Gardens and principal Nurseries of Europe; useful at all seasons. Invaluable for Potting, Plunging, Forcing, Ferneries, Strawberries, Bedding-out Plants, &c.; Destroys all Slugs and Insects.
JULY 1, 1882.—In consequence of the great scarcity of husks and enormous Continental demand for our "Refuse," we are compelled from this date to advance prices as follows, and only orders accompanied by remittance will receive attention (in rotation). We also find it necessary to caution purchasers to beware of spurious imitations and buy the genuine "Refuse" direct. Sacks, 1s. 6d. each; 10 Sacks, 13s.; 15 Sacks, 18s.; 20 Sacks, 23s.; 30 Sacks, 30s. (all Sacks included); Truck-load, free on rail, £2. Limited quantities of P.M. *Special Quality*, granulated, in sacks only, 2s. 6d. each (2 prize medals), valuable for potting and use in conservatory. Terms strictly cash with order.—To obtain the genuine article, buy direct from the Manufacturers, CHUBB, ROUND AND CO., Fibre Works, Milwall Road, West Ferry, London, E.

PEAT.—Excellent for Rhododendrons and common purposes. Delivered at Nine Elms Station, at 21s. per ton; sample bag (1 cwt.) on Rail Ringwood, 2s.
GATERELL AND SON, Peat Merchants, Bisterne, Ringwood.

12-oz. Sample Packets, free by post, 12 stamps.
FIBROUS PEAT for ORCHIDS, &c.—BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6s. per Truck. BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, 15s. per ton per Truck. Sample Bag, 5s.; 5 Bags, 22s. 6d.; 10 Bags, 45s. Bags included. Fresh SPHAGNUM, 10s. 6d. per Bag.
SILVER SAND, Coarse or Fine, 52s. per Truck of 4 tons. Red Sandstone ROCKWORK, £5 per Truck of 4 tons. GRAVEL, good colour, 25s. per Truck of 6 tons.
WALKER AND CO., Farnborough Station, Hants.

BEAUTIFUL OLD LAWN TURF for Sale, from the grounds of a mansion, 5 miles from London, about to be developed for building. Quantity about an acre and a half. Apply by letter to
Messrs. WM. AND F. HOUGHTON, 61, Old Broad Street, London, E.C.

SUSSEX DOWN TURF, of finest quality.—For price on rail at Portslade Station (4 miles from Brighton), in large or small quantities—special quotation to the Trade—apply,
W. MILES, West Brighton Nurseries, West Brighton, Sussex.

LOAM, splendid Yellow Fibrous, 15s. 6d. per ton. Useful Brown PEAT, 22s. per ton, free to Bricklayers' Arms, S. E. R. Fine ORCHID PEAT, as supplied to the principal Orchid Growers. Prices on application.
A. FOULON, 32, St. Mary Axe, E.C.

Thomson's Vine and Plant Manure.
Manufactured and Sold by
THE LIVERPOOL HORTICULTURAL COMPANY
(JOHN COWAN), LIMITED.

This is the Manure used to produce the splendid Grapes grown at the Tweed Vineyard, Clovenfords.

Full particulars on application. The Trade supplied.

All Letters to be addressed to THE MANAGER, The Vineyard and Nursery, Garston, near Liverpool.

GISHURST COMPOUND.—Used by many of the leading Gardeners, since 1859, against Red-spider, Mildew, Thrips, Greenfly, and other Blight, in solutions of from 1 to 2 oz. to the gallon of soft water, and of from 4 to 16 oz. as a winter dressing for Vines and Fruit Trees. Has outlived many preparations intended to supersede it. In Boxes, 1s., 3s., & 10s. 6d.

AMERICAN BLIGHT on APPLE TREES CURED by rubbing a wet hard Painter's brush on Gishurst Compound, and working the lather into the infected part.

GISHURSTINE for, dry feet and boot comfort, is much used by Gardeners, Farmers, Ladies, Sportsmen, and Shore-waders; is sold by Nurserymen and Oilmen, with testimonials and directions for use, in boxes, 6d. and 1s. each. Wholesale by PRICE'S PATENT CANDLE COMPANY (Limited), London.

THE NEW AMERICAN
CUT CAVENDISH TOBACCO PAPER.
The best article in the market for fumigating, in 2 lb. and 4 lb. boxes, price 1s. 6d. per pound. Usual discount to the Trade. To be had only of the Sole Agents for the United Kingdom,
OSMAN & CO.,
14, WINDSOR STREET, BISHOPSGATE, E.C.

SQUELCH AND BARNHAM, COMMISSION SALESMEN, Covent Garden Market, London, W.C.
Gentlemen, Fruit Growers, and Gardeners, wishing to dispose of their Fruit, &c., to the best advantage, can be SUPPLIED WITH BASKETS, LABELS, &c., at once, by applying to the above. Banker's reference and terms on application.

AUTUMN PLANTING.

THE LAWSON SEED AND NURSERY COMPANY (LIMITED),
EDINBURGH,

Respectfully invite the attention of intending Planters to their large Stocks of

SEEDLING and TRANSPLANTED FOREST TREES,

ORNAMENTAL TREES and SHRUBS, FRUIT TREES, ROSES, &c.;

And will be glad to submit Special Offers upon application.

THURSDAY NEXT.

CATTLEYA GASKELIANA

MR. J. C. STEVENS has received instructions from Mr. F. SANDER to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, December 21, at half-past 12 o'Clock precisely, a wonderful Importation of this Grand NEW CATTLEYA, consisting of masses of unusual size and health. This fine thing has just flowered with Hugh J. Scott, Esq., of Belfast, and may be fairly described as an autumn-flowering Cattleya Mendelii.

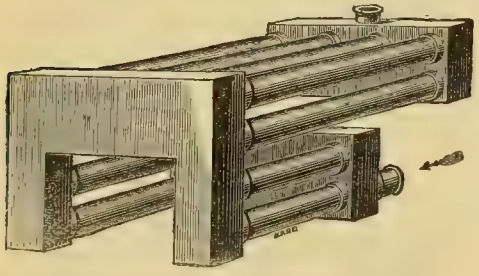
The Sale will also contain a splendid importation of ODONTOGLOSSUM ALEXANDRÆ, collected in flower, in especially fine varieties, and other Importations.

On view morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

THE THAMES BANK IRON COMPANY,

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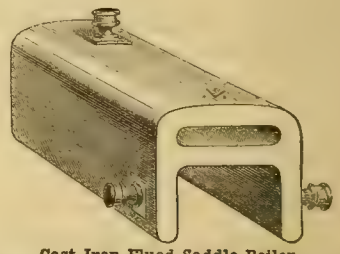
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Gardeners' Chronicle.

SATURDAY, DECEMBER 16, 1882.

FLOWER SHOWS.

AT length the season of flower shows is over, and the knowledge that such is the case seems to bring with it a sense of relief. Were flower shows an eternal institution, never ending, never resting, we might, perhaps, presently come to ask, in view of the monotonous labours incidental to them, whether life was for their sakes worth living. Fortunately, inexorable fate, as presented in the rigours of the winter season, steps in and gives the jaded *habitué* of flower shows the much needed rest, and abundant time to recruit both body and mind ere the weary round again opens.

In olden days our rude forefathers were content with at least one show in the year; we are far more exacting, and demand a dozen. The genuine spring show of Hyacinths, Tulips, and other bulbs, allied to many forced flowers, now held in March, is a modern institution, and has perhaps grown out of that marvellous increase both in variety of flowering plants and in our knowledge of how to force them, which has grown up since the days of old. The late autumn show, too, is a modern product, and is born of he Chrysanthemum, of the wondrous variety and gorgeousness of which our parents knew nothing. If our flower show season opens up gaily with bulbs and early forced flowers, it winds up grandly with the Chrysanthemum shows, the rich and varied beauties of which make them in gaiety and colour formidable rivals of the sunny shows of summer. But though we get thus pretty well nine months of flower shows, our trouble lies in the knowledge that there is no telling whether that period of time will long suffice. A well known Rose enthusiast, not content with seeing his favourite flower universally exhibited throughout the summer, cried hard for autumn exhibitions as well. Fortunately, we cannot have a Rose show at Christmas, and even the Chrysanthemum, late blooming as it is, refuses to be beautiful in mid-winter; but if some determined effort were made to organise a grand exhibition of flowers, say, in the metropolis on Boxing Day, it is notorious that it could be done, and the knowledge that it can be done naturally breeds disquiet and anxiety.

If any one doubts the assertion that a great flower show could be arranged at Christmas they have but to visit Covent Garden at that season and note how, under conditions of which the ordinary gardener knows little, the market trade-grower brings up, literally in thousands, Cyclamens, Chinese Primroses, Camellias, Genistas, Poinsettias, Roman Hyacinths, and numerous other plants, to find assurance that it is but to say, and the thing could be done. Why Mr. Little, at Hillingdon, Mr. Cannell, at Swanley, and others, with zonal, single and double Pelargoniums make up a brilliant display of colour that vies with the July shows of this same facile and fertile flower.

We may rest assured as to the present future

of the Rose, but the Pelargonium creates disturbance, for it is now demonstrated as clearly as daylight that these at least will make exhibition plants as rich and beautiful at Christmas as at any time of the year. But flower shows are largely contingent upon horticultural enthusiasm and pecuniary considerations, and if the enthusiasm of growers would urge them to have flower shows in mid-winter, fortunately the pecuniary conditions prevent the realisation of their desires. No one imagines that any such exhibition would be a success, and the public would deliberately refuse to admit that any such floral display in mid-winter was real. Whilst, however, we may so far rejoice that there is no prospect of flower show seasons becoming converted into one perpetual, never-ceasing period, we may none the less exhibit some pride in the contemplation of the fact that horticulturists, having so far availed themselves of the potent forces of Nature, can give us flowers in myriads, beautiful and varied, even whilst the earth is locked in hard frost and cold reigns triumphant.

To moralise over the general results which flow from the now almost universal holding of flower shows is to exhaust a well-worn theme. Perhaps the less we attempt to demonstrate the elevating tendencies of floral displays the less likely shall we be to get a fall. It would be idle to assume that the prospectuses which usually precede the formation of local flower shows convey the exact facts. The truth is more nearly found in the desire local growers may have to publicly display their products, of which they may have good reason to be proud, and, not least, to secure some tangible prizes. Putting aside as too theoretical for present consideration, the possible moral effect upon the denizens of a locality, at least no question remains as to the good effect that flower shows have upon local horticulture, and upon not only the humble plodding gardener of a district, but also upon those sections of the little community (and they are important ones) known as amateurs and cottagers.

Here flower shows do very much practical good, for they both teach and stimulate to better work and higher cultural results. Some few employers—not very wise ones it is true—are apt to think that the gardener who gives his mind to the culture of plants or flowers for exhibition, of necessity will and does neglect the growth of other less pretentious products. No conclusion could be more at variance with facts, for it is almost universally found that the man who under flower show stimulus strives to do some things better than he previously has, will carry that same desire to excel into all the garden products he may grow; as well as in thus growing better things for show, he presents his employer with better products for his gratification. Without doubt the balance of good is a long way in favour of flower shows, although they are still defective for educational purposes.

New Garden Plants.

POLYSTICHUM VESTITUM GRANDIDENS, *n. var.*

FRONDS lanceolate or ovate, with a narrowed and extended apex, bipinnate; pinnæ very unequal, in the narrower fronds generally cuneate or obovate, sometimes oblong, inciso-dentate, sometimes abortive; in the broader fronds with the more perfect parts furnished with obliquely ovate-oblong acute auricled, bidentate pinnules, the auricles and basal pinnules often undeveloped, and the narrower apex of the fronds with cuneate or obovate pinnules as in the lanceolate fronds; stipes and rachis densely clothed with dark brown scales, ovate and lanceolate at the base, becoming smaller upwards, the rachis proliferous at the apex.

This Fern, which we have recently received from Mr. D. Anderson, gardener at Singleton Park, Kendal, is quite the counterpart of the British P. angulare grandidens in all but the proliferous apex. Like that form of our native species, which is one of the most elegant of its unsymmetrical varieties, the plant before us is remarkable for the sharp deep toothing of the pinnules, which are in some cases wedge-shaped or obovate in outline, and seldom have the normal oblong acute auricled form, which nevertheless is occasionally developed upon those fronds which come nearest to the full normal growth. Even in these fronds, or parts of fronds, the development of the spiny-pointed teeth is far beyond the average.

We learn from Mr. Anderson that the plant is a seedling from P. vestitum proliferum, which was raised by him about seven years ago, and that it has retained its characteristics up to the present time. It is a remarkably elegant greenhouse evergreen Fern, distinct in character, the most striking feature being the preponderance of the round-ended pinnules, with the margins deeply incised or cut up into long spiny-pointed conspicuous teeth, whence the name grandidens. The pinnules on the younger less mature fronds are even more strikingly fissile; while as they become more mature and fertile the dental development is less strongly marked. *T. Moore.*

AGAVE BRACTEOSA, *S. Watson in Herb.*

(See figs. 138, 139.)

Acaulescent, with 10—15 lanceolate or broadly linear, fleshy, greyish-green, irregularly spreading leaves recurved at the tip, 18—22 inches long, tapering from a width of 1½ inch near the base gradually to an herbaceous point without becoming wider in the middle; ¾—½ inch thick below, slightly concave; margin serrulate with minute rather obtuse cartilaginous teeth about $\frac{1}{20}$—$\frac{1}{16}$ line in length. The flowering stalk was 37 inches high, 17 inches of which formed a dense spike of flowers; the whole stalk closely beset with spreading or recurved bracts 5—6 inches long, subulate-filiform from an oval base. Flowers in pairs, their short pedicels with conspicuous membranaceous bracts, about half as long as the ovary. Flowers (fig. 138) only about 1 inch long; ovary as well as perigon only ½ inch long each; the latter divided nearly to the base, tube being only ½ line deep; lobes oblong-oval, spreading; stamens inserted in the throat, four times as long as the lobes; style at last longer than stamens; anthers 4 lines in length when fresh.



FIG. 138.—AGAVE BRACTEOSA.

The minutely serrulate, narrow, but yet fleshy leaves, the numerous flexuous or recurved bracts of the stalks, the very conspicuous membranaceous bracts on the pedicels, and the small size of the flowers with the very long filaments, contribute to make this one of the most curious species of the genus. It was found in the same locality, near Monterey, where Agave Victoriæ Reginæ was collected. Dr. Palmer discovered this Agave, which flowered last year in the Cambridge, U.S., Botanical Garden, where Mr. S. Watson named and figured it. It seems to be allied to A. pruinosa, Lem. (see Baker, Monog. in *Gard. Chron.*, Dec. 15, 1877), at least in the consistency and the margination of the leaves, while in other respects it may stand nearer to A. yuccæfolia. *G. Engelmann.*

GRAMMATOPHYLLUM ELEGANS, *n. sp.**

A very elegant Grammatophyllum, imported from the South Sea Islands by Mr. B. S. Williams. The pseudobulb is in the way of that of Grammatophyllum multiflorum, Lindl., to judge from a sketch kindly sent. The peduncle is erect, a foot high, with seven stately flowers. Sepals oblong, very rounded, sepia-brown, with light yellow margins; petals much smaller and narrower, of the same colour; lip pallid ochre, with brown anterior margins, hairy on the disc; column whitish, with two sepia-brown lines under the fovea. I had very great difficulty in deciding whether it is a variety of Grammatophyllum Fenzlianum or a distinct species. The very blunt sepals, the totally distinct colours, the great irregularity of the sepals and petals, the distinct shape of the lip, and last, not least, the mostly shorter pedicelled ovaries, made me prefer establishing a species. *H. G. Rchb. f.*

CŒLOGYNE OCELLATA (*Lindl.*) BODDAERTIANA, *n. var.*

This is a good typical Cœlogyne ocellata, Lindl., but, strange to say, the very curious and deep colour of the lip is totally washed away, so that an exceedingly meritorious albino is the result. I had never had any information about such a plant till I got it, in April last, from Mons. le Professeur Boddaert van Cutjem, of Ghent (Rue Guillaume Tell et Avenue de Courtrai), who is known as one of the most intelligent and enthusiastic Orchidists of our day, and whose name it very justly bears. *H. G. Rchb. f.*

LÆLIA AMANDA, *n. hyb. nat.?*

A very fine Lælia, but no doubt a hybrid, to judge from the very unequal pollinia, which suggests a Cattleya parentage. A very good pencil sketch shows thin fusiform bulbs, which are said to be 5—7 inches in length. The cuneate ligulate blunt acute leaves, which are equal to two-thirds of the length of the bulbs, are said to be tinted with red underneath when young. The fine flowers stand in pairs, the common peduncle exceeding the small narrow spathe. Ovary purple and green. Sepals and broader petals oblong, ligulate, rather acute, wavy, lightest rose with a very obscure greyish hue outside of the sepals and darker tinted nerves on the inner side of the petals. Cordiform base of the lip enveloping the base of the column, with rounded side laciniæ going out into angulate antrorse lobes and with a tranverse oblong emarginate wavy short middle lacinia, separated by an exceedingly short isthmus; longitudinal keel and base of the side nerves prominent on the disc of the lip, where there is a very rich purple nervation, a very great charm. Anterior laciniæ of the lip and lateral angles of the finest richest dark purple. Side of lateral laciniæ light purple. Column light, rosy at middle of the back, white at the top and base, with dark purple in front. This came in excellent order from Mr. W. Bull. I must acknowledge with most agreeable surprise and thanks, that a very good, quite satisfactory sketch of the plant with measurements, &c., arrived at the same time. Usually this is the subject of a long correspondence. What were the parents? There is no difficulty in thinking of Cattleya intermedia from the nature of the lip. The other parent may have been Lælia crispa. *H. G. Rchb. f.*

CRINUM HILDEBRANDTII. — This species was sent from Dr. Kirk, Japan, about four years ago, under the name of Crinum sp. It is now flowering in the Orchid-house at Kew, where it is very conspicuous. The flowers are borne in an erect umbel, while the long linear white segments recurve in an elegant manner. Like several others of this rather extensive genus it has the fault of losing its leaves when in flower; but this defect may be compensated by standing it amongst other plants.

* *Grammatophyllum elegans*, n. sp.—Affine Grammatophyllo Fenzliano: sepalis oblongis obtusis; tepalis angustioribus obtusis, labelli trifidi disco pilosi laciniis lateralibus triangulis antrorsis; lacinia mediana cuneato retusa emarginata, carinis pauci angulatis per discum. Flores speciosi brunnei, ochraceo marginati. Labellum ochraceum, antice brunneo prætextum. Columna albida lineis duabus brunneis sub forveâ. Ex Oceania imp. dom. B. S. Williams, London. *H. G. Rchb. f.*

† *Lælia amanda*, n. hyb. nat ?—Pseudobulbis fusiformibus monophyllis seu diphyllis; foliis cuneato oblongo ligulatis acutis; pedunculo uni seu bifloro spatham angustam superante; sepalis ligulatis acutis; tepalis oblongo ligulatis acutis undulatis labello supra basin columnæ adnato, basi cordato, dein dilatato, antice trifido, laciniis lateralibus semirotundis antice antrorsum angulatis, lacinia mediana ab isthmo brevissimo transversa, dilatata, emarginata, crispula; nervis longitudinalibus lateralibusque, disci carinatis elevatis; polliniis inæqualibus. Col. exc. Bull. *H. G. Rchb. f.*



Fig. 139.—Agave bracteosa. (see p. 776.)

INDIAN TEA.

It is remarkable that whilst Tea is so universally used in England the public should know so little about it, and be, therefore, such indifferent judges as to what they should look for as the signs of a good article. There is a mistaken notion still abroad that "flowery Pekoe" is made of the white, Camellia-like blossom from the bush, and that several species are cultivated to produce the various qualities of Teas. Many of your readers may feel an interest in learning something concerning the Kangra Valley Tea district and the method of cultivation, picking and making of the Tea there grown. The exhausted leaves from their teapots will then guide them in their future purchases; when they have learned that in carefully made and honestly packed Tea there are no sticks or other incongruous matter, but simply the leaf of the curled, dried Tea, which has opened and expanded in the water to something like its pristine state.

All the kinds of Tea, which are described as Pekoe, Orange Pekoe, Pekoe Souchong, &c., are picked at the same moment, from the same stem, from the same bush. The barely developed little leaf, covered with a delicate down, which is just unfolding on the top of the spray, is to produce the finest Tea; the first perfect, but still tender leaves, the next; and the broader ones, lower down, the Bohea, or coarse Tea. These leaves are all manufactured together into Tea, as we shall see presently; and the best Tea to drink is, perhaps, the liquor derived from the mass as it stands. But the different sized leaves are all laboriously sorted by hand, after manufacture, before they are exported to the English market, to meet the requirements of the trade and in accordance with the China mode. These carefully sorted leaves have to be mixed again to make a Tea for actual use, such, for example, as Pekoe Souchong, which is, perhaps, the best mixture; and some of the finest Tea goes to make coarse China Teas drinkable and fit for the market. The coarse Teas from the Kangra Valley are sold in India and are not exported to England, where we get the mass of our Tea concentrated, as it were, by this removal of all leaves of scanty strength and flavour.

The Kangra Tea Plantations.

These lie along the slopes of the North-West Himalayas, nestling at the feet of grand mountains of from 10,000 to 16,000 feet high, and comprising, between the Ravee and the Sutlej, 8000 square miles of country. The district of Kangra proper, leaving out the sub-division of Kúlú, and the highly picturesque native states of Mundi, Sookêt. and Chumba, extends from the Beas, where the natural watershed divides it from the Hooshiarpore district, to the boundary of the Mundi State, near Byjnath, on the one side, and to Noorpoore on the other. It is in this lovely valley that most of the European Tea-planters have settled, and made around them comfortable homes and homesteads, which remind the sun-scorched visitor from the plains of India of far-off English farms.

At the upper part of the valley, and lying opposite to a huge gorge in the mountains, from which the planters obtain their daily supply of ice in the summer, lies Palumpore, the head-quarter station of the Tea district, with its Government offices, rest-house, dispensary, planters' club, and beautiful little church. Talumpore, which is 4000 feet above the sea-level, enjoys an excellent climate for eight or nine months in the year; during the other months the heat and rains are somewhat disagreeable, although admirably adapted to the growth of Tea. The beautiful little station is situated on a series of gently sloping knolls of green turf, thickly studded with Cheel trees (Pinus longifolia), and has the universal Kangra background of mighty mountains. The place is greatly indebted to the exertions of Sir Douglas Forsyth, who did a great deal for it and its immediate neighbourhood whilst he was the Commissioner of the district. His attempt to establish an annual fair at Palumpore, to induce traders from Yarkand and other distant provinces of Central Asia to open up trade with British India, is matter of history; and the causes of its failure are written in the records of the diplomatic offices of England and Russia.

When land has been selected and purchased (no easy tasks in a district where by a mistake in the settlement a great portion of the waste, or uncultivated lands suitable to Tea were given to the natives, and where the bargains have for the most part to be

*

made with the wily intriguing Hindu), and whilst it is being cleared of jungle and prepared for a Tea garden, the seed for the future plantation must be sown. The original seed which was used in the district was introduced by Dr. Jameson, the official Government pioneer of Tea cultivation, who selected Hotta, Bawarnah, and Negreta as gardens, and sowed that seed which he had brought from the Debrah Doon, and which became so reproductive in the soil of the Kangra Valley that it now supplies the planters of its native Doon, and many of the younger Tea districts. H.H. the Maharajah of Cashmir has of late been a large purchaser of seed, for, not content with energetically pushing on the growth of Vines and Hops, his Highness seems bent at the same time on producing something with which his people may cheer themselves and escape inebriation.

The seed is carefully removed from all Tea bushes in the garden during October and November by boys, girls, and women. A large yield of seed is an indication of something wrong in cultivation, or season, or soil. The planter's object is to grow as much new, vigorous leaf as possible, and cultivation suited to leaf production is not productive of an abundance of seed or fruit; and, therefore, all that advertising dealers and brokers tell the public about flower and seed is simple nonsense to those who understand the business, and have ever seen Tea grown and made.

The ripe seed, which is picked in the autumn, has not shed its outer husk, and is sown entire as it comes from the bush in neatly made nursery drills a foot apart and 4 inches deep, a shaded spot being selected for the seed bed that it may be protected from the cold of winter and the parching heat of the full summer's sun. As the necessary decay of the seed takes place in germination the outer husk decays and feeds the young plant. Although this care is necessary in raising seedlings in the comparatively temperate climate of Kangra, the hot steaming climate of Assam, where Tea is indigenous, produces all vegetation in such luxuriance that the seed has but to be dibbled into the land which it is permanently to occupy like a row of Beans.

Cultivation.

The periodical rains commence in the Kangra district on or about June 15, and, if they be not too heavy, the seedlings may be transplanted to their places in the garden at the beginning of July. For this planting out arrangements will have been made during the winter months. In rich soils, where the growth of the bushes will be quick and luxuriant, the seedlings are put in at greater distances from each other than in poorer soils, where the bushes will be longer in approaching each other. According to soil, these pits, 2½ feet deep by 1½ foot wide, are dug in rows varying from 5 feet by 5 feet in good soil, to 3 feet by 4 feet in poor soil, and into each of these pits from ten to twelve seedlings are planted. The coolies who put them in are drilled by a jemadar, or head man; who takes his place and orders from the planter himself; and so well is the work done in this way that the plants are rarely an inch out of the direct line, or of the proper depth in the soil. Under the magic wand of English energy, what was but now virgin soil of the forest or the village common, or the arable land of the natives, is a young Tea plantation, not yet ready to be plucked, but growing wondrously fast, needing to be carefully terraced to keep the soil up, if it be on a slope, and to be sometimes irrigated in hot, dry weather. In three years the plants in good soil begin to be profitable, and need no further waterings, although they are not in full bearing for, perhaps, seven or eight years.

During their minority each plant requires careful cultivation, constant hoeing, fairly liberal manuring, and judicious pruning. In November the winter cultivation of the mature bushes begins. Divisions of men—the strongest and possibly the least intelligent—are told off to hoe the garden throughout 1 foot deep; and this hoeing work should go on all the year round with variations at different seasons of the depths of hoeing.

Pruning.

Simultaneously with the hoeing, so that all that is cut off the bushes may go back and be buried in the soil, the pruning commences. As pruning is one of the most important works on a plantation, so is it one on which there is the greatest difference of opinion. A great many experiments have been made in the art, and probably planters have not yet learned all the science of the subject. Ten years ago an indiscriminate slashing off of the top of the bush and cutting three or four large holes into the body of the plant, to let in light and air, was the style of pruning most in vogue, chiefly on account of its fancied economy. By this method of pruning numberless shoots no doubt sprung up in the spring, but from the very fact of their being so numerous the bush was choked up as to all after-growth, and became a mass of unproductive crows'-feet.

Thorn pruning was next tried, and it may answer admirably in a cold climate, but certainly it is not the proper method for shrubs in a high temperature, such as Tea requires, for they need protection from the sun's rays and from electric and winter hail, without which the wood branches and the sap dries.

Coppicing, as a last remedy for old woody plants, was then tried; but the remedy is a most severe one; the plant loses much strength by the inevitable bleeding which takes place, and consequently the new shoots it makes are weak and feeble.

A new method of pruning which has been introduced into the valley is at present the approved one. The old, white, gnarled wood, and all the "whipcord," is cut off entirely an inch or two below the surface of the soil in such a way as shall cause the bush to bleed as little as possible. Then all the long, straggling shoots are cut back, no matter how good their material may be; and lastly, all the shoots are cut back close to the finest bud growing from the axilla of the leaf, which is left to act as shelter.

Bushes of about 4 feet in height are the most convenient for boys and girls to pick from, and some of the finest bushes in the Kangra Valley gardens are of this height, and 6 or 7 feet in diameter.

Pruning operations are going on from November to the end of the first week in March. Boys in India are almost always sharper and more active and willing than men. Strong, picked men cut out the thick, tough wood from beneath the soil, and the lighter pruning is done by the boys. The best pruner cannot average more than twenty full-grown bushes in a day. *A Planter.*

(To be continued.)

PLANT PORTRAITS.

Allium Ostrakowskianum, Regel, in *Gartenflora*, t. 1089.—Leaves longer than the stem, linear acute, flowers umbellate, pink. Eastern Turkestan. Probably the most beautiful of all the species.

Araucaria Mulleri, Brongn. et Gris, *Illust. Hort.*, May, 1882, t. 449.—New Caledonia. A noble species for conservatory culture.

Bacularia monostachya, F. Mueller, Hook. f., in *Bot. Mag.*, t. 6644.—One of the smallest Palms of the old world, confined to the east coast of tropical Australia. Stem 6—12 feet, not thicker than the thumb; leaves in terminal tufts, oblong pinnately divided segments, narrow oblong, cut at the tips. Warm greenhouse, Hort. Kew.

Berberis Thunbergii, DC.; Hook. f., in *Bot. Mag.*, t. 6646.—A dwarf shrub, native of Japan, the branches spiny, leaves small, obovate, flowers solitary on slender pendulous stalks, small, subglobose, yellow striped with pink.

Bredia hirsuta, Blume; Hook. f., in *Bot. Mag.*, t. 6647.—A Japanese Melastomad, with ovate acuminate hairy leaves, and loose terminal many-flowered cymes; flowers about half an inch across, rose-pink.

Catasetum callosum, Lindl.; Hook. f., in *Bot. Mag.*, t. 6648.—A native of Venezuela, with racemes of dull brown flowers, the perianth-segments are narrow, elongated, the lip much shorter, greenish, spotted with brown.

Cœlia bella, Orchidaceæ, *Bot. Mag.*, June, t. 6628.—Flowers racemose from the base of the subglobose pseudobulbs; perianth tubular, with a long spur; sepals regular, oblong, lilac tipped; lip narrow, oblong acute, yellow tipped. Central America. Hort. Kew.

Croton magnificus, *Illust. Hort.*, May, 1882, t. 447.—Leaves lanceolate, shortly stalked, disc of leaf crimson, margins green. Introduced from the Solomon Isles.

Cyclamen Atkinsi, Hort., *Flore des Serres*, t. 1425.

Dracocephalum imberbe, Bunge, *Gartenflora*, May, 1882, t. 1080.—A hardy perennial, with stalked, cordate, roundish, coarsely-toothed leaves, and whorls of large lilac, labiate flowers.

Echinocactus centeterius, Lehm.; Regel, in *Gartenflora*, t. 1094.—Subglobose, deeply furrowed with tufts of spreading slender curved spines; flowers yellow. Brazil.

Echinocactus Kunzei, Först., *Gartenflora*, May, 1882, t. 1082.—Stems oblong, ribbed and tubercled, with tufts of numerous long slender curved spines Chili.

Grape Chavoush, *Bulletin d'Arboriculture*, August, 1882.—A white Grape, much esteemed in Constantinople, but stated not to be good for forcing purposes. Only a second-rate variety.

Herbertia cœrulea, *Gartenflora*, May, 1882, t. 1081.—A dwarf bulbous Irid with linear leaves, a 6-parted perianth, the three outer segments of which are broad, oblong, violet, with an eye spot at the base, inner segments very much smaller and of the same colour. Texas.

Hieracium villosum, Linn.; Regel, in *Gartenflora*, t. 1090.—An alpine species, with sessile broadly lanceolate ciliated leaves and large showy yellow flower-heads.

Impatiens Sultani, Hook. f., in *Bot. Mag.*, t. 6643. See also *Garden*, t. 352, Sept. 2.—A native of Eastern tropical Africa, with lanceolate stalked glandular serrate leaves and bright crimson flowers. This brilliant Balsam, which will be valuable for hybridising purposes, was introduced to Kew by Sir John Kirk.

Lilium Parryi, Watson; Regel, *Gartenflora*, t. 1093. — Leaves lanceolate; flowers racemose, yellow, funnel-shaped; limb of six reflexed narrow lobes. California. Haage and Schmidt.

Luculia gratissima, *Revue de l'Hortic. Belge*, June, 1882.

Masdevallia rosea, Lindley; Morren, in *Belgique Horticole*, 1882, t. iii.—See *Gard. Chron.* 1880, 1881, *passim* 1882, May 13, fig. 101.

Nemastylis cœlestina, Nutt., *Gartenflora*, May, 1882, t. 1081.—A bulbous Iridaceous plant, with linear leaves and large regular 6-parted flowers, with oblong, deep violet segments. Native of Florida and Carolina.

Nicotiana affinis, Hort., *Garten Zeitung*, June, 1882, coloured plate and analyses.—See *Gard. Chron.*, xvi., 1881, p. 141, fig. 131.

Odontoglossum hebraicum, *Garden*, June 3.—A hybrid between O. crispum and O. gloriosum. See *Gard. Chron.* 1881, vol. xvi., p. 173.

Pæonia Wittmanniana, Steven; Hook. f., in *Bot. Mag.*, t. 6645.—A native of the Caucasus and Northern Persia, with large cup-shaped creamy-white flowers.

Phytarrhiza monadelpha, E. Morren, *Belgique Horticole*, June, 1882.—A Bromeliad, with narrow, linear-lanceolate purplish leaves dilated at the base, and central distichous spikes of closely-set flowers, with green calyces and white corollas twice the length of the calyx, and with six monadelphous stamens. Hort. Linden.

Psychotria cyanococca, *Revue de l'Hortic. Belge*, October; *Gard. Chron.* 1871, p. 412.—Remarkable for its dense bunches of deep blue berries.

Quesnelia rubra, Gaudichaud; Morren, in *Belgique Horticole*, 1882, t. iv., vi.—Leaves linear oblong, deeply channelled, dentate, green, horizontally barred with black. Flowers in dense cylindrical spikes, bracts imbricate oblongate, crimson with white margins. Native of Brazil. At first acaulescent, but subsequently developing a stem 7—8 feet in height.

Rosanowia ornata, Hort. Van Houtte, *Flore des Serres*, t. 2424.—Stem herbaceous, erect; rhizome tuberous; leaves stalked, cordate, ovate, acute; peduncles long, slender; flowers pedulous, irregularly funnel-shaped, 2½ inches long, white striped with rose. Gesneraceæ. It is the Biglandularia conspicua, B. Seemann, in *Gard. Chron.* 1868, p. 738.

Sedum Rhodiola var. linifolium, Regel, *Gartenflora*, May, 1882, t. 1080.—Differs from the type in its linear-oblong, entire, or dentate leaves, and purple flowers; in the plate, however, the flowers are shown of an orange colour.

Saxifraga virginiensis (Mich.) fl.-pl., Regel, *Gartenflora*, 1092.—A double-flowered form of this North American species; flowers white, in branched panicles.

Spathiphyllum hybridum ×, N. E. Brown, *Illust. Hort.*, t. 450.—A hybrid between S. Patini and S. cannæfolium (syn. A. Dechardi), raised in the establishment of the Compagnie Continentale d'Horticulture at Ghent.

Thunbergia coccinea, Wall., *Flore des Serres*, t. 2477; *Bot. Mag.*, t. 5124.—Sometimes called Hexacentris coccinea.

NEW PLANTS CERTIFICATED

BY THE FLORAL COMMITTEE AT THE ROYAL HORTICULTURAL SOCIETY'S MEETINGS, 1882.

*** F.C., First-class Certificate; S.C., Second-class Certificate; B.C., Botanical Certificate; C., Commended.*

Abutilon Cloth of Gold ..	George, March 14—F.C.
,, La Grande	George, March 14—F.C.
Acroclinium album fl.-pl. ..	Schmidt, Dec. 12—F.C.
,, roseum fl.-pl.	Schmidt, Dec 12—F.C.
Adiantum Bourrei	Smith May 23—F.C.
,, dolabriforme	B. S. Williams, May 23—F.C
,, Legrandii	Veitch June 13—F.C.
,, Victoriæ	Gen Hort Co., Mar 28—F C.
Aerides formosum	Veitch, June 13—F C.
Ageratum Malvern Beauty ..	Cannell, Aug. 16—F.C.
Alsophila Rebeccæ	Bull, April 25—F C
Amaryllis Autumn Beauty ..	Veitch, Jan. 10—F.C.
,, Baron Schroeder ..	Veitch, March 14—F.C.
,, Charles Dickens ..	Veitch, March 14—F C.
,, Duchess of Connaught ..	Veitch, March 14—F.C.
,, Duke of Albany	Veitch, March 28—F.C.
,, The Giant	Veitch, March 28—F.C.
Andromeda japonica	Waterer, March 28—F.C.
Anthurium Scherzerianum, Woodbridge's var.	Woodbridge, April 11—F.C.
Aubrietia violacea	Dean, April 25—F C.
Azalea rubifolia flore-pleno ..	Veitch, May 9—F C.
Begonia A. F Barron ..	Royal Hort. Soc., July 11—F.C.
,, Ball of Fire	Laing, May 23—F.C.
,, gogoensis	Veitch, July 25—F.C.
,, Hon. and Rev. J. T. Boscawen	Laing, June 13—F.C.
,, Mrs. Stevens	Royal Hort. Soc , July 7—F.C.
,, Thomas Moore ..	Royal Hort. Soc., July 7—F.C.
Carnation Alice Duffield ..	Duffield, April 11—S.C.
,, Charles Page	Duffield, June 13—F.C.
,, Mary Morris	Smyth, Aug. 22—F C.
,, (Tree) W. Howard ..	Howard, May 9—F.C.
Cattleya gigas Burfordiensis ..	Lawrence, June 13—F.C.
,, Mendelii Jamesianum ..	James, April 11—F.C.
,, Whitei	Low, July 25—F.C.
Chrysanthemum La Petite Marie	Ware, July 11—S.C.
,, (incurved) Lord Wolseley	Orchard, Nov. 14—F.C.
,, (Japanese) Ceres ..	Jackson, Dec. 12—F.C.
,, ,, Crimson King ..	Dixon, Nov 14—F.C.
,, ,, Duchess of Albany ..	Jackson, Dec. 12—F.C.
,, ,, F. A Davis	Jackson, Nov. 14—F.C.
,, ,, M. Desbraux ..	Jackson, Nov. 14—F.C.
,, ,, Madame Brun ..	Jackson, Nov. 14—F.C.
Cineraria Mr. Cullingford ..	Cannell, March 14—F C.
Cinerias, for strain	Cannell, March 14—C.
Cœlogyne cristata Lemoniana ..	Veitch, Feb. 14—F C.
,, glandulosa	Parr, March 14—F.C.
Columnea Kalbreyerana ..	Veitch, Jan. 10—B C.
Comparettia falcata vera ..	Lawrence, July 25—F.C.
,, macroplectron	Heims, July 25—F.C.
Coryanthes elegantissima ..	Lawrence, March 28—F.C.
Cosmos bipinnatus var. parviflorus	R.H.S., Dec. 12—S.C.
Crinum Makoyanum	B. S. Williams, April 11—F.C.
Croton aureo-marmoratus ..	Veitch, July 11—F.C.
,, Dayspring	Veitch, July 11—F C.
,, Eyrei ×	Ross, Oct 10—F.C.
,, Princess of Waldeck ..	B. S. Williams, June 27—F.C.
Cupressus Lawsoniana erecta alba	Davis, Oct. 10—F.C.
Cyclamen persicum Crimson Gem	Little, March 14—F.C.
,, ,, giganteum compactum	Clarke, Feb. 14—F.C.
,, ,, giganteum roseum compactum ..	Edmunds, Feb. 14—F.C.
,, ,, Rose Queen	Little, March 14—S.C.
,, ,, White Gem	Little, March 14—F.C.
Cypripedium Arthurianum × ..	Veitch, Oct 10—F.C.
Dahlia, Harrison Weir ..	Rawlings, Oct. 10—F.C.
,, John Henshaw	Rawlings, Sept. 12—F.C.
,, (Fancy) Duchess of Albany	Turner, Oct. 10—F.C.
,, (Bouquet) Gem	Turner, July 25—F.C.
,, ,, Isabel	Turner, Oct. 10—F.C.
,, ,, Little Duchess ..	Turner, Oct. 10—F.C.
,, ,, Little Princess ..	Turner, Oct. 10—F.C.
,, ,, Nymphe	Turner, Oct. 10—F.C.
,, (Cactus) Constance ..	Cannell, Oct. 10—F.C.
,, (Single) Cherry	Ware, Oct. 10—F C.
,, ,, Christine	Ware, Sept, 12—F C.
,, ,, Francis Fell	Ware, Oct. 10—F.C.
,, ,, Marguerite	Cannell, Oct. 10—F.C.
,, ,, Mrs. Burbidge ..	Ware, Oct. 10—F.C.
,, ,, Mrs. Goldring ..	Ware, Oct. 10—F.C.
,, ,, Pantaloon	Ware, Oct. 10—F.C.
,, ,, Ruby King	Hooper, Sept. 12—F.C.
,, ,, Tsyo	Cannell, Oct. 10—F.C.
,, ,, White Star	Ware, Oct. 10—F.C.
,, ,, Yellow Gem	Cannell, Oct. 10—F.C.
Davallia Griffithiana	Howard, May 9—F.C.
,, tenuifolia Veitchiana ..	Veitch, July 11—F.C.
Dendrobium macrophyllum Dearei	Fagg, April 11—F.C.
Dracæna Goldieana	Gen. Hort. Co., Jan. 10—B C.
Erica hyemalis alba	Kinghorn, Jan 10—F.C.
Gaillardia picta Lorenziana ..	Carter & Co., June 27—F.C.
Galeandra nivalis	Lawrence, March 14—F.C.
Gladiolus A. F. Barron ..	Kelway, Aug. 5—F.C.
,, albus	Kelway, Aug. 5—F.C.
,, Bouo	Kelway, Aug. 5—F C.
,, James McIntosh ..	Kelway, Aug. 5—F.C.
Gloxinia Garibaldi	Veitch, June 13—F.C.
,, Major Mason	Royal Hort. Soc., July 7—F.C.
,, Mrs. Atkinson	Hudson, June 27—F C.
,, Robin Hood	Veitch, June 13—F.C.
Godetia Duchess of Albany ..	Daniels, July 11—F.C.
,, Satin Rose	Carter, Aug 8—F.C.
Grammatophyllum multiflorum	Lawrence, July 25—F.C.
Gymnogramma Laucheana grandiceps	Dixon & Co., April 25—F C.
Hoya lasiantha	Veitch, July 11—B C.
Hyacinth Challenger	Veitch, March 28—F C.
,, Delicata	Veitch, March 28—F C.
,, Enchantress	Veitch, March 28—F.C.
,, Leo	Veitch, March 28—F.C.
Impatiens Sultani	Veitch, July 11—B.C.
Lælia anceps var. Veitchii ..	Veitch, Jan. 10—F.C.
Lantana Phosphore	Royal Hort. Soc., July 7—F.C.
Lastrea montana coronans ..	Stansfield, Aug. 8—F.C.
Lavatera arborea variegata ..	Smith, May 23—F.C.
Leea amabilis	Veitch, March 28—F.C.
Lilium auratum virginale ..	Veitch, July 25—F.C.
,, elegans robustum ..	Ware, June 13—F.C.
,, speciosum var. Melpomene	Hovey, Aug. 22—F.C.
,, Thunbergianum cruentum	Ware, July 11—F.C.
Lobelia pumila Ingrami ..	Wood & Ingram, June 13—F C.
Lycaste Deppei punctatissima	B. S. Williams, June 27—F.C.
Lygodictyon Forsteri	Kettle, Jan 10—F.C.
Masdevallia Harryana striata	Lawrence, June 13—F C.
,, imperialis	Warner, April 25—F.C.
,, Shuttleworthii ..	Lee, March 28—F.C.
,, Veitchii grandiflora ..	Coningsby, May 23—F.C.
Mormodes unicolor	Veitch, Oct. 10—F C.
Muscari lingulatum	Harpur-Crewe, Feb. 14—F C.
,, armeniacum	Harpur-Crewe, May 9—F.C.
Nasturtium Empress of India	Carter, July 25—F.C.
Nepenthes Mastersiana ..	Veitch, June 13—F C.
Nerium Madonni grandiflorum	Huber & Co., July 7—F.C.
,, Mons. Balaguier ..	Huber & Co., July 7—F.C.
,, Sœur Agnes	Huber & Co., July 7—F.C.
Odontoglossum Cervantesi decorum	Lee, March 28—F.C.
,, crispum Dormanianum ..	Coningsby, Nov. 14—F.C.
,, ,, var. The Duchess ..	Stevens, Nov 14—F.C.
,, ,, giganteum	Warner, May 23—F C.
,, ,, Leeanum	Veitch, March 28—F.C.
,, ,, Stevensi	Stevens, March 14—F.C.
,, ,, var. virginale ..	B. S. Williams, Nov. 14—F.C.
,, ,, var. Wilsoni	Stevens, Nov. 14—F C.
,, Pescatorei Veitchii ..	Veitch, March 28—F.C.
,, vexillarium var. Cobbianum	Cobb, June 13—F C.
Oncidium fuscatum album ..	Veitch, March 14—F.C.
,, lamelligerum	Coningsby, May 23—F.C.
,, stelligerum	Lawrence, July 25—F C.
,, teretifolium	Lawrence, May 9—F.C.
Ornithogalum thyrsoides ..	R. T. Veitch, Oct 10—F.C.
Osmunda japonica corymbifera	Veitch, July 11—F C.
Pansy, Mrs. Laing	Hooper, April 25—F C.
,, Mrs. Llewellyn	Hooper, April 25—F.C.
,, (double) Lord Waveney .	Cannell, July 11—F.C.
Paphinia rugosa	B. S. Williams, June 27—F.C.
Pelargonium (decorative) Belle de Jour	Lemoine, July 7—F.C.
,, ,, Gold Mine	Hayes, June 13—F.C.
,, ,, Lady Brooke	Stacey, June 27—S C.
,, ,, Madame Harmant ..	Lemoine, July 7—F.C.
,, (Ivy-leaved) Albert Crousse	Little, Nov. 14—F.C.
,, ,, Comte Horace de Choiseuil	Lemoine, July 7—F.C.
,, ,, Comtesse Horace de Choiseuil	Lemoine, June 13—F C
,, ,, Eurydice	Cannell, May 23—F C.
,, ,, Rossini	Lemoine, Aug. 16—F C.
,, (show) Gratitude ..	G. Smith, June 13—F.C.
,, (zonal) Atala	Pearson, July 7—F.C.
,, ,, Eva	Pearson, July 7—F.C.
,, ,, Kléber	Lemoine. July 7—F.C.
,, ,, Lumen	Pearson, July 7—F.C.
,, ,, Miss Hamilton ..	Pearson, July 7—F.C.
,, ,, Mrs. Gordon	Cannell, Nov. 14—F.C.
,, ,, Olive Carre	Pearson, July 7—F C.
,, ,, Surprise	Aldred, Jan. 10—S C.
,, (double zonal) Aglaia ..	Pearson, July 7; Little, Nov. 14—F.C.
,, ,, candidissimum plenum	Lemoine, July 7—F.C.
,, ,, M. Got	Lemoine, July 7—F C.
,, ,, M. Hardy	Lemoine, July 7—F C.
Pentstemon Mrs. McFarlane..	Cannell, Oct. 10—F.C.
Pernettya mucronata macrocarpa	Davis, Oct. 10—F.C.
,, ,, carnea nana	Davis, Oct. 10—F.C.
,, ,, alba	Davis, Oct. 10—F.C.
,, ,, sanguinea	Davis, Oct. 10—F.C.
,, ,, nigra major	Davis, Oct 10—F C.
,, ,, rosea purpurea ..	Davis, Oct. 10—F.C.
Pescatorea Dayana	Salter, June 27—F.C.
,, Lehmanni	Lawrence, May 9—F.C.
,, Vervaeti	Vervaet & Co., Dec. 12—F.C.
Petunia Mrs Dunnett	Carter, Aug. 8—F C.
Phacelia campanularia ..	Thompson, July 25—F C.
Phalænopsis E-meralda ..	B. S. Williams, Oct. 10—B.C.
,, Stuartiana var nobilis ..	Low, March 28—F.C.
,, violacea var Schroederi..	Veitch, Aug. 8—F C.
Pinguicula caudata	Veitch, March 28—F.C.
Pleione præcox	B. S. Williams, Nov. 14—F.C.
Pleopeltis fossa	Veitch, July 11—F.C.
Pleurothallis glossopogon ..	Veitch, March 14—B.C.
Podolasia stipitata	Veitch, July 11—B C.
Polypodium vulgare cornubiense Fowleri	Stansfield, Aug. 8—F.C.
Primrose Gilbert's Harbinger..	Gilbert, Feb. 14—F.C.
Primula acaulis Crousii, flore-pleno	Paul & Son, March 28—F.C.
,, latifolia	Dean, April 11—F.C.
,, obconica	Veitch, March 28—F.C.
,, sinensis, Holborn Gem..	Carter, Jan. 10—F.C.
,, ,, Magenta Gem ..	Little, Feb. 14—F.C.
,, ,, Princess of Wales ..	Cannell, Jan. 10—F.C.
Renanthera matutina	Lawrence, July 25—F.C.
Reseda Golden Queen	Benary, Carter, Henderson, Veitch, July 7—F.C.
,, odorata pyramidalis grandiflora	Vilmorin, June 27—F.C.
Rhododendron Alice Mangles	Mangles, April 25—F.C.
,, Aurora	Veitch, March 28—F.C.
,, balsaminiflorum × ..	Veitch, June 13—F C.
,, ,, album	Veitch, July 11—F.C.
,, ,, aureum	Veitch, July 11—F.C.
,, Excelsior	Veitch, March 14—F.C.
,, Favourite	Veitch, March 28—F.C.
,, Forsterianum	Veitch, April 11—F.C.
,, Fortunei	Aslett, May 9—F.C.
,, Monarch	Veitch, March 14—F.C.
,, Queen Victoria	Veitch, Feb. 14—F.C.
,, Sir B. Seymour	Veitch, Oct. 10—F.C.
,, Sir G. Wolseley	Veitch, Oct. 10—F.C.
Rose, H.P., Duchess of Connaught	Noble, July 11—F.C.
,, ,, Earl of Pembroke ..	Bennett, Oct. 10—F.C.
,, ,, Her Majesty	Bennett, March 28—F.C.
,, ,, Lady Mary Fitzwilliam	Bennett, June 27—F.C.
,, ,, Reine Marie Henriette	R. T. Veitch, May 23—F.C.
,, ,, Ulrich Brunner ..	W. Paul & Son, May 9—S C.
Salvia Hoveyi	Cannell, Nov. 14—F.C.
Scolopendrium vulgare crispum multifidum	Stansfield, Aug. 8—F.C.
,, ,, densum	Kelway, May 9—F.C.
Selaginella platyphylla ..	Veitch, May 23—F.C
Sequoia (Wellingtonia) gigantea pendula	Brown, Feb. 14—F.C.
Spathoglottis Lobbi	——. March 14—B C.
Spergula pilifera aurea ..	Dean, May 23—F C.
Statice floribunda	Lee, May 23—F.C.
Sweet Pea Bronze Queen ..	Eckford, Aug. 8—F.C.
Tecophilea cyanocrocus ..	Wilson Jan 10—F C.
Telopea speciosissima	Green, April 11—B C.
Tydæa Cybèle	Vallerand, Aug. 16—F.C.
,, Robert le Diable ..	Veitch, July 11—F.C.
,, Magicien	Vallerand, Aug. 16—F.C.
Vanda Hookeri	Hill, Sept. 12—F.C.
Verbena Aug. Renz	Cannell, Aug. 16—F.C.
,, Kertish Beauty	Cannell, Aug. 16—F.C.
,, Phlox	Cannell, Aug. 16—F.C.
,, Stars and Stripes ..	Cannell, April 11—F.C.
Veronica Hulkeana	Douglas, May 23—F.C.
Viola Champion	Heath, June 13—F.C.
Zygopetalum expansum ..	Lawrence, June 13—F.C.

NEW FRUITS.

CERTIFICATED BY THE FRUIT COMMITTEE.

Apple, Landsberger Reinette ..	McIntosh, Oct. 10—F.C.
Fig Negro Largo	Veitch, Aug 8—F.C.
Melon Burghley Pet	Gilbert, Oct. 10—F.C.
,, William I.	Howe, May 23—F.C.
Pear Tyson	Royal Hort. Soc., Sept. 5—F.C.

NEW VEGETABLES.

Broccoli, Ledsham's Latest of All	Ledsham, May 9—F.C.
Pea Alfred the Great	Laxton, July 7—F C.
,, Gladiator	Veitch, July 7—F.C.
,, Lye's Favourite	Lye, July 7—F.C.
,, Stratagem	Carter, July 7—F.C.
,, Turner's Emerald ..	Carter, July 7—F.C.
Potato, Main Crop Kidney ..	Bliss, Sept. 5—F.C.
,, Aurora	Bliss, Sept. 5—F.C.
,, Richter's Imperator ..	Lawson Nursery Co., Sept. 5—F.C.

FORESTRY.

THE PROTECTION OF FORESTS.—This matter forms the subject of an article in the current number of the *North American Review*, written by Professor Sargent. It has reference especially to North American forests. After alluding to the difference in the forests of the Atlantic, central and Pacific regions respectively—differences with which our readers are familiar from the writings of A. Gray and Hooker—Professor Sargent goes on to remark that "the distribution of the forests over the continent shows tha where the rainfall is heaviest the forest growth is heaviest; that where the rainfall is light and unequally distributed the forest is proportionately light; and that where the average annual rainfall sinks below a certain amount—about 20 inches—the real forest disappears entirely. Speaking of the maintenance and reproduction of forests, it is truly stated "that a forest in which a regular succession of young trees is not coming on is always in danger of speedy and entire destruction. "Fire is the greatest enemy to the American forest; next to fire, the browsing animal inflicts upon it the greatest damage; and the American people, in generally using their woodland for pasturage, have adopted the surest method to compass the final destruction of their forests. In spite of this, the unequalled forests of Fir of the north-west coast hardly show the marks of thirty years of cutting and annually increasing fires. In this humid climate young trees of the same valuable species spring up so quickly on land stripped of its original forest covering, and these new forests grow with such remarkable rapidity, that there is little danger of their final extinction. Serious and often fatal injury has been inflicted on the Sierra forests, however, by the sheep which every summer are driven up by thousands to pasture in the cool moist subalpine meadows of these high mountains. The sheep, enforced by great bands of horses, cattle, and goats, clean everything before them—nothing but the large trees and the most stubborn and thorny "chapperal" escape their voracity. Every young tree, every bud, and every blade of herbage is devoured, everything green is destroyed, and the sheep tread out from the dry gravelly hillsides the roots of all young and delicate plants. The Sierra forest is over most of its extent a forest largely composed of full-grown trees, containing but few young seedlings, and little undergrowth to shelter and protect them. Its condition, then, is critical, and unless measures can be taken for effectually limiting the range of browsing animals, its total extinction must be merely a question of time. A forest crop is slow to mature, its area cannnot be extended or reduced in response to large or small demands. A forest fire may destroy in a single day the growth of 500 years, and what another 500 years can hardly replace. Although the forest does not cause the rain to fall, it husbands it after it has fallen. It serves as a mulch on the earth's surface, it prevents the too rapid flow of water from the surface, checks evaporation, breaks the force of destructive winds, and prevents the soil on the mountain-side from being washed away. The great value, then, of the forest lies in its power to protect the surface of the ground from denudation, to regulate the flow of rivers, modify temperature, and preserve the rain.

LILIES IN 1882 AT EDGE HALL.

EVERY season ought to add something to our knowledge of the habits of Lilies in open air cultivation. At Edge, owing to bad climate, this cultivation is carried on under difficulties; still we are making progress with many which we have tried, though some have proved failures. We must not, however, speak of Lilies collectively, as if all required the same treatment, for if we take half-a-dozen of as many different species, selected at hazard, and plant them in the same soil, they cannot all be expected to succeed; and yet all soils and climates in England are adapted to grow some Lilies well, and it is difficult to know what the soil will not grow well without trying. One thing seems to me necessary for all Lilies alike, and that is thorough and efficient drainage at a greater depth than they send their roots. No Lily that I have tried, not even L. superbum, though known in America as the Swamp Lily, will, in my climate at least, thrive with wet stagnant about the roots, but they will dwindle away and die out under this condition. One more general statement I will venture to make, that some of us have had mistaken ideas about the amount of moisture in the ground necessary for Lilies when growing and flowering. Until this year I have done far too much with the water-pot, and have begun its use too early. We have so often been told that in Japan L. auratum is used to a rainfall of about an inch a day, or more, from the time it begins to grow to the time it flowers, but we cannot imitate in the open air in England the climate and temperature of Japan; and I become every year more convinced that it may be a mistake with many exotic plants to imitate some of the natural conditions when we cannot imitate them all.

Lillium auratum gets the greatest share of attention, but there are many reasons why it can never be quite satisfactory as an outdoor plant. Heavy showers will always paste the anthers to the petals with pollen, and spoil the flowers; yet if we have a large number of bulbs in different situations it is hard if we do not get one good month for the flowers out of the four months during which they continue to be produced. This year was one of surprises to me as regards this Lily, for it was most satisfactory in the mixed herbaceous beds, with no special preparation of soil, but planted in moderately strong sandy loam, and thoroughly drained. I am now trying in different soils some bulbs raised from English seed, and hope to find them entirely free from that habit of shedding first their leaves and then their buds which so large a proportion of the imported bulbs adopt; still, when once the weak individuals of an importation have died, the residue—perhaps twenty of every hundred—which survive say to the third year seem to take a new start of vigour, and flourish and increase. One batch in a peat bed, now in its third or fourth year, besides several smaller flowering stems, produced three principal stems about 8 feet high, and each 5 inches in circumference near the ground, bearing between them about fifty flowers. I dug up this clump in October, and besides several smaller bulbs I found at the base of each of the large stalks a gigantic bulb of which I am afraid to tell the weight and dimensions. These were all the produce of a single bulb, planted either three or four years ago, possessing wonderful individual vigour of constitution, which will, I hope, be imparted to all the increase of that bulb; but I mark them my A 1 amongst auratums, and shall watch them.

Precisely the same thing has happened with one out of three or four dozen L. chalcedonicum planted at the same time as the auratum described above. These scarlet Turk's-caps do not generally take to my soil, but one increased rapidly, besides producing strong flower-stalks each with from eight to fourteen flowers. This clump I have also divided, and expect the stock to maintain its character. I believe it is by selecting and encouraging individuals in this way that a healthy and vigorous population of Lilies may be obtained in gardens.

My success, however, with L. pardalinum, and all its varieties, has been so great, and so easy, that I need say but little about it. Deep peat beds, made from the black surface peat carted from the neighbouring hills, are all that is required in the way of cultivation. This peat especially suits these Lilies. I plant a small imported bulb, and by the end of the first year it has increased to three; at the end of the second year it will have grown into a compact ball of roots a foot or more through, containing probably a dozen bulbs, some of which will show above the surface. The stalks of these will be from 7 to 9 feet high, bearing from eight to fifteen flowers each. The variety californicum increases fast, but is of much dwarfer growth, and seldom has more than three or four flowers on a stalk.

Other named varieties of pardalinum maintain their character in relation to the type, but except californicum none are remarkably superior to it. Late frosts at the end of April or beginning of May are apt to injure these Lilies, and some other of the earlier kinds. Three fine plants of L. Hansoni had their flowering completely destroyed from this cause this year, though the foliage was not injured. In spite of this I am gradually getting rid of the overgrowth of evergreens in my Lily beds, Heaths, Pernettyas, Skimmias, and such-like. Where there is unlimited room these are very nice, but they seem to me to keep the beds too wet, and I find that the Lilies do better without them. No doubt in dry soils the case is different; but I never could discover any disadvantage in exposing the surface of my soil to the sun. On the other hand, I wish I could give it more sun than it gets; sunlight sweetens it so.

Another Lily which does very well in my peat—better, I think, than when planted in loam—is L. Szovitzianum. It does not increase fast, but, being an early flowerer, always matures its growth, and ripens seed in abundance. L. giganteum, as far as I have tried it, thrives wonderfully in the same peat. It was growing there through the two hard winters of 1879 and 1880, and after producing an immense flower-spike of twenty-three flowers left five new bulbs, each as large as I have more than once bought as of flowering size. I cannot think that there will be any difficulty in growing this Lily in deep well-drained soils, and in situations not exposed to high winds, which would tear the large soft leaves to pieces.

But my chief success with Lilies this year has been in my Elwes frame, as recommended in the introduction to the Monograph of Lilies—a space dug out and drained 4 feet deep, and walled at the sides to 5 feet above the ground, 24 feet long by about 10 feet 6 inches wide, roofed with eight pairs of 6-foot lights arranged in a double span. This cost, with the lights, about £15. Ventilation is given by sliding boards all along the sides, so that I can keep the lights on all winter; but they slide off at pleasure. The made soil is up to the ground-line. Here L. Parryi, L. Leichtlini, L. Washingtonianum, have all flowered well for two years; L. auratum and L. speciosum do so well that I shall have to turn them out; L. Humboldti, which grows well outside, but generally falls a victim to spot before it has completed its flowering, flowers and keeps its leaves and stalks green for a month after flowering.

But I am taking too much space, and I will merely sum up by saying that the plan seems likely to be a complete success. It may be imitated on a smaller scale by placing one of those double span frames so common in nursery gardens, and which may be lifted by two men—say 12 feet by 6 feet—over a small bed. I am beginning to be convinced that the one thing needful for growing successfully the more hardy of the American and Japanese and Himalayan Lilies is to protect them against being drenched in winter. *C. Wolley Dod, Edge Hall, Malpas, December* 8.

LIST OF GARDEN ORCHIDS.

(*Continued from p.* 746.)

46. NEPHELAPHYLLUM.—Sepals free. Labellum spurred. Column rather long, footless. Leaf-bearing pseudobulb exceedingly narrow, jointed to the petiole, and looking like a petiole jointed in the middle. Flowers medium size, in dense or loose racemes on leafless scapes. Terrestrial creeping herbs, in habit resembling the Anæctochili. Four or five species inhabiting India, the Malayan Archipelago, and China. Cytheris is reduced to this genus.

1. N. PULCHRUM, Bl., *Bijdr. Fl. Nederl. Ind.*, p. 373, t. 22; Lindl., *Gen. and Sp. Orch.*, p. 24; *Bot. Mag.*, t. 5332; Rchb. f., *Xenia*, i., p. 216, t. 88, fig. 1; Sieb., *Fl. des Jard.*, 1862, t. 2.—Java. Introduced by Messrs. Low, with whom it flowered in 1862. Flowers small; sepals and petals green; labellum white. Leaves beautifully mottled with dark green. Hort. Kew.
2. N. SCAPIGERUM, Hook., *Bot. Mag.*, t. 5390.—Borneo. Imported by Messrs. Low, of Clapton, with whom it flowered in 1863. This species has very pretty flowers, the labellum being white at the base, spotted with purple-brown in the middle and yellow at the tip. Leaves plain.
3. N. TENUIFOLIUM, Bl., *Bijdr. Fl. Nederl. Ind.*, p. 373; Lindl., *Gen. and Sp. Orch.*, p. 24; Bl., *Orch. Arch. Ind.*, t. 61, fig. 2; Vriese, *Ill. d'Orch. Ind. Nderl.*, t. 12, fig. 3.—Java. Cultivated in the Buitenzorg Botanic Garden in 1866.

47. TAINIA.—Lateral sepals attached to the foot of the column. Labellum gibbous or spurred at the base. Column rather long, with a short foot. Pseudobulbs thick, one-leaved. Flowers loosely racemose on a leafless scape; sepals and petals acute or long-tailed. Flowerless stems springing from a rhizome, sheathed at the base, and at length thickening into a pseudobulb, with one terminal long-stalked leaf. Flowers medium size, racemose, on a leafless scape. Mitopetalum and Ania belong here.

1. T. ANGUSTIFOLIA. *Ania angustifolia*, Lindl., *Gen. and Sp. Orch.*, p. 270.—Tavoy. Cultivated at Kew in 1858.
2. T. BARBATA, Lindl., *Gard. Chron.* 1857, p. 68. *Eria barbata*, Rchb. f., *Walp. Ann.*, vi., p. 270.—India, Khasia Hills. Originally collected by W. Griffith, and subsequently introduced by T. Lobb. Cultivated by Messrs. Veitch and Loddiges.
3. T. BICORNIS. *Ania bicornis*, Lindl., *Bot. Reg.* 1842, Misc., n. 31; *Bot. Reg.* 1844, t. 8. *Eria bicornis*, Rchb. f., *Walp. Ann.*, vi., p. 269.—Ceylon. Imported by the Rev. J. Clowes. Flowers green, except the bright yellow lip.
4. T. FIMBRIATA, Teijsm. and Binnend. *ex* Miquel, *Fl. Nederl. Ind.*, iii., p. 674. *Mitopetalum fimbriatum*, Miquel, *loc. cit. Octomeria paucifolia*, Breda, *Orch. Kuhl. et Hass.*, t. 11. *Eria paucifolia*, Rchb. f., *Walp. Ann.*, vi., p. 270.—Java. Cultivated at Buitenzorg in 1866.
5. T. LATIFOLIA. *Ania latifolia*, Lindl., *Gen. and Sp. Orch.*, p. 130; Wight, *Ic. Pl. Ind. Or.*, t. 914. *Eria Ania*, Rchb. f., *Walp. Ann.*, vi., p. 270. *Calanthe viridifusca*, Hook., *Bot. Mag.*, t. 4669; Lemaire, *Jard. Fleur.*, t. 336 (copied from *Bot. Mag.*); Lindl. and Paxt., *Fl. Gard.*, iii., p. 118.—India. Sent by Mr. Simon from Assam to Kew, where it flowered in 1852. Hort. Kew.
6. T. SPECIOSA, Bl., *Bijdr. Fl. Nederl. Ind.*, p. 354. *Mitopetalum speciosum*, Bl., *Orch. Arch. Ind.*, t. 50, fig. 1. *Eria speciosa*, Rchb. f., *Walp. Ann.*, vi., p. 268.—Java. Cultivated at Buitenzorg Botanic Garden in 1866. This differs from all the other species in the sepals and petals terminating in long slender tails.

(*To be continued.*)

The Arboretum.

THE BLACK WALNUT (Juglans nigra).—During the last year or so there have been many enquiries from intending planters and from persons interested in the timber trade respecting this tree. It would, therefore, probably be both interesting and useful were a series of notes strung together giving in a concise form information on the points about which questions have been frequently asked of late. It is perhaps hardly necessary to describe the wood, &c.—the following extract from that extremely useful work, *A Catalogue of the Forest Trees of North America*, by Professor C. S. Sargent, gives in a few words all that it is necessary to say in that direction:—"Wood dark brown, light, soft, easily worked, susceptible of a beautiful polish, very durable; its specific gravity .577; more extensively used in cabinet-making and for gun-stocks than that of any other American tree. A tree 60 to 80 feet in height, with a trunk 4 to 6 feet in diameter; of the first economic value. Rare at the East; most common in the valley of the Mississippi and its tributaries, but now everywhere becoming scarce." The Black Walnut is perfectly hardy in this country, and Loudon states that it attains as great a height with us as in North America. In many places, if judiciously planted and duly cared for, there seems no reason to doubt that it would really prove a paying investment. The seeds could be procured without much difficulty from the United States, and these should be sown immediately on arrival, care, of course, being taken to prevent the ravages of mice, rats, or squirrels. The last published *Report of the Montreal Horticultural Society* contains an interesting and suggestive article, entitled "The Returns of Forest Tree Culture," by the Hon. H. G. Joly; from this article, or, to speak more correctly, that portion of it which relates to the Black Walnut, the following remarks are condensed.

Rate of Growth.—On this point the writer of the article just mentioned quotes from notes furnished

him by one of his correspondents :—"You know that this Long Point country was a great Black Walnut district, and on the Lake shore there are still a few trees left. I have measured to-day some five trees, and got their ages as near as I can, relying on what the owners have told me." For the purpose of comparison, the results of the measurements are given in a tabular form.

No	Soil.	Age.	Diameter.	Approximate annual Growths.
		Years	In.	
1	Very rich black sand loam	24	22	Eleven-twelfths, or very nearly 1 inch.
2	Very light sand	30	21	About two-thirds of an inch.
3	Good clay ground (transplanted)	11	8	Over two-thirds of an inch.
4	Good clay ground (transplanted)	11	8	Over two-thirds of an inch.
5	Very light sand	55	31	A little over half an inch.

It will be seen from this that the soil has everything to do with the growth of the tree ; the richer the soil the more rapid the growth. The writer of the above details adds that he hopes by planting in rich virgin clay soil to have a return in about twenty-five years. The Hon. H. J. Joly also gives the measurements of five of his young Walnuts (seven years old) at 1 foot from the ground ; one had a circumference of 14 inches, two had 12 inches circumference, and two 9 inches. He adds, that as the trees advance in age, their annual growth appears to become greater. There is no saying how far we shall be able to stimulate the rapid growth of the Black Walnut with proper attention and care.

Return of one superficial acre planted in Black Walnut.—The Hon. J. B. Hough, head of the Forestry Department of the United States, in his celebrated report on Forestry of 1877 (p. 37), allows 680 trees, fifty-one years old, to 1 superficial acre, 8 feet distant from one another on every side. At that rate 1 superficial acre of good soil, planted to-day in Black Walnut, and carefully looked after, would yield, in about thirty or forty years, according to circumstances, the sum of 20,400 dols., allowing 30 cubic feet (at 1 dol. a foot) for each tree, averaging 20 inches diameter. Of course, no one could rely upon such a result, which could only be achieved if none of the trees failed ; but even after striking off 50 per cent., the return would still be such as no other legitimate investment could secure.

How to Cultivate the Black Walnut.—"Whenever practicable avoid transplanting by sowing at once the nut, where the tree is to remain, in rows, 4 feet apart on every side. Instead of spreading lateral branches (very fragile in the young wood, and liable to be torn off by snow, ice, wind, &c.) at that distance, they will grow up in length, with no under branches, and can be thinned in course of time. The nut must be sunk about a couple of inches in the ground. The rows ought to be quite straight, set out by the line, and marked from place to place by pickets, so as to know exactly where the young plants are the first year, and avoid hurting them when hoeing or weeding." If this cannot be done, sow the seed in nursery rows, and carefully transplant afterwards. The nuts are better sown in autumn, no matter how late ; unless they are kept in a perfectly cool place they lose their germinating power. Mr. Joly wintered a couple of thousand nuts in a cool garret, and sowed them the following spring, but not one grew, whilst several of the same nuts, lying where they fell the preceding autumn, came up vigorously. *Geo. Nicholson, Royal Gardens, Kew.*

CRYPTOMERIA ELEGANS.—On the morning of the 2d inst. we had a sharp "white frost" here, clothing our evergreens especially in hoary mantles, which poets call "silvery rime." Of the many beautiful forms presented to the eye that morning, none in my opinion equalled the loveliness of Cryptomeria elegans. Its light, drooping habit was greatly increased in beauty, as its branches bent rather more than usual under the weight of the moisture which had condensed upon them, and which the frost had crystallised into silver, and as these contrasted with the dark bronzy hue of the lower branches in the bright rays of the sun the effect was charming. In the glancing light the plants looked like "silvery fountains" falling into dark depths below. *J. S. G., York.*

PROLIFEROUS FERNS.

AT the meeting of the Linnean Society, held on Thursday, Nov. 2, as also at a previous meeting of the Edinburgh Botanic Society, of which a report was sent to us with an illustration, Mr. Charles T. Druery exhibited two proliferous forms of Athyrium filix-fœmina, raised from spores provided by Mr. P. Neill Fraser, of Edinburgh, and presenting the following abnormal characteristics:—No. 1. (fig. 140). The first

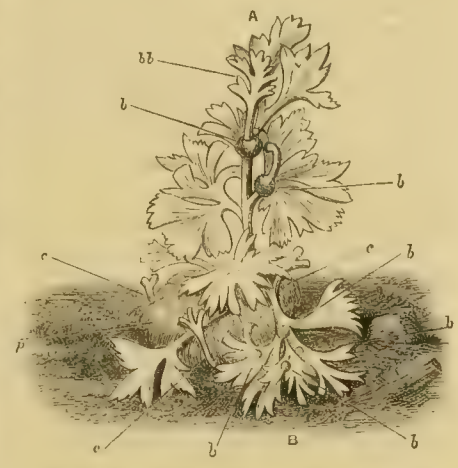


FIG. 140.—PROLIFEROUS FERN SPORELING : × 2½ TIMES.

A, First frond ; B, Second frond ; *b*, Bulbils ; *p*, Prothallus ; *b*, *b*, Frond of second generation ; *c*, independent Ferns developed from same prothallus. The two bulbils on A have sent out aërial roots, reaching and entering soil raised half an inch distant.

rond evolved from the prothallus (corresponding to the seed-leaf), besides being bi-pinnate and very foliose, instead of having the usual uni-palmate form peculiar to seedlings of this family, bore two buds, one in the axil of a pinnule, the other in the axil of a pinnulet ; these buds, without any dormant period, developed at once small palmate fronds and aërial roots, the growth being so vigorous that the roots were projected

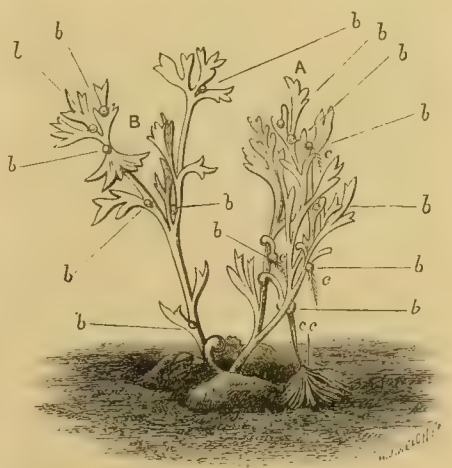


FIG. 141.—PROLIFEROUS FERN SPORELING : × 2½ TIMES.

A, First frond ; B, Second frond ; *b*, Bulbils ; *c*, Aerial roots ; *c*, *c*, Root entering soil.

into a mound of soil raised at a distance of half an inch. The second frond produced bears four buds, which are, however, dormant, the growing season being over. In addition to these axillary buds there is a whitish mass of apparent bud formation in the crown of the caudex at the base of the fronds. The same prothallus has also developed three small independent Ferns from its edge ; these, however, are seemingly normal, which fact, coupled with the abnormal vigour of the main plant, points to a hybrid origin. No. 2 (fig. 141) is an altogether different form, being very depauperate and ramose ; the two fronds of this have developed no less than thirteen buds, of which the majority have evolved aërial roots, one reaching and penetrating the soil. The buds on the first frond have thrown up small circinate fronds, which have so far not unfolded. The genus Athyrium, rich as it is in variations, has so far been remarkable for its unproliferous nature, the exhibitor failing to find any record of a bulbil-bearing form ; it is therefore singular that two forms so distinct in character, yet so alike in their profuse proliferousness, should have originated simultaneously and within a few inches of each other. Finally, not the least singular feature is the extreme precocity of both forms, since bulbil-bearing Ferns, almost without exception, are proliferous only on their ripe fronds, and when much further advanced in development. The formation of axillary buds of this nature is a new link between the Ferns and the higher forms of vegetation, as, if persistent, a shrub-like growth would result.

The Rosery.

THE SUTTON AMATEUR ROSE SOCIETY, following the example of the parent Society, has issued some good practical hints on how to grow Roses, to which we call attention with a view of showing how such societies might greatly increase their usefulness by compiling and distributing for the use of their members similar little handbooks on fruit and vegetable culture. In country places especially there is a want of adequate knowledge of the best methods of cultivation, and more especially of the varieties best adapted for particular districts. It is lamentable to see common and inferior sorts grown when better and more productive kinds are to be had at little or no extra cost. Local societies and metropolitan ones also for the matter of that, should not make exhibitions their only aim but should, by all available means, study to diffuse correct information and secure the cultivation of the best, that is the most suitable, varieties in their respective districts. A useful form of prize at exhibitions would consist in seeds, grafts, or tubers as the case may be, of the best varieties. Some societies, we believe, have already done this, but much more might be done. Such societies might also enlist the services of some competent cultivator to explain and, as far as possible, demonstrate the best methods of cultivation, pruning, &c., and so greatly extend their sphere of usefulness. We have specially in view the case of the cottager or labourer with a small piece of allotment ground, but it is obvious that the plan might be adopted with general benefit.

Notices of Books.

Nyman's Conspectus Floræ Europæ.—The fourth and concluding part of this very useful publication, containing the Monocotyledons, has just been issued. The work contains a classified list of all the species of plants known to grow wild in Europe, together with synonyms, references to collections, and countries. The total number of species enumerated in the entire work (excluding sub-species) is 9395. Of these 7770 are Dicotyledons—over 82 per cent.—and 1625 Monocots, or over 17 per cent. Of the 139 orders, Compositæ head the list with 1336 species, or 14 per cent. of the whole ; Leguminosæ follow, with 839 species, nearly 9 per cent. ; Grasses come next, with 570 species, about 6 per cent. ; Cruciferæ, 543, or about 5 per cent. ; Umbelliferæ, 500, or about 5 per cent.; Caryophylleæ (Silenaceæ, 321, and Alsinaceæ, 194) = 515, or about 5 per cent.; and Labiatæ, 420, or about 4 per cent. The work has been carefully and thoroughly accomplished by Dr. Nyman, of Stockholm, and will be useful not only to professed botanists for the arrangement of their herbaria, and as serving as a treasury of statistics and of materials for the investigation of botanical geography, but also to growers of hardy plants desirous of possessing accurate information as to the names, synonyms, and localities of European plants. The book may be had from Messrs. Williams & Norgate.

PUBLICATIONS RECEIVED. — *The Farmers' and Country Gentleman's Almanac* (*Farmer* Office, Salisbury Square, E.C.).—*Time's Footsteps* for 1883, a charming little almanac and remembrancer for the pocket-book, issued by Chas. Goodall & Son, Camden Works, N.W. — Saxby's *Weather Tables and Almanac of the Heavens* for 1883 (Chas. Letts & Co., 13, Royal Exchange, E.C.).—*The Garden Annual* for 1883 (37, Southampton Street, W.C.).

Orchid Notes and Gleanings.

WORK IN THE HOUSES.—With severe weather one of the difficulties of cool Orchid growing will have to be faced; as it will be impossible to maintain a suitable temperature without continuous firing, and as the latter when carried to excess is very injurious to these plants, great care will be necessary to avoid over-heating the pipes to such a degree as to cause too great aridity of atmosphere. When the temperatures can be maintained without making the pipes more than milk-warm little harm will result, but when this degree of heat has to be exceeded, it will be safer to allow the house to fall a few degrees lower than the temperature kept up during mild weather. Thus a temperature of 45° during severe weather, maintained with slight fires, will be better for the health of the plants than a temperature of 50° to 55°, which would require sharp firing to keep the house up to the latter figures. The Odontoglossums will now be showing their flower-spikes pretty freely, and it will be necessary to be on the alert for slugs and other depredators, which, if left to themselves, will soon destroy each spike as it appears. All plants which are expected soon to throw up should have a little cotton-wool placed round the top of the bulb, as this will effectually prevent any slug from getting at the spike as it emerges from the base of the bulbs. Some of the Odontoglossums, such as O. nebulosum, throw up their spikes when the plants commence growing, and as this is generally an early bloomer, it may be in proper condition just now for a shift, which should be done before the plant gets far advanced in growth. Another plant in the cool-house, which will be about the same as the above in condition of growth and flower-spike, is Oncidium cucullatum. This may be re-potted as soon as the plants are on the move. There are generally a few plants scattered through the different houses that require attention to repotting or basketing, even at this dull season of the year. The following will probably now or soon require putting in order. Masdevallia tovarensis, as soon as the flowers are gathered, may be moved into a size larger pot, as this, if kept in a slightly warmer temperature than the cool house, quickly commences to grow after flowering. Pilumna fragrans generally commences to grow while flowering, and will now require attention to put it right for another season's growth. Several of the Oncidiums will most likely be in a fit state for rebasketing. O. hæmatochilum should be put in very open material and a basket will suit it better than a pot. O. Cavendishii will also be right for repotting; this is a good winter Orchid. O. bicallosum and the latest flowered plants of O. Forbesii, may be repotted if they require such attention. The Pleiones now starting into growth should be placed on a warm shelf near the glass, watering them carefully till they get more advanced. A few of the earliest Cœlogyne cristata that are showing for flower may be encouraged with a little more heat to bring them forward before the bulk of the plants get into flower. Keep them moist at the root, but be careful not to get any water into the young growths and spikes now showing, as it often causes them to rot. The growths on Odontoglossum vexillarium will now be getting forward, and if any show signs of damping a drier position should be chosen for them. Should thrip show itself on this plant it will be safer to remove it with a soft brush by working it carefully between the leaves, than by dipping, at this season of the year. In the warm houses, while the present weather lasts, it will be necessary to damp down a little oftener than during mild weather; as with all the outer surfaces of the houses cold, the moisture soon condenses, and this, combined with extra heat in the pipes, soon begets an unfavourable atmosphere. The Phalænopsis, and indeed all plants in the East Indian house, should be closely watched to see that no drip settles in the hearts of them at the present time. *J. Roberts, Gunnersbury Park Gardens.*

LÆLIA MONOPHYLLA. *N. E. Br.*—This is the little-known and interesting Orchid which Grisebach in his *Flora of the West Indies*, p. 629, described as Trigonidium monophyllum, and which until recently was, I think, only known from a specimen in the Kew Herbarium; last year, however, Mr. Morris rediscovered the plant in Jamaica, and sent good dried specimens and living plants to Kew. On examining the dried specimens the pollinia were not very satisfactorily made out, but it was thought that there were six free masses, and the plant was at the time supposed to be a species of Octodesmia. In September and October of the present year the living plants flowered at Kew, and the pollen masses were found to be eight, and sessile, on a flat adhesive disc; which characters, taken together with the general structure of the flower, proves the plant to be a member of the genus Lælia, and a very remarkable species it is, with a single leaf, and a slender 1-flowered, or very rarely 2-flowered peduncle, with from 3—5 distant, closely applied, tubular, brown-speckled sheaths. The flower is about as large as a two-shilling piece, and of an uniform light orange-scarlet, except the anther, which is dark purple; the labellum is very remarkable for its very small size, the free part being scarcely more than ⅛ inch long, and slightly 3-lobed. I do not here give a full description, as the plant has been figured for the *Botanical Magazine*. The above remarks have been called forth upon receiving from the Editor a specimen of this singular species for determination, sent by a correspondent who probably procured it from the same source whence the Kew specimens came. *N. E. Brown.*

MR. PHILBRICK'S COLLECTION AT OLDFIELD, BICKLEY.—It is pleasant to see that in spite of the trouble and inconvenience consequent on the removal to his new place, Mr. Philbrick has no intention of letting his collection go down. Notwithstanding that many of the plants of the Avenue Road collection were sold and only the pets retained, the collection at the new place is fast approaching the importance of that of the old establishment, while the fine quality of the Kentish air has imparted that healthy, hardy look to the plants which is difficult to attain in London. The Cattleyas especially have been greatly benefited by the change, and seem to be quite at home in their spacious span-roofed house. They are grown tolerably cool; at present the house is kept at 50° at night, and 60° to 65° by day—a scale which it is intended to maintain throughout the winter. In such a temperature the plants keep plump without much water being given them, and thus preserves their roots sound. The good root condition of all the Cattleyas and Lælias is a marked feature at Oldfield; some of the large plants on blocks literally bristle with tender root points. Mr. Heims naïvely remarked that they were "Great, awkward things, you could not put down without breaking the roots." When they send up their flowers from the numerous sheaths they now bear their awkwardness will be forgiven, I am sure. In bloom in the Cattleya-house are a grand pair of Cypripedium insigne punctatum violaceum, many fine varieties of C. insigne, large masses of Lælia anceps, L. autumnalis atro-rubens, L. acuminata, many varieties of L. pumila, several C. labiata, autumn-flowering; Masdevallia tovarensis, with about fifty spikes, some of them bearing four flowers; M. triangularis, with twenty blooms; Cœlogyne ocellata maxima, and many fine plants of the snow-white Pilumna fragrans and P. nobilis. Thriving in the same house and under the same cool treatment are a great number of all the best varieties of Miltonia, the plants having their naturally pale but healthy tint, very different from the sickly yellow hue they have when grown in a warm house. The large lean-to Odontoglossum-house contains a very fine lot of plants, grown on strictly cold principles. The house frequently gets nearly down to 40°, but Mr. Philbrick agrees with me that 45° ought to be the lowest recommended for these and the Masdevallias, although his own plants show that they have only been benefited by a little extra cold. The famed plant of O. crispum var. Reginæ particularly demonstrates this by its plump appearance and by the advent of two immense spikes from one bulb. The plants of O. Ruckerianum, O. prænitens, O. hebraicum, O. Andersonianum are also in grand order. Suspended near the glass are a few things in rude health not usually seen in such fine condition in so cold a temperature. The first is Dendrobium Jamesianum (several plants), the thick healthy pseudobulbs sending out numerous flower-spikes and exhibiting quite a different character to what it usually does. There is no doubt that the colder this plant is grown the safer it is with those who can grow it cold; for my part I always found it do best in a sunny part of the intermediate-house. Next come Oncidium Marshallianum and O. crispum, with very large plump bulbs. I fear that heat has already killed the greater part of the importations of both these plants. Odontoglossum Cervantesii and Mesospinidium vulcanicum, with numerous spikes, are also here very good. Among the fine collection of Masdevallias in bloom was one especially attractive—M. splendida. It seems like a bright orange M. Veitchii without the mauve tinge. In another large span-roofed warm intermediate house the Bolleas, Pescatoreas and Batemannias are in very good order, and a very complete collection of Cypripedium, Aërides, and Dendrobes are to be found. The large plants of D. Falconeri are particularly fine here; they are grown in an intermediate house and kept syringed frequently and are now being kept dry in a temperature of 45° to 50°. Any treatment will do for a fresh imported plant for a year or so, but under this treatment D. Falconeri is to be kept for any number of years and bloomed well. The Phalænopsis-house does not contain anything like such a splendid lot as the Avenue Road collection contained although the plants are large and sound; when the pecularities of the house have been mastered something like the former excellence will result no doubt. A few more houses for specialities, the ends of each of which are bright with flowers, complete the Orchid accommodation of a very pretty place. *James O'Brien.*

PILUMNA NOBILIS.—A winter-flowering Orchid, exceedingly attractive and very useful for cutting. The flowers are borne upon spikes, and have the appearance of being crystallised. They are pure white, with a blotch of orange-yellow in the centre of the lip, and are beautifully scented.

DENDROBIUM HETEROCARPUM.—This is a species of one of the most useful genera of Orchids, and is worth growing for the fragrance of its flowers if for nothing else. They are canary-yellow in colour, and are Violet scented—a fact which we are sure is sufficient to commend them to the notice of ladies.

MR. LEE'S COLLECTION AT DOWNSIDE, LEATHERHEAD.—The following Orchids are now in flower in this beautiful and choice collection, under the practical care of Mr. Woolford:—Angræcum eburneum, A. sesquipedale; Cattleya maxima, C. dolosa, twelve nice plants; C. Holfordi, C. Aclandiæ, C. guttata Leopoldi, and C. pumila, in several nice varieties; Cypripedium Harrisianum, C. insigne, C. insigne Maulei, C. Heynaldianum, C. Schlimii, C. Schlimii album, both grand; C. Spicerianum, very fine varieties; C. niveum, C. Boxalli, C. Lawrencianum, C. pardinum, C. calophyllum, C. Crossianum, C. barbatum, all fine varieties and flowering freely; C. Sedeni, C. Dominianum, and C. Parishii; Comparettia rosea; Calanthe Veitchii, C. vestita oculata rosea, C. vestita lutea; Cymbidium Mastersii; Cœlogyne barbata (this was recently condemned by some one, but as seen here it is shown to be worth a place in the most select collections); Dendrobium chrysanthum, D. Goldiei, D. superbiens, a fine addition to this noble family; D. formosum, and the true old form of D. fimbriatum, D. Hughii, a pure white; Epidendrum vitellinum majus, E. dichroum, E. evectum; Lælia Dominiana, L. purpurata, L. elegans, L. anceps, L. præstans, L. autumnalis, L. furfuracea; Lycaste Skinneri alba, a lovely form, the purest white we have seen; Masdevallia amabilis, M. Veitchii (many), M. Davisii, M. bella, M. Lindeni, M. Shuttleworthi, M. ignea, and many fine flowered plants of the lovely pure white M. tovarensis; and Maxillaria picta. Odontoglossums are done remarkably well. There are many hundreds of plants. Some lovely forms of O. Alexandræ, O. Pescatorei, O. Rossii majus, O. roseum superbum, O. hebraicum, O. blandum, O. madrense, O. Uro-Skinneri, O. Oerstedii, O. hastilabium; Oncidium Forbesii, O. unguiculatum, O. macranthum, O. ornithorhynchum, and a dozen nice flowered plants of the sweet-scented O. cheirophorum; Pilumna fragrans, Pleione maculata, some fine well flowered varieties of Phalænopsis amabilis, P. grandiflora, P. Schilleriana, a very fine deep coloured one; P. leucorrhoda, and over a dozen well flowered plants of the lovely P. Stuartiana, some of the varieties being beautifully spotted and free flowering; Sophronites grandiflora, well flowered and good varieties; Vanda lamellata Boxalli, very fine also; and the lovely Zygopetalum Clayii, the new hybrid sent out by Mr. B. S. Williams. In addition to these there are some nice specimen Nepenthes well pitchered, and a grand collection of Filmy Ferns in splendid condition, and evidently receiving the treatment they require from Mr. Woolford, the gardener-in-chief. *A.*

The Hardy Fruit Garden.

OCCASIONAL sharp frosts are affording an opportunity of getting manure wheeled upon fruit quarters and borders, Seize every suitable opportunity when wheeling can be done without fear of injuring the surface-feeding roots, and use as far as possible only well decayed manure, which is more suitable for the support of the tree than manure fresh from the stables. The product of the waste vegetable heap, where properly attended to in turning, &c., and that has been allowed to lie twelve months after being accumulated, is as suitable as anything that can be applied, and is easily worked in where the roots are shallow. The rougher refuse of the garden, when carefully charred to destroy the seeds of weeds, and the shoots of trees, &c., on which fungi are likely to be produced, is one of the most valuable of helps on fruit borders that have become heavily taxed with fruit production. Soot is also a valuable stimulant too seldom used, and on portions long devoted to the cultivation of stone fruits an occasional dressing of lime ought not to be neglected. Where Raspberries have not yet been securely fastened to their supports of wire or stakes, as the case may be, they ought to be attended to at once. All suckers and weeds should be removed with the hoe, and any supernumerary or weak shoots that have escaped attention when the general thinning-out was done can be cut away. If the ground is clear of weeds the dressing applied can be left on the surface after being spread rather than run any risk of disturbing and injuring the roots.

The pruning and nailing of Plum trees on walls must be pushed on during all suitable weather. Remove a portion of the oldest spurs that produce too great a quantity of weak growths, and that crowd those of a more fruitful description. Shoots that were duly pinched to proper dimensions during the growing season should be left without further pruning; as every cut made upon Plum spurs is liable to remove the only wood-bud, and to cause the loss of the spur after fruiting the following season; especially is this likely to happen when the trees are exceedingly promising in the quantity of bloom they carry, and in such cases the terminal bud is often the only one likely to produce growth. Thin out, therefore, portions of the oldest and most crowded of the spurs, and suffer the younger ones to extend an inch or two beyond the "rule and thumb" line rather than run any risk of lessening the vigour and productiveness of the tree, and incurring loss of much needed spurs by exaggerated views on the necessity for the use of the knife. See to the removal of all light ties on the stronger branches where they are liable to be overlooked, and give a few fresh ties to all branches—however secure they may appear—to prevent the trouble and annoyance of their failing to effectually support during the summer the weight of fruit they may possibly produce in a fruitful season. Keep a sharp look-out for scale, if any is known to be present, and where necessary dress carefully with paraffin oil any affected portion after scraping thoroughly with some blunt instrument; and where it has become so bad as to have spread to the spurs and smaller branches a weak infusion of the above in water may be applied through the syringe, but avoid using undiluted oils of any description on young and soft growths, or where it can in any way reach the buds. A fair amount of spur development may also usefully be allowed to Apricots, and the remarks made generally as to Plums are equally applicable to the management of the former. Well ripened growths that were left at the summer pruning for the purpose of furnishing and extension may be fastened in at full length if undue crowding will not result from their retention. It will be well to provide for possible loss of limbs in Apricot trees by having young ones planted where space is available on walls, to take the place of any suddenly brought to an unsightly condition through the collapse of large portions of the head. *Ralph Crossling, Penarth Nurseries.*

The Pine Stove.

NOW that severe winter weather has set in, firing forms the chief feature in the management of this department. Reduce the temperatures all round, and keep fruiting-houses at about 66° at 10 P.M., which should be allowed to fall to 58° by 6 A.M. during very severe weather. Keep all plants in succession stages about 60° to 62° at 10 P.M., which may fall as low as 56° by 6 A.M.; rooted suckers may be kept 2° or 3° lower—say about 58° at 10 P.M., which may be allowed to fall as low as 53° by 6 A.M. Only maintain these low temperatures during sharp, severe weather, and when a change for the better takes place raise the temperatures all round 3° or 4°. Avoid steaming the pipes when they are very hot, but keep up a good supply of moisture in the atmosphere to counteract the excessively dry atmosphere brought about by hard firing. Where bottom-heat is supplied by hot-water pipes examine the plants thoroughly, to see that they do not become too dry, as it sometimes happens that plants are moist on the surface of the balls, and yet at the same time are parchingly dry at the base. Do not neglect covering during the present state of the weather, as it materially reduces the use of fire-heat. *D. Wilson, Castle Hill.*

The Flower Garden.

CLEARING-UP LAWNS AND SHRUBBERIES.—There being now no further danger of litter from falling leaves, it becomes necessary to take advantage of the first spell of mild and open weather to institute a thorough clearing-up in every department. All the best sorts of leaves, such as Oak and Beech, and the clearest from other rubbish, may with great advantage be stored to mix with the stable-manure for forcing and other purposes. The remainder should be stored as before recommended, to keep up the supply of leaf-mould; but all the coarse rubbish, such as the rakings of beds and borders, and the sweepings of the lawns, mixed as they always are with worm-casts and other *débris*, may be taken at once to the regular rubbish-heap, and, without waiting for decay, when all is collected if it can all be subjected to the action of fire and smouldering smoke, its value as a fertiliser will be greatly increased, besides the good resulting from the complete destruction of the seeds of weeds, the eggs of snails, and other inimical matters.

RHODODENDRON BEDS AND BORDERS. — Where it is usual to prick up the surface of the Rhododendron borders the work cannot be commenced too soon in suitable weather, as the leaves, which always accumulate plentifully at this season, form the best of all dressings, and the sooner they are covered with soil the better, to prevent them from being blown about by high winds; but if the practice of digging them in is objected to, they should all be raked off the borders and stored to form leaf-mould, and a thorough good and thick dressing of decayed vegetable mould should be spread over the whole surface of the borders. Now as all this involves a considerable amount of extra labour in wheeling out, &c., we prefer the turning over of the soil at once, both for neatness and utility, and having followed the practice for very many years we see no reason to alter it.

HARDY FERNERY. — This should now be cleared of dead fronds and other unsightly matter, taking care, however, to leave all evergreen Ferns of the lobatum and aculeatum type until the spring; and if when the fernery is planted care is taken to distribute the evergreen sorts judiciously through the mass, there is no reason why the hardy fernery should not furnish a very agreeable feature through open weather in winter, especially as there are now so many different varieties of Scolopendrium to intermix with the remaining sorts which retain their fronds through the dull season, none of which require the removal of the old fronds until the young ones are considerably advanced; a dressing of cocoa-fibre will contribute to make all neat. A few Crocus, Winter Aconite, and Snowdrops, distributed in bunches in situations where they may be left, will tend very much to enliven the fernery in early spring; the foliage all dies off early, and will not interfere with its character as a feature in the garden where flowers would be out of place in the season.

ROCKERY.—It will be advisable to give the rockery a little attention before the advent of very severe weather by reducing the size of all coarse-growing sorts likely to smother up and injure the choicer and more delicate sorts; and after clearing off all extraneous matter to cover the whole of the surface of the borders and pockets with a good coating of cocoa-fibre, which will contribute materially to the warmth of the surroundings, and assist the protection of the more tender sorts from frost.

SOWING SEEDS. — Seeds of the different varieties of Echeverias and Sempervivums, if sown at once in heat and pushed on, will make very good plants for carpet-bedding purposes for the coming season. Leaves of Pachyphytum bracteosum, laid out on a shelf in heat, will throw out roots and the germ of a future plant, small at first, but which will be very useful in after years. *John Cox, Redleaf.*

Grapes and Vineries.

THE earliest Vines will now be breaking fast, and can be kept at a night temperature of 55° to 60°, with a rise of 10° by day, steadily increasing it as growth proceeds until it reaches 10° higher both night and day. In very severe weather it is better to let the temperature fall a few degrees lower in the night than to use fire-heat excessively. Raise the temperature to 70° in the early part of the day if the weather is mild, but if severe a few degrees lower. Admit air on the back ventilators when the temperature reaches 70°, but it must be admitted with caution, so that the Vines do not feel any cold draughts, and close the house early in the afternoon with plenty of atmospheric moisture. Examine the inside borders, and when dry water them thoroughly with clear tepid water at a temperature of 85°. The Vines will now be better tied up to the wires, or some of the young growths will get broken if left any longer; any young strong rods that are not breaking freely can still be left over the fermenting material until they do so regularly. Add fresh materials to both inside and outside borders, mixing the old and new well together to keep the heat steady, and damp the paths and borders with tepid water several times daily, according to the state of the weather. Keep the evaporating pans filled with weak manure water. The present is a good time to start Vines, where the Grapes are required in the beginning of June, treating them at closing time as advised in previous Calendars. Late fruit of Hamburghs, either hanging on the Vines or in the fruit-room, must be kept in a dry temperature of 45°, but the season for having them in good condition is now fast drawing to a close. Continue to prune the Vines in succession-houses when the fruit is all cut and thoroughly wash all the glass and woodwork. Clean the Vines and tie them down in a horizontal position, and keep the house cool until it is started. Do not peel off too much of the bark, only the loose pieces that will come off with the thumb and finger, and if insects have been troublesome paint them with a mixture of Gishurst Compound (6 oz. to the gallon of water), sulphur, clay, and soot, well mixed together; but if the Vines are clean no painting will be required. Muscats can now be kept at a night temperature of 45° to 50°, using only sufficient fire-heat to keep the atmosphere dry and the berries plump. Admit air on the back ventilators on all favourable occasions, but on sunless or frosty days the house will be better if kept close and less fire-heat used. No more water will after this time be required at the roots. The Grapes in late houses of Lady Downe's, Alicante, &c., can either hang on the Vines a short time longer, or be cut and put in the fruit-room. It is of great benefit to the Vines to cut the fruit at the earliest opportunity, and it will keep as well in a good Grape-room as on the Vines. Before putting them in the Grape-room, cleanse it thoroughly and keep the temperature as near 45° as possible, and the atmosphere dry. Put a few pieces of charcoal in each bottle and then fill them with soft water; after filling let them stand in the Grape-room a few days before using, so that the water will be of the same temperature as the room when the fruit is cut and brought in. If the fruit is still left on the Vines keep them as advised in my last Calendar. The earliest pot Vines can now be kept at a night temperature of 60° to 65° with a rise of 10° by day and a steady bottom-heat of 75° to 80°; tie the Vines up to the wires and give them liberal supplies of clear tepid water at the roots, admit a little air on the back ventilators when the temperature reaches 70°, and close the house early in the afternoon with plenty of moisture: damp the house down several times daily, and syringe the Vines overhead until the bunches can be seen, when it must be discontinued. Any pot Vines that are started now can be treated at starting as advised in previous Calendars. *Joshua Atkins, Lockinge Gardens, Wantage.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, Dec. 18 { Sale of Lilium auratum Bulbs, &c., at Stevens' Rooms.

WEDNESDAY, Dec. 20 { Meteorological Society at 7 P.M. Papers: Popular Weather Prognostics; by the Hon. R. Abercromby, F.M.S., and W. Marriot, F.M.S. Report on the Phenological Observations for 1882; by the Rev. T. A. Preston, M.A., F.M.S. Sale of Hardy Plants and Bulbs, at Stevens' Rooms.

THURSDAY, Dec. 21 { Linnean Society, at 8 P.M. Papers: 1. Floral Development and mode of Fertilization of Asclepias cornuta; T. H. Corry. 2 Observations on the Marine Fauna of the East Coast of Scotland; Dr. F. Day. 3. Flora of Madagascar, II.; J. G. Baker. 4. Ligula Mansoni, a new Human Cestode; Prof. Cobbold. Sale of Imported Orchids, at Stevens' Rooms.

THE list of PLANTS CERTIFICATED by the committees of the Royal Horticultural Society for the present year, which we publish in another column, is useful in itself and serviceable as a contribution to the discussion now going on in our columns, as to the necessity for some change in the course of procedure. The discussion seems the more timely, as just now there is an *interregnum*—the old committees have ceased their labours for the year, and the new ones have not been appointed, and will not be in working order for nearly a month. It is felt also that the Society will have in all probability to pass through a severe trial next year, and that every effort should be made to maintain and extend its usefulness and its reputation. As to its usefulness, there is no question among those who are best qualified to judge, but its reputation among the general public, and even among provincial horticulturists, not personally familiar with the work of the Society, and the difficulties under which it is done, sorely needs to be enhanced by every legitimate means. It is true that financial difficulties bar the progress of the Society, and prevent much being done, the desirability of which all admit; all the more reason, therefore, that what is done should be done well.

Reverting to the question of certificates—the matter on which the present discussion turns—we find from the list before us that about 240 subjects have been certificated in some way or another by the Floral Committee, a large majority having received First-class Certificates. During the same period of one year, fourteen First-class Certificates have been awarded by the Fruit Committee, five for fruits and nine for vegetables.

Now, admitting that the number and variety of subjects brought before the Floral Committee is very much greater than what are submitted to their brethren of the Fruit Committee, surely the disproportion, even after all allowances are made, is enormously great. If so, it shows one of two things—either the one committee is too lavish, or the other is too chary. Which is it? The members of the two committees are drawn from the same source, contain the same elements, and each body, we are persuaded, is actuated by the same honourable motives, the same desire to do what is right. Each committee in fact consists of commercial, practical, and amateur horticulturists, numerically fairly distributed.

A First-class Certificate has a distinct and recognised commercial value, and its possession, no doubt, stimulates trade, and hence a tendency on the part of the commercial element to multiply these documents. This is legitimate enough, but, even from this point of view, there is a fear lest by over-production the market may be spoiled.

The practical element on the committee consists of gardeners who have the requirements and interests of their employers to consider, and they naturally think that what their employers want the public must want, too, and to a large extent this is so. The third, or amateur element of the committees is not directly interested in plants for their actual or potential commercial value, but is influenced simply by love of plants. If the amateur possessed—as he sometimes does—the requisite knowledge of plants, his verdict would be the one to which most importance should be paid, because he is perfectly disinterested, and judges plants, not from any commercial or fashionable standpoint—points which are fleeting and unstable—but from the point of view of real intrinsic merit, a merit which will be the same a hundred years hence as it is now. Unfortunately such amateurs are scarce: there are plenty who are good in one class of plants but few who have any extensive general knowledge of plants. Again, while it is a matter of business with the commercial and practical members to attend—and their regular attendance can thus be counted on—the amateur who takes up the subject for recreative purposes only, cannot attend regularly, and when he does come he feels too diffident to express an opinion, especially if it run counter to that of the practical and commercial elements.

It will be seen that we attribute the, as we think, undue multiplication of certificates in some measure to the want of voting power on the part of the amateur element. Let us see how far the figures and lists before us bear this out. About 240 certificates were granted by the Floral Committee during the year: the number is a matter of minor importance as compared with the manner in which they were awarded. On this latter point a few remarks may be made. Six were allotted to Amaryllis, six to Begonias, four to Carnations, six to Chrysanthemums, four to Crotons, five to Cyclamens, twenty to Dahlias, twenty-two to Pelargoniums, six to Pernettyas, thirteen to Rhododendrons, and six to Roses.

Can any one, however interested he may be in Dahlias or Pelargoniums, pretend that it is a fair distribution of honours to allot to them collectively one-sixth of the whole number of awards? The specialist here has surely been allowed to ride his hobby too hard, and the amateurs and non-voters generally have, by their abstention, destroyed, as it seems to us, the proper balance that should exist. The disparity becomes more obvious when it is remembered that for the newest and most remarkable plant that may be exhibited the award is the same as for one of a myriad host of Roses and Primulas differing from the rest by fractional degrees only. But worse than this, as regards the outside reputation of the Society, is the case where a plant of great interest and value gets wholly unappreciated, and the ludicrous result accrues that a plant the like of which may be bought in quantities in Covent Garden in a forty-eight pot for a shilling a-piece, obtains a mark of the Society's appreciation—a plant which will be dispossessed next year and forgotten entirely in a decade, while the Welwitschia or the Rafflesia itself, if it were exhibited, would not, in all probability, obtain a certificate.

We trust we shall not be misunderstood. It is the duty of the committees to exert their beneficial influence over the production and quality of plants for the million, and indirectly to regulate, so far as they can do so, the commercial aspects of horticulture; but these are not their only duties or even their highest. They should endeavour to lead and improve the public taste and the public knowledge. Commercial horticulture wants no Society to promote its welfare, nor is any committee essential to it. But the diffusion of taste, knowledge, and powers of discrimination stand on a different footing, and here the committees should do their most exalted work.

The Floral Committee is generally admitted to be too large. One of our correspondents urges, as we have repeatedly done, that it should be divided into a Floral and a Plant Committee. The exhibitor should be requested to specify in which department he proposes to exhibit, or it should be left to the Superintendent to distribute the objects sent according to their nature.

The publication of the names of those voting for or against particular plants would also be serviceable in sharpening the discretion of the voters, and would increase the confidence of the public.

—— DUNDEE HORTICULTURAL SOCIETY: RESOLUTION TO HOLD AN INTERNATIONAL SHOW.—We learn from the *Dundee Advertiser* that on Monday night a meeting of the members of this Society was held in reference to the proposal to hold an International Show in Dundee in 1884. Provost MONCUR who presided, explained that the last general meeting remitted the question to a committee for full consideration, and that committee in turn asked a sub-committee to consider how funds should be raised to meet any loss on the International Show should it be held. It had been reported to the committee that a number of gentlemen had guaranteed a fund to the amount of £125, and the committee had agreed almost unanimously to recommend the Society to hold an International Show in 1884. It was eight years since the last International Show was held in Dundee, and the great success which attended it should encourage the members of the Horticultural Society to arrange for another two years hence. The last exhibition gathered together an immense number of excellent plants and a large quantity of fruit, and it was also a great success financially. Councillor MACDONALD moved, and Mr. M'MILLAN seconded, that the Society resolve to hold an International Show in 1884, and the motion was unanimously adopted. It was agreed that not less than £1000 should be given in prize money.

—— THE ANNUAL MEETING OF THE NATIONAL ROSE SOCIETY was held at the rooms of the Horticultural Club on Thursday, the 7th inst., when, notwithstanding the inclemency of the weather, there was a numerous attendance from all parts of the country, including many of the principal exhibitors both professional and amateur. The chair was taken by Dr. HOGG, and a most satisfactory report was read by one of the Secretaries, from which it appeared that notwithstanding the fact of the Society having held three exhibitions during the past year, and expended some £25 on the publication of their catalogue of exhibition Roses, there was a balance in hand of £52. The arrangements for 1883 were announced—namely, the Metropolitan Exhibition at South Kensington, in connection with the Royal Horticultural Society, on July 3; the Grand Provincial Exhibition at Sheffield, in connection with the Sheffield Botanical Society, on July 12; and a third, organised by the Royal Southampton Horticultural Society, at Southampton, on June 28. In the evening a large number of the members dined together at the Club, the Hon. and Rev. J. T. BOSCAWEN presiding, and Dr. HOGG acting as Vice-Chairman; and everything passed off in the most satisfactory manner.

—— LUCULIA GRATISSIMA IN SMALL POTS.—We are so often recommended to grow this most charming of all winter blooming plants trained against a wall or as a bush specimen in an intermediate temperature that one rejoices to see handsome little plants of it in small pots. In Mr. B. S. WILLIAMS' nursery may now be seen little plants from 12 to 18 inches in height, each bearing from one to three trusses of bloom of that delicate pink shade so much sought after by ladies, but so seldom obtained. Mr. WILLIAMS has, to our knowledge, been equally successful in the cultivation of this plant for years, and it is strange that up to the present he has found so few imitators among professional plant growers.

—— VALUABLE ODONTOGLOSSUMS.—At STEVENS' Rooms on Thursday a specimen of Odontoglossum crispum (Alexandræ), one of the original importation by CHESTERTON to Messrs. VEITCH, with a flower-stem nearly 4 feet long, bearing seventeen flowers, 4 inches in diameter, and beautifully spotted, realised 30 gs. Two other grand varieties out of the same batch sold for 12½ gs. and 20 gs. respectively. An O. vexillarium superbum, nearly approaching in quality a plant sold a few weeks ago, was knocked down at 30 gs.; and a specimen of O. mulus, with a very fine branched spike, from the Hextable Horticultural Company, Swanley, sold for 16 gs.

—— ROYAL CALEDONIAN HORTICULTURAL SOCIETY.—The annual general meeting of this Society was held on Thursday, the 7th inst., Mr. JAMES WELSH, of Messrs. DICKSONS & Co., in the chair. Sir JAMES GARDINER, Bart., was elected a Vice-President, and Mr. JAMES ALEXANDER, of Messrs. DICKSONS & Co., and Mr. A. M'LEOD, Superintendent of the City Gardens, were elected as nurseryman and gardener members of the Council respectively. The abstract of accounts submitted to the meeting showed that the income for the year amounted to £2226, including £1443 drawn for admission to the shows—£1106 being drawn at the International, £364 of annual subscriptions, and £381 of special subscriptions to the International Show. The expenditure amounted to £1894, of which £737 was show expenses, £95 general expenses, and £1046 prize money. The balance for the year in favour of the Society was thus £347, which, added to the amount previously on hand, brings up the total funds of the Society to £1045. The accounts were approved. The shows for the ensuing year were fixed for April 4 and 5, July 11, and September 12 and 13. A list of prizes has been arranged for the spring show to the amount of £365, being £165 more than was offered at the corresponding show of last year. By this liberal addition to the schedule the Council hope to attract a much keener competition than hitherto, and to attract exhibitors from a much wider area. The excellent railway facilities, and the splendid accommodation afforded in the Waverley Market, as well as the higher value of the prizes, which are always paid on the show day, should undoubtedly effect the laudable objects the Council have in view.

—— THE ACTION OF POISONS ON PLANTS.—Mr. F. C. PHILLIPS (*Chemical News*, Nov. 17, p. 224, cited in the *Pharmaceutical Journal*) has carried out a number of experiments with Pelargoniums, Coleuses, Ageratums, Achyranthes, and Pansies, planted in soils containing one-half per cent. of carbonate of zinc, copper or lead, or arsenate of lime. The most strongly-marked effect was observed to be produced by the arsenate of lime, and from the general results Mr. PHILLIPS concludes (1) that healthy plants grown under favourable conditions may absorb through their roots small quantities of lead, zinc, copper, and arsenic; (2) that lead and zinc may enter the tissues in this way without causing any disturbance in the growth, nutrition, and functions of the plant; and (3) that compounds of copper and arsenic exert a distinctly poisonous influence, tending, when present in larger quantity, to check the formation of roots, and either killing the plant or so far reducing its vitality as to interfere with nutrition and growth. It will be obvious that these conclusions have an important practical bearing upon the extensive use of Paris green (arsenite of copper) as an agricultural insecticide in the United States.

—— IRISH POTATOS.—After having heard for the past two years such glowing accounts of the immense benefit the introduction of the Champion Potato into Ireland was proving to the poor inhabitants of that unhappy country, we are naturally surprised to learn now that during the year closing the crop of Champions has been so poor a one that it may almost be termed a failure. Ireland's Potato saviour, like to most of her political ones, has soon collapsed, and when the need of help is greatest is then found to be a bruised reed. It was always certain, such is the peculiar habit of the Champion, that it would only suit good seasons—that is, when other kinds of Potatos are plentiful that is abundant also. We have seen here at home this year that its extreme robustness and exceeding late tubering has told heavily against growers; but here in England we have a climate that is, as compared with that of Ireland, forward and dry. Not only do the inhabitants of the Emerald Isle suffer from their near contiguity to the tearful and melancholy ocean, but their crops do so in not less degree. And such is the watery nature of Irish summers that when we, more fortunate, may be digging fairly ripened Potato crops, those of the sister island are, perchance, all a-growing and a-blowing, and thinking perhaps least of all, in the delights of the moment, of creating a crop of profitable tubers. Some of the present dearth of Champions is ascribed to the fact that the seed is of two years' growth; but that is no tangible reason. Probably the western Irish farmer in his shiftless fashion has but saved the refuse tubers for seed, and cared even then for them badly; but there is no reason why good seed should not have produced good crops. Probably a much earlier and less wild growing variety would be better suited to Ireland's drippy seasons.

—— COSMOS BIPINNATA VAR. PARVIFLORUS.—It was perhaps the somewhat spare and straggling habit of growth seen in the plants of the foregoing, which were sent up from Chiswick by Mr. BARRON on Tuesday last, that induced the Floral Committee to



FIG. 142.—A TEA PLANTATION IN THE KANGRA VALLEY. (SEE P. 777.)

award this useful old plant a Second-class Certificate of Merit. If a handful of its pretty bright pale purple blossoms had been laid before the committee, as gathered from a free flowering plant in an ordinary greenhouse in December, the chances are that a higher award (if any award were necessary at all) would be forthcoming. To give any plant a Second-class Certificate is to mark it as second-rate; and surely it was never intended to be the business of the committee to distinguish second-rate plants. Even though some of this character are not infrequently advanced into the front ranks, it is better to give a higher award, or nothing. It is more than probable that a thoroughly good useful plant if shown in indifferent condition might receive a Second-class Certficate, and remain under a ban from which there is sometimes considerable difficulty in emerging. This has actually happened, and may happen again. It would be much better to abolish altogether the Second-class Certificate, and give in its place one of commendation to anything of a promising character, leaving it to time for the subject to win its way to a higher award.

—— ARALIA SPECTABILIS.—The unhappy, and we may add extravagant, selection of plants that is made from time to time in private establishments, and which is so embarrassing to the gardener, where the purse strings are held tight, is a fact which is but too well known. Large parties are to come off at a certain time, and some fine specimen that has taken the gardener years to grow is pitched upon, irrespective of weather, to make a show in the house for the time being. It may probably be a specimen of Adiantum farleyense, or some other rare variety of Fern, whose days are numbered shortly after the event. A fine specimen, worth perhaps five to ten guineas, is sacrificed for a few hours' show, and, what is worse, there are cases where little allowance is made for the circumstances under which the tender plant has been lost. We do not blame any one for having an eye to economy, so long as it is tempered with reason, but we think it is wholly unnecessary to expose such plants to the baneful influences of inclement weather. These valuable plants are often used for no better reason than that they are ready to hand, and apparently cost nothing, being grown in the establishment by the gardener. But after a time it is found that they do cost more than the owner cares to pay for. Much trouble, unpleasantness, and expense also, would be spared, if the gardener were allowed a little more license and an opportunity of exercising his own judgment, which, if based upon practical experience, can never be far wide of the mark. There are scores of cheap plants, of beautiful habit and of rapid growth, that in point of effect are quite equal to the most valuable specimen. The cost of one rare plant would secure a goodly stock of them, and among their number none have higher claims upon our notice than Aralia spectabilis. It makes a striking object, of bush habit, the branches being rather thinly produced upon the stems, which gives it a pleasing light appearance. The shoots are from 2 to 3 feet long upon an ordinary sized plant, and are rather thinly clad with leaves, produced in pairs opposite to each other from the base to the extreme point. Mr. B. S. WILLIAMS showed a fine specimen of this plant at the last great summer show of the Royal Horticultural Society, and we lately saw a good stock of it in his nursery at Upper Holloway.

—— POPPY CULTIVATION IN PERSIA.—From a recent report on the trade of Persia it seems that silk, once the staple produce of the country, is not likely to maintain its position much longer. Owing to the silkworm disease, which destroyed crop after crop, the peasantry of Ghilan have turned their attention to the cultivation of Rice, which, as a crop, seems to suit them better, as it requires less trouble to cultivate, and is, moreover, in itself an article of food upon which they principally subsist; it is also extensively exported to Russia. Another article which has replaced silk is opium. In Kermanshah until ten years ago the cultivation of opium was very limited, not exceeding 675 lb. a year, required for local consumption. Last year's crop yielded about 13,500 lb., and it was expected that this year's would realise double that quantity, but it was affected by cold, and consequently did not realise more than 9450 lb. From Ispahan it is reported that this year's crop has been partially injured by cold, but that it is richer in juice than that of the preceding year. No change or improvement, it is stated, has taken place in the preparation of the drug, beyond a large admixture of oil introduced to suit the taste of the Chinese, the proportion being about 6 lb. or 7 lb. to each chest of 141 lb. Very low prices were obtained in foreign markets for Persian opium last year, in consequence of which it is said by some that unless prices rise in China the Poppy cultivation will not be further extended. The drug is prepared at Ispahan, Shiraz, and Yeza. After being dried in the sun it is manipulated. That destined for China is mixed with oil; that sent to London is exported in its pure state. Persian opium is reported to have lost in the estimation of the Chinese; from this it may be inferred that adulteration must have considerably increased. In Khorassan the cultivation of the Poppy has increased tenfold within the last ten years. It grows everywhere in cold as well as in hot districts; every landed proprietor cultivates it, and it may be said that one-eighth of the entire produce of Khorassan is Poppy. In Yeza it seems that this year's crop suffered much from cold, resulting in the produce of about half last year's crop. The oil used for mixing with the drug destined for China is Linseed oil.

—— GESNERA ELONGATA.—Nearly half a century has elapsed since this South American plant was introduced to this country; yet it is less seldom seen in private collections than its merits deserve. Where grown, however, it is essentially a winter blooming plant and cultivated as such. Old plants, if properly attended to, may be utilised for decorative purposes with profit for more than one season. They are of shrubby habit, and should be trimmed in a little in spring, started in a brisk heat to induce free growth, and then subjected to a lower temperature near the glass to harden the shoots. They may be introduced to heat in autumn, when they will gradually come into bloom and last a considerable time. The orange scarlet tubular flowers are produced in fours on axillary footstalks all along the shoots of the current season, giving the plant a very elegant appearance. Several botanical publications, as the *Botanist*, 27, *Botanical Magazine*, 3725, and *Paxton's Magazine*, 6, p. 103, icon., have figured or described this species with a slightly varying nomenclature. Several specimens are coming into flower in the stove at Kew.

—— HOLLIES AT THE HANDSWORTH NURSERIES.—Messrs. FISHER & CO. have long been noted for the fine varieties of Holly which they have raised, some of which stand in the very first rank amongst these finest of evergreen shrubs. They have still several new kinds which are not yet in commerce that from their distinct character are destined to hold a place with the best. In addition to free habit of growth and bold distinct foliage the freedom in producing their bright red berries is a matter worth taking into account in Hollies. One of the new varieties in particular we noticed with large deep green foliage and unexceptionable habit is the most profuse fruiting kind we have seen. Not only does it berry on the preceding season's growth, but right on the old wood—so much so that the branches frequently for 12 or 15 inches in length are literally clothed with them, giving the tree a unique and remarkable appearance. The stock of Hollies here is a large one, and, in addition to the new kinds, includes the best varieties in cultivation.

—— CHRYSANTHEMUMS. — At Garbrand Hall, Ewell, the residence of Mrs. TORR, there is a grand show of Chrysanthemums, consisting of all the leading sorts and varieties, flowering splendidly and arranged so as to form a nice arcade in a span-roofed Peach-house over 100 feet long. Mr. CHILDS is to be congratulated on having such a fine display, so beautifully arranged.

—— ZENOBIA PULVERULENTA.—Prior to the inset of the frost the foliage of this plant has been unusually beautiful in its autumnal tints. The upper surface of the leaves has presented various shades of crimson and yellow, the lower surface being milky-white. Mr. BUSBY, of Thornhill Park Gardens, finds them well adapted for table-decoration. The plant is quite hardy.

—— DISSOTIS PLUMOSA.—This is a beautiful Melastomad from West Tropical Africa, where more than twenty species are known to exist, inhabiting the tropical and sub-tropical southern regions of that continent. They are of a herbaceous or sub-shrubby nature, and delight in a moist stove temperature. The present species is of a procumbent habit, and now flowering at Kew, where its long, slender, leafy shoots give good promise of its utility as a basket plant. The flowers are comparatively large, of a lively pale purple colour, and solitary, terminating the shoots. The foliage has the appearance of being dotted over with white marks, which is due to the presence of small fleshy hairs.

—— GREENHOUSE RHODODENDRONS AT THE HANDSWORTH NURSERIES.—When the Java Rhododendron (R. javanicum) was first introduced, and was found to succeed under cool greenhouse treatment, it was justly looked upon as an acquisition, although its erect spare-branching habit somewhat detracted from its merits as a pot-plant. Subsequently other species, mostly from the high regions of the Eastern hemisphere, made their appearance, and have been frequently intercrossed, the result of which is that a beautiful race of free-blooming varieties has been brought into existence that give quite a new feature to our greenhouses and conservatories, for flowering in which structures they are particularly adapted. With many of these there is little to complain of on the score of habit of growth or disposition to bloom, for most of them can be made to assume the form of a dwarf bush without recourse to an unreasonable amount of shoot pinching. Messrs. FISHER, SON & SIBRAY have gone largely into the cultivation of these fine plants, and possess a very large stock, consisting of all the best kinds in commerce, which fill one side of a house 110 feet in length, in addition to quantities in smaller structures. Hundreds of the plants have attained a size such as enables them to bear considerable numbers of their glorious trusses of bloom, comprising all shades of colour from ivory-white to the deepest crimson. Some of the very finest have been obtained by crossing the yellow or buff Java species with R. jasminiflorum—a white species from Malacca, well known for its pretty flowers. Others are the result of intercrossing some of the best hybrids within themselves or with one or other of the species. As often happens in hybridising, a good many of the seedlings are far ahead of their progenitors in their floriferous habit, combined with brilliancy of colour. Amongst the finest coloured sorts are Duchess of Connaught, which, in addition to a free habit of growth, has large full-sized flowers of the most vivid crimson-scarlet, almost the exact shade of Schizostylis coccinea. Another fine variety, Duchess of Edinburgh, bears flowers of intense scarlet. Of the now well known variety, Princess Royal, there are quantities; this appears to be an exceptionally good stock for grafting with any of this race of plants. R. javanicum makes more than double the progress when grown on this variety that it does on its own roots; some plants of it here, two years grafted, are 4 feet high, and very much stronger than we ever saw it before, and bearing flower-buds almost as big as the ordinary hardy outdoor sorts. One essential in the treatment of these Rhododendrons is to keep them cool enough; they do well out-of-doors in summer. When well managed they are almost always more or less in flower; in addition to the crop of summer bloom they produce, they come again in quantity through the late autumn and winter.

—— EUCHARIS CANDIDA.—Little headway seems to be made in the distribution of this, one of the most useful of winter blooming plants. Its great rival, E. amazonica, is so popular with gardeners and florists that it will probably take some time to prove, what is a fact, that the small-flowered variety (E. candida) is more free to bloom, and as a flower is for many purposes the most useful of the two. The small white flowers of E. candida are better adapted for making button-hole bouquets, or bouquets of any kind, than the much larger flowers of E. amazonica, while those of the latter are, of course, preferable, inasmuch as they are larger, for dressing glasses for the boudoir or sitting-room. But even this advantage may not be so great as it at first sight appears when it is remembered that the small bulbs of E. candida flower so freely, and the delicate yellow colour of the corolla is, to many eyes, a pleasing distinction of shade. Be that as it may, there can be no doubt as to its superiority in many of the respects we have mentioned, especially at this particular season, when so many flowers of a white shade of colour are required. In Mr. B. S. WILLIAMS', nursery, Upper Holloway, we recently saw a nice batch in flower;

and next to the Orchid family it is probably one of the most chaste and useful of winter flowering plants.

—— DR. ASA GRAY.—We regret to learn, from the American *Gardeners' Monthly*, that Dr. GRAY recently fell and broke his shoulder-bone. It is gratifying to know that the accident will not seriously interfere with his active work.

—— ROYAL HORTICULTURAL SOCIETY.—The dates selected for holding the meetings of the Fruit and Floral Committees, exhibitions, and promenade shows, in 1883, are:—January 9, February 13, March 13, March 27, April 10, April 24, May 8, May 22 and 23 (Great Summer Show); June 12, June 26, July 10, July 24, August 14, August 28, September 11, October 9, November 13, December 11.

—— THE SMITHFIELD CLUB (p. 759).—Messrs. SUTTON & SONS write to "protest against" the "unfair report," so far as their house is concerned, of the exhibition of the Smithfield Club. As we cannot undertake to give a full detailed report of any exhibit, however meritorious, and as we had nothing but encomium to give Messrs. SUTTON, we fail to see the point of their complaint, particularly as we did not, as Messrs. SUTTON do in their letter to us, enter into any comparative statement as to the merits of the productions of the various exhibitors. We do not count the lines in the Editorial department, nor attach any special significance to their number under ordinary circumstances.

—— THE WEATHER.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending Dec. 11, issued by the Meteorological Office, London:—The weather has been very unsettled and wintry, with heavy snowstorms in most districts. Lightning was seen in the north of Scotland towards the end of the week, and a thunderstorm occurred at Shields on the 9th. The temperature has been exceptionally low everywhere, the deficit ranging from 6° in "England, N.E.," to 10° in "Ireland, N.," and 11° in "Ireland, S." The maxima were registered at the commencement of the period, and varied from 39° in the east of Scotland to 48° in the south of Ireland. The minima were extremely low in all parts of the kingdom. The lowest reading of all (10°, at Nairn) was recorded on the 8th, but in nearly all other places the thermometer was lowest on the 11th, when it fell to 12° or 13° in Ireland and over central, southern, and eastern England, and to between 14° and 20° elsewhere. In some parts of central England the thermometer did not rise above 22° or 23° all day. The rainfall has been more than the mean in nearly all the "Wheat-producing Districts," but considerably less in the "Grazing Districts." In "Scotland, E.," and "England, N.E.," the excess was large. Bright sunshine varied in amount from 42 in "England, S.W.," and 37 in "Ireland, N.," to only 4 in "Scotland, E.," and 10 in "England, S." Depressions observed:—During the first part of this period the weather was influenced by a depression which travelled down our east coast in a south-easterly direction until it reached a position between the Helder and Yarmouth, when it moved westwards, and finally dispersed. During the latter part of the period a depression which had arrived from the south-westward, moved slowly, in a north-easterly or east-north-easterly direction up the Channel, and afterwards in a northerly direction outside our east coast. The winds, until the 8th, were generally fresh or strong from the north-eastward or northward, with gales on our northern and eastern coasts; but after that date they were light and more variable, and at the end of the week calms or very light airs were reported from all parts of the country.

—— GARDENING APPOINTMENTS.—Mr. THOMAS LLOYD is leaving Spring Grove, Bewdley, to enter into business on his own account in the town of Stourport, as a grower of Grapes, Cucumbers, and Tomatos for market.—Mr. H. A. MANN, Gardener to Mrs. HORNSBY, St. Vincent's, Grantham, is engaged as Gardener to Sir W. E. WELBY GREGORY, Bart., M.P., at Denton Hall, Grantham.—Mr. WILLIAM BEECH, Plantsman at Alaston Towers, has been engaged, through Mr. RABONE, as Gardener to W. S. ALLEN, Esq., M.P., Woodhead Hall, Stoke-on-Trent.

MANAGEMENT OF GRASS-LAND.

CATTLE GRAZING: FOGGAGE.—There is doubtless, as in all other questions relating to agriculture, considerable difference of opinion respecting the treatment of grass-land so as to obtain the greatest amount and best quality of herbage from any given pasture. Pasturage consists either of natural herbage or "seeds." In the lowlands of Scotland and the light land districts of England there is little good old grass; all the really fertile soils being employed in arable husbandry, with the exception of small portions around the mansions of landowners.

The pasturage consists therefore for the most part of the cultivated Clovers and grasses. Comparatively few cattle are there fattened on grass, the object of graziers being rather to stock their pastures with young and growing animals, and to get them into forward condition for being afterwards fattened upon roots, cake, and corn. The grazing season is there much shorter than on the old "ox-pastures," grass seldom affording a full bite for a well conditioned bullock before the middle of May or later than the middle of September. In these descriptions of pasture, "foggage" or "fog," is a term usually applied to that portion of dead herbage and stubble which is left by cattle when grazing a pasture, and which may be observed in large patches in many of our better class of grass-lands during the autumn months of this year.

This "foggage" is often rather encouraged than otherwise, as it is supposed to afford something of a protection to the young grasses during the winter, and to bring on the herbage to a full bite before the pasture is stocked in the spring.

It is quite otherwise in Leicestershire, the Vale of Gloucester, and various parts of England which abound with old grass-lands of the very richest description, on which oxen of the largest class can be fattened rapidly. These in many cases admit of being stocked towards the end of April, and under judicious management continue to yield excellent pasturage (weather permitting) up to November. In these pastures the economical grazier endeavours by a wise selection of stock, either of mixed animals or otherwise, and by the even distribution of the animal droppings to avoid as far as possible the unsightly tufts and patches of herbage, which not only disfigure the pasture, but tend to deteriorate the quality of the produce.

In all pastures every plant is doing its utmost to accomplish the provisions of Nature, and to reproduce its species by the production of stem and seed, consequently the better the land the more quickly do the plants start into fresh growth after being bitten off by the grazing cattle, and as in certain seasons the grass often grows more rapidly than an ordinary stocking of cattle can consume it the herbage on some parts is allowed to get rank and coarse, producing both stem and seed. Now we know that when a plant is suffered to run to seed it endeavours to draw from the soil sufficient nourishment to bring its seed to maturity in its accustomed season, hence the larger and coarser growing plants in their struggle for existence push out their weaker neighbours, and in this way pastures are often injured more than is generally supposed.

In the best managed districts we find it is the practice regularly to collect the "clots" and to keep down the weeds, which materially assists in keeping an even pasture, and the herbage by this means runs less into bunches or "fog."

Mr. Robert Smith, late of Burley, Rutland, in a prize essay on the "Management of Grass-land" (*Journal of the Royal Agricultural Society*), says:—"In regard to the old ox-lands, after the first run of oxen have been sent to market, which is usually terminated by the season, these pastures are cleaned up, the clots are gathered or knocked, and the weeds, if any, removed by mowing or spudding. At the end of three weeks, or according to the season, they are again moderately stocked with cattle, from the sheep or second-class pastures. About September a few sheep are placed upon them, but not earlier, as those dry soils will not admit of their short bottom-grass being eaten out during the summer months. The next stage of management is to place the store stock upon them for cleaning up the surplus summer grass, or what is termed 'fog,' it being exceedingly desirable to have an entire clearance at least once a year. Those lands which are closely fed, and consequently contain less 'fog,' have but few beasts placed upon them, though they are usually more heavily depastured with sheep." Again, "It is quite certain (the result of practice) that all lands which have been mown require extra close feeding to subdue the stubble or 'foggage' formed by mowing, and to cause the natural grasses to resume their former habit. The aftermath upon cool or marshy meadows is widely different from that on the upland meadows, as their produce is of a coarse character and not to be injured by mowing, but rather accelerated; yet if not eaten down as required by the former class of pastures the grasses gradually get sour and coarser in their foliage. Close feeding at least once a year is essential to all pasture grasses."

Morton's *Cyclopædia of Agriculture*, in reference to this subject, says:—"The droppings of cattle ought to be repeatedly knocked and spread, and it is a good practice to mow some portion of the rough places every day, in order that they should be eaten more readily than they otherwise would be. This will keep the pasture ever materially improving the herbage of the rough spots; and in 'grass' years, when the herbage is very rank, the cattle will be benefited by eating the partially dried grass thus mown. Animals affected with scour or purging resort with good benefit to it. Such coarse tufts, when left uneaten during the summer, become so tough and weedy that no stock will eat them; they destroy the finer herbage near them, and are finally rotted down in the ensuing winter." *W.*

ÆSCHYNANTHUS MARMORATUS, *Moore.**

THIS is the ornamental climber that is well known in gardens as *Æ.* zebrinus, but which is scarcely, or perhaps not at all known to gardeners as *Æ.* marmoratus, and as it affords an excellent illustration of a point in botanical nomenclature, I take this opportunity of calling attention to the name. It is the custom of nurserymen when they have introduced a plant which they believe to be new, either to send it to some botanical establishment to get it named, or to give it a name of their own coining, without taking the trouble to find out if it is a plant already known, and this latter practice is unfortunately by no means an uncommon one: I say unfortunately, for the reason that after a few years it sometimes is impossible to identify the plant with the name. Suppose A. introduces a plant which he calls J— s—, and in his catalogue gives a description of it, which perhaps is sufficient to convey a general idea of what the plant is like, but which is utterly insufficient to distinguish it from allied species that may exist, and of which A. knows nothing. This plant is distributed in gardens under the name A. has given it, and perhaps escapes the botanist's notice for several years, or, at any rate, no botanical description may be published of it, and possibly no specimen of it is preserved in a public herbarium. After a few years, say ten or twelve, some one who has a plant named J— s— may want to know something about it, and if it is correctly named; but how is he to ascertain this? There is no proper description, figure, or specimen preserved of the original thing, and, as sometimes happens, other and nearly allied species may meanwhile have been introduced, and confused with it in gardens, so that there may be two or more distinct plants cultivated under the one name, and it would often be a matter of extreme difficulty, and perhaps an impossibility, to trace out which of them was the plant which A. called J— s—; whereas, had the plant been properly described, there would have been no difficulty. It being doubtful, therefore, as to what is the true J— s—, we will suppose that B. describes in a proper manner the plant, or one of the plants, cultivated under that name, but giving it a different specific name, say J— m—; should not the name J— s— hereafter be discarded, and the name J— m— be substituted in its place? Assuredly it should, for on the one hand neither the gardener nor the botanist can with certainty determine if a plant that is called J— s— in gardens is really the one that A. intended to be so called, whilst on the other hand it would be very easy to determine if the plant cultivated as J— m— was the one that B. described as such, that is, if, as before stated, he had properly described the plant, for there unfortunately exist botanical descriptions from which it is

* *Æ. marmoratus*, Moore, in Lindley and Paxton's *Flower Garden*, iii., p. 56, No. 522.

as impossible to determine a plant as it is from a nurseryman's catalogue, though this difficulty is often overcome through dried specimens having been preserved. Æschynanthus marmoratus offers a similar case to the above. In the *Allgemeine Gartenzeitung*, 1851, xix., p. 371, is given a list of the species of Æschynanthus cultivated in gardens at that date, and among those of which little is known is cited "Æsch. zebrinus, Van Houtte Cat. 1851, Java." This list is translated in Lindley and Paxton's *Flower Garden*, iii., p. 14, and on p. 56 of this same work is a description of Æ. marmoratus by Mr. Moore, of the Apothecaries' Garden, Chelsea, under which he states that "This is the Æ. zebrinus of English gardens, and is probably the Æ. zebrinus, Hort. Van Houtte (*Walp. Rep.*, vi., p. 521). It cannot, however, be the Æ. zebrinus of Paxton's *Bot. Dict.*, for that is stated to have scarlet flowers." This being the case, and there being no description of Æ. zebrinus, Van Houtte, which renders it doubtful if the plant now grown in some gardens under that name is really the plant to which Van Houtte gave that name, it is desirable that the undeterminable name Æ. zebrinus should be discarded for the determinable one of Æ. marmoratus. The following is a description of Æ. marmoratus, taken from a specimen sent to me in October, 1879, by Mr. Lynch, the Curator of the Cambridge Botanic Gardens :—

Stem climbing, glabrous. Leaves opposite, glabrous ; petiole, ¼—½ inch long ; blade, 2½—4 inches long, 1—1¼ inch broad, lanceolate-acuminate, sometimes oblique, fleshy, margins obscurely toothed, upper surface pale green marbled with dark green, the position of the teeth indicated by dark purple, under-surface pallid marbled with purple. Flowers axillary, solitary ; pedicels 3—4 lines long, five-angled, having a very few scattered hairs. Calyx 5-parted to the base, segments very narrow, subulate, rather spreading 8—10 inches long, hairy, brownish purple. Corolla 15—16 lines long, curved, constricted below the middle, glabrous and dull green outside except the margins of the short rounded lobes which are red-brown and ciliate ; inside the upper part is glabrous and of a dark chestnut-red, the lower part green, with a dense ring of glassy purple-pointed hairs at base, and a few scattered ones above. Stamens considerably exserted, anthers violaceous. Style exserted after the pollen is shed, covered with purple hairs ; ovary green, glabrous. *N. E. Brown, Kew.*

THE FLOWERS OF MUMMY GARLANDS.

IN an interesting article which appeared not long since in the *Academy*, Miss Amelia B. Edwards describes some curious additions to the Boolak Museum. Several of the royal mummies discovered last year at Dayr-el-baharee were, it will be remembered, found garlanded with flowers, those flowers being for the most part in as perfect preservation as the specimen plants in a "Hortus Siccus." M. Arthur Rhoné, in a recent letter to *Le Temps*, has described the extremely curious way in which these garlands are woven. They consist of the petals and sepals of various flowers, detached from their stems, and enclosed each in a folded leaf of either the Egyptian Willow (Salix salsaf) or the Mimusops Kummel Bruce. The floral ornaments thus devised were then arranged in rows (the points being all set one way) and connected by means of a thread of Date-leaf fibre woven in a kind of chain stitch. The whole resembles a coarse "edging" of vegetable lace work. Among the flowers thus preserved are the bright blue blossoms of the Delphinium orientale, or Larkspur ; the blue Lotus, or Nymphæa cœrulea ; the white of Nymphæa Lotus, with pink-tipped sepals ; the blossoms of the Sesbania ægyptiaca ; and the orange-hued flower of the Carthamus tinctorius, or Safflower, so largely employed as a dye by the ancient inhabitants of the Nile valley. The dried fruit, as well as the dried yellow blossom, of the Acacia nilotica is likewise present ; and mention is also made of the blossom of a species of Water Melon now extinct. The foregoing are all interwoven in the garlands in which the mummy of Amenhotep I. was elaborately swathed. With others of the royal mummies were found fine detached specimens of both kinds of Lotus, the blue and the white, with stems, blossoms, and seed-pods complete. Still more interesting is it to learn that upon the mummy of the priest Nebsoohi, maternal grandfather of the king Pinotem II. (XXIst Dynasty), there was found a specimen of the Lichen known to botanists as the Parmelia furfuracea. This plant is indigenous to the islands of the Greek Archipelago, whence it must have been brought to Egypt at, or before, the period of the Her-Hor Dynasty (B.C. 1100 or B.C. 1200). Under the Arabic name of "Kheba," it is sold by the native druggists in Cairo to this day.

These frail relics of many a vanished spring have been arranged for the Boolak Museum with exquisite skill by that eminent traveller and botanist, Dr. Schweinfurth. Classified, mounted, and, so to say, illustrated by modern examples of the same flowers and plants, they fill eleven cases—a collection absolutely unique, and likely ever to remain so. The hues of these old-world flowers are said to be as brilliant as those of their modern prototypes ; and, but for the labels which show them to be three thousand years apart, no ordinary observer could distinguish between those which were buried with the Pharaohs, and those which were gathered and dried only a few months ago. *The Field Naturalist.*

PEPPERMINT GROWING IN AMERICA.

As is well known, the cultivation of Peppermint at Mitcham is one of the chief crops in the famed medical and herb gardens that abound in that neighbourhood. Oil of Peppermint distilled from Mitcham-grown plants is celebrated throughout the world, and consequently realises the highest price of any Peppermint oil in the market. Two qualities of Peppermint oil, however, are distilled at Mitcham, furnished by plants of totally different habits, as seen growing in the Peppermint fields. They are distinguished as the White and Black Peppermint, the first being known to botanists as Mentha piperita var. officinalis, and the second as M. piperita var. vulgaris. A field of White Peppermint is of a bright green, the individual stems of the plants being also of a lightish green-white ; the black form is of a much darker green, and the stems are of a purplish colour. It grows to a greater height than the white form, and is much more robust in habit. The oil, though produced in greater quantity from this variety, is not so highly valued, as it has a less delicate flavour. Peppermint, besides being grown at Mitcham, is cultivated to some extent in the counties of Lincoln, Cambridge, and Herts, as well as in France, Germany, and Southern India, and on a very large scale in America. An account of the cultivation recently appeared in *New Remedies*, from which the following notes are gathered.

The account is descriptive of a visit to Wayne County, in New York State. It is now upwards of fifty years since Peppermint was first cultivated in that locality for its oil ; the first attempt in America being made in Massachusetts. For many years it has also been grown in a few counties in Ohio, and in some parts of Upper Canada (Ontario). Its growth in Michigan was first undertaken in 1855, and has since steadily increased. Western New York, however, produces the largest quantity of oil, and it is said that the products of that region are characterised by a finer aroma than that produced in most other localities in America. Of late growers and refiners have devoted special attention to the selection of the best varieties of the plant, and to the qualities of the product. In Wayne County alone more than 3000 acres of Mint are cultivated annually, with an average yield of about 20 lb. of oil to the acre, or a total yearly production of over 60,000 lb.

It is estimated that the annual production of oil of Peppermint throughout the world is about 90,000 lb., which would show that by far the largest portion—certainly two-thirds—comes from the Wayne County, New York, region. The Peppermint harvest commences in America early in August, or as soon as the plant is in flower (by which time it will have attained a height of about 2 feet or upwards), and continues into September, warm or hot weather being essential at harvest time that the plant may produce oil abundantly. The first crop is the best, the second year's of less value, and the third year the ground may be again ploughed, and the crop allowed to spring up from the broken roots. The yield in the third year, when the ground is treated in this manner, is somewhat less than that of the first year. After this the land should be devoted for a time to some other crop. Not only is the yield most abundant in the first year, but the crop is more free from weeds than during the subsequent years, and the oil is correspondingly purer. The weed which causes most trouble is the Broom-weed, Mare's-tail, or Fire-weed (Erecthite hieracifolia), a Composite yielding a volatile oil which is bitter and pungent, and by its presence impairs the naturally fresh, penetrating, and delicious taste of the pure oil of Peppermint.

The Mint is cut with a sickle, scythe, or mowing-machine, according to the fancy of the cultivator. After cutting it is allowed to wither in the sun for five or six hours, and is then raked into "cocks," where it remains a short time before being distilled. This process is found to give a larger yield of oil, and to improve the odour of the product. It is not every cultivator that is provided with a still, but stills are found distributed about the Peppermint region at convenient distances. Some are of the most primitive character, while others are constructed more elaborately. The apparatus and method differ from that employed in Europe, where the fire is applied to the still. In America the still consists of a wooden tub or vat of heavy staves hooped with iron. The withered Mint is packed into the vat by treading with the feet until the vat is full, when a cover, made steam-tight with rubber packing, is fastened down with screw clamps. A steam-pipe connects the lower part of the vat with a steam-boiler, and another pipe from the centre of the cover connects the vat with the condensing worm. The latter varies in size according to the capacity of the still, but becomes progressively smaller towards the outlet. The worm is so placed as to have a constant stream of cold running water surrounding it. The steam from the boiler being admitted to the vat at a pressure of 30 to 40 lb., the oil of the Mint is volatilised and mixed with the steam condensed in the worm. The mixed oil and water are collected in the receiver, where the difference in their specific gravity causes them to separate. No attempt is made to re-distil the water which separates, and a considerable loss of oil which is held in solution doubtless results from this lack of economy.

The oil is packed in tin cans, or glass demijohns, holding about 20 lb. each. The glass demijohns are much the best when the oil is to be kept for any length of time, as its good qualities are more fully retained, and it is less liable to discoloration. From the oil thus produced the refiners and exporters make their selections, and upon their judgment in selecting, skill in refining, and their honesty, as well as the care used in excluding foreign plants from the crop, depends the quality of the oil found in the market. It is very probable that most of the adulteration which this oil undergoes takes place after it has left the hands of the original refiners and dealers. At the present time Wayne County, New York, grows, refines, and exports the greater quantity of all the oil of Peppermint grown in the United States and Canada.

Oil of Peppermint is sometimes adulterated with turpentine, and also with oil of Hemlock. Pure oil of Peppermint, as exported from Wayne County, is colourless, and resembles the English oil, except that its odour and taste are somewhat less pungent and penetrating. The oil deteriorates with age, and the aroma becomes more faint ; after a certain number of years it thickens, and the colour becomes of a yellowish tinge ; exposed for a long time to air it becomes resinous.

LOCKINGE HOUSE

Is the beautiful seat of Sir Robert Lloyd Lindsay, Bart., in Berkshire, and is situate in a nicely-wooded and undulating park about 5 miles from the Wantage Road Station of the Great Western Railway, whence a steam tram runs in connection with the up and down trains to the ancient town of Wantage, and in one of which the writer found himself one day last summer jogging along for the subject of this notice, and where, unfortunately, he had only about three-quarters of an hour to "run through" the extensive and well-kept gardens and grounds, as he had to leave in time to catch the next down train, and he mentions this fact so that your readers may understand that his notice of the gardens, &c., must necessarily be a passing one.

The house and grounds in connection therewith are very picturesque—the latter, which are laid out with great taste and skill, having many interesting features of undulating lawn, specimens and masses of handsome trees and bushes, and—

"Silvery streams where green boughs meet,"

and which are well under control, as evinced by the variety of forms in which they appear—here descending over huge boulders and shedding refreshing sprays over the Ferns which are growing on the rocky banks—there under rustic bridges and projecting rocks, and again shooting forth in sundry directions from a variety of grotesque figures, &c. In short, the grounds in character are a combination of the romantic and beautiful, which when contrasted with the fine masses of foliage and flower which meet the eye among the clumps and banks of ornamental trees and shrubs, the one forming a striking contrast and happy relief to the other, together with nice vistas through choice Coniferæ and shrubs in the background, and the pretty and well-kept flower garden in front of the mansion on the opposite slope, complete as pleasing a picture as the eye need wish to rest on, and in the execution of which the landscape artist made the most of the natural surroundings of the scene. However, before I proceed farther, I may as well say that the object of my hurried visit was to see the Grapes. Yes; to see the Lockinge Grapes was the immediate cause of my visit, and what I saw in the six large vineries there amply repaid me for my journey thither.

Those of your readers whose good fortune it may have been to see the fine examples of Grapes which Mr. J. Atkins, Sir Robert's able gardener, has from time to time staged at the Royal Horticultural and other societies' meetings, may have gone away with the idea that the Vines at Lockinge were lightly cropped; such, however, is not the case, but the reverse, inasmuch as each rod was carrying from twenty to twenty-four bunches each, and every one of which (second Hamburgh house) was the counterpart of its fellow, and fine in berry and finish. The crop of Muscats, while devoid of sensational bunches, was nevertheless a splendid and somewhat remarkable one—splendid on account of the evenness and size of bunches and berries, and promising good finish of the same; and seeing that the Vines were carrying from 30 lb. to 35 lb. of fruit each, it is a remarkable fact that there was not a small or shanked berry to be seen in the house; in short, it was as fine a house of Muscats as any man need wish to see, and the same may be said of the Alicantes and other late varieties. The vineries are, when viewed from the outside, apparently of moderate height and length of rafter, but in reality they are lofty houses. This is through the site for the vineries and borders having been excavated to a considerable depth in the chalk, and the surface of the made borders are, I should think, 12 or 18 inches lower than that of the soil immediately in front of them, thus forming a capital receptacle for water, of which, owing to the natural situation of the place and the nature of the subsoil, it would, I should think, be impossible for the Vines to have too much at the roots. The borders are made of red loam from the downs, bones, &c.; and the Vines, one and all, as may be gleaned from the foregoing remarks, are in capital condition; and the same remark applies to the other remarks of indoor fruit, also to the plants in the numerous stoves, greenhouses, conservatories, pits, &c. Among the plants there are some nice pieces of choice Fern, foliage plants, and Orchids; of the latter there is a large, fine-grown batch of Calanthes Veitchii and lutea in pans.

The kitchen gardens, like the ranges of glass, &c., have been made within the last fifteen years, are extensive, well cropped with an assortment of vegetables and small fruit trees, and enclosed by lofty and substantially built brick walls, which are wired and covered with choice fruit trees, such as Peaches, Nectarines, Apricots, Pears, and Plums.

At the west end of the principal range of glass-houses, and high above them, is a large reservoir, whence the water is laid on to the numerous houses and kitchen gardens, in which latter hydrants are fixed at a convenient distance from each other. This is an accommodation that cannot be too highly prized by gardeners, inasmuch as one man during a dry season with a short length of hose can do as much work, and do it more efficiently too, as ten men would do where this accommodation did not exist. Mr. Atkins, to whom great credit is due for the fine condition of his gardens and everything in them, informed me that in a large orchard a short distance from the gardens he had a good crop of Apples—an exceptional case this year—and that trees of the King Pippin variety were heavily cropped. *H. W. W.*

THE LIQUIDAMBAR, OR SWEET GUM.

There seems to have been great diversity of opinion amongst the older botanists as to the natural affinities of this genus. Some included it in a large and incongruous order, including all those trees with catkins, as Oaks, Beeches, Willows, and Planes. Some made it an order by itself, called Balsamaceæ; more recent authorities, however, class it with the Witch Hazels of North America. The catkins of the female flowers are globose, and resemble those of the Plane externally. The trees themselves that are hardy in this country are much like Maples. Apparently only three species are known, inhabiting the warmer parts of North America, Asia Minor, and the South of Asia, especially Java.

Liquidambar styraciflua is the best known species in this country, and the most ornamental. It inhabits the United States, extending southwards into Mexico, where it attains its maximum dimensions in swampy or wet places, near rivers. Thirty or 40 feet is the average height of the tree in this country, but if planted in a sheltered, moist place, it attains the height of 60 or 80 feet. It grows slowly, and with a little attention can be kept in pyramidal shape, forming at once a highly ornamental and interesting tree for the lawn or pleasure-ground; or, if planted near the margin of large clumps, or on islets on ornamental water, it could not fail to be productive of the most pleasing effects. The leaves are acutely five-lobed, and serrated with woolly tufts at the conjunction of the veins beneath. They have a dark green leathery appearance, and when ripening in autumn become a blaze of deep purplish-red and orange. The bark is corky and fissured, but at a little distance is hidden by the dense leafage. Beneath the bark all parts of the tree are pervaded by a resin of a sweet balsamic fragrance. This substance is most highly developed in warm countries, and exudes spontaneously from any wound in the bark. It is of a clear or amber transparent colour, whence the generic name of the tree from "liquidum," fluid, and "ambar," amber.

The best is obtained by purposely making incisions in the bark, and a second-rate quality by boiling the bark and branches, when the oily material floats on the surface and is skimmed off. Another mode of obtaining it is by putting the inner bark in a bag and submitting it to pressure. This substance is used medicinally in several countries, and to a small extent in this. It is supposed to possess healing and balsamic properties, and in some degree to be stimulating and expectorant, while an oil extracted from the same substance is used in perfumery. The heart-wood of the tree is dark, with a beautiful compact grain, and furniture made of it has a handsome appearance. The product of this, as well as the following tree, has superseded the storax of the ancients, which was obtained from Styrax officinale, a low tree inhabiting South Europe.

L. imberbe, otherwise known as L. orientale, a low tree inhabiting Asia Minor, seldom exceeds 6 feet in height in England. It bears considerable resemblance to Acer campestre, the common small-leaved Maple. The leaves are much smaller than those of L. styraciflua, with shorter blunter lobes, and glabrous beneath; hence the specific name "imberbe," beardless. As an ornamental tree it is much inferior to the North American one, but interesting on account of its relationship. Although presenting the appearance only of a bush in tree form it is worthy of a place amongst other deciduous subjects, or as an isolated specimen on grass where a large tree would be inadmissible. Its economic uses are the same as that of the former tree.

L. altingia is a noble tree, inhabiting the forests of the West of Java, where it attains the height of 200 feet, and is found at elevations of 2000 or 3000 feet. The wood is reddish, and afterwards brown, of a beautiful compact grain, and, like its congeners, redolent of a grateful balsamic odour. The leaves are ovate-oblong acuminate and serrate, quite a different type from the other species. As might be expected, it is not hardy in this country. L. chinensis, sometimes seen planted against a wall in the open air, appears to be synonymous with this species. In severe winters it gets killed to the ground.

The hardy species are propagated by layers, or imported seeds—preferably the latter, because trees produced from layers seldom or never make such handsome specimens as those from seed. *Observer.*

HOME CORRESPONDENCE.

The Royal Horticultural Society's Committees.—In answer to one or two points in "X.'s" note in to-day's *Gardeners' Chronicle*, p. 756, allow me to say that what I write is simply in my individual capacity as an old amateur horticulturist who has had every chance of seeing the working of all the three committees of the Society, and not in any way as a member of Council, or as "the exponent of the views of the Council." "X." writes:—"Mr. Wilson does not deny the assertion, not made by me, but still in these columns, that sometimes only five or six members out of perhaps twenty present vote certificates." It is a fact that sometimes this small number only vote. I cannot see the objection to it; there is a large body at their back who, in the case, say, of a Rose or a Croton, do not know Roses or Crotons sufficiently well to be able to judge the novelty, and yet who, if there was a suspicion of favouritism, would vote. In the great shows, where the awards are most important, there are only about two or three judges to each class of plants, and these, I believe, are, for want of all-round men, usually "speciality men." If it would please anybody, and the committee were asked all to hold up their hands for or against, I have no doubt that they would be happy to do so, but I cannot see that hands held up in ignorance strengthen an award. Of course it would be better if everybody on the committee knew all plants, but it will be a long time before we get to this. A very able man, who had filled several high positions, said to me many years ago, when I was complaining of some deficiency in people, "You should not expect better bread than can be made from Wheat." This was a lesson I have never forgotten. I believe the professional members of the committee are as good as can be found in the country within reach; as to the amateurs, it is very difficult to find competent men with time at their disposal, who live near enough to London to allow them to attend at all regularly; and yet amateurs are an essential element, representing the opinions of a most important class. It is, of course, impossible to satisfy everybody; if an exhibitor does not get a certificate for a favourite plant he is apt to think the judges incompetent. Lilies are the plants I have worked at most, and I think I know their points, but have more than once taken up one which I believed worthy of a First-class Certificate, and taken it home again some what disappointed, but on knowing the grounds of rejection recognised that there was something in them. At the beginning of "X.'s" note he regrets my objecting to reforms. I have had hard things said of me for suggesting rather sweeping alterations. When blamed both ways people are apt to fancy themselves right. I think the note which follows "X.'s," p. 757, answers the "visitor's voting." With regard to what my friend Mr. Wolley Dod says of Malva moschata alba, it did get a First-class Certificate. I was present, and, if I remember rightly, did not vote either way. When it was brought forward a large proportion of the committee, including old experienced nurserymen, rather to my astonishment, did not know it and much admired it. It had been given me many years ago at Bitton, and had been much admired in my garden. The committee knew much more than the public, therefore here was a case where there should have been a certificate that the plant was a desirable one, not new, but little known in cultivation. If I remember rightly, Chionodoxa Luciliæ when first brought before the committee had been grown in a frame, and we had thoroughly good evidence that the plant was hardy and had bloomed as well in the open border; the committee refused the certificate "till a plant grown out-of-doors was exhibited;" it then was at once awarded a First-class Certificate. *George F. Wilson.*

—— The difficulties connected with these cannot be better seen than by the remedies that are proposed, amongst which the most impracticable is that of "X." In the first place the committee—I speak of the Floral—is much too large, and this is one cause of the discontent. I have seen a plant or flower passed round, and yet it was impossible to know anything about it, there was so much talking going on; and, in the second place, eminent horticulturists as visitors are not supposed to be present until after the committee's decisions are given. "X.'s" recommendations, too, seem to me inconsistent; he says persons ought to take an independent position, and yet he says further on they are to follow the lead of some one. I believe the best plan would be to divide the committee, give plants to one section, and flowers to the other, for I contend if I grow Orchids and know nothing of florists' flowers, I have no right to give a vote on one of the latter, and *vice versâ*. "X." may tell me to follow some good leader, but I

have seen good leaders take opposite sides on a question, and then what is to be done? I do not believe there is any undue influence exercised as to membership, and I am quite sure that if the usual names one finds were divided, as I say, very efficient committees would be formed. I think, too, the numbers given *pro* and *con* for each subject ought to be publicly recorded. *A Former Member of Committee.*

—— May I suggest to the Council, with whom rests the appointment of the members of the various committees, the desirability of changing their manner of selection to some such system as the following:—At the last meeting in each year let the Secretary place in the hands of the Chairman of the day of each committee, a list of the names of those members who retire by rotation or otherwise, with a request to the committee to submit to the Council for final approval the names of such gentlemen as in their opinion would be fit and proper men to fill up the vacancies. The members of the Council cannot be expected to know everybody, or to remember the names of desirable candidates at the right moment, hence the occasional misfits, which have such an irresistible tendency to raise one's bump of ridicule. There would be no loss of dignity on the part of the Council in thus taking the committees into their confidence in such a matter, and I am strongly of opinion that if the committees were made up every year in this way the selection would be a wider and better one than is now made, and we should have no more of the charges of favouritism which were at one time levelled at the heads of one or two members of the ruling body. It would be impossible, under such a method of election, to put so many square men into round holes as is now done, and I believe would create more confidence in the committees than now exists. Another satisfactory result of such a method of procedure would be that the retiring members would in this way be officially apprised of their fate, and perhaps would also receive at the same time a vote of thanks for their services, if it is not too late in the day to suggest the desirability of such an innovation. At present a man may faithfully and gratuitously serve the Society for years, but when his turn to go arrives he goes without notice or thanks, and only learns that he is not wanted any more, or, it may be, for a time only by not finding his name in the new list, and by the non-arrival of the usual complimentary season ticket. I have known men whose practical knowledge has been of the greatest value to the Society for years, and who at considerable expense have regularly attended the committee meetings and the shows, steadily doing the practical work which has kept the head of the Society as much out of water as it is, yet who have been "retired" without the Society being put to the slightest expense for ink; and I have known those men six months after their retirement pay for the privilege of visiting one of the Society's shows—after years of good work cheerfully rendered in the Society's interests. I have, too, heard their comments on this shortsighted and ungracious way of doing things, but the common politeness due to your readers must be my excuse for not retailing them. But how is it that at South Kensington, of all places, there is, and long has been, such an utter want of tact and consideration in the unpaid powers that be? *X. X.*

The "Archer Hind" Aster.—This handsome Aster is one of the best and most useful of the genus, on account of its flowering so late in the season; indeed it seems to be the latest flowering of them all, since during the last week in November it was still in full flower. This being the case, it is desirable that the correct name of it should be ascertained, but this does not appear to be at all an easy thing to decide, since opinions differ, or, in other words, the doctors disagree. The naming of an Aster is nearly always an exceedingly troublesome matter, that is, if it is named in a careful and trustworthy manner, for the genus is a large one, any many of the species are very closely allied and difficult to discriminate from dried specimens. In the present volume of the *Gardeners' Chronicle*, p. 693, is the statement that the "Archer Hind" Aster is A. versicolor; that determination emanated from myself, since a specimen of the plant was sent to me by the Editor for determining, and I found that it exactly matched a specimen in the Kew Herbarium, to which was attached a label bearing the name Aster versicolor in Mr. Baker's handwriting. This specimen is from a plant cultivated at Kew in 1874, and was passed by Professor Asa Gray, when working up the Asters at Kew last year, as A. versicolor; and there can be no question that the "Archer Hind" Aster is identical with that specimen. But Mr. Wolley Dod was not satisfied with this determination, since he sent to Mr. Baker a specimen for his opinion, and Mr. Baker declares it to be "typical Aster lævis"! And now Mr. Dod sends other specimens of the plant in question to the Editor, again seeking to get a proper name for it. These specimens having been sent to me, I have gone as carefully into the matter as the time and material at my disposal will admit. So far as the specimens in the Kew Herbarium are concerned, it is certainly the same as the specimen named A. versicolor before alluded to, and at that first comparison on finding it to be identical with that specimen I did not search any further, but now, since Mr. Dod has questioned the correctness of that name, I have compared it with the original description of A. versicolor in Wildenow's *Species Plantarum*, iii., part 3, p. 2045, and finding that it cannot possibly be referred to that species, I hunted again for it in the Herbarium and find that it is identical with specimens named Aster lævigatus, Lam., by Asa Gray, and which according to description appear to be correctly determined; it is also the same as Aster brumalis, Nees, but that name must give place to Lamarck's older one of A. lævigatus. I think it may also be the same as the plant figured in the *Botanical Register*, at t. 1495, as Aster cyaneus, though the description that accompanies the plate appears to be drawn up from two or three species. So that the correct nomenclature of the "Archer Hind" Aster is:—A. lævigatus, Lam. (synonyms, A. brumalis, Nees, and probably A. cyaneus, Lindley, *Bot. Reg.*, t. 1495, *non* Hoffmann). As to its being Aster lævis, that appears to me quite out of the question, as besides the difference in habit, A. lævis having a decidedly panicled inflorescence, whilst in this plant it is racemose or at most but very slightly panicled, the leaves of A. lævis are distinctly amplexicaul and very much broader based than are those of our plant, in which they are merely sessile; and by this character it may easily be distinguished from A. lævis; the achenes, too, are glabrous in A. lævis, but in A. lævigatus there are always a few hairs to be seen upon them when viewed under a lens. *N. E. Brown.*

Coreopsis præcox.—Mr. Wolley Dod may expect, for the above, something very much in the way of Helenium grandiflorum. If not identical it comes very near to it, and I should certainly say not a Coreopsis at all. A plant apparently identical with either the Helenium or the reputed Coreopsis præcox came to Mr. Whitehead's garden at Bickley, from the late Mr. Niven, as Leptopoda brachypoda. Does any one know anything about it? *T. D. Hatfield, Nursery Road, Harborne.*

British Rainfall.—I am just preparing to issue to all the observers of rainfall known to me blank forms for the entry of their records for the year shortly about to close. This staff now exceeds 2000, but still, as they are not unfrequently rather clustered, there are many parts of the country where additional records are needed. I have no doubt that records are already kept in many places unknown to me, and I shall be glad if you will allow me to invite communications from any one who has kept an accurate record, and to supply either those already observing or contemplating doing so with a copy of the rules adopted by British observers, and with all necessary blank forms—all, I may perhaps as well add, free of charge, as our greatest requirements are ample and accurate records. *G. J. Symons, F.R.S., 62, Camden Square, London, N.W.*

Brockworth Park Pear.—Can any of your readers explain the difference between that much lauded Pear, Brockworth Park, and the old second-rate Bonne d'Ezée? At a recent exhibition a grower having both kinds in a collection expressed to me an opinion that they were synonymous, which view I fully indorse. A great authority on such matters has described the former as "delicate, buttery, melting, juicy, rich," &c.; but on the occasion to which I refer one equally eminent, when asked his opinion of the two, replied, "Both alike—both worthless." Now, if the Fruit Committee of the Royal Horticultural Society really made the blunder in 1871 of giving a First-class Certificate to an old and comparatively worthless Pear, I think the sooner it is corrected by somebody the better. *A. G. Bridgeman, Marlow.*

Hardiness of Ampelopsis sempervirens.—Some time ago a correspondence took place in your columns as to the hardiness of Ampelopsis sempervirens (Vitis striata), which we distributed in the trade two or three years ago. One of our friends has very kindly sent us, unsolicited, the letter we enclose. In one respect the experience he narrates is even more satisfactory than our own, for whilst our plants survived the winter of 1880, we could not say they were uninjured. The cause of this, we suppose, was owing to their standing plunged in pots in a rather shady place, and therefore not being well ripened, as the summer and autumn that year were very cold and wet, whilst the plants at Bryngwyn would be ripened against the mansion much better. The free growth, evergreen foliage, and close, neat habit, which this South American creeper possesses, do really make it a valuable addition to the hitherto very limited number of evergreens suitable for covering walls, when in such a winter as that of 1880 it was "perfectly uninjured without any protection whatever," as our correspondent describes. *Jas. Backhouse & Son, York.*

"I saw a few days since a very fine plant of your new Ampelopsis sempervirens trained against the mansion at Bryngwyn near here, the seat of James Rankin, Esq., M.P. It is a large plant and in splendid health, and Mr. Nash, the gardener, informed me that it passed through the severe winter of 1880 perfectly uninjured without any protection whatever, although the thermometer registered 2° or 3° below zero on more than one occasion. I thought it might possibly interest you to know this, as I have noticed on several occasions the hardiness of this very distinct and beautiful creeper called in question. *Henry R. Jelman, Foreman to Cranston's Nursery and Seed Company, Limited.*"

The King Apple.—Since sending my notes relating to the King Apple (p. 723) I have seen Mr. Abbott, of Knaresborough. I asked him if he knew of whom his father obtained the trees of the King Apple, or if he knew where they came from, but he could not tell me. If the plate of Warner's King Apple in the *Florist and Pomologist* for October be a faithful representation it is totally distinct from the Apple known in Yorkshire as the King Apple. There is not the slightest similarity between them. The King Apple is quite a flat fruit, of irregular shape, with a broad deep-set eye. It has no tinge of yellow, nor the slightest speck of russet. As I before stated, it was introduced into this neighbourhood, and let out, by Mr. Abbott's father something like sixty years ago. Mr. Abbott can give no information from whom or where his father obtained it. It is very strange that nothing is known of the origin of this Apple. Can any readers of the *Gardeners' Chronicle* give any information as to who was the raiser of this fine Apple? Probably also some of your readers may be able to give us all particulars as to who raised Warner's King, and when it was let out. Who was the Warner that the Apple is named after? *M. Saul, Stourton Castle, Yorkshire.*

Mealy Bug.—I venture to ask for your advice under the following circumstances:—When I took charge of these gardens, three years ago or more, I found mealy-bug in the stove very bad, and I have tried hard to get rid of it, but with the result that it spread from the stove to the climbers in a corridor, and has run the whole length of the house; and it is only a question of time as to when it will attack the Vines (for it is on a Plumbago immediately over the door opening into the vinery) unless exceptional steps are taken to prevent its doing so. Perhaps you will say that I cannot have used the best means possible to get rid of it; but as I have used Gishurst, Fir-tree oil and paraffin with no other result than to check it for a time, but not to kill it outright, I can only say I have done the best I know. My master is willing to allow me to cut down the climbers in both stove and corridor, to have the soil taken out of each house, and the plants carefully sponged and cleaned, &c., and taken away into a house which has been only just put up and has not been used yet, and to throw the houses open to all weathers for several months: afterwards to have sulphur burnt in, and the woodwork, &c., painted, if, in your opinion, such measures will stamp out the pest, or if you cannot suggest any other alternative equally efficacious. I may say that the houses are all new, having been built within the last eight years; also that the climbers in the houses mentioned have all been pruned and sponged with paraffin, so that there is no danger of the pest spreading for some weeks at least. *H. H. Hurt.*

[Our correspondent should take, as he hints, "exceptional" steps to prevent the mealy-bug from reaching his Vines. If they have not really yet done so he may consider himself fortunate in that respect. As his employer is willing to allow him to cut down the climbers in both the stove and the corridor communicating with the same and the vineries, I would strongly urge him to take advantage of this liberal offer at once, and do all that lies in his power at this, the best time of the year for the operation of eradication. If he does as he says—"throw the houses open to all weathers for several months, afterwards to have sulphur burnt in the same, and the woodwork painted," and "soil taken out of each house"—he may rely on eradicating the bug. I would advise him to have the walls whitewashed with fresh slacked lime at the time of painting the woodwork. The burning of sulphur is a dangerous remedy, and should be used with caution. Syringing every accessible nook and cranny and all open spaces likewise with hot water is a most destructive agency. The water should be as hot as the operator can possibly work the syringe. This will penetrate and cleanse also. I should use this in preference to the "sulphur" remedy, not once merely, but at frequent intervals when such a favourable opportunity is offered. Destroying the climbers will be easier than trying to clean them. The labour saved will buy a fresh stock. The cleaning process may be performed efficaciously in the case of all smooth-leaved plants, such as Stephanotis, for instance; but those with downy foliage

and all quick growing climbers should be destroyed root and branch. Any of the plants (if very badly infested) of a shrubby habit should, if they are in a sickly condition, be destroyed also. Young healthy stock can be easier cleansed, and when clean will quickly replace the older ones by making a luxuriant growth. In the case of stove bulbous plants we once had charge of a collection of Amaryllis and Eucharis that were bad enough for anything. We determined to kill or cure, and commenced by shaking the roots out free of soil, then, removing all the older scales around the bulbs, we brought the hot-water cure into work, driving the same as hard as we could into the crown of the bulbs; the result being we soon had a clean stock. We found the bug very plentiful here when we took charge amongst stove plants, conservatory climbers, Vines, and Peach trees. Where we could not thoroughly cleanse we destroyed the plants, &c. Now we have no bug on the place, and the sense of relief is almost more than we know how to express. For the cleansing process we had a large zinc trough made 6 feet by 4 feet and 4 inches deep, with a small hole at one corner, from which the "insecticide" we used could drain into a zinc pail, and thus be used over again as often as necessary. This we found to be an economical manner of proceeding, as a large amount of insecticide would necessarily be expensive. We used "The Chelsea Blight Composition," and have always found it most effective. We began by using at the strength advised, but proceeding cautiously, continued adding till we were 50 per cent. beyond printed directions, which we found to be too much for the bug. In this manner we cleaned Stephanotis, Gardenias, &c. Some Eucharis that were not badly infested we cleaned by sponging with the composition at 100 per cent. in advance, viz., 2 pints to the gallon of warm water instead of one pint. This we did not syringe off with clear water, but in the case of the Stephanotis and the Gardenias we did this about twenty minutes afterwards, and then repeating the process in a week or two. We were unwilling to sacrifice some effective climbers in the conservatory, where only a few bugs were found, so proceeded by pruning moderately hard, and then painting with the composition at "double" strength. When young growth commenced a sharp look-out was kept, many hours having been spent, and not as many bugs found. Once cleaning is not sufficient, close, unremitting attention is required, and that for two or three years in difficult cases, with the determination to be the master in the end. *J. H. G.*]

Poinsettias.—Entering the fine conservatory at Ashridge the other day I was much struck with the brilliancy of the display of this fine old winter-flowering subject. The specimens are arranged so as to form an avenue the whole length of the conservatory, which is 100 feet long. The plants range from 1 to 6 feet in height, and some of the finest breaks measure 20 inches across. They have beautiful green foliage down to the pot, some of the leaves measuring 8 inches across, and 12 inches in length. The plan Mr. Lowe adopts in raising his stock is to strike them from cuttings (which he prefers to eyes) in June, and grow them on, close to the glass, in plenty of heat, with as much air as possible during the summer, gradually hardening them off towards the end of the season. Under this treatment they do not lose their foliage, and stand well in the conservatory in a temperature of about 50° to 55°. *J. Fitt, Cassiobury Gardens, Watford.*

COLONIAL NOTES.

CALCUTTA BOTANIC GARDEN. — This garden, though not of easy access, is described in the annual report as a beautiful and shady park, traversed by numerous driving roads and footpaths, and containing many beautiful and instructive specimens both of Indian and exotic plants. The experimental culture of plants yielding caoutchouc has been continued, and the Ceara rubber has thriven well, while the Para rubber (Hevea brasiliensis) has completely failed. Other experiments have been made with reference to fibre-plants for paper-making. At Darjeeling Messrs. Gammel and Jaffrey have been very successful in the introduction, culture, and distribution of Potatos among the native cultivators and others.

PUNJAB AGRI-HORTICULTURAL SOCIETY'S GARDEN, LAHORE.—The annual report for the year 1881-82 has reached us. Eucalyptus, Carob, and Olive trees have succeeded well. The institution, in spite of its title, is an agency entirely supported by Government for the purpose of "importing and acclimatising the seeds and raising the plants so largely in request all over the province." Mr. Baden Powell's introductory statement as to the condition of the garden does not reveal a very satisfactory state of affairs.

POONA: *Catechu.*—From Mr. Woodrow's report of this garden we learn that catechu is produced from Acacia ferruginea, as well as other species of this genus. So far as we know, this species has not been noted before as producing this drug. Mr. Woodrow has succeeded in making paper from the stems of Bulrush, Typha elephantina.

Watercress.—That £150,000 worth of this, in Poona, despised herb is annually sold in Paris—that the value of the quantity sold annually in London is probably 30 lákhs of rupees—and that the average price in Manchester is twice the price of bread, is a statement of the facts that may awaken interest.

Potatos.—Mr. Woodrow notes the following as the yield of certain well-known varieties at Poona. The tubers were received January 28, 1882; planted January 31, 1882; lifted May 1, 1882.

	Planted.	Produce.		Size.	Colour.	Shape.	Regular.	Depth of Eye.
	lb.	Oz.	lb.	Oz.					
Schoolmaster	12	5	8	Large	Roughly skinned white	Globular	Regular	Hollow
Redskin Flourball	1	3	7	1	Large	Red	Oblong	Irregular	Medium.
Magnum Bonum	2	3	10	3	Small	White	Globular	Regular	Hollow
Scottish Champion	7	1	5	Small	Smooth White	Globular	Irregular	Deep
Ashtop Fluke..	10	1	15	Small	White	Oval	Regular	Hollow
Rivers' Royal Ashleaf	8	1	14	Small	White	Oval	Regular	Hollow
Red Emperor..	7	1	12	Small	Red	Extremely irregular	Extremely irregular	Hollow
Woodstock Kidney	5	3	6	Fair	White	Oval	Very regular	Very hollow

REMARKS.—In noting the yield the very untoward season at which these were planted should be borne in mind. I consider that Schoolmaster, Magnum Bonum, Redskin Flourball, and Woodstock Kidney have proved great acquisitions; the others need further trial. The varieties that have done well can be rapidly propagated by cuttings during next rainy season.

Florists' Flowers.

THE AURICULA.—Winter is now upon us "with his cold icy coat," and the Auricula must be laid up in suitable quarters for the season. We have been fortunate hitherto in having a north aspect for our plants, where they were always kept until October, when they were removed to a more open position for the winter. The experience of the last two or three seasons has taught us that it is better not to remove them from their summer quarters, in our district at least, until the middle or even the end of November. When they have been removed in October a considerable number of them have thrown up autumn trusses, when it would have been far better that they remained quiet. Removing the plants affords a good opportunity to thoroughly clean them, and slightly stir the surface soil in the pots, taking care also that any green-fly lurking underneath the leaves is also brushed off. Where the plants are thoroughly clean and yet do not thrive, the woolly aphis may be introduced round the neck of the plants. It may be obtained from Yorkshire. According to a writer in a contemporary, the Auricula did not thrive in that county until it was attacked by this product; for he does not seem to be sure whether it is a live creature or a fungoid growth. At any rate, it seems to have been a perfect godsend to the Yorkshire growers, and if they have been cultivating it for some time they must now have a surplus stock; growers should advertise it.

Seedlings from seeds sown in June and July seem to disappear during the winter months from various causes, but mostly from slugs; one of these slimy creatures gliding over the surface of a seedling pot will clear off dozens of the tiny plants in one night. Fanciers watch for them carefully with a good bull's-eye after it is dark at night; attend to them at daybreak in the morning as well. See that the soil in the pots of specimen plants is not quite dried up, but they must not have much water after this time. Give air abundantly; whenever the weather is dry remove the lights entirely.

THE CARNATION AND PICOTEE.—An enthusiastic amateur writes to me from South Wales in great perplexity about his plants being affected by spot. This is doubtless a fungoid growth caused by wet, in addition to submitting the plants to a close atmosphere. I have never seen spot in our own collection, nor in that of Mr. Dodwell, or Mr. Turner, of Slough. We treat the Carnation as a hardy plant—night and day there is a constant circulation of air through the frames. In addition to having the lights constantly tilted, Mr. Dodwell raises the frames from the ground, and the air passes over and amongst the plants in the severest weather. Some growers again err on the dry side; because wet injures them they are afraid to water, and keep the soil in the pots dusty dry; there is no need to do this, in fact even at midwinter the plants would be injured by being kept so dry as this. Our plants are potted early in October, and are placed in frames facing the north; but the aspect is not important—our object is to prevent their being early excited into growth. In late districts the frames should have all the light and sun they can obtain. Water the plants with rain-water, if it can be obtained, whenever they are dry; and there is no need to warm it—that would be coddling. I have broken the ice on the tanks to get at the water. One thing I must mention, and that is, never water the plants when they are frozen, nor if they are likely to be frozen immediately after. One florist, writing in a contemporary advocating the claims of the Rose over the Carnation, tried to make his readers believe that the Rose could be had in flower all the year round, and the Carnation for "three weeks only." There are late and early flowering Carnations and Picotees, so that with a fairly good collection of the florist type, and taking no extra pains, the main bloom lasts for six or seven weeks. Then many of them will bloom again in the autumn, like hybrid perpetual Roses. In addition to these we have the perpetual flowering or Tree Carnations, with the aid of which, and a greenhouse, an amateur with not a large collection of varieties may have a Carnation or Picotee for his buttonhole every day in the year. Out upon your milk-and-water florists, I say, who studiously seek to advocate the claims of one flower at the expense of another.

THE PINK.—One always thinks of the Pink when writing about the Carnation, and lately we were more forcibly reminded of it by the papers containing an obituary notice of Mr. James Clarke, of Bury St. Edmunds. The type of Pinks he was successful in raising were not those esteemed by the florist, but they are more grown and valued by the general public, as they are so well adapted for forcing. Lord Lyons is a charming variety, with a better habit of plant than Derby Day. Such flowers can never become too common. Unlike the Carnation, the Pink succeeds best planted out in the open garden, in beds or borders; it is emphatically a border flower, even in its most refined state. The young plants which ought to have been planted-out in October should be looked over, especially after frosts, as they are sometimes thrown out of the ground and require to be pressed in again. The leather-coated grub and slugs feed upon them at night if they are not disturbed at their meals by the watchful gardener.

We annually pot up a number of Pinks for forcing: the best for this purpose are Lady Blanche, pure white; Lord Lyons, reddish-purple; Derby Day, Mrs. Moore, white with reddish-maroon centre, and Mrs. Pettifer; Lord Lyons and Lady Blanche I consider the two best varieties for forcing. *J. Douglas.*

HERBACEOUS PHLOXES.—With some 200 or more kinds of these truly grand summer and autumn blooming plants in commerce, it is almost humiliating to find so few of them in gardens of all kinds, though, as hardy border plants, they can hardly be excelled. Gardeners, perhaps as a rule, have not time or even space in which to do everything well, hence it is that we find the herbaceous Phlox treated pretty much as an ordinary border plant. The summer growth in the autumn is cut away, and that of the next year comes up in its usual course: it flowers by no means well, the blooms becoming smaller by degrees and beautifully less with age, until presently the plant becomes worthless. Perhaps a revision of the hardy plant border takes place once in five or six years, and then the stool is kindly cut up with a spade, and the dissected portions are replanted to again grow into a mere massy stem that produces starved worthless flowers. The first thing a gardener who may wish to renovate his Phlox culture should do, is to lift and throw upon the rubbish heap all the old stools he has by him, for since their introduction newer and far more beautiful kinds have been raised, and may be had in plenty and cheaply. A couple of dozen of young plants, got in pots, or in rooted clumps, in April, for about 12*s*., and planted out singly and in good soil, will give the next year, with careful division, half a dozen plants of each kind, and far more if the strong shoots, as they break up in March, be taken off and rooted under glass. Once having a good stock the gardener has but to add a dozen newer sorts now and then, and his collection will always be varied and of the best. Owing to the earliness which the more precocious kinds display the blooming season is made a long one, for it may begin in June and end in October. To get flowers so late, cuttings must be put in late, and when rooted they should be planted out in a cool place and in holding soil. Some kinds naturally bloom later than others; these will be found in time, though perhaps more or less governed by the soil and position. It is in deep or peculiarly striking colours that the Phlox is now so rich, and indeed in the subdued glow of the autumn sunshine these are wondrously effective. A big head of Countess of Breadalbane or of Crozy Fils stands out amidst the green foliage, and indeed amidst all other flowers, as something specially brilliant. All growers will no doubt give the preference to these rich hues, and especially for their latest bloomers, because of the brilliant glow of colour they give in the duller autumn light, and when glow is so much needed. None the less the pale forms, the whites pure and the whites with coloured eyes, the pleasing lilacs, the carmines, scarlets, pinks, and even the splashed flowers, all are very beautiful; then, too, what fine form and good substance the individual pips have. Even the most exacting of florists must admit that the Phlox has become well nigh perfect. There is a fine field open for some enthusiastic grower who may wish to show what can be done with the hardy flowers in pots, grown with single stems and trusses and in varying heights from 15 to 24 inches, the heads of bloom as big as a Dutch cheese but much more elegant; nay, even as cut flowers the big heads shown in dozens would make a fine exhibit, that would be productive of a sensation at any autumn show. *A. D.*

NEW CHRYSANTHEMUMS.—One might with much truth state new late flowering Chrysanthemums in reference to the varieties shown by Messrs. T. Jackson & Son, of Kingston, and certificated by the Floral Committee of the Royal Horticultural Society on Tuesday last. It is certainly somewhat unusual to give Certificates of Merit to Chrysanthemums so late as Dec. 12. The two varieties that won First-class Certificates on this occasion are true Japanese forms. One—Ceres—has long, broad, pure white, ribbon-like florets, and comes mid-way in character between Fair Maid of Guernsey and Meg Merrilies: of these two the latter is the latest to flower, but Ceres appears as if it would bloom later still. The fact that the centre is dashed with pale primrose does not in the slightest degree detract from the purity of the blossoms. The other—Duchess of Albany—has narrow twisted petals of the Dragon type, and is in the style of Madame R. Rendatler; the flowers large, full and spreading, and the blossoms deeper in colour, while the petals twist with age; the colour is pale gold heavily tinted with reddish-brown, and is not unlike Luteum striatum, though decidedly distinct from it. These two varieties being so late, combine with the early flowering forms of the Japanese type to prolong the bloom for a considerable period, and the pretty little white pompon Le Pureté, shown previously by the same firm, deserves something more than a passing notice. The particular plant produced on this occasion was forced into bloom more than a month ago; it is of dwarf habit, late in flowering, which is of decided value in the case of a pompon variety, and very free indeed—so free in fact that one shoot contained a cluster of not less than eleven expanded blossoms. The Floral Committee could scarcely have given it a certificate having regard to the condition in which it was shown, but it is a variety likely to be largely grown for late work, and, we should think, for exhibition purposes, because of its free habit and the sunny purity of the flowers.

Reports of Societies.

Royal Horticultural: *Dec.* 12.—G. F. Wilson, Esq., in the chair. The Rev. G. Henslow illustrated, by several examples exhibited, the power of plants to render themselves attractive with bright colours, independently of, or in addition to, the corolla. This was principally attained by means of bracts. A beautiful series of Salvias exhibited by Messrs. Cannell & Son showed how the bracts and calyx, both being usually green in flowers, could become brilliantly coloured, and so intensify the beauty of the spray. An Acroclinium, a kind of "everlasting," from West Australia, showed how the bracts of the "involucre" surrounding the florets could mimic a true flower. In this plant the chaffy scales, interspersed amongst the florets, contributed to the same effect. Mr. Henslow pointed out how bracts might thus either enhance the general colouring of an inflorescence, or actually assume the appearance of a flower. He further illustrated this by dried specimens and drawings of Poinsettia, Leycesteria, Epiphyllum, on the one hand, while Bupleurum, Cornus, Darwinia, and Euphorbia jacquiniflora were exact imitations of true flowers on the other.

SCIENTIFIC COMMITTEE.—Sir J. D. Hooker in the chair. The principal subject of discussion at this meeting was the report on the losses and injuries to plants throughout the United Kingdom, consequent upon the severe winter of 1880-81. The Secretary, the Rev. George Henslow, had compiled from circulars sent out by him in the name of the Society an exhaustive report on the subject, together with collateral references to other great frosts. A large body of facts most useful for future reference was thus accumulated, and much disappointment was felt by those who filled in the circulars and others at the non-publication of the memoir. At a previous meeting the Council were memorialised on the subject, with the result that that body expressed their regret at their inability at present to incur the financial outlay requisite. Some conversation ensued as to the course to be followed under the circumstances, and ultimately it was decided to confer with the Meteorological Society on the subject.

The subjects sent for exhibition on this occasion were very few, the most novel being a scape of Eucharis bearing a leaf springing from its centre. A vote of thanks to the Chairman, Sir J. D. Hooker, for his services during the year, was carried by acclamation.—Sir Joseph in reply alluded to the value of these meetings, and to the great pleasure he experienced in attending them.

FLORAL COMMITTEE.—B. S. Williams, Esq., in the chair. The inevitable result of several days of sharp frost and sixty hours of continuous fog was abundantly manifest on Tuesday in a small meeting of members and an equally small array of subjects staged for their consideration. The largest contributor was the Chairman of the day, who had a bold and brightly coloured group of Cyclamens and red and white Primulas, admirably representing the well-known excellent characteristics of Mr. Williams' strains of those flowers. A Silver Medal was recommended. The Messrs. Cannell & Son again did their best to make us believe that the sun perpetually shines at Swanley by exhibiting remarkable stands of single and double flowered zonal Pelargoniums, brilliantly coloured Salvias, and fragrant Heliotrope, and to produce which in such weather was surely worthier of some higher award than a vote of thanks. The best of the new plants shown were Japanese Chrysanthemums Ceres and Duchess of Albany, shown by Messrs. T. Jackson & Son, of Kingston, and described in the preceding column. The new double-flowered form of Acroclinium roseum, and an equally double type of A. album, sent by Mr. J. C. Schmidt, of Erfurt; Pescatorea Vervaeti, a novelty with waxy-white sepals and petals, tipped with crimson-claret; and a labellum wholly of the same colour, sent by Messrs. Vervaet & Co., of Ghent; and Cosmos bipinnatus var. parviflorus, sent up from Chiswick, and noticed in another page.

The awards made were:—

First-class Certificates.

To Mr. J. C. Schmidt, for Acroclinium roseum florepleno.

To Mr. J. C. Schmidt, for Acroclinium album florepleno.

To Messrs. Jackson & Son, for Japanese Chrysanthemum Ceres.

To Messrs. Jackson & Son, for Japanese Chrysanthemum Duchess of Albany.

To Messrs. Vervaet & Co., for Pescatorea Vervaeti.

Second-class Certificate.

To the Royal Horticultural Society, for Cosmos bipinnatus var. parviflorus.

FRUIT COMMITTEE.—H. J. Veitch, Esq., in the chair. The largest contribution made to this meeting was a remarkably creditable collection of sixty-six dishes of Apples staged by Mr. Goodacre, Elvaston Castle Gardens, to whom the committee recommended the award of a Bronze Medal. A smaller collection (fifteen dishes), also of well-grown specimens, came from Mr. H. A. Mann, St. Vincent's Gardens, Grantham, and a vote of thanks was the exhibitor's reward. Mr. Hudson, gr. to H. J. Atkinson, Esq., Gunnersbury House, Acton, showed three superb bunches of Black Alicante Grapes, and single fruits of Smooth Cayenne and Lord Carrington Pine-apples, the latter especially being a medium-sized, handsome, and pleasantly odoriferous fruit. A Cultural Commendation was awarded. Messrs. James Dickson & Sons, Chester, sent two seedling Apples, Favourite and Masterpiece; and some other seedlings, principally small fruiting sorts, came from Mr. Gilbert, of Burghley. Mr. Eckford, gr. to Dr. Sankey, Boreatton Park, Baschurch, sent some seedling pedigree Potatos. Messrs. James Carter & Co., who offered a series of prizes for a collection of vegetables, were unfortunate, as a result of the severe weather of the previous week, in having only two competitors—Mr. H. Marriott, Prospect House, Skirbeck, Boston, and Mr. G. Summers, Sandbeck Park Gardens, Rotherham—who took the 1st and 2d prizes in the order named, with very creditable collections, the season and the weather considered.

York Ancient Florists' Chrysanthemum and Fruit Show.—The third annual exhibition of the above-named Society was held on November 29 and 30 and December 1, and, taken as a whole, it was the best show of its kind yet seen in York. The committee were fortunate in being able to secure the fine roomy, well-proportioned building erected some few years since by the committee of the Yorkshire Fine Art Institution, in which to hold the show. There is a quantity of statuary, paintings, &c., permanently in the building, and this year the committee kindly allowed to remain until the show was held a quantity of large specimen Conifers, which were used some few weeks ago in fitting up a winter garden by the Messrs. Backhouse. These were grouped round some of the most prominent statuary on each side, and made a splendid background to the groups of flowering foliage plants and Chrysanthemums which were dispersed on the floor of the building. When lit up in the evening, and the room well filled—the company either admiring the plants and flowers, or listening to the strains of our famous Yorkshire Black Dike Band—the scene was, to say the least, a charming one. My notes are made as the schedule runs. First prizes were offered for groups of plants arranged for effect covering spaces of 91 feet and 36 feet. In the large group class the 1st prize was awarded to Mr. Scott, gr. to J. Buckle, Esq., York; 2d to Mr. McIntosh, gr. to J. F. Hingston, Esq., Clifton, York. Mr. Buckle's group had the most valuable plants, but Mr. McIntosh's was, in the opinion of many gardeners and others, the most tastefully arranged. In the smaller groups, Mr. Doe, gr. to Dr. Baker, The Retreat, York, was 1st, with a very pretty group. There were several other competitors in both classes, whose exhibits, though good, call for no further remarks. For a group of Chrysanthemums, 9 feet in diameter, Mr. Doe was again 1st, with a very fine group of plants, well grown and nicely arranged. In the class for nine Chrysanthemums, large-flowered varieties (Japanese excluded), there was a good competition. The best lot of plants, exhibited by W. Bleasdale, Esq., York, was disqualified through having duplicate plants of Miss Forsyth, one being inadvertently put up as Virgin Queen. The same thing again occurred in the class for six, the judges deciding that the two varieties were the same. Mr. Fieldhouse, gr. to Miss Steward, Bishopthorpe, was 1st in both the nine and six, Mr. McIntosh being 2d. All had good plants of old-established sorts. For three plants, W. Bleasdale, Esq., was 1st, and Mr. McIntosh 2d. In the class for six Japanese varieties there was a good competition. Mr. McIntosh was 1st, his best plants being Purple King, Orphée, Elaine, and Cossack; Mr. Fieldhouse, gr. to H. Newton, Esq., York, was 2d. For three Japanese, Miss Steward was 1st; W. Bleasdale, Esq., 2d, the last named gentleman being 1st for a single specimen Japanese, with a fine plant of Peter the Great; Mr. McIntosh 2d, with a good Fair Maid of Guernsey, having 120 blooms on it. Classes were provided for six and three pompons, but

though there were several competitors, the plants were not so good as usual. At one end of the building, in front of the raised orchestra, W. B. Richardson, Esq., Elm Bank, York, put up a splendid group of plants, not for competition. They were arranged in the form of a sloping bank facing the main entrance, and had a fine effect, the back row being formed of standard grown plants, each one having a quantity of fine well-developed bloom just at their best—Empress of India, Faust, Fleur d'Hiver, Bronze Jardin des Plantes, Prince Alfred, and Lord Talfourd being the most noteworthy in a lot all good.

The schedule contained prizes for Roman Hyacinths, Primulas, Cyclamens, and table plants, in all of which classes there was good competition and good plants but I refrain from giving details, fearing lest in the crowded state of your columns you may even now have to use the editorial scissors freely. In the class for British Ferns I must mention the 1st prize lot, exhibited and grown by Mr. W. R. Robinson, a tradesman amateur in York. He had fine plants of Scolopendrium vulgare var. (much crested), about 2 feet 6 inches across; a splendid plant of Hymenophyllum tunbridgense, Polypodium cambricum, Polystichum aculeatum var. proliferum, Sclopendrium crispum, and Trichomanes radicans, a yard in diameter.

In the classes for cut Chrysanthemums there was a quantity of really fine flowers put up, both in the large flowered and Japanese classes. For eighteen large-flowered, Mr. T. B. Morton, florist, Darlington, was 1st, with amongst other grand blooms, Prince Alfred, Cherub, Mr. Rowe, White Venus, Eve, Baron Beust, and Empress of India. Mrs. T. Hayne Cook, Mirfield, was 2d with a really good lot, treading close on the heels of the 1st prize lot; Mr. Hemming, gr. to J. Cholmley, Esq., Newton House, Malton, being 3d, with good blooms. The same exhibitors occupied their respective positions in the class for twelve varieties. For twelve Japanese varieties, Mr. Morton was again 1st, his best blooms being Baron de Prailly, Grandiflora, Meg Merrilies, and Oracle—Mrs. T. Hayne Cook being again 2d, having a splendid full shaped flower of Elaine, 7 inches in diameter, amongst her lot. The judges had difficulty in deciding which was the best lot in the class. Prizes were also offered for the best stand of twelve bunches of cut flowers, and a fine lot of stands were shown, what were otherwise the two best lots being disqualified through having a single Calla and a single bract of Poinsettia amongst them. There was a fine lot of bouquets put up to compete for the prizes offered for a bouquet of Chrysanthemums, and a hand bouquet of miscellaneous flowers respectively—Mr. Cartwright, gr. to A. Wilson, Esq., M.P., Tranby Croft, Hull, being awarded the 1st prize in both classes. The same exhibitor was again 1st in the class for twelve coat bouquets. Ten lots were put up in this class.

Fruit.—For two bunches of black Grapes, Mr. Allsop, gr. to Lord Hotham, Dalton Hall, Hull, was 1st, with two splendid clusters of Black Alicante, weighing not less than 10 lb.; 2d, Mr. Hemming; 3d, Mr. Wallis, gr. to Sir H. Thompson, Kirby Hall, York. For two bunches of white Grapes, Mr. Allsop was again 1st with two bunches of Muscat of Alexandria, beautifully finished, having the real amber tint; 2d, Mr. Hemming, with the same variety. A fine lot of Apples and Pears were shown, Mr. Allsop being 1st for kitchen Apples with six Warner's King, weighing 5½ lb. Miss Lloyd, Stockton, was 1st in the dessert class, with a fine dish of Ribston Pippin. In the classes for six dishes of kitchen Apples, also ditto dessert ditto, Mr. Allsop was again 1st; also in the classes for six dishes of Pears, and a single dish of ditto: in the latter class he had a really fine dish of Doyenné du Comice. Prizes were also offered for vegetables, both collections and single dishes of all the leading kinds, and a splendid lot were put up, the company taking much interest in them as a whole. In the class for eight varieties, open, Mr. Cartwright was 1st; Mr. T. Smith, Driffield, 2d; and Mr. Hemming, 3d. *H. J. C.*

Nottinghamshire Horticultural and Botanical: *Dec.* 12.—The usual monthly meeting of the above Society was held at the Mechanics' Institute, Nottingham, on Monday evening last, when there was a large attendance of members and their friends. Mr. S. Thacker occupied the chair, and Mr. Edington the vice-chair. The discussion which had been left unfinished at the previous meeting on Mr. Meadows' paper on "The Chrysanthemum and its Culture," was resumed, Mr. Meadows adding to his previous essay a supplementary paper dealing with fresh points, viz., the best time to propagate and the causes of mildew. There was a good show of cut flowers and fruit. Mr. Goodacre, of Elvaston Castle, sent a fine collection of sixty varieties of Apples, and from Mr. Edington, Woodthorpe Grange, came an interesting collection of Chinese Primula hybridised with the Polyanthus. [What were these like? ED.] Mr. Bellis, of Newstead Abbey, showed a fine collection of Poinsettias, and a grand box of cut blooms of Chrysanthemum Elaine—Mr. Ward, of The Park, contributing a similar lot of Poinsettias. Messrs. Pearson, of Chilwell, sent a fine collection of cut blooms of Chrysanthemums, which were much admired. Votes of thanks were awarded to the essayist, and to the different exhibitors. It was resolved that the annual meeting and dinner of the Society be held early in January, and a floral *fête* and flower show in the summer of next year. *D.*

Obituary.

With great regret we have to record the death of Mr. John Sadler, Curator of the Royal Botanic Gardens, and of the new Arboretum, Edinburgh. We had been aware for some time that Mr. Sadler's health was precarious, and though somewhat surprised to find him so feeble as he was in September, his condition was not then such as to lead us to anticipate his early loss. He only took to his bed on Thursday week, when nothing serious was anticipated; but, despite the skill of his medical attendants, he gradually sank, and died early on Saturday morning last, leaving a widow and seven children, besides a host of warm personal friends, to mourn his early death. Mr. Sadler, who was the son of a gardener, was born at Gibbleston, Fifeshire, on February 3, 1837, and had thus only reached his forty-sixth year. In 1854 he became assistant to Dr. Balfour, Professor of Botany in the University of Edinburgh, and carried out the duties of his office with diligence and assiduity; latterly giving the Professor valued assistance in conducting the microscopical and other practical demonstrations. In 1858 he became Secretary to the Edinburgh Botanical Society, and for seventeen years he filled a corresponding position in connection with the Scottish Arboricultural Society, both of which offices he filled with a zeal that was highly appreciated. In 1867 he was appointed Lecturer on Botany in the Edinburgh High School, and during the period he held this office gave many interesting lectures on various branches of Vegetable Physiology before various horticultural and literary societies. Two years later Mr. Sadler was awarded the Neill Prize of £50, by the Royal Caledonian Horticultural Society, in acknowledgment of the services rendered by him to botany and horticulture; and, in the same year, 1879, on the death of Mr. McNab, he was appointed as his successor at the Botanic Gardens, an appointment which met with considerable local opposition at the time, but which he successfully lived down, and last year had his duties increased by his appointment to the post of Curator of the new Arboretum. He was for some time connected with the Holyrood High Constables, which body quite recently did him the honour of appointing him their Moderator, and within the last few weeks he was elected President of a club established in Edinburgh to popularise the study of fungi as an article of diet. In our number for January 18, 1879, we gave a portrait of Mr. Sadler, who for many years had been an occasional contributor to our columns. He was buried on Wednesday afternoon in the Warriston Cemetery, in the presence of over a hundred of his relatives and friends, including most of the leading horticulturists of Edinburgh and the neighbourhood.



A Mid-Lothian correspondent writes on December 11:—We are in the midst of the heaviest snowstorm which has visited this part of Scotland within the memory of any living man. Snow fell last week every day—very heavily on Thursday and Saturday—till on Saturday afternoon it lay 25 inches deep in the open, where there was no drift. Frost set in keen last night, and this morning we had 14°. To-night there is 20°—at 9 P.M.—and with a steady barometer it looks like several days of keen frost. The heavy snowfall has tumbled about and badly broken many shrubs and other evergreens.—Dec. 13: The thermometer stood at 7° Fahr. (25° of frost) yesterday (Tuesday) morning, and 6° Fahr. (26° of frost) at 2 o'clock this morning; since which it has risen gradually, till it now (12 noon) stands at 26°, and it has been snowing fast for the last hour.

—— From Kelso Mr. P. Ireland writes:—Although the temperature this season has not been marked by any amount of intense frost, yet we have experienced one of the most severe snowstorms that has ever occurred in the memory of the oldest inhabitants in this neighbourhood. We had several slight showers in the month of November, with the thermometer varying from 2° to 10° of frost and cold biting east winds; but it was not until December 5 that we had any quantity of snow, when it fell to the depth of 6 inches, and it continued falling in slight showers until Thursday, the 7th, when it commenced with all the fury of a gale about 9 A.M., and continued without intermission until about 7 P.M., when from 14 to 18 inches of snow fell in the space of ten hours—the full depth of snow which fell in the immediate vicinity of the town from December 5 to December 7 varying from 24 to 30 inches, which, however, was much exceeded on the higher grounds a few miles outside the town, making the roads quite impassable. I learn from various sources that there has been a great amount of damage done to trees by the great weight of snow lodging on the branches and breaking them. Fortunately, we had not a great amount of frost at the time, or things would have suffered to a greater extent, as the branches would have been rendered more brittle and would have yielded more readily to the extra strain upon them. The thermometer registered this morning (December 11) 23° of frost, and it has every appearance of continuing.

—— Mr. Perkins, Thornham Hall, Suffolk, writing under date of December 12, states that on December 10 the thermometer registered 13° of frost, on the 11th 18°, and on the 12th 20°.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
For the Week ending Wednesday, Dec. 13, 1882.

Month and Day.	Barometer. Mean Reading Reduced to 32° Fahr.	Barometer. Departure from Average of 18 years.	Temperature of the Air. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years	Hygrometrical Deductions from Glaisher's Tables 6th Edition. Dew Point.	Degree of Humidity. Sat. = 100.	Wind. Average Direction.	Rainfall.
Dec	In.	In.	°	°	°	°	°	°			In.
7	28.97	—0.80	34.2	27.0	7.2	31.7	— 5.8	26.0	79	E.N.E.; N.N.E.	0.56
8	29.22	—0.56	36.5	32.2	4.3	34.9	— 6.5	30.4	83	N.E.; N.W.	0.06
9	29.54	—0.24	38.0	29.5	8.5	33.6	— 7.6	30.0	87	W.; W.N.W	0.00
10	29.58	—0.20	31.0	24.0	7.0	27.1	—13.9	25.5	93	—	0.00
11	29.59	—0.20	29.0	26.5	2.5	27.5	—13.3	25.9	92	—	0.00
12	29.50	—0.29	32.7	25.9	6.8	32.6	— 8.1	31.0	95	E.	0.00
13	29.38	—0.42	41.8	31.0	10.8	37.9	— 2.7	33.4	84	W.S.W E.	0.04
Mean	29.47	—0.39	34.7	28.0	6.7	32.2	— 8.7	28.9	88	Variable.	0.66

Dec. 7.—Fine cold morning; snow falling from 11 A.M. to 7 P.M. Rain from 7 P.M.
— 8.—Fine day, snow still on ground, gleams of sunshine at times; snow melting fast at night.
— 9.—Dull overcast morning; fine afternoon; gleams of sunshine at times; blue sky between clouds. Fine night.
— 10.—Dense fog all day and night; very cold.
— 11.—Dense fog all day and night; very cold; ice on ponds.
— 12.—Slight fall of snow in morning. Cold day, frost on ground.
— 13.—Fine bright day; blue sky; sun shining; ice and snow all melted. Dark cloudy night.

London: *Atmospheric Pressure.*—During the week ending December 9, the reading of the barometer at the level of the sea decreased from 29.84 inches at the beginning of the week to 29.04 inches by 9 A.M. on the 4th, increased to 29.12 inches by 3 P.M. on the same day, decreased to 29.07 inches by 9 A.M. on the 5th, increased to 29.23 inches by 9 A.M., and decreased to 29.15 inches by 3 P.M. on the 6th, increased to 29.18 inches by 9 A.M. on the 7th, decreased to 29.12 inches by midnight on the same day, and was 29.76 inches by the end of the week.

The mean reading for the week was 29.28 inches, being 0.58 inch lower than last week, and 0.66 inch below the average of the week.

Temperature.—The highest temperature in the shade in the week was 51°.1, on the 3d; on the 7th the highest temperature was 34°.2 The mean of the seven high day readings was 41°.1.

The lowest temperature in the shade in the week was 27° on the 7th; on the 4th the lowest was 38°. The mean of the seven lowest temperatures was 32°.2.

The greatest range of temperature in one day was 17°.6, on the 3d; the smallest was 4°, on the 5th. The mean of the seven daily ranges was 8°.9.

The mean temperatures were—on the 3d, 44°.4; on the 4th, 42°.7; on the 5th, 36°.9; on the 6th, 33°.7; on the 7th, 31°.7; on the 8th, 34°.9; and on the 9th, 33°.6; the first two being above their averages by 2°.6 and 0°.9 respectively; the last five being 4°,8, 7°.9, 9°.8, 6°.5, and 7°.6 respectively below their averages.

The mean temperature was 36°.8, being 0°.8 lower than last week, and 4°.7 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun, was 74° on the 4th. The mean of the seven readings was 50°.

The lowest reading of a minimum thermometer with its bulb placed on grass, and fully exposed to

the sky, was 25°.5, on the 7th. The mean of the seven readings was 26°.9.

Rain.—Rain fell on four days to the amount of 0.68 inch, of which 0.54 inch fell on the 7th.

ENGLAND: *Temperature.*—During the week ending December 9 the highest temperatures were 55° at Truro, 53° at Plymouth, and 51°.1 at Bristol and Blackheath; the highest temperature at Wolverhampton was 42°.4, at Bradford 43°.2, and at Bolton 43°.5. The general mean was 47°.3.

The lowest temperatures in the week were 24° at Cambridge, 25°.4 at Wolverhampton, and 26°.7 at Brighton; the lowest temperature at Leeds was 31°, at Sunderland 30°, and at Sheffield 29°.7. The general mean was 27°.8.

The greatest ranges of temperature in the week were 28° at Truro, 25° at Plymouth, and 24°.1 at Blackheath; the least ranges were 14° at Leeds, 14°.3 at Sheffield, and 14°.8 at Bradford. The general mean was 19°.5.

The mean of the seven high day temperatures was highest at Truro, 45°.3, at Plymouth 43°.9, and at Sunderland 41°.4; and was lowest at Bolton, 37°.4, at Wolverhampton 37°.8, and at Sheffield 38°.3. The general mean was 40°.

The mean of the seven lowest temperatures was highest at Truro, 34°.7, at Leeds 33°.9, and at Plymouth 33°.5; and was lowest at Wolverhampton, 28°.7, at Bolton 30°.4, and at Brighton 30°.5. The general mean was 32°.

The mean daily range was greatest at Truro, 10°.6, at Plymouth 10°.4, and at Brighton 10°.1; and was least at Sheffield and Liverpool, 5°.4, and at Bradford 5°.7. The general mean was 8°.

The mean temperature was highest at Truro, 39°.9, at Plymouth 38°.6, and at Blackheath and Leeds 36°.8; and was lowest at Wolverhampton, 33°.1, at Bolton 33°.8, and at Nottingham 34°.9. The general mean was 35°.9.

Rain.—The largest falls were 3.44 inches at Hull, 2.57 inches at Sunderland, 2.11 inches at Bradford, and 2.03 inches at Nottingham. The smallest falls were 0.63 inch at Brighton, 0.64 inch at Bristol, and 0.68 inch at Blackheath. The general mean fall was 1.36 inch. At Nottingham, Bradford, Leeds, and Sunderland, rain fell on every day in the week, and from four to six at most other stations. Snow fell, and fog was very prevalent at most stations throughout the week.

SCOTLAND: *Temperature.*—During the week ending December 9, the highest temperature was 46° at Glasgow. The highest temperature reached at Dundee was 43°. The general mean was 45°.

The lowest temperature in the week was 20°, at Glasgow; at Leith the lowest temperature was 27°.5. The general mean was 24°.4.

The mean temperature was highest at Aberdeen, 34°.7, and lowest at Dundee, 31°.3. The general mean was 33°.5, being 2° below that of the week immediately preceding, and 5° below that of the corresponding week of 1881.

Rain.—The largest fall was 2.78 inches, at Aberdeen; and the smallest fall was 0.62 inch at Edinburgh. The general mean fall was 1.53 inch.

JAMES GLAISHER, F.R.S.

Answers to Correspondents.

CAMELLIAS: *E. T., Nottingham.* Messrs. Hooper & Co., Central Avenue, Covent Garden, W.C.

DAMP IN STRAWBERRY HOUSE: *Edenbridge.* We imagine from your statement that your system of ventilation is at fault rather than the damp bed. If the heating and ventilating are properly attended to, the moisture arising from the bed should do no harm. The Eucalyptus is out of the question.

DIARY: *E. S. B.* No, to both questions.

DIVINING ROD: *Eldridge Spratt.* We think the matter may now be allowed to rest, but we will send your letters, &c., to Mr. Ingram.

GLADIOLI: *W. N.* If you have a frame that you can keep the frost out of, we should think your best plan would be to pot them, and by not giving much water to keep them as quiet as possible till spring.

HOLLYBERRIES: *J. Johnson.* Gather the berries when ripe, and lay them in a heap mixed with soil to rot the pulp surrounding the seeds before sowing them.

NAMES OF FRUITS: *J. B.* 1, Golden Noble; 2, Golden Pearmain; 3, King of the Pippins; 4, Cox's Orange Pippin.—*J. M.* Federal Pearmain, we believe.

NAMES OF PLANTS: *E. Aytoun.* Sparmannia africana, introduced in 1790 from the Cape of Good Hope.—*B. B.* We are unable to correctly determine your Orchid. It may be Dendrobium polyanthum, but we cannot say without seeing stem and leaves.—*Brazil.* Brassavola Perrinii.—*J. Hart.* Lælia monophylla. (See p. 782).

PRIMULAS: *G. H.* There is a good strain of speckled flowers already in existence, and we see no difference between yours and some sorts Mr. Barron has grown at Chiswick for several years. The new reds seem specially liable to vary in this manner.

*** Correspondents are specially requested to address, post-paid, all communications intended for publication to the "*Editor*," and not to any member of the staff personally. The Editor would also be obliged by such communications being *written on one side only of the paper* and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

☞ FOREIGN SUBSCRIBERS sending Post-Office Orders are requested to send them to the Publisher of this journal, 41, Wellington Street, Covent Garden, and to make them payable to William Richards, at the post-office, Drury Lane, London, W.C.

CATALOGUES RECEIVED.

JAMES CARTER & Co., High Holborn, W.C. — "Vade Mecum" for 1883.

JOHN DYKES, Kilmarnock—General Nursery Stock.

RODGER, M'CLELLAND & Co., Newry, Ireland—Seedling and Transplanted Forest Trees, Roses, Fruit Trees, &c.

HOGG & WOOD, Coldstream, N.B.—General Nursery Stock.

W. FISHER, Horninglow Cross, Burton-upon-Trent—Dutch Bulbs, Fruit Trees, &c.

MARTIN GRASHOFF, Quedlinburg—Wholesale Trade Catalogue of Seeds.

OTTO PUTZ, 50, Great Russell Street, W.C.—Flower and Vegetable Seeds grown at Erfurt.

HOGG & ROBERTSON, 22, Mary Street, Dublin—Trees, Shrubs, Roses, &c.

WM. FELL & Co., Hexham, Northumberland—General Nursery Stock.

WILHELM BÜCHNER, Erfurt—Trade List of Garden, Farm, Tree, and other Seeds.

COMMUNICATIONS RECEIVED.—B. S. W.—H. Low & Co.—J. Hart.—Brazil.—Sutton & Sons.—S. H.—W. C.—T. L.—A. O.—C. Y. M.—Scotia.—P. J.—T. P.—M. D.—R. L.—A. Gordon.—F. A. F.—J. D.—A. G. B.—J. C. F.—D. S.—J. S.—J. C. & Co.—W. Gallop.—T. Shingles.—N. E. B.—B. S. W.—T. S. W.—J. M., Killyon.—W. J. M.—D. T. F.—M. P. A.—J. W.—H. T., Ceylon.—H. G. Rchb. f.—H. K.—F. W. B.

Markets.

COVENT GARDEN, December 14.

We have no alteration to quote. Our market is very quiet in home goods, and importations from America and Canada are but slight. Kent Cobs advancing, the bulk being sold. *James Webber, Wholesale Apple Market.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldii, doz.	12 0	24 0	Ferns, in variety, per dozen	4 0	18 0
Arbor-vitæ (golden), per dozen	6 0	18 0	Ficus elastica, each	1 6	7 0
— (common), dozen	6 0	12 0	Foliage Plants, various, each	2 0	10 6
Azaleas, per dozen	30 0	60 0	Genista, per doz.	8 0	12 0
Begonias, per doz.	6 0	12 0	Hyacinths, per dozen	9 0	12 0
Bouvardia, doz.	12 0	18 0	— (Rom.), per pot	1 6	2 0
Chrysanthems., doz.	6 0	18 0	Marguerite Daisy, per dozen	6 0	12 0
Coleus, per dozen	4 0	6 0	Myrtles, per doz.	6 0	12 0
Cyclamen, doz.	9 0	24 0	Palms in variety, each	2 6	21 0
Dracæna terminalis	30 0	60 0	Pelargoniums, scarlet, per doz.	6 0	12 0
— viridis, per doz.	12 0	24 0	Solanums, per doz.	9 0	12 0
Epiphyllum, dozen	18 0	30 0	Tulips, per dozen	6 0	9 0
Euonymus, various, per dozen	6 0	18 0			
Evergreens, in var., per dozen	6 0	24 0			

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 blooms	0 2	0 4	Lilac (French), bun.	8 0	9 0
Arum Lilies, per doz.	8 0	12 0	Lilium various, per 12 blooms	3 0	6 0
Azalea, 12 sprays	1 0	2 0	Lily-of-Val., 12 spr.	3 0	5 0
Bouvardias, per bun.	1 0	1 6	Marguerites, 12 bun.	6 0	9 0
Camellias, per dozen	2 0	4 0	Mignonette, 12 bun.	3 0	6 0
Carnations, 12 blms	1 0	3 0	Narcissus, 12 sprays	2 0	3 0
Chrysanth., 12 bun.	6 0	12 0	—(paper-white). Fr., 12 bunches	4 0	9 0
— (Fr.) per bunch	0 6	1 6	Pelargoniums, 12 spr.	1 0	1 6
— white, 12 bunches	9 0	18 0	— zonal, 12 sprays	0 6	0 9
— 12 blooms	1 0	2 6	Primula, double, per bunch	1 0	1 6
Cyclamen, 12 blooms	0 3	0 6	Roses (indoor), doz.	2 0	4 0
Epiphyllum, 12 blms.	6 0	9 0	— (outdoor), doz.	1 0	2 0
Eucharis, per doz.	6 0	9 0	— Coloured, doz.	2 0	3 0
Euphorbia Jacquiniflora, 12 sprays	4 0	6 0	Tropæolum, 12 bun.	1 0	2 0
Fuchsias, 12 bunches	6 0	8 0	Tulips, 12 blooms	1 0	1 6
Gardenias, 12 blms.	9 0	12 0	Violets, 12 bunches	1 6	2 0
Heliotropes, 12 sp.	0 6	1 0	— French Crar, bun.	1 6	2 6
Hyacinths, 12 spikes	10 0	12 0	— Parme (Fr.), bun.	4 6	5 6
— (Roman), 12 spr.	2 0	3 0	White Jasmine, bun.	1 0	1 6
Lapageria, white, 12 blooms	3 0	6 0			
— red, 12 blooms	1 0	3 0			

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, per doz.	3 0	6 0	Herbs, per bunch	0 2	0 4
— Jerusalem, bush.	4 0	..	Horse Radish, bund.	4 0	—
Asparagus (Sprue), per bundle	1 6	..	Lettuces, Cabbage, per dozen	1 6	..
Beans, Fr. grown, lb.	0 8	..	Mint, green, bunch	0 9	..
Beet, per doz.	1 0	..	Mushrooms, p. baskt.	1 0	2 0
Bruss. Sprouts, bush.	3 0	4 0	Onions, per bushel	3 0	..
Cabbages, per doz.	1 0	2 0	— Spring, per bun.	0 6	..
Carrots, per bunch	0 4	0 6	Parsley, per bunch	0 4	..
Cauliflowers, English, dozen	2 0	4 0	Radishes, per doz.	1 6	..
Celery, per head, per bundle	0 4	.. 1 6 ..	Rhubarb, per bundl.	0 9	..
Cucumbers, each	0 6	1 0	Seakale, per punnet	2 0	..
Endive, per score	1 0	..	Small salading, pun.	0 4	..
Garlic, per lb.	—	1 0 ..	Spinach, per bushel	4 0	..
			Sweet Potatos, lb.	0 6	..
			Tomatos, per doz.	2 0	4 0

POTATOS:—Magnum Bonums, 130s. to 140s.; Regents, 100s. to 120s.; Champions, 100s. to 120s. per ton.

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	2 6	6 0	Figs, per dozen	0 6	1 0
— Canadian and American, barrel	18 0	30 0	Grapes, per lb.	1 0	4 0
Aubergines, per doz.	4 0	..	Lemons, per 100	6 0	10 0
Cobs, 100 lb.	45 0	50 0	Pears, per dozen	1 0	2 0
			Pine-apples, Eng. lb.	2 0	3 0

SEEDS.

LONDON: *Dec.* 16.—Firmness of tone continues to characterise the market for field seeds. Red Clover seed is steady. American advices still report diminished receipts; the English crop also appears to be very small. There is a good demand for Italian Rye grasses, both home-grown and foreign, at advanced prices. Fine qualities of Trefoil are scarce, and higher rates are asked for same. Rape seed, Canary, and Hemp seed are again dearer. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

At Mark Lane on Monday, apart from the influence of a dense fog there was a want of demand, or the tone might have been firmer. The large quantity of flour on the way for this country not only affects the sale of that article adversely, but Wheat also. Barley tended in favour of buyers on the spot. Beans and Peas were firm. Oats on the week were 3*d.* to 6*d.* dearer, and met fair inquiry. Maize was rather lower.—On Wednesday very little business transpired. Sales of Wheat were not pressed, and rates remained nominally unaltered. Flour was inactive. Barley, Beans, and Peas showed rather a firm tone, though without much doing. Oats, with liberal arrivals, met a quiet demand, at late rates, and Maize was slow.—Average prices of corn for the week ending Dec. 9:—Wheat, 41*s.* 8*d.*; Barley, 34*s.* 5*d.*; Oats, 20*s.* 9*d.* For the corresponding period last year:—Wheat, 44*s.* 9*d.*; Barley, 32*s.* 6*d.*; Oats, 20*s.* 2*d.*

CATTLE.

At Copenhagen Fields on Monday the "great" Christmas market took place. There was a splendid collection of animals, numbering 7379 as against 8000 head last year. On this, as on all similar occasions for some years past, the Scotch breeds were strongest in numbers, and carried the very extreme of merit for superiority of quality and condition. The pure breeds were a very choice selection, and cross-breeds were equally well up in their chief points of recommendation. The shorthorn breeds included some of the finest specimens of the class that could well be produced. Herefords were well represented, and lost none of their *prestige* for condition or symmetry; whilst the Devons were not behind any of the other breeds as a choice selection. Some very prime Welsh cattle were in the gathering, and among the Irish some exeeedingly prime animals. The sheep supplies were the shortest we remember for a Christmas market, the entries amounting only to 6380, against an actual supply of 11,070 last year. The collection, however, included some of the very choicest, that would compare well with previous Christmas selections. Quotations:—Beasts, 5*s.* to 5*s.* 4*d.*, and 6*s.* to 6*s.* 4*d.*; calves, 5*s.* 10*d.* to 6*s.* 10*d.*; sheep, 6*s.* to 6*s.* 8*d.*, and 7*s.* to 7*s.* 10*d.*—Thursday's trade was quiet. The supply of beasts was principally the residue from Monday, and the demand was heavy, at drooping prices. Sheep were firm, with a fair demand, and calves and pigs were steady.

HAY.

Tuesday's Whitechapel Market report states that supplies were rather shorter than last reported, and prices firm, but without change. Quotations:—Prime Clover, 105*s.* to 120*s.*; inferior, 75*s.* to 80*s.*; prime meadow hay, 85*s.* to 92*s.*; inferior, 36*s.* to 60*s.*; and straw, 35*s.* to 42*s.* per load.—On Thursday there was a moderate supply. The trade was quiet, but prices ruled firm, as follows:—Prime Clover, 100*s.* to 120*s.*; inferior, 60*s.* to 95*s.*; prime meadow hay, 85*s.* to 92*s.*; inferior, 50*s.* to 85*s.*; and straw, 30*s.* to 42*s.* per load.—Cumberland Market quotations:—Superior meadow hay, 95*s.* to 110*s.*; inferior, 65*s.* to 84*s.*; superior Clover, 110*s.* to 120*s.*; inferior, 70*s.* to 95*s.*; and straw, 38*s.* to 44*s.* per load.

POTATOS.

The Borough and Spitalfields Markets reports state that there have been moderate supplies, and a steady demand, at the following quotations:—Magnum Bonums, 120*s.* to 140*s.*; Regents, 110*s.* to 120*s.*; Champions, 100*s.* to 110*s.* per ton; German reds, 5*s.* to 6*s.*; ditto blues, 5*s.* 6*d.*; Dutch Rocks, 4*s.* 3*d.*; and ditto reds, 4*s.* per bag.—The imports into London last week were:—355 bags froms Boulogne, 47,676 Hamburgh, 1057 Stettin, 4205 Bremen, 490 Harlingen, 65 tons from Roscoff, 90 tons St. Nicholas, and 15 packages from Bordeaux.

COALS.

The following are the prices current at market during the week:—Ravensworth West Hartley, 15*s.*; Wallis End—Hawthorn, 18*s.* 3*d.*; Lambton, 19*s.* 6*d.*; Wear, 18*s.*; South Hetton, 20*s.*

Government Stock.—Consols closed on Monday at 100⅝ to 100⅞ for delivery, and 101 1/16 to 101 3/16 for the account. Tuesday's figures were 100⅝ to 100¾ for delivery, and 100⅞ to 101 for the account. Wednesday's final quotations were 100 1/16 to 100⅛ for delivery, and 100⅛ to 101 1/16 for the account. The last figures reported on Thursday were 100⅝ to 100¾ for delivery, and as on the previous day for the account. The above figures are all ex div.

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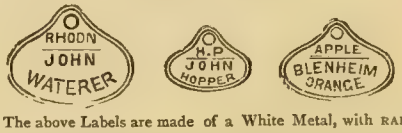
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10 feet × 8 feet	10	0	0
12 feet × 8 feet	12	0	0
15 feet × 8 feet	15	5	0

SPAN-ROOF GREENHOUSES, same as above.

10 feet × 8 feet	11	10	0
12 feet × 8 feet	13	10	0
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NOTE.—See article on the above, *Gardeners' Chronicle*, No. 416, dated December 17, 1881.

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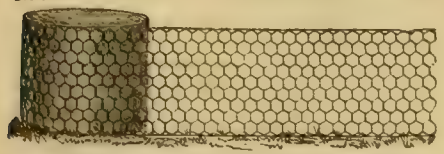
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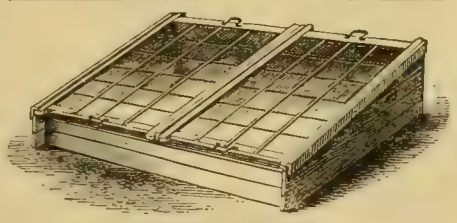
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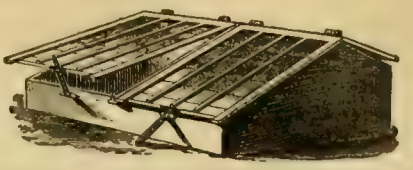
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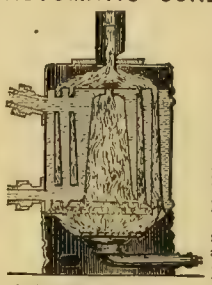
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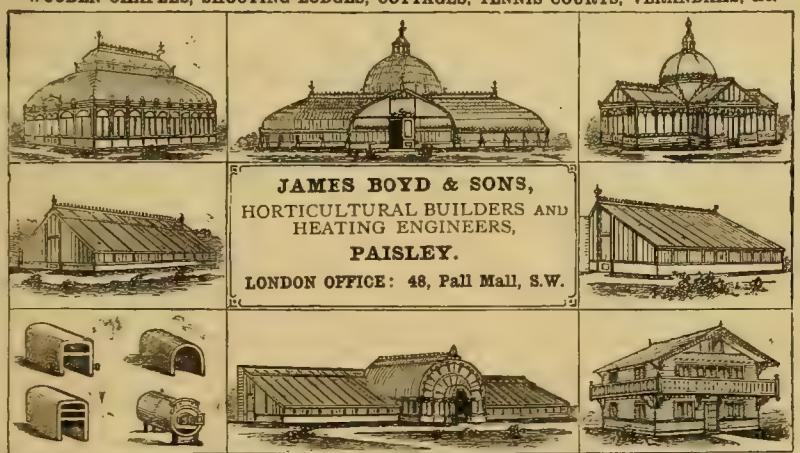
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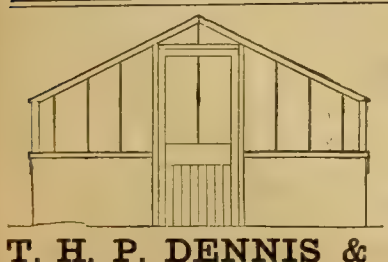
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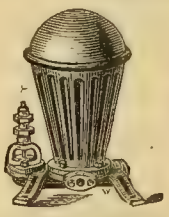
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CLERK, BOOK-KEEPER, &c.—Age 25; nine years in Seed and Nursery Trades. Excellent references.—O., 13, High Street, Fulham, S.W.

CLERK, or ASSISTANT.—Best recommendations for efficiency and trustworthiness in Office and at Counter. Wholesale desirable. Would take temporary engagement —CORIN, 45, Chester Street, Cirencester.

To Nurserymen and Seedsmen.

BOOK-KEEPER, SHOPMAN, or some position of trust.—Age 37. First-class references. — A. B., Mr. Presley, Stationer, Wotton under-Edge.

TO THE SEED TRADE.—Youth (age 17) requires situation in Seed Trade; two years in Seed Shop. Good character.—F. W. LOCKE, 1, South Place, Parson's Green, Fulham, S.W.

TO FRUITERERS and FLORISTS.—Respectable young man (age 22) desires situation; three and a half years in country Wholesale and Retail. Accustomed to serve throughout.—A. T., 20, Perowne Street, Cambridge.

EPPS'S (BREAKFAST) COCOA.

GRATEFUL AND COMFORTING.

"By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well-selected Cocoa, Mr. Epps has provided our breakfast tables with a delicately-flavoured beverage which may save us many heavy doctor's bills. It is by the judicious use of such articles of diet that a constitution may be gradually built up until strong enough to resist every tendency to disease. Hundreds of subtle maladies are floating around us ready to attack wherever there is a weak point. We may escape many a fatal shaft by keeping ourselves well fortified with pure blood and a properly-nourished frame."—*Civil Service Gazette.*

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THE WORLD SAYS THUS:

We have now so perfected the system of sending Flowers and Seeds to the most remote parts of the World that success is no longer an uncertainty.

From G. VANDEN BRINK, Esq., *Curator of Botanic Gardens, Utrecht, Holland, December* 10, 1882.

"I am pleased to inform you, that with the Chrysanthemum cuttings I received from you last time, my friend secured the first (£5 5s.), the second (£2 1s. 8d.), the third (£1 13s. 4d.), and fourth (£1 13s. 4d.) prizes, for different classes, and for seeds you sent of Primula sinensis, the first (£1 3s.), at our show here from November 17 to 19."

From J. BOND, Jun., Esq., 103, *Fulton Street, Boston, Mass., U.S. America, October* 27, 1882.

"The Chrysanthemums you sent me by post have bloomed in a fine way, and are the admiration of all who see them."

From Captain A. C. BORTON, A.D.C., *The Palace, Malta, November*, 1882.

"The plants and seeds you sent to the Hon. Sir Arthur Borton, Governor, were very carefully packed, and arrived in good condition."

From Miss CLARKE, *Villa Melzi, D'Albaro, Jeune, Italy. December* 5, 1882.

"Sir—I am desired by the Duchess Melzi d'Eril to inform you that the flowers have reached us all safe, and are doing well."

From J. WILSON, Esq., *Kaiapoi, Canterbury, New Zealand, August* 12, 1882.

"I received on January 13 the two packages of plants by post, and was glad to find that eleven out of the fourteen were alive; the voyage, forty-five days to here, was a good test of your system of packing. Four packages of Geraniums just arrived. After forty-three days' voyage, two only out of twenty plants were dead. Another order soon."

From Mr. LUKE DUNSCOMBE, *Roseville Nursery, Roseville Street, Jersey, May* 21, 1882.

"I am much pleased, especially with the Dahlias, admirably rooted."

From Mr. E. FEWKES, *Newton Highlands, Mass, U.S.A., May* 18, 1882.

"Twenty-two Dahlia roots arrived two or three weeks ago in splendid condition, and I hope my Begonia bulbs will come in as good a shape."

From Dr. HENRY BENNET, *Mentone, France.*

"The Calceolarias arrived safely, so the question of transmission by post to France may be considered settled. Is it now the time to buy the Single Dahlias advertised Oct. 20?"

From EDWARD J. DOWLING, Esq., *Oamaru, New Zealand, December* 30.

"The parcel containing bulbs and tubers reached me in capital order, only thirty-eight days on passage by the 'Orient' line. The other importations are doing well, and make a good show in my house now."

From A. HAMILTON, Esq., *Petane, Napier, New Zealand, November* 26.

"Your two parcels of cuttings came to hand quite safely, and I was very much pleased with the careful manner in which they were packed. When you can conveniently send me a catalogue I shall be obliged, as I shall then be able to send a further order."

From T. J. WAFFORN, Esq., *Christchurch, New Zealand, December* 31.

"I received the 12 Pelargoniums by post on December the 8th in good condition, and at the present time I have got 11 of them nicely in leaf. I also beg to inform you that the Auricula, Begonia, Cyclamen, Cineraria, and Primula seeds I had from you have germinated splendidly."

From Mr. HUBERT MERKINS, *Constantinople, February* 14, 1882.

"Seeds duly to hand, with best thanks."

From Mr. J. BARKER, *Arahura Nursery, Hokitika, New Zealand, January* 20, 1882.

"The Begonias you sent me last year are splendid loud dashing plants. The Dahlias are now in their beauty. Paragon is a gem.

"P.S.—I would give something to see your place, but I suppose I shall never see the dear old land again."

From Mr. H. KUHN, *Nishni-Novgorod, Russia, October* 19, 1882.

"I beg to inform you that the case arrived here on the 7th of October in a very good state. Plants nice and healthy, and are growing well."

From Mons. VEDOLIN, *Canderan, près Bordeaux, October* 19, 1882.

"I thank you very much for the good varieties of Chrysanthemums which you have sent me, which are very beautiful."

From JEREMIAH LYON & Co., 4, *Lombard Court, Gracechurch Street, London, E.C., May* 5, 1881.

"We have received the following from our friend in India, for whom we sent you an order on Tuesday last:—

"'I enclose a small fresh order for Messrs. Cannell. I prefer them to others, as their packing is so superior. In the last case you sent from them not a single Fuchsia had died.'"

From W. TUCKER, Esq., *Quebec, Canada, February* 13, 1882.

"I received the packages of seeds twenty-six days from date of order. I also received your 'Floral Guide.' It contains a vast amount of practical information, and I look forward for it every season with anxious pleasure. I had the best show of Dahlias in Quebec last season from roots supplied by you."

From F. E. CLARKE, Esq., *Alexander House, Roseville Street, Jersey, April* 12, 1882.

"I received basket with plants yesterday, in good condition, with many thanks."

From Dr. BLANCHARD, *Prov. de Jaen, Linares, Andalusia, Spain, February* 13, 1882.

"The plants arrived very fine, well, and healthy, and I see in your Catalogue of 1882 that you notice my receipt of the Coleus, bonny little plants. I am glad to see this or anything else in favour of the great pleasure of receiving choice varieties—from one's native land."

From Madame F. C. ANET, *Ollioules, Var, France, February* 25, 1882.

"I am glad to take this opportunity of telling you that your cuttings of Chrysanthemum are now transplanted, and not one missing."

Matakana, New Zealand, July 15, 1882.

"Mrs. Phillips begs to acknowledge the Seeds, Bulbs, &c., and is obliged for the promptness in sending them. The 'Floral Guide' has given great pleasure both to herself and friends."

From A. SMALLWOOD, Esq., *Charlottetown, Prov. Prince Edward Island, Canada, July* 20, 1882.

"Dear Sir,—The Coleus and Pelargoniums you sent me are in splendid condition, and are doing well. I did not expect the Coleus could be sent, and I am well pleased."



The engraving represents Dr. Beaumont (one of our East Indian customers) again leaving England, for several years, taking out his Coat, Bouquet, and other choice flowers with him. He writes *en route* from Malta thus:— *P. and O. ss. "Sutlej," off Malta, October*, 1882.

"The plants you packed in my case are all alive and healthy, and look much fresher after the journey than many of the passengers."

From Mr. MCMURRAY, 134, *Church Street, New York, U.S.A., June* 13, 1882.

"The Zonals arrived safely, and in splendid condition, and perfectly satisfactory. They are all fine large plants, and growing well."

From Mr. JAS. BATTLEY, *Port Huron, Michigan, U.S. America, July* 25, 1882.

"Pelargoniums to hand in excellent condition. Great credit is due for packing. Please accept my best thanks."

From G. D. TAIT, Esq., *Oporto, Portugal, July* 19, 1882.

"I have exhibited your variegated leaf Pelargoniums three times this year, and on each occasion a First Prize was awarded."

E. A. M. FENTON, Esq., *Pernambuco, July* 20, 1882.

"I am happy to give a good account of the Roses received in January; they have nearly all bloomed, and give satisfaction."

From Mr. W. WIESE, *Stara Derewna, St. Petersburgh, Russia, July* 25, 1882.

"The Pinks you sent me are in splendid flower, and the other plants are all I can desire. I am very satisfied."

From Mr. L. W. GOODELL, *Seed Grower and Dealer, Amherst, Mass, U.S. America, February* 3, 1882.

"The package of seeds I ordered is at hand. Accept my best thanks for the very liberal manner in which you filled my order, and I am greatly obliged for your promptness."

From Mr. J. L. WILLES, 361, *Boston Street, Lynn, Mass., U.S. America, March* 28, 1882.

"Your Post-office Order of the 13th is at hand, also the Single Dahlia seed, and I must say that I am more than pleased with them. They look nice, and there are ten times as many as I can get here for the same money."

From Mr. CHARLES H. HOITT, *Nashua, N.H., U.S. America.*

"The seeds ordered of you earlier in the season came promptly and in good condition, and many of them are grown up. I am led by my previous good success to send another small order, trusting you will send them as early as possible."

From A. A. VAN BEMMELLY, Esq., *Director of Zoological Gardens, Rotterdam, Holland, February* 21, 1882.

"The Pelargoniums and Chrysanthemums you sent last year turned out very well indeed, and I hope the seeds will do the same."

From Mrs. J. MANCHE, *Malta*, 33, *Sada, Alessandro, July* 24, 1882.

"In acknowledging receipt of the four boxes registered, I beg you will be good enough to accept my best thanks for your punctuality and attention. The plants have met my best satisfaction."

From Rev. H. WOODHOUSE, *Bega, viâ Sydney, N.S. Wales, Australia, May* 24, 1882.

"The flower seeds were very good indeed, and have given me much satisfaction and pleasure."

From W. A. HARRIS, Esq., *New York.*

"Many thanks for the plants sent me. Their receipt was especially gratifying for two reasons—one, that it was entirely unexpected; the other, that I perceive the plants to be from your most recent introductions. They are in good condition, and will undoubtedly do well."

From A. HASELDEN, Esq., *Linares, Spain.*

"On my arrival here I was very much pleased with the Zonals you sent me last year; they are very handsome indeed. The Chrysanthemums are also very fine."

From Mr. J. BOND, *Jun.*, 103, *Fulton Street, Boston, U.S.A. May* 15, 1882.

"I wish you could see some of my seedling Geraniums from seed purchased of you two years ago—they are grand."

From Mr. TRICKER, *Gardener to* R. Hamilton, Esq., *Quebec, Canada, April* 6.

"The eighteen packages of plants by post came duly to hand, and in splendid condition."

From Mr. F. F. CANDA, *Ravenswood, Cork Co., Ill. U.S.A., April* 20, 1882.

"The consignment of plants came to hand in admirable condition this day; your packing is perfectly unique."

From ARTHUR PERRY, Esq., *Timaru, Canterbury, New Zealand, June* 13, 1882.

"The Calceolaria, Cineraria, and Primula seed I had from you last year turned out splendidly, especially the latter, Swanley Red being very fine. A gentleman from Oamaru, near here, told me the other day that he had received from you a packet of Zonal Pelargoniums by post, which arrived in splendid order."

From GODFREY RUEL, *Esq., Hotel Dufferin, St. John's, New Brunswick, Canada.*

"I saw the plants sent to J. Smallwood, Esq., Prince Edward Island; they were very fine."

From J. EVERAERTS, Esq., *Anvers, November*, 1882.

"Allow me to congratulate you on your Catalogue, which is worthy to be placed on the drawing-room table with choice illustrated books. It is a real art object in its way."

From Mr. WALTER COLES, *Belvedere, New Jersey, U.S.A., September* 3, 1882.

"The plants you sent me about four months ago have given perfect satisfaction. Your mode of packing is certainly grand. You may send plants all over the United States and be received in fine condition. I am delighted with some of your plants, which are now in bloom."

From H. EDWARD ADAMS, Esq., *Patea, Taranaki, New Zealand.*

"I have to thank you for your promptness in executing my order for the seeds, the whole of which arrived in excellent condition."

From Mrs. FOLJAMBE, *Madeira, January* 31, 1882.

"The plants came in excellent condition."

From Mr. H. LUMBARD, 176, *Randolph Street, Chicago, U.S. America, July* 20, 1882.

"The Pansy seed I had from you turned out fine."

From Mr. A. BROWN, 133, *West Avenue, Hamilton, Ontario, Canada, November* 20, 1882.

"I received your consignment of plants of November 4, by post quite safe, with many thanks."

From C. M. ATKINSON, Esq., *Brooklyn, Boston, Mass, U.S. America, July* 19, 1882.

"The six packages came safe to hand by post all right. For ingenious simplicity and almost positive safety your system for conveying plants deserves all praise. The United States issues series of patents that for general utility are comparatively worthless—whereas you deserve much patronage."

H. CANNELL & SONS, F.R.H.S., H.M.C.A.B.,

Importers and Exporters of all New and Choice Florists' Flowers to and from all parts of the World,

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Agent for Manchester—JOHN HEYWOOD. Agents for Scotland—Messrs. J. MENZIES & Co., Edinburgh and Glasgow.

THE

GARDENERS' CHRONICLE.

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Volume XVII., JANUARY to JUNE, 1882.
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Intending Competitors must send in their Names and Addresses to THE SECRETARY, 24, Haymarket, S.W., where all particulars can be obtained, on or before Noon on SATURDAY, January 13, 1883.

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JANUARY ELECTION, 1883.
CHARLES TURNER solicits your VOTE and INTEREST, and can strongly recommend from personal knowledge of over 25 years, the case of
GEORGE PRIOR.
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G. PRIOR is the raiser of the well-known "Cottagers' Kale."
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To the Trade.
WAITE, NASH, HUGGINS AND CO. have posted their GENERAL CATALOGUE to all their Customers; if not received, another copy will be sent on application.—79, Southwark Street, London, S.E.

GARDENIAS, fine healthy, in 48's, showing flower, 14s. per doz Well grown DRACÆNA terminalis, for Decorating, in 32's, 45s. per doz. GLOBE ARTICHOKE, 2s per doz.—H. R. MARSHALL, Nursery, Barnham, Arundel.

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THE NEW RASPBERRY,
BAUMFORTH'S SEEDLING,
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Price, 5s. per dozen canes; 35s. per 100.
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New Seedling Apple, The Queen.
FIRST-CLASS CERTIFICATE.
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SCHOOLMASTER, the best new Apple, and good for exposed situations. First-class Certificate Royal Horticultural Society. Strong Maidens, 7s. 6d. each; coloured plates, six stamps. Particulars post-free from
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LILIUM AURATUM, received from Japan. Per case, containing 100 bulbs, 44s., packing included. The bulbs measure from 7 to 9 inches in circumference. Samples will be sent upon receipt of six stamps for each bulb. Terms cash from unknown persons.
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WANTED, a few thousands of strong rooted BRIER CUTTINGS for working next season (1883); also MANETTI STOCKS. State cash price per 1000, and forward samples of same, carriage paid, to
ROWLAND MAY, Wensleydale Nurseries, Leyburn, Yorks.

WANTED, a few dozens of Red and White bedding Double PRIMROSES. State quantity and lowest price to
HOGG AND ROBERTSON, Seedsmen, Dublin.

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CHARLES WILSON, Summerhow Nurseries, Kendal.

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To the Trade.
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JAMES CARTER, DUNNETT, AND BEALE'S WHOLESALE CATALOGUE of SEEDS, PLANTS, BULBS, and GENERAL SUNDRIES has now been posted to their Customers. Should it have miscarried another copy will be sent on application to
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LAPAGERIA RUBRA, superb, 7s. 6d., 10s. 6d. and 15s. A few extra-sized specimens, size and prices on application.
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CHRYSANTHEMUMS.—Chrysanthemums.—Cuttings now ready of several hundred varieties, our selection, 1s. 6d. per dozen, 8s. per 100. The collection comprises all the new and old sorts worth growing, English or Continental. Japanese varieties, 2s 6d. per dozen.
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STANDARD ROSES, with fine bushy heads. Have still a fine lot to offer to the Trade. Price on application.—E. S. KNOX, Nurseryman, Alcester.

Roses—Roses—Roses.
MESSRS. MITCHELL AND SONS beg to offer the Trade and others an unusually fine stock of Standard Hybrid Perpetuals and Dwarf Teas, of all the leading kinds. Prices on application.
Piltdown Nurseries, Uckfield.

New Rose.
CHARLES BONNET, with Twenty-four Strikings of this valuable Rose, to be disposed of. The trees are vigorous, remontant, and without thorns. For particulars apply to
Mons. CHARLES BONNET, Professor d'Arboriculture, Lausanne, Suisse, or Mdlle. BONNET, 58, Alma Villas, Silver Hill, Hastings.

To the Trade Only.
TEA ROSES, on own roots, extra strong, out of 4½-inch pots, £2 per 100, for cash.
LIST on application
MAIRIS AND CO., Weston-in-Gordano, Bristol.

Lilies and other Bulbous Plants for Autumn PLANTING, ORCHIDS, &c.
THE NEW PLANT AND BULB COMPANY beg respectfully to invite an inspection of their CATALOGUE, No. 60. Post-free on application.
Lion Walk, Colchester.

To Bouquetists, Florists, &c.
CUT LILIES of the VALLEY, and MAIDENHAIR FERNS, any quantity, regular supplies from now till May. Particulars, &c., on application to
T. JANNOCH, Lily Nursery, Dersingham, Norfolk.

LARCH, splendid, from 15s. to 25s. per 1000. QUICK, for Hedges, 15s. to 25s. per 1000; samples, 3s. per 100 COLCHIC LAURELS, 1½ to 2½ feet, 15s. per 100. ROTUNDIFOLIA 25s. per 100
GEORGE DAVISON, White Cross Nursery, Hereford.

LARCH.—Splendid, 1½ to 2½, 20s.; 2 to 3½, 25s. QUICK, for Hedges, transplanted, fine, 3-yr., 15s.; 4-yr., 25s. per 1000. Samples (prepaid) of 100, 3s 6d.
GEORGE DAVISON, White Cross Nursery, Hereford.

CUT FLOWERS.—Camellias, Chrysanthemums, Geraniums, Eucharis, and other choice Cut Flowers, in any quantity, offered.
WILLIAM INGLIS, Nurseryman and Seedsman, Kelso, N.B.

AQUILEGIA GLANDULOSA (True).—Strong flowering plants, 9s. per dozen, free to any railway station in England or Scotland on receipt of cash with order.
JOHN GRIGOR AND CO., The Nurseries, Forres, N.B.

NEW RHUBARB, "PARAGON."—For particulars see back page of *Gardeners' Chronicle* for December 2. Order at once of
CHARLES KERSHAW, The Slead Syke Nurseries, Brighouse; or of Messrs. HURST AND SON, 152, Houndsditch, London, E.; and Mr. SAMUEL YATES, 16 and 18, Old Millgate, Manchester.

SALES BY AUCTION.

Thursday Next.

CATTLEYA SKINNERI.—100 specimens, averaging 100 bulbs each, comprised in an altogether wonderful importation, in grand health and condition, and finest short-bulbed large-flowering variety; among them such a mass as was never seen before in any Orchid, with an uncountable number of bulbs, on native wood, 15 feet in circumference.

CATTLEYA SKINNERI ALBA. — The rarest Cattleya known, and certainly an extremely beautiful one; plants in large size and finest condition.

CATTLEYA MENDELII.—A very fine importation of this superb and very showy Cattleya.

ODONTOGLOSSUM ALEXANDRÆ, CATTLEYA, supposed autumn-flowering Mossiæ, ONCIDIUM species, and other importations.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., by order of Mr. F. Sander, on THURSDAY NEXT, December 28, at half-past 12 o'Clock precisely, the above very fine importations, &c.

On view morning of Sale, and Catalogues had.

Sale Thursday, January 4, 1883.

CATTLEYA TRIANÆ, very finest varieties.

MR. J. C. STEVENS has received instructions from Mr. F. Sander to SELL by AUCTION, at his Great Rooms, 38, King Street, Convent Garden, W.C., on THURSDAY, January 4, 1883, at half-past 12 o'Clock precisely, an immense importation of CATTLEYA TRIANÆ, very finest forms, and in grand health and masses, &c.

On view morning of Sale, and Catalogues had.

To Nurserymen and Others.

FREEHOLD LAND, Leyton, containing Greenhouse 80 feet by 18, Hot-water Pipes, and large stock of Plants for Propagating for ensuing season.
WINNINGTON, Skelton's Lane, Leyton.

TO LET, a compact NURSERY, suitable for a Florist, in the neighbourhood of London.
Apply to Mr. NAYLOR, Nurseryman, Harrow.

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 8, New Broad Street, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

PLANTS FOR POTTING AND FORCING:—
AZALEA MOLLIS, with from 10 to 30 buds
„ a selection of the best hardy kinds, including PONTICA, NARCISSIFLORA, well budded.
KALMIA LATIFOLIA, nicely grown plants with flower-buds on wellnigh every shoot.
RHODODENDRONS, well budded and the best varieties for the purpose.
DEUTZIA CANDIDISSIMA, fl.-pl., established in pots.
HYDRANGEA PANICULATA GRANDIFLORA, very strong.
ANDROMEDA PULVERULENTA or SPECIOSA.
These can be obtained in satisfactory plants and at fair prices from
ANTHONY WATERER, Knap Hill Nursery, Woking, Surrey.

Continental Seeds.

O. KNOPFF AND CO., Erfurt (Established 1832) offer their well-known FLOWER SEEDS to the Trade. For CATALOGUES, &c., apply to
BECK AND POLLITZER, 211, Upper Thames Street, E.C.

Kent-grown Fruit Trees.

THOMAS FROST AND SONS have a fine lot of Standard Pears and Cherries to offer. LIST of varieties, and prices per dozen or 100, on application.
Bower and Ling Nurseries, Maidstone.

Planting Season.

ANTHONY WATERER begs to invite attention to the following well grown and properly rooted NURSERY STOCK:—
AUCUBA JAPONICA, 1½, 2, and 3 feet. Thousands.
BOX, Green and Variegated, 2, 3, 4, 5, 6, and 7 feet. Thousands.
YEWS, English, 2, 3, 4, 5, 6, 8 to 10 feet. Thousands.
„ Golden, all heights up to 10 feet, and various shapes—Globes, Pyramids, &c. Thousands.
„ Irish, 5, 6, 7, to 10 feet.
JUNIPERS, Chinese, 5, 6, 7, to 10 feet.
PICEA PINSAPO, 5, 6, 7, to 10 feet.
„ NORDMANNIANA, 5, 6, 7, to 10 feet.
SPRUCE FIRS, well furnished, 3, 4, 5, 6, and 7 feet. Many thousands.
„ Black, 3, 4, and 5 feet.
SPRUCE, Hemlock, 4, 5, and 6 feet.
WEARE'S ARBOR-VITÆ, 4, 5, 6, and 7 feet.
HOLLIES, common Green, of all heights, up to 10 feet. Thousands.
„ Green, of sorts, such as LAURIFOLIA, MYRTIFOLIA, HODGINS', ALTACLARENSE, Yellow-berried, &c. An enormous Stock.
„ Variegated, from 3 to 5, 6, 7, 8, and 10 feet.
„ Waterer's, beautiful Specimens.
„ Golden Queen, up to 10 feet. Hundreds.
„ Silver Queen, up to 10 feet. Hundreds.
„ Perry's Weeping Standards and Pyramids.
„ Golden Weeping Standards and Pyramids.
The Stock of Hollies of various kinds comprises many thousands, and affords a choice quite unequalled.
CUPRESSUS LAWSONIANA ERECTA VIRIDIS, 3, 4, 5, 6, 7, and 8 feet. Thousands.
„ „ GRACILIS, 3 and 5 feet.
„ „ ARGENTEA, 3 and 5 feet.
„ „ LUTEA, hundreds of fine plants, 3, 4, and 5 feet high.
RETINOSPORA PLUMOSA AUREA, 3, 4, and 5 feet.
„ OBTUSA AUREA, 4, 5, 6, and 7 feet.
„ PISIFERA AUREA, 3 and 4 feet.
THUIOPSIS DOLABRATA, 3, 4, 5, and 6 feet. Hundreds.
BEECH, Purple, 6 to 10 and 12 feet. Thousands.
LIMES, 10, 12, 14, 15, and 16 feet. Thousands.
PLANES, 10 to 20 feet.
MAPLE, Norway, 10 to 15 feet.
CHESTNUT, Horse, 10 to 16 feet.
„ Scarlet, 10 to 16 feet.
POPLAR, CANADENSIS NOVA, 10 to 16 feet. Thousands.
OAKS, Scarlet American, 10 to 12 feet.
ACER DASYCARPUM, 10 to 16 feet.
„ SCHWEDLERII, 10 to 12 feet.
And a vast and Miscellaneous Stock of Flowering DECIDUOUS SHRUBS and EVERGREENS, which intending purchasers are respectfully invited to come and see.
Knap Hill Nursery, Woking, Surrey.

To the Trade.

DECORATIVE PLANTS FOR CHRISTMAS.

W. M. CROWE has a large stock of the following, in excellent condition:—
DRACÆNAS—amabilis, torminalis, stricta, Baptisti, congesta, gracilis.
PALMS—Corypha australis, Latania borbonica, Phœnix reclinata, &c.
Azaleas in flower, Lily of the Valley, Ficus elastica, Aspidistras, Grevilleas, green and variegated Aralias, Ferns in variety. Prices on application. An inspection is solicited.
W. M. CROWE, Boleyn Nursery, Upton, Essex.

GUARANTEED TRUE HIGHLAND NATIVE SCOTCH FIR SEED.—We are now Booking Orders for the above on very easy terms. Before purchasing send for prices to
WM. WISEMAN AND SON, Nurserymen, Elgin, N.B.

To the Nursery Trade.

THOS. IMRIE AND SONS' Trade CATALOGUE of FOREST TREES, CONIFERÆ, ORNAMENTAL TREES and SHRUBS, FRUIT TREES, ROSES, &c., can now be had, post-free, on application.
The Nurseries, Ayr, N.B.

CREEPERS for WALLS, TRELLISES, &c., in great variety. See Descriptive LIST. Most of these plants being in pots, may be moved now.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

CHRYSANTHEMUMS. — We have been awarded Four First-class Certificates for our this season's novelties. Cuttings can now be had of the 20 extraordinary grand new varieties introduced by us this year, at 1s. 6d. each, or the set for 20s. Well rooted plants can also be had now of all the sorts, at 3s. 6d. each. See CATALOGUE (gratis) for description. Cuttings of the best older varieties, our selection, from 2s per dozen.
S. DIXON AND CO., Amhurst Nurseries, Auton Street, Hackney, E.; and City Seed Warehouse, 34, Moorgate Street, London, E.C.

Winter List.

JOHN LAING AND CO.'S New CATALOGUE of Roses, Fruit Trees, Vines, Ornamental and Forest Trees, Shrubs, &c., has been issued to all Customers. Copies gratis on application. Goods all first quality at moderate rates. Address
JOHN LAING AND CO., Nurseries, Forest Hill, S.E.

LARCH, 2 to 3, and 3 to 4 feet, strong, transplanted. A large quantity to be sold.
EDWIN HOLLAMBY, The Nurseries, Groombridge, Tunbridge Wells.

4000 Azaleas, Camellias, Ericas, and Epacris. 4000

AZALEA INDICA, in best varieties, for forcing, including Whites, well set with buds, 24s., 30s., and 42s. per dozen, £8 to £15 per 100.
AZALEA MOLLIS, good bushy stuff of these invaluable plants for early forcing, in all shades of colour, 21s., 30s., and 40s. per dozen, £8 to £15 per 100.
HEATHS and EPACRIS, best varieties, well set with flower, 18s. and 24s. per dozen.
CAMELLIAS, in best varieties, including Whites, 25s., 30s., and 42s. per dozen, £9 to £15 per 100.
CATALOGUE free.
W. M. CROWE, Boleyn Nursery, Upton, Essex.

TUBEROUS BEGONIAS. — JAMES KING (the celebrated Raiser of New Coleuses) having taken the above Begonias in hand for several years, has, by careful crossing, succeeded in obtaining a grand strain; having again made a series of crosses, begs to offer Seed from such in 2s. 6d. and 5s. packets; price to the Trade on application.—JAMES KING, Florist and Seed Grower, Rowsham, Aylesbury.

FINEST SEEDLING and TRANSPLANTED TREES.
ALDER, 3 to 4 feet, 18s. per 1000.
ASH, 2 to 3 feet, 16s. per 1000.
LARCH, 2-yr., extra, 3s. 6d. and 5s. per 1000.
„ 3 to 4 feet, 26s. per 1000; 4 to 5 feet, 30s. per 1000.
SPRUCE FIR, 2-yr., £7 per 100,000.
„ 1 to 1½ foot, 10s. per 1000; 1½ to 2 feet, 12s. per 1000.
SCOTCH FIR, 1 to 1½ foot, 12s. per 1000; 1½ to 2 feet, 15s. per 1000; 2½ to 3½ feet, 18s. per 1000.
PINUS AUSTRIACA, 2-yr., fine, 2s. 6d. per 1000, or £12 per 100,000.
„ LARICIO, 10 to 15 inches, 20s. per 1000; 1½ to 2 feet, 25s. per 1000; 2 to 3 feet, 30s. per 1000.
THORNS, 1½ foot, 10s. 6d. per 1000; 2 feet, 12s. per 1000; 2 to 3 feet, 13s. 6d. per 1000.
CRABS, 1-yr., extra, 3s. per 1000.
PEARS, fine, 1-yr., 5s. per 1000.
GARLIES MITCHELL, Stranraer.

EXTRA CHOICE SEEDS.
for Season 1883.
ELLIOTT'S PRIZE COCKSCOMB.—The best variety in cultivation, having been selected with great care for eighteen years. Was awarded a Cultural Certificate for two plants exhibited at South Kensington, August 2, 1876, by the Royal Horticultural Society; and has taken prizes for a number of years at the principal Horticultural Exhibitions in this district. Per packet, 1s. 6d
ELLIOTT'S SELECTED FRENCH MARIGOLD.—This may be relied upon as being a very superior strain, selected from the best coloured and most perfectly formed flowers. The blooms are very large, and for beauty of marking and variety of colour cannot be surpassed. Per packet, 1s.
ELLIOTT'S "YORKSHIREMAN" CUCUMBER.—A new variety of very excellent quality, being remarkable for its solidity, showing, when cut, almost an entire absence of core. It is a very deep green, of perfect shape, and grows about eighteen inches long. It is a fine exhibition kind, a strong grower, and free bearer. Per packet of Six Seeds, 1s. 6d.
Trade price on application.
G. E. ELLIOTT, Seedsman, 97, Bradford Road, Huddersfield.

To Planters.

JAMES BIRD offers the undermentioned Forest stuff, price on application:—
LARCH FIR, 5 to 6 feet.
SCOTCH FIR, 1½ to 2 feet, and 2 to 3 feet.
SPRUCE FIR, 1½ to 2 feet, and 2 to 3 feet.
PINUS AUSTRIACA, 1½ to 2 feet.
HAZEL, 3 to 4 feet.
ROSES, Standard and Dwarf.
The Nurseries, Downham.

EWING & CO.,

EATON, NORWICH,

Having given instructions to

MESSRS. PROTHEROE AND MORRIS to SELL by AUCTION, WITHOUT RESERVE, on February 13 next, and following days, almost the whole of their thriving outdoor

NURSERY STOCK,

HEREBY GIVE NOTICE, that they will not be prepared to Receive Orders for TREES, SHRUBS, PLANTS, &c., after the 31st of this month—December 18, 1882.

The remaining portion of the Stock (including the splendid collection of TEA and NOISETTE ROSES in Pots) will probably, so far as the Pot Plants are concerned, be SOLD by AUCTION in May or June next.

APPLE TREES with MISTLETO growing on them. Price from 7s. 6d. to 21s. each.
RICHARD SMITH AND CO., Nurserymen, Worcester.

J. FIDLER, MARKET GARDENER, 87, King's Road, Reading.
Has to dispose of 500 Stools of LINNEUS RHUBARB for Forcing, or can be divided into eight or ten plants for planting-out. Price, from 1s. to 1s. 6d. per stool, cheaper by the 100. Also young roots for planting-out, from 4s. to 6s. per dozen. Also 200 plants of ROYAL ALBERT, the earliest, high in colour, which I consider the best in cultivation, at 6s. per dozen.

STRAWBERRIES.—Strong roots for present planting and for fruiting next year, 4s. per 100. Descriptive LIST and price for plants in pots for forcing on application. — RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

CHESTNUT (Spanish), Hazel, Ash, Larch, Scotch, Birch, Alder, Willow, and Thorn Quick.—Stout, well-rooted, transplanted. A large quantity to be sold.
GEO. CHORLEY, Coaster's Nursery, Midhurst.

HORIZONTAL TRAINED FRUIT TREES.—For extra sized Horizontal Trained Pears which will cover bare walls, and come into bearing at once.
PYRAMID APPLES and PEARS and ESPALIER APPLES, extra transplanted, and in fruiting condition.
AUCUBA JAPONICA, beautifully coloured and very fine.
AUCUBA VERA, thickly set with berries.
Through trucks to any part of the United Kingdom. Plants and trees added to compensate for freight. Apply to
GEORGE SMITH, The Dell Nursery, Rock Ferry, Cheshire.

Gardenias.

MESSRS. JOHN STANDISH AND CO.'S Stock of GARDENIAS was never so extensive or good as it is this season. They have thousands of plants to select from, in all sizes, from fine specimens in 18-inch pots to small plants in 60's. All clean and healthy, and to a large extent well set with buds for winter-flowering. VERY REASONABLE Prices will be quoted on application.
Royal Nurseries, Ascot, Berks.

EIGHTY THOUSAND CLEMATIS, in Pots, of all the finest double and single varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants.
Descriptive LIST on application.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

FRANCIS BELL, NURSERYMAN, Easingwold, offers:—
2,000,000 SCOTCH LARCH, 1½ to 2 feet, 2 to 3 feet, 3 to 4 feet.
200,000 SCOTCH FIR, 1 to 1½ foot, 1½ to 2 feet.
200,000 QUICKWOOD, 2 to 3 feet.
The above are recently transplanted, with good leads and roots. For particulars apply as above.

To the Trade.

SEED POTATOS.

H. and F. SHARPE'S Wholesale LIST of SEED POTATOS is now ready, and will be forwarded on application. It comprises the best varieties in cultivation, of the finest quality, free from disease, and selected specially for seed purposes. The prices will be found exceptionally low.
Seed-Growing Establishment, Wisbech.

NEW ROSES of 1882, in pots.—Vendors' Selection, 30s. per dozen; Purchaser's, 36s. per dozen. The above comprise all the best English and French raised Hybrid Perpetuals, Perpetual Polyantha, Teas, Hybrid Teas, and Perpetual Moss.

ROSES of 1881, of above-named classes, 18s. to 24s. per dozen, in pots.

CHOICE ROSES. — Tea-scented, Hybrid Tea, Noisette, China, and Bourbon, 18s. to 24s. per dozen, strong plants in pots.
Descriptive LIST on application.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

THURSDAY NEXT.

CATTLEYA SKINNERI.

100 Specimens, averaging 100 Bulbs each, comprised in an altogether wonderful importation, in grand health and condition, and finest short-bulbed, large-flowering variety, among them such a mass as was never seen before in any Orchid, with an uncountable number of bulbs, on native wood, 15 feet in circumference.

CATTLEYA SKINNERI ALBA.

The rarest Cattleya known, and certainly an extremely beautiful one. Plants in large size and finest condition.

CATTLEYA MENDELII.

A very fine importation of this superb and very showy Cattleya.

ODONTOGLOSSUM ALEXANDRÆ, CATTLEYA, supposed autumn-flowering MOSSIÆ, ONCIDIUM species, and other Importations.

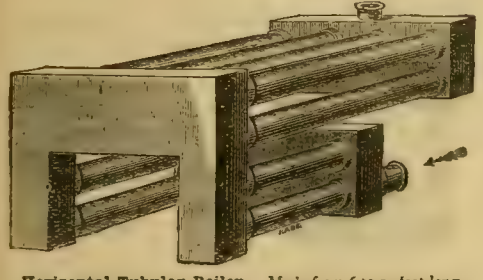
MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., by order of Mr. F. SANDER, on THURSDAY NEXT, December 28, at half-past 12 o'Clock precisely, the above very fine Importations, &c.

On view morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

THE THAMES BANK IRON COMPANY,

UPPER GROUND STREET, LONDON, S.E.,



Horizontal Tubular Boiler. Made from 6 to 14 feet long.

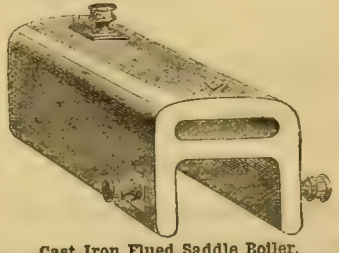
Have the Largest and most Complete Stock in the Trade.

HOT-WATER BOILERS, PIPES, and CONNECTIONS, and all CASTINGS for Horticultural Purposes.

Illustrated CATALOGUE, 12th edition, price 1s.

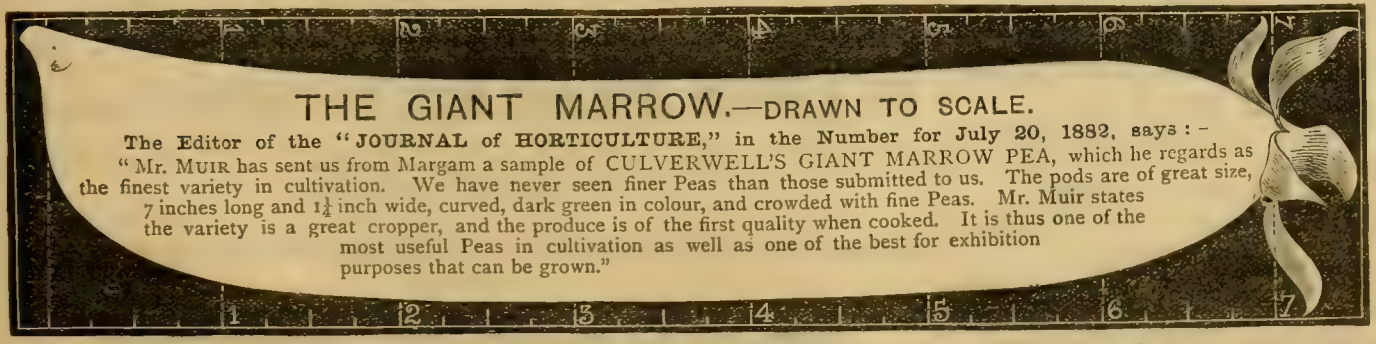
Price List on application Free.

Hot-water and Hot-air Apparatus erected Complete, or the Materials supplied.



Cast Iron Flued Saddle Boiler.
Made in Cast Iron, 3 feet long. This Boiler will be found to be more durable in Cast Iron than in Wrought Iron.

CULVERWELL'S GIANT MARROW PEA.



Price, 2s. 6d. per Half-pint Packet; 1s. 6d. per Quarter-pint Packet.

TRADE PRICE ON APPLICATION.

CHARLES SHARPE & CO., SEED MERCHANTS, SLEAFORD.

THREE ARTICLES WORTH HAVING.

Gloxinia, Leeds Prize.

This magnificent erect flowering strain is probably unequalled. It has a strong robust constitution, produces flowers 3½ to 4 inches in diameter, and embraces upwards of 50 distinct and charming varieties. Wherever exhibited this strain has, without a single exception, carried off the first prize. In 1879 a leading London Nurseryman gave 20 guineas for the 6 plants shown at Leeds. This fact will give some idea of its merits. The strain has been greatly improved since then, and the seed now offered will produce plants very much superior. Price, per packet, 2*s.* 6*d.*

Wallflower, Charles Kershaw's Brilliant Dark.

This strain is unsurpassed, and may be relied upon to produce not one light-coloured flower. C. K. has selected it with the greatest care for many years, and has now got it to such perfection that it cannot be surpassed. Per packet, 6*d.*

New Celery, Thornhill Prize Red.

This is the stock of a noted exhibitor, who in 1881 and 1882 took upwards of 70 prizes with this variety. Wherever exhibited it has without an exception carried off the first prize; it never runs, is early, large, solid and crisp, is of fine flavour, and keeps well; is equally good for exhibition or general use. Per packet, 1*s.* Stock very limited.

CHAS. KERSHAW,
THE SLEAD SYKE NURSERIES,
BRIGHOUSE.

Ferns a Speciality.

The largest stock in the greatest number of varieties of

EXOTIC AND BRITISH FERNS

In the Trade, suitable for STOVE and GREENHOUSE cultivation, for Outdoor Ferneries, and other purposes. Special LIST free on application. Illustrated CATALOGUE 6*d.*

W. AND J. BIRKENHEAD, Fern Nursery, Sale, near Manchester.

WHOLESALE SEED CATALOGUE.

We have now published our Wholesale CATALOGUE of Vegetable, Flower, and Agricultural Seeds, containing, also, all the best Novelties of the season. It may be had on application. All our Regular Customers should already have received a Copy by post; any not having done so, will oblige by letting us know.

WATKINS & SIMPSON,
EXETER STREET,
STRAND, W.C.
Seed and Trial Grounds, Feltham and Twickenham, Middlesex.

GARDEN SEEDS.
FARM SEEDS.

CHARLES SHARPE & CO.,
SEED GROWERS,
SLEAFORD,

Having now completed harvesting their SEEDS, will have much pleasure in sending SPECIAL OFFERS on application, with Samples if desired.

TO THE TRADE.

A very large quantity of fine
Half-Standard and Dwarf-Standard ROSES,
Of all the leading sorts, to offer cheap.

Apply to—
BENJAMIN R. CANT,
THE CHAMPION ROSE GROWER,
COLCHESTER.

AN OFFER NEVER BEFORE MADE.

CHRISTMAS TREES, 11 to 17 feet,
PERFECT SPECIMENS.
ABIES NORDMANNIANA, 10*s.* 6*d.* to 21*s.*

CHARLES NOBLE, Bagshot.

SEED CATALOGUE
AND CULTURAL GUIDE, 1883.

A full and complete List of all approved varieties of

VEGETABLE AND FLOWER SEEDS,

and all the genuine Novelties of the season.

Forty-eight Pages of most valuable information, post-free for two stamps.

J. CHEAL & SONS,
CRAWLEY, SUSSEX.

A Double First-class Certificate,
The Highest Honour ever bestowed by the Royal Horticultural Society, was awarded to the
ENGLISH RAISED SEEDLING ROSE,
DUCHESS OF CONNAUGHT (Noble),
now being sent out at 10s. 6d. each.
CHARLES NOBLE, Bagshot.

SEAKALE—SEAKALE.

VERY LARGE.
ANY QUANTITY.

Apply to the Grower for Particulars.
W. BAGLEY,
MILLSHOT FARM, FULHAM, S.W.

The Largest Rose Gardens in England.

CRANSTON'S NURSERIES
(ESTABLISHED 1785).

ROSES ON OWN ROOTS.

A large quantity of very fine plants of Hybrid Perpetuals, Bourbons, Hybrid Chinas, &c. List of varieties, with prices, on application.

CRANSTON'S NURSERY and SEED CO.
(LIMITED),
KING'S ACRE, HEREFORD.

FOREST TREE SEEDLINGS.

One of the largest and finest stocks to choose from, including over three millions of two Seedling LARCH, with sound leaders—a splendid lot. Samples and prices post-free on application to

PETER S. ROBERTSON & CO.,
NURSERYMEN, EDINBURGH.

---

110 SPECIMENS OF
CHOICE NEW ZEALAND FERNS,
Artistically Mounted and Correctly Named.

Messrs. PARTRIDGE & COOPER

Have received a Consignment of these unique Collections from New Zealand, and have them on View, for Sale, at
192, FLEET STREET, E.C.

THEY SHOULD BE SEEN BY ALL LOVERS OF FERNS.

Suitable for Christmas Presents, Or as Illustrated Catalogues to the Trade.

NEW AND RARE ORCHIDS.

PHALÆNOPSIS SPECIOSA (Rchb. f.).
See *Gardeners' Chronicle*, April 30, 1881.
THRIXSPERMUM BERKELEYI (Rchb. f.).
See *Gardeners' Chronicle*, April 29, 1882.
AËRIDES EMERICII (Rchb. f.).
See *Gardeners' Chronicle*, November 4, 1882.
PHALÆNOPSIS TETRASPIS (Rchb. f.).
See *Gardeners' Chronicle*, April 30, 1881; and
D. FORMOSUM BERKELEYI (Rchb. f.).
Recently named; not yet described.
All the above plants were collected by Lieut.-Col. Berkeley, the original discoverer, and are guaranteed true to name.
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A new white variety of the giganteum type, possessing great merit. The plant is of a compact habit, with strong flower stems and very fine foliage. It produces a great profusion of bloom of a pure white colour and good substance. It will prove very effective along with the other varieties, which I have introduced, of this highly popular giant strain.
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For 1883.

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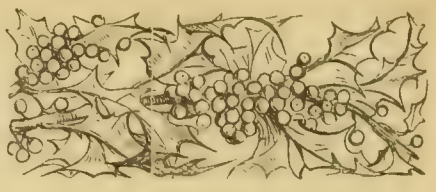
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SEEDSMEN TO THE PRINCE OF WALES,
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THE

Gardeners' Chronicle.

SATURDAY, DECEMBER 23, 1882.

"BALEFUL MISTLETO."

ONCE upon a time—a long while ago, but it might just as well have happened yesterday—you incurred the reproach of blowing hot and blowing cold. The story is told in a book of fables. You deserved the blame, you deserve it now—though you are so self-complacent that I expect you won't admit it. But it is true, nevertheless, as my own experience amply proves what a wavering, inconsistent set of beings you are. At one time you take great pains to find me, cherish me, and make much of me; at another time you asperse my character, call me bad names, and hint that I am altogether degenerate, as if *you* had not fallen from your high estate too—that is, if you are not really descended from some race inferior to yourselves, as I incline to think you must have done, when I note the waverings and changes of your conduct and your variability of appearance and endowments. These are characteristics which show at least that you have not been properly "selected," and that your strain was let out before it was fixed. Yes, you are as fickle and unstable as—as—well, as men. As for me, when your forefathers had scarcely done chipping flints and carving caricatures on reindeer horns, I was pretty much as I am now, and my habits were what they are now; at least I infer so from what your forefathers did. When they had in their so-called progress substituted metal hooks for stone tools, they went in solemn form to cut me from the Oak branches on which I then grew, and with golden knives too. Those knives must have cost money—that is, if the poor creatures had any in those days. Now-a-days, such is *your* degeneracy, that you are constrained to use steel knives instead of gold ones, and instead of gathering me with solemn, respectful ceremonial, you, in your degeneracy, wrench me brutally from the trees on which I grow, cram me into wooden crates—which, by the way, must be like those wicker cages in which your predecessors long ago used to burn their enemies when their religious fervour was at white heat—amiable creatures! Now you hurry me on to the deck of a steamer, or thrust me into a railroad car (I do not remember these things, by the way, in my young days), and then bundle me, with scant ceremony, into a costermonger's barrow, or into a greengrocer's shop. Ah! after all you are still obliged to spend gold on me, and you buy and sell me for gold.

And what a mean set you are, *you*, to call me "parasite," "degenerate," and what not! Just remember the mean trick you made me play once, when you caused me to slay some unsuspecting youth, invulnerable to any shaft cut from tree that had grown in the earth; and so you must make an arrow of me, and make me do your murderous work. I do call it mean. What if I am, as you call it, a parasite. I simply do what you all try to do—get my living as pleasantly as I can, and with the least exertion to myself. You, with your high philosophy and your laws of this, that,

and the other! I act on the law of least trouble, and so do you as far as you can.

I live on Apple trees and Thorn bushes, or wherever I can get a meal that I can digest; and don't you do the same? I wonder what the turkey, and the shorthorns—descendants of my old friend, *Bos primigenus*—would say to you if the poor things could speak? Wouldn't they call you a parasite? Besides, I have to work for my living, and I help to feed the thrushes, and I do you a good turn, too, especially at Christmas; and there are some parasites I know of, such as my far-off cousins, the toadstools, which don't seem to me to do much, though they do lead a fast life, and perhaps cram a good deal into a short time; at any rate, they work in the dark, while I am not ashamed of the light. And I am better than the Dodder, which, so far as I can see, does nothing whatever but strangle the farmers' Clover and suck its juices. But I am always at work, night and day too; I respond to the call of the sun and the persuasions of the dewdrop, and I work for myself and clothe myself all the year round—winter and summer alike—in a garb of green; while those other poor creatures of whom I spoke—*they* are degenerate if you like, for they make other creatures feed them, and breathe for them, and are so idle that they do not even clothe themselves.

"Degenerate," indeed! What did I degenerate from? Why—how—am I degenerate? Surely my domestic arrangements are as perfect as can be. My culinary apparatus does its work perfectly, my house is well ventilated, my store cupboards are never empty, my seed warehouse, if not so bedizened with flaunting advertisement as that of some people, is at least quite as efficient. So far from being degenerate I should call it rather complicated and full of contrivance in its arrangements; in fact, if I were not told so often, that, being a parasite, my whole construction must be degenerate, according to one of those laws you are so fond of talking about, I should imagine my family arrangements to be more dodgy than that of most of my associates. But of course, being a degenerate parasite, I have no right to any opinions.

And see your inconsistency again: have I not heard you say that the greatest among you have the smallest families? Your Shakespeares and Bacons, and Newtons, did not leave many successors behind them. You call my near friend, the Sunflower and all his race, highly developed, because they have but one seed in each flower; and so by the same rule, if you were less inconsistent than you are, you would admit my one seed to be a sign of high development rather than of degeneracy. I should like to know, on your own principles, why you consider me to be more degenerate than a Lily or a Poppy with a spoonful of seed in each pod? Your principles, indeed! I shall think more of them when you can tell me who and what my ancestors were, and how I came to degenerate from their standard. I suppose you think—at least you say so—that they were honest, hard-working folk, strong in wind and limb accordingly, and full of artful adaptation, while I, having somehow taken root upon an Apple tree and found out that the pasturage was good, determined to stay there for the future and make the best of it, and so have brought upon myself as a consequence of my own idleness and my sponging upon others' degeneracy of structure, and want of adaptation forsooth! as if I were not perfectly adapted to my "surroundings," to use your new-fangled slang. That's your view, I know—a nasty bit of scandal I call it. I wonder what *you* would say if I were to apply the same principle to you when you go settling and colonising on some one else's property. You would call it "development," "progress," "civilisation," or some such fine name. I verily believe you call me degenerate simply because I don't flaunt it in the gaudy colours some of you are so fond of, especially at this time of year; but you forget my pearls. I can tell you, too, that if I prefer to don sober attire, because I get on very well with it, I have sisters and brothers whose apparel is as brilliant as anything you can put on; and if your gardeners want to make a sensation they should try and induce some of my near relatives, the Loranths, to adorn your houses. I expect you wouldn't call them degenerate—why, they would blush with rage at the thought. But your gardeners, poor things! can't do it, and, worse still, they are many of them quite ignorant of the existence of some of the most gorgeous flowers in creation.

Again, if I am so very degenerate and so low a character as you make me out to be, how is it I am in such request? Why, you not only buy me as I am, but you buy me, Apple tree and all, and that, too, just after you have been abusing me for the injury I do your trees. Wasn't I right when I called you inconsistent?

But there, I harbour no malice—"Live and let live" is my motto—I don't care what you say about me. It is quite evident that you have some appreciation for me, in spite of the hard things you say about me; and just at this season you give me signal proofs of your confidence. Ah, yes, I can sympathise with your heart throbs, and your whisperings, and your wooings. Don't think I don't know all about it. I am not too degenerate to have my sweetheart as well as you; your prying botanists have long ago found me out; but I will set you and them an example this Christmas. You may kiss but *I* will never tell. Yours, *Viscum album.*

New Garden Plants.

NERINE ATROSANGUINEA×.

THE specimen I have forwarded to you is a winter flowering hybrid Nerine, produced by Mr. James O'Brien by crossing N. Plantii by N. flexuosa. The umbel of rose-coloured flowers grows on a stem about 16 inches in height; its foliage consists of ten dark green leaves, rather glaucous and nearly as broad as those of an Imatophyllum. It has acquired its winter flowering habit from N. flexuosa, but the form of the flower, its segments being nearly equidistant, and the character of its foliage appears to be due to N. Plantii. *T. Cam, Hereford.* [The umbel sent bears about eight flowers broadly campanulate, nearly 2½ inches in diameter and of a bright rosy-salmon colour. The segments are linear, oblong, apiculate, very shortly stalked, with a very prominent midrib and wavy margins. The versatile anthers are purplish with grey pollen. If all the specimens are equal to sample we should call this one of the very finest of its class. ED.]

ODONTOGLOSSUM JENNINGSIANUM LIMBATUM, *n. var.*

A very pretty variety with the usual feature, but a very fine sulphur margin around sepals and petals, when O. Ruckerianum (also called Edithiæ) shows the edge mauve colour. I obtained it from Mr. Chas. Winn, The Uplands, Selly Hill, near Birmingham. *H. G. Rchb. f.*

CATTLEYA SCHOFIELDIANA, *n. sp.*

A very unexpected novelty. Mr. Law Schofield, Rawtenstall, near Manchester, has kindly sent me a sketch, that proves the habit to be that of Cattleya granulosa, whose neighbour it is. The "light" bulbs are slender, 16 inches high, by ¾ inch round. Leaves two, dark green, 6 inches long by 2 inches broad. The flower is superior to that of Cattleya granulosa, and bears sepals and petals of light greenish-yellow. The petals are exceedingly peculiar, quite distinct from anything to be seen in my rich collection of flowers of Cattleya granulosa, very narrow at the base, very broad and blunt at the top. The lip is like that of Cattleya granulosa, side laciniæ whitish, mid lacinia fine purple-amethyst, covered with lamellæ and papulæ.

The great difficulty was to form an opinion about the position of the plant from a single flower. There are two extraordinary leading features. The totally new shape of the petals, and the totally new covering of the lip with lamellæ and papulæ of the brightest purple, arranged in a quite distinct manner from those of Cattleya granulosa. The origin of the plant is that well-known place—Mr. Stevens' great room—July 3, 1879. I have ventured to dedicate it to its lucky possessor, Mr. G. Law Schofield, New Hall, Hey, Rawtenstall, near Manchester, hoping to have a few fresh flowers next year, as, I am sorry to say, my description of the colours, excepting that of the glorious purple tints, may prove to have been taken from the fading flower, and, at all events, a control of the features appears very desirable. "Species are judgments," says our grand-master, Asa Gray, with condensed United States logic, and it is very desirable to revise our judgments now and then.

The plant came into my hands through my excellent correspondent, Mr. B. S. Williams *H. G. Rchb. f.*

CYRTOSPERMA JOHNSTONI, *N. E. Br.* (=ALOCASIA JOHNSTONI, *Hort.*)

The remarkable and handsome Aroid which Mr. W. Bull introduced from the Solomon Isles, and sent out as Alocasia Johnstoni, has just flowered in the nursery of the Compagnie Continentale d'Horticulture, Ghent, to whose kindness I am indebted for a specimen. I believe this is the first occasion of its having flowered in Europe, at least so far as is known to me.

An examination of the specimen proves what I had long ago suspected, viz., that it is a member of the genus Cyrtosperma, since at a glance it was easy to see that the plant could not be an Alocasia, therefore it should henceforth be known as Cyrtosperma Johnstoni, and it is, I believe, the first Cyrtosperma that has been cultivated in European gardens.

The peduncle resembles the petiole, being terete, coloured in the same manner, and armed with clusters of spines arranged in an interruptedly spiral manner. The spathe is ovate-lanceolate acuminate, slightly convolute at the base; it is about 5 inches long, and appears to have been of a brownish colour, though, as it did not reach me in its freshest condition, I cannot be sure of this. The spadix is 2 inches long, and ½ inch thick, quite terete; it is of a brownish colour, and flowers downwards, the apical flowers maturing first. The perianth segments are six in number, and free; stamens six, free, anthers exserted, white; ovary ovoid-oblong, 1-celled, with two or sometimes one anatropous ovule affixed to the side of the cell at about the middle. *N. E. Brown.*

DENDROBIUM IONOPUS, *n. sp.**

It is just incredible how so many fresh members of the section Pedilonum have been introduced by the firm of Hugh Low & Co. Here is once more a new one with a curious mauve cluster of racemes, mauve stalked ovary, and exceedingly short bracts. The flowers are deep yellow, with a red hue along the thicker back of the falcate spur-like extension of the disc. There are two fine purple blotches on the base of the expanded three-lobed lacinia before the thick channelled stalk of the lip which bears a long depressed retrorse tooth. Finally the trifid border of the androclinium has four red blotches. The flowers are somewhat smaller than those of Dendrobium cumulatum. Mr. H. Low states nothing of the locality, which would appear to be Birmah. *H. G. Rchb. f.*

NEPENTHES SANGUINEA.

THIS very fine Nepenthes is generally considered a very difficult plant to grow, but in the garden of Colonel Ratcliff, Calthorpe Road, Edgbaston, Birmingham, no difficulty seems to be experienced, if we may judge from the accompanying illustration prepared from a photograph, kindly placed at our disposal (fig. 143). Colonel Ratcliff has a fine collection of these interesting plants, but few finer specimens we imagine than this one, which in August last bore twenty-seven fully developed pitchers, and several more in the small state, and the largest pitcher measured 6 inches in length to the spring of the lid.

RUBBER IN BRAZIL.—Vice-Consul Bolshaw, reporting on the trade and commerce of Rio Grande del Norte, says that indiarubber does not appear to progress as it promised, the ultimate extraction showing that the Mangabura (Hancornia speciosa) has got exhausted, probably on account of the land where they grow being very dry and very different from those of the provinces of Para and Amazon.

* *Dendrobium ionopus*, n. sp.—(Pedilonum): racemis abbreviatis; bracteis minutis; sepalis triangulis, lateralibus in mentum falcatum elongatis; tepalis triangulis; labelli ungue elongato crasso canaliculato cum dente plano retrorso, lamina antica explanata triloba, lobis lateralibus obtusangulis lobo antico producto retuso emarginato; androclinio trifido. *H. G. Rchb. f.*

CHRISTMAS PLANTS.

Happily for the gardener there are many of these that he can turn to most useful purposes. What though dells, waysides, and woodland ways find the leaves lying thickly, yellow, seared, and dead, Nature has her compensatory aspects, and supplies in many plants berry, blossom, and varying tints of foliage in marvellous abundance and variety—

> "Yet there's lustre ever beaming,
> Ever cheerful, ever gleaming,
> A perpetual brightness seeming."

with which to make our houses gay, and make the partakers of Christmas festivities smile as they look out on the frowning mid-winter.



Fig. 143.—Nepenthes sanguinea, as grown by Colonel Ratcliff: greatly reduced. (see p. 808.)

When before was Cratægus pyracantha seen to be so richly laden with its pale orange berries, or borne in such large clusters? Out of the abundance of the fruit many a spray can be cut for indoor service without in any way robbing the trees too greedily of their wealth of berry. Many a dwelling is this winter season strikingly gay with manifold clusters of fruit from this invaluable and most hardy plant—in their happy plenteousness mocking snow and frost as they appear to try to hide from the gaze with a mantle of snow signs of natural activity in plant and tree that cannot be altogether shut out from view. Then there are the Hollies, with their varieties reckoned by hundreds, and not an ugly one among them; and in addition to their berries, varying in size, colour, and tint—no other shrub deviates into such an endless diversity of foliage. "Between the miniature leaves of Ilex crenata and the magnificent foliage of I. latifolia there are infinite gradations of size, shape, and colour." There is no lack of Hollyberries this Christmas, and the strange, weird-looking, ancient, but ever-welcome Mistleto appears to be plentiful also, and well-berried in the present winter. One wonders whence the enormous supplies that come to London are obtained.

And of other berried trees and shrubs there are Arbutus Unedo, with its large Strawberry-like fruits becoming disfigured by the rigours of weather at Christmas and devoured by birds, but yet to be had at this season of the year; Aucuba japonica, of which many an old female plant can now be seen laden with scarlet berries and handsomely marked variegated leaves, from which one can cut an abundance and by doing so encourage a prolific growth; Berberis stenophylla, a beautiful evergreen hybrid, blooming profusely, and perchance carrying some of its abundance of purple berries into the Christmas season; Cedrus Libani, which is now affording groups of young cones on the surface of the points of recent growths on its majestic branches, and a few of which might be cut for special purposes without disfiguring the trees; Cotoneaster microphylla and C. Simonsii, both bearing a profusion of red berries, the last very handsome in foliage in addition, and well adapted for covering walls; Garrya elliptica, a beautiful evergreen shrub adorned in the middle of winter by long, slender, pendulous catkins, which make a most showy and elegant appearance, but which should be grown against a west or south wall to have it in perfection; Mahonia japonica and its seedling varieties, all possessing large leathery pinnate leaves, and bearing full clusters of fine purple berries—these may not last on until Christmas, but the foliage is conspicuously decorative and useful; M. Aquifolium comes under the same category; and the common Berberry, which in some localities produced enormous crops this season, is carrying its ruddy-hued berries up to this period of the year. And then there is Pernettya mucronata and its many fine varieties, especially those produced during the past few years by Mr. Davis, of Hillsborough, co. Down. They are very prolific of berries of many hues, from white to dark purple or black, and berried sprays are well adapted for festoons, wreaths, &c. The Siberian Crab (Prunus prunifolia) bears many very pretty small scarlet fruits that hang on the branches most of the winter if the season be at all dry and mild, but they are greedily attacked by birds, who make many a hearty meal of them. The common Dog Rose and some cultivated varieties produce clusters of large bright coloured seed-pods, many of which can now be seen in the hedgerows, and which can be made of decorative value in not a few ways. Lastly come Skimmia japonica and other species, all neat evergreen shrubs, their flowers succeeded by large red berries; the plants grow slowly, but they become thickly berried when in a young state.

And then of hardy flowering plants we get Andromeda floribunda, that because of its tendency to flower twice a year will blossom in October and on till Christmas; the sweet and deliciously fragrant Chimonanthus fragrans, from which can be gathered on Christmas Day, even amid frost and snow, some of its most acceptable flowers, scented like a Jonquil;

*

but this plant should always have the protection of a wall; Cydonia japonica, which in some seasons, and when the plant is in a warm and sheltered position, will produce its flowers at mid-winter; Erica carnea, which comes into blossom as the old year glides into the new, and let snowfall and frost prevail will yet put forth abundant pink flowers as if defying old Winter to do its worst—a plant that is always a pleasant sight on New Year's Day; the bright yellow-flowered Jasminum nudiflorum, which is one of the showiest of hardy winter bloomers, and which can always be depended on at Christmas; Lardizabala trinervata, which is described as "a magnificent evergreen climbing plant which deserves to become an universal favourite; it is perfectly hardy against a wall, the leaves are large and elegant, it blooms in December, and is therefore a most welcome addition to our few winter-flowering open-air plants." The humble and ever-welcome Christmas Rose, which is already in flower, but which needs the protection of a hand-light to ward off the effects on the snowy blossoms of bad weather; and, lastly, many a handful of cultivated and common Primroses will be gathered on this coming Christmas Day to gild with some slight touches of floral beauty the old year as it takes its place in the great record of the past.

And then of foliage shrubs, &c., there is a great variety; for instance, Aralia Sieboldii and its variegated variety, with their noble ornamental leaves; the golden Biota orientalis, and many other coniferous plants too numerous to mention; Escallonia macrantha, with its large shining evergreen leaves, even more glistening in winter than in summer; Euonymus japonicus and its green and variegated leaved varieties; also E. radicans, with its dwarf growth, from which many a useful handful of sprays can be cut; Ivies in great variety, one of the most useful evergreens for decorative purposes at Christmas; the Sweet Bay, and the best types of the Laurel; Ligustrum japonicum, and L. ovalifolium—the leaves of the latter taking on bright purple tints as a result of the autumnal frosts; the golden variegated Japanese Honeysuckle, with its wreath-like shoots of foliage; Osmanthus ilicifolius and its variegated variety—plants of slow growth, and which should be sparingly cut; and, to more pointedly particularise a group of coniferous plants, the Retinosporas—especially the plumosa types, with their charming feathery foliage, green, silver, and gold; Veronica Andersoni, and the type with variegated leaves—the latter especially most useful for cutting from.

To the foregoing flowering plants can be added the homely Laurustinus, now breaking out into profuse bloom; and—

> "The sweet white Thorn which in chill December
> Somewhere in the West puts forth its flowering buds"

—the Glastonbury Thorn, of reputed miraculous origin and precocious flowering.

Add to these the many forms of dried and dyed grasses, and the numerous varieties of everlasting flowers bleached and then so brightly coloured by skilful hands, and it will be seen there is no lack of material with which to brighten the Christmas season. Whatever may come in the train of the new year, let us at least part from the old one with courageous and hopeful hearts, and as it passes away with many that at have gone before be merry and wise, trusting the future as bringing with it much that will be good for mankind all the world through. *R. D.*

JARRAH WOOD (EUCALYPTUS MARGINATA).—Reporting on this wood the Chief Engineer at Adelaide, South Australia, says it has been extensively used in the colony for many years for railway sleepers, piles, and other structural purposes. Many of the sleepers that have been laid in the permanent way for a period of eighteen years are quite sound at the present time, and show no symptoms of decay or destruction from the white ant. It is recommended that the timber should always be provided from the ironstone ranges, and not from the flats or swamps, as from the latter places it is spongy, and is liable to attack from insects both on land and in the sea. It is also a matter of importance that the logs should be felled when the sap is down, and properly pitched, by which means any tendency to splitting is minimised. Sound logs are readily obtainable from 20 to 40 feet in length, and from 12 to 34 inches square.

GYNERIUM ARGENTEUM.

THIS noble grass comes from the great Pampas of South America, whence the English name Pampas-grass. These Pampas are simply vast treeless plains, covered with tall, coarse grasses, and known in North America as prairies, or in the north-west of that country as savannahs. The Pampas-grass is stated to attain the height of 30 or 40 feet in its native habitat; but in this country 8 to 10 feet is an average, if not the maximum. In the light sandy soil of Kew the flowering stems reach, if not exceed, 8 feet. It is interesting from a botanical as well as a horticultural point of view, seeing that it is one of the few instances of a dicœcious grass—that is, having the male and female flowers on different individuals. Both plants are in flower at Kew, and are sufficiently distinct to deserve consideration from an ornamental point of view. The male panicle of inflorescence is purplish, but fades with age, and droops elegantly on one side as soon as it leaves the sheath; while the plumes of the female plant are erect, and of a shining silvery hue. In the southern part of this island it succeeds fairly well in favourable seasons; but flowering as it does when the autumnal gales are laden with moisture and fraught with injury, the flowering period is considerably shortened. In the northern part of the island the plant proves quite hardy, but seldom flowers, by reason of the shortness of the growing season. However, the cæspitose or tufted habit of the long arching and drooping leaves render the plant sufficiently conspicuous and distinct at all times to commend itself to the attention of the horticulturist or landscape gardener.

HORTICULTURAL BUILDINGS.*

THE chief object I have had in view in preparing this paper has been to embody just that information and just those points relating to the construction of horticultural buildings which are outside the province of the gardener, and do not usually come within the knowledge of architects; in fact, to supply a few links which are generally missing between the architectural and horticultural interests.

In order to start fairly I will first of all draw your attention to the nomenclature of the subject. The words "hothouse," "greenhouse," "glasshouse," are so frequently used indiscriminately, that a slight classification of these structures is necessary. I generally find they divide themselves into two classes, growing-houses and showing-houses. Growing-houses, again, divide themselves into three sections—1st. Those in which plants are grown in pots on stages, or at a certain distance from the glass, comprising simple greenhouses, plant-houses, houses for bringing on bedding stuff, some descriptions of orchard-houses, and plant-stoves without bottom-heat. 2d. Houses in which foliage is trained along the roof, such as early and late vineries, Peach-houses, or similar descriptions of orchard-houses. 3d. Houses in which root-action is stimulated, such as Cucumber and Melon-houses, Pine stoves, pits with forcing or propagating beds, plant stoves containing heated beds, &c.

The peculiarly trying conditions under which horticultural buildings exist, viz., the extremely varying temperatures of the inside and outside: the moisture-laden air of the former; the exposed character of the structures; the uncertainty of our climate; the necessity for durability, solidity, and yet the minimum obstruction to light—warrant every precaution being taken that the materials used be thoroughly sound; that the construction be such that there be no crevices for the retention of moisture or harbouring of insects; and that the buildings, by subsequent periodical painting and repair, be kept in a good state of preservation.

PITCH OF THE ROOF.

The first main point in connection with a growing-house is to determine the pitch of roof most advantageous for various purposes. For plant growing, where low houses are required, a roof of 26° to 30° is suitable. For fruit growing along the rafters, when the ripening process requires the maximum sun influence from 36° to 44°—say a mean of 40°—and for wall fruit, where the glass requires to be as near the wall as possible, and a specially narrow house is advisable, 60° to 70° may be advisable.

* Summary of a paper by Mr. F A. Fawkes, read before the Architectural Association on the 8th inst.

The first and most natural form is the lean-to, and of course the best aspect for a lean-to house is to face the south. It will then catch a larger amount of sun than in any other position. Even when the lean-to faces exactly south, and the wall is consequently due east and west, part of the early morning and late evening sun will be lost, for the sun rises north of east and sets north of west during part of the year.

The next form of house is the span, and the best aspect for such a house is, of course, for the ridge to run north and south. In this way the contents obtain as perfect a distribution of the sun's rays as possible; for as the side facing east receives all the morning and part of the afternoon rays, so the side facing west receives part of the morning and all the afternoon rays. The lean-to and the span are the chief simple forms to be met with in connection with glass-houses; but there is another—a sort of compromise between the two, viz., the three-quarter span, which will be found very useful. When the back wall of an otherwise lean-to requires to be kept as low as possible, so that without departing from the main features of the lean-to the wall may form the minimum obstruction; when it is necessary to let light in at the back or for utilising early morning or late afternoon sunlight, which would otherwise be lost; and when the maximum length of rafter is not a *sine quâ non*.

SITE AND LEVELS.

Very important points in connection with planning horticultural structures are site and levels. The actual site may be, and frequently is, a matter of choice. When this is the case, first see that trees or other objects are not likely to obstruct the sun's rays and thus neutralise the advantages of your glass-houses. Decide upon that site that will best suit the varied conditions of aspect, drainage, stoke-hole, furnace, chimney, potting-shed, fuel-shed, and other buildings, retaining a particular view, &c. Also see if your ground is level; if it is not, ascertain the exact nature of the inequality. If the ground be fairly level in the direction of the length of your buildings, well and good. If, however, the ground fall in that direction, several courses are open to us. In any case, it is advantageous for the boiler to be at the lower end, when, in many instances, excavation for a stoke-hole may be entirely avoided. Even supposing the ground to be perfectly horizontal, the question of floor-levels must be considered. If there is a difficulty of drainage, or the boiler cannot be sunk as low as necessary, it is often advisable to raise the floor-level. On the other hand, it may be necessary to sink the floor-line below the ground-line, in order that the houses may form the minimum obstruction. In this case great care must be exercised in the drainage, or the houses may be perpetually flooded.

In constructing a glass-house, several points thrust themselves upon us, especially with reference to the roof. Under ordinary circumstances, for growing-houses a roof well tied with light iron tie-rods will enable rafters to be much shallower than a roof not so tied. As to whether the roof shall be made of framed lights or not, I may say from my own experience a sash-bar roof, with T-iron purlins between the rafters, is lighter, has less material, is not so liable to get out of repair by rotting, and, in fact, will answer every practical purpose for such houses much better than the heavier and more substantial sash roof. For clear glazing, 21-oz. English sheet glass is generally used. Thinner than this is not advisable; neither is Belgian glass so desirable as English. Wavy speckled glass is apt to scorch plants. For a semi-obscure glass, Hartley's rolled plate is generally used.

GLAZING.

As to the mode of fixing the glass, I have unhappily come to the conclusion that, for use in purely growing horticultural houses, no system hitherto invented is more advantageous than putty glazing. I say "unhappily," because putty glazing is by no means perfect: the putty is apt to peel off, crack, form crevices for the retention of moisture and insects, and cause the woodwork to rot. Then it is troublesome, to a certain extent, to renew putty-glazed glass when necessary, as well as to put it in in the first instance. There can be no doubt that horticulturists generally would welcome any advantageous method of superseding putty glazing; but there can equally be no doubt that for use in purely growing horticultural structures, putty glazing yet holds its own.

In some systems of mechanical glazing the glass is held in its place by metallic clips; in others by compressible metallic bars; in others between wedges of lead; in others between strips of vulcanite or other elastic substance (the glass and such elastic substance being held in their position by wood or metallic capping and screws); in others the glass drops into grooves prepared to receive it. Now in all of them the glass comes in contact with either a metallic or an elastic substance. In the former case there must be a sufficient amount of "play," or the glass will certainly break; in the latter case the elastic substance is found in practice—chiefly in consequence of internal moisture, excessive variations in temperature and atmospheric influences—to give far more trouble to gardeners than putty properly made and applied. If, on the other hand, there be any "play" between the glass and whatever it touches, hot air has abundant opportunity for escape; such a house cannot be properly fumigated; crevices for the retention of water by capillary attraction abound; subsequent freezing of the water and breakage of the glass are liable to occur; and the same crevices which hold the water will harbour insects—all most serious disadvantages from the point of view of a horticulturist. Of course, for other than strictly growing glass-houses, mechanical glazing may frequently be employed with benefit.

Ventilation.

The most usual form of ventilator is a framed light, hinged at the top, and opening from the bottom outwards. Sliding sashes for roof ventilation have almost gone out of fashion, except for simple frames, low pits, and houses in which the roof requires, at certain times, to be practically stripped. For any other purposes sliding lights are cumbrous and unmechanical, and a roof in which they are fitted requires to be abnormally heavy, and affords great obstruction to the solar rays. Both top and bottom ventilators should extend along the whole length of a house, except perhaps in the case of the top ventilators of a span or three-quarter span, which may often be arranged alternately on each side of the ridge. Continuous ventilators, then being necessary, consecutive lights may be made to open simultaneously or each can be arranged to open separately. Unless, however, there are a great number of lights to manipulate, or unless they are not easily accessible, it is generally advisable to adopt the latter course; for obviously it may not be advisable to have exactly the same area of ventilation along the whole length of a house.

Roofs have occasionally to be wired, in order to support foliage trained near them. In practice I find the best way to wire roofs is as follows:—Suppose we have a lean-to to deal with: take two flat bars turned edgewise, and suspend them at back and front by holdfasts, bolted at the back through the wall, and at front into the mullions. Then at the necessary intervals stretch wires by means of *raidisseurs* to these two bars. Intermediate parallel bars, dependent upon the length of rafter, may serve to support these wires. The wires can thus be at short, long, or irregular intervals, or at any time, and as frequently as required, the distance apart of the wires may be altered. In this way they help to tie in the roof, enable painting and repairs to be more easily effected, and are more easily adapted to the wants of the gardener than fixing wires permanently and separately at right angles to the rafters.

Conservatories.

I should like, in conclusion, to say a few words upon conservatories, or showing-houses. By these I do not mean winter gardens, in which Palms and other large specimens of vegetation are permanently planted, but just ordinary conservatories, with numbers of which architects may expect to come in contact in the course of their professional work. At the outset several points must be kept in view. 1. A conservatory must be treated as one of the reception-rooms of the dwelling-house. 2. Without departing from its strictly horticultural character we must endeavour to make it approximate architecturally, both inside and out, to the other portion of the dwelling-house. 3. This being so, we must regard the functions of growing and showing as quite separate. I am perfectly aware that many cases exist in which it is necessary that growing and showing be accomplished in the same house. In such cases a compromise must be effected, for if all the conditions of growing be complied with, the conditions of showing will suffer, and *vice versâ*.

Summing up the chief points to be observed in designing a conservatory, I would say,—Construct it in harmony with the adjoining or surrounding architecture. Give as much light as you can. Ornament the construction: never construct the ornament. Interest and pleasure should be excited by the broad lines of a conservatory rather than by meretricious ornament and fussy detail. Touching the interior, I would say,—Throw away stages, hide the pots, and let us see natural beds and banks of foliage and flowers massed with artistic irregularity. Let there be an ample paved space—not a mere path—but a space so that a table and a chair or two may be placed in it. Let the conservatory be regarded more as a lounge than a mere place to walk round in single file.

CORDYLINE AUSTRALIS.

In your number for August 26 there is an illustration of a very fine Cordyline australis grown out-of-doors at Enys, Penryn, Cornwall, which had attained to the height of about 17 feet, and which quite resembles those in this, their native country. I daresay many here who noticed the illustration had feelings of surprise and delight at seeing one of our popular plants likely to become a favourite in the gardens of the old country. I believe they will be in great demand for dotting about suburban, town, and villa gardens, but will most likely require to be grown in pots for the first four years from their seedling state, and taken into a cold house during the winter season until their stem has attained to a sufficiently hard state to endure the winters of the old country, after which they will then most probably stand planting out in the gardens.

As regards the question, Is there a branching variety of this Cordyline? I may say that ordinary observers have thought that there is, but I presume that the branched forms of it are due to the conditions under which the plant has had to struggle through its previous existence. The much branched plants are often found in exposed places where the plant has to struggle against strong winds and a poor soil producing very slow growth. It may also be caused by the heart of the plant being broken off, when several buds will issue near the injured part, and they also begin to branch when they have flowered, to which state they attain in about ten to fifteen years from seed. I have one in my garden which is ten years old from the seed state, and it is about 12 feet high to the tip of its leaves. This is quite straight, not having flowered yet; there are slight variations to be met with in a batch of seedlings. *John Dutton, Florist, &c., Springfield Road, Christchurch, New Zealand.* [We do not think this plant would be hardy here except under very favourable conditions. Ed.]

EARLY PLANTING AS A MEANS OF HARDENING PLANTS.

The present severity of the weather (Dec. 14) gives practical interest and importance to questions of this character. The time is, therefore, most seasonable and opportune for asking and endeavouring to answer the question—Can plants be made more hardy by annual lifting, and if so, what is the best season to transplant in order to gain the greatest amount of hardening from the process?

The first question may assuredly be answered in the affirmative. Roses and other shrubs, fruit and other trees, and even vegetables recently transplanted, have been found in numerous cases to withstand severe cold better than similar plants in identical position that have not been moved. Many striking cases of this sort have come under my notice. Some of these have been Conifers that can hardly be pronounced quite hardy, such, for example, as Araucaria imbricata, Abies Webbiana, and Pinus insignis Neither of these under normal conditions can be warranted to withstand much more than 20° of frost. I have, in fact, seen the two first crippled and the latter destroyed by little more than 15°. But I have also seen a recently transplanted Pinus insignis withstand 25°, and in one case at least live through zero.

Tea Roses, again, are certainly not hardy. They are often killed or very severely crippled by a frost of from 12° to 15°. Recently planted Tea Roses have, however, taken little harm when exposed to the latter temperature.

In the case of Broccoli, again, many that would be quite destroyed by 15° of frost have passed through 30° with safety when recently moved. In the case of these, however, it must be admitted that a change of position in the inlaid plants has assisted in resisting the penetrating power of the cold. The more tender part—the crown—is trebly protected by its semi-prostrate condition, the covering of its own leaves and the overlapping of the stems of other plants; while the earthing-up of the stems keeps the latter frost-proof. *Per contra*, however, the close proximity to the earth of the heads of the Broccolis places them in the line of most intense cold. This, of course, is not felt during snowstorms, or when the Broccoli is afforded extraneous protection; but, under other circumstances, the extreme coldness of the air near the ground-line tells severely against the plants, and neutralises to some extent the hardening effects of mere transplantation. So far, a few of the results of careful observation and practical experience have been stated. Accepting these for what they are worth, some of the causes, at least, of this additional hardiness do not seem far to seek. The first and more immediate result of all root disturbance is depletion. The roots, forcibly separated from their feeding ground, cease collecting food. Nor is this all. Simultaneously with this cutting off of its supplies there is probably a greater expenditure of food and fluids than before; hence a compound process of depletion, that speedily exhausts the plant of much of its more volatile juices. And besides this, a third depleting process comes into play. Hardly have the roots been safely and securely placed in their fresh feeding grounds than they make efforts to take possession of them. In these first efforts, however, they derive no support from the soil, for detached roots cannot absorb food, and most of the absorbing points are so far injured or destroyed as to make immediate absorption from without impossible; hence the roots have to be repaired and new roots formed from the internal resources of the plants. By such time as this is done, and taking into cognisance the fact that the absorbing powers of the roots have been idle during this abnormal rate of expenditure of vital force or stored up power, it is obvious that a paucity of food and juices must follow on the heels of transplantation.

Now, whatever lessens the amount of fluid in a plant, whether perfected maturity or depletion through removal, makes it more hardy. The reason for this is doubtless partly mechanical. The action of severe frosts on fluids does not greatly vary, whether these are in mere mechanical tubes or in the tissues of plants, though the latter have assuredly more power of resistance than the former, possibly arising from the latent heat incident to or a part of vegetable life. Still in regard to vegetable tissues and to plants of the same character, it holds good that the more watery the tissues the greater the danger from severe cold And such being the case our contention is established, that transplantation exerts a hardening effect on plants.

The point of determining the best season for disturbing the roots in order to gain a maximum amount of hardening influence is one of great delicacy and difficulty. The general constitution and character of the plant, as well as its growth afterwards, must be taken into account, as it must be obvious that it would be folly to gain a temporary hardiness at the expense of the future health and ultimate well-doing of the plant.

Taking all these matters into account, theory and practical experience seem to point to about the middle of October as the best season for transplanting to insure an additional amount of hardiness, as well as the future health and strength of the plants. If root severance from the soil is deferred too long, the probability is that the roots may remain unattached all winter, the work of depletion be carried to extremes, and the supply of food in the spring be too late in regard to time, inferior in quality, and deficient in quantity. Transplant in October and all these evils will be avoided, and that happy mean of character and condition assured that will impart greater hardiness without permanently weakening or injuring the plants.

Fresh roots will speedily be formed, but by the time these are sufficiently developed to forward new supplies, the temperature of the earth and air will have fallen so low that but little will be forwarded until probably all danger from injury from any excess of moisture in the plants has passed away. But as the winter passes away and spring allures vital force into more vigorous action it will be found that the loss the plants sustained through removal has been slowly but surely made good; or if not a whole host of new and vigorous roots will be found ready to forward abundant supplies to any extent demanded by the bursting leaves or unfolding flowers.

How far it is practicable to take advantage of this hardening influence of root disturbance every cultivator must determine for himself. Only let the fact be once recognised that such a power, within certain limits, is within reach of all, and it may be applied to an extent that few have dreamed of. Obviously many fruit trees and flowering shrubs—notably Roses

—might be thus hardened to withstand more frost without suffering much or any loss of beauty or fertility during the following summer. Anything that will extend our power over our capricious climate—so erratic in its sudden changes, so cruelly destructive in its killing severities—should be welcomed as a boon. As such I venture to commend these thoughts to my brother cultivators, and to ask as a favour for their views or experience on and about this important matter. *D. T. Fish.*

LIST OF GARDEN ORCHIDS.

(*Continued from p. 780.*)

48. ANTHOGONIUM.—A monotypic genus in tropical Asia.

Subtribe vii.—*Coelogyneæ.*

Stems either pseudobulbous and 2-leaved, or several-leaved and bulbless; peduncle 1-flowered or raceme-bearing from between the terminal leaves (sometimes appearing before the leaves). Column produced in a foot or footless. Pollinia 4 or 8, clustered, usually rather flattened, acute or acuminate at the apex or produced in caudicles, more or less connected by a granular or thin viscous appendage, and sometimes after dehiscence attached to the rostellum or a gland.

In *Calanthe* and its allies the appendages or caudicles of the pollinia resemble the stipes of the Vandeæ, but they evidently develope from the pollen itself, and not from the rostellum.

49. JOSEPHA.—Two inconspicuous species in India and Ceylon.

50. EARINA.—Inconspicuous plants, inhabiting New Zealand and the Pacific Islands.

* Flowers small, crowded, in sessile heads; lateral sepals and foot of the column forming a chin.

51. GLOMERA.—Stems leafy with a terminal loose head of flowers. Pollinia 4. Two species inhabiting the Malay Archipelago and Pacific Islands.

G. ERYTHROSMA, Bl., *Bijdr. Fl. Nederl. Ind.*, p. 372, t. 68; Lindl., *Gen. and Sp. Orch.*, p. 253; Rchb. f., *Xenia*, ii., t. 128.—Java. Cultivated at Buitenzorg.

52. AGROSTOPHYLLUM.—Stems leafy with a terminal dense head of flowers. Pollinia 8. Epiphytical herbs with thickened stems and crowded distichous leaves. Flowers small. Five species are known; they inhabit India and the Malayan Archipelago.

1. A. JAVANICUM, Bl., *Bijdr. Fl. Nederl. Ind.*, p. 369, t. 53; Lindl., *Gen. and Sp. Orch.*, p. 248.—Java. Cultivated at Buitenzorg.
2. A. KHASIYANUM, Griffith, *Calcutta Journ. Nat. Hist.*, iv., p. 376, t. 19. *A. planicula*, Rchb. f., *Walp. Ann.*, vi., p. 909.—India. Introduced into the Calcutta garden by Gibson. Cultivated at Kew in 1878. Hort. Kew.

53. CERATOSTYLIS.—Heads few-flowered, with numerous bracts, lateral. Column furnished with two long arms. Pollinia 8. Herbs with small or minute flowers; some of them are not unlike Rushes. See *Xenia*, ii., t. 127. Some of the species have been published under Appendicula. C. anceps, C. graminea, C. latifolia, C. simplex, C. teres, and others are recorded as having been in cultivation.

** Flowers spicate or racemose. Lateral sepals connate at the base, forming a chin.

54. CALOSTYLIS.—One Javan species, with inconspicuous flowers.

55. CRYPTOCHILUS.—Pseudobulbs one or two-leaved. Sepals cohering in a tube three-lobed at the top, and enclosing the petals and labellum. Anther-bed short. Pollinia 8.—Two Himalayan species.

C. SANGUINEA, Wall., *Tent. Fl. Nep.*, t. 36; Lindl., *Gen. and Sp. Orch.*, p. 193; *Bot. Reg.* 1838, t. 23.—Cultivated by Messrs. Loddiges in 1837. A pretty and very singular Orchid, with clustered spheroidal pseudobulbs, the older ones leafless, the younger ones bearing one or two leaves and two or three sheaths, and a terminal erect raceme of yellowish-crimson flowers. Hort. Kew.

56. TRICHOSMA.—Stems not thickened, two-leaved. Sepals spreading. Anther-bed elevated, toothed. Pollinia 8. One species.

T. SUAVIS, Lindl., *Bot. Reg.* 1842, t. 21. *Coelogyne coronaria*, Lindl., *Bot. Reg.* 1841, Misc., n. 178. *Eria coronaria*, Rchb. f., *Walp. Ann.*, vi., p. 271; *Gard. Chron.*, n.s., v., p. 234. *Eria suavis*, Lindl., *Journ. Linn. Soc.*, iii., p. 52. *Eria cylindropoda*, Griff., *Not.*, iii., p. 299.—India. Collected in Khasya by Mr. Gibson and sent to the Duke of Devonshire about 1840, and it has recently been reintroduced. Flowers white and yellow, fragrant. Hort. Kew.

(*To be continued.*)

INDIAN TEA.

(*Concluded from p. 778.*)

PICKING.

The sap begins to rise in March, and by the middle of April the first flush or picking comes on, and every available man, woman, and child in the neighbouring villages is hunted up to reinforce the permanent coolies of the establishment. A man and a boy per acre are required for a garden in full yield, at 4 Rs., 3 Rs., or 3 Rs. 8 a., a month respectively. On a garden of 600 acres there would therefore, at times, be the responsibility of 1000 coolies on the head of one European, who has himself only to rely upon for good management and efficient work. The flushes continue in greater or less strength and vigour, from April to the end of October. A long, succulent shoot runs up of four, five, or even six leaves, and from these three or four are taken, as the case may be; the whole shoot, stem and leaves, is picked off by the fingers down to the leaf which is left to shelter the bud from which the new flush is to spring. At times the growth is so rapid that by the time the pluckers have been round the whole garden in the course of two or three weeks, and have, with their nimble little fingers of both hands at work at the same time, taken off all shoots that are then ready for plucking, new shoots have come to perfection. It is astonishing how few mistakes these pluckers make, they become such adepts at the work that it is very seldom that too few or too many ready leaves are picked from any particular shoot.

PREPARATION OF THE LEAF.

During a good flush some 5000 lb. a day of leaf will be plucked on the plantation, and when it is brought to the factory, if it be intended to make black Tea from it, it must all be spread out in thin layers to wither. The planter's ingenuity, after all his floors and tables are covered, is much exercised to contrive surface for this necessary process. High racks are constructed, and divided by thin slips of wood or wire, so as to form lofty stands for series of light Bamboo trays, which contain the leaf. In this way the air circulates among the bright, fresh green leaves, and what was life to them whilst they were on the bushes now brings decay, and by the following morning the day's picking is changed to a dark green colour, and the crisp leaves have become withered, soft, and pliable.

The rolling process, which follows next, is in some gardens carried out by machinery, and thereby much labour is saved, though perhaps not altogether to the benefit of the leaf. We will, therefore, keep to the old plan. A hundredweight of the withered leaf is given out to every three men, and if the leaf be succulent it will take them four or five hours to roll this properly: the work is hard and exhausting, and very often the men begin as early as 3 A.M. to get it well over before the great heat of the day comes on. Each man takes as much at a time as he can grasp and conveniently cover with his hands, then with arms and hands he gives a sort of rotatory movement to the leaf, which he presses with the palms and heels of his hand, and deftly gathers together with his fingers, working the mass so as to break all the cells of the leaf and free the sap, and at the same time to give it that curled and twisted form peculiar to manufactured Tea. When sufficiently manipulated the mass leaves the hand in the shape of a ball, and is placed to ferment in baskets, which will hold about 2 cwt. each, lined and covered with damp blankets.

The amount of fermentation given to the leaf is a matter of great importance, and requires in its regulation much judgment and experience; the process can be checked or encouraged at the will of the planter, whose object it is to produce a leaf of a bright colour, like a new penny, which is also the colour the finished Tea should have after infusion.

When the proper amount of fermentation has been obtained, the balls of leaf are taken out of the basket, broken up, and thrown into metal pans, to be cooked over a gentle fire. This at once checks and stops the fermenting of the leaf, and makes it softer and more pliable for the second rolling, which is generally necessary at this stage. The leaf is from this time called "Tea," but it would seem that it is not yet quite a finished article: for even after panning, the colour of the newly manufactured Tea is liable to change, becoming, as it is thought, oxidised by the action of the air. It is the planter's business to see that one process of manufacture succeeds another as quickly as possible, and he immediately spreads the new Tea on Bamboo mats, or sheets of zinc, and places it in the hot sun, which quickly dries up into the Tea all the remaining sap, fixes the twist, and adds a bloom like that on a dried Raisin. To prevent the possibility of the Tea becoming sour, and any loss of aroma from exposure, it is, after a short exposure to the sun, taken to the long, narrow firing-rooms, which run along the sides of the factory, and placed in wire-gauze trays, holding about 2 lb. each of Tea, over charcoal fires, which are contained in long narrow troughs of masonry, about two feet high. Supposing 100 lb. of Tea to be over the fires at one time in these 2 lb. trays, it would require an hour and a half to dry the Tea sufficiently for packing, and as space is limited the Tea is usually fired to such an extent as will prevent its turning sour, and finished off afterwards.

SORTING FOR MARKET.

All that remains is to classify and sort the Tea, and to pack it for market. A certain amount of classification has been going on during manufacture; and the larger and coarser Tea can be separated from the mass by sifting it, but after that the Tea has to be shaken out pound by pound on to Bamboo trays, and sorted by the quick fingers of boys and girls, who, whilst they separate the various qualities of Tea, pick out all useless and foreign matter. This is a long and tedious work, and, to the uninitiated, seems hopeless.

Each estate keeps its own sawyers, carpenters, and smiths, who cut the trees from the forest—which the planter should always be careful to include in his land purchases—saw the planks, and make the chests in which the Tea is packed, and which, lined with sheet lead, are sent off to Calcutta or London. The season's Tea is sent in as few consignments as possible, to secure uniformity of appearance and taste to the various "breaks."

Now comes the Indian Tea planter's great difficulty. He has laid out considerable capital in land, in planting, in cultivation, in manufacture. He has worked hard, honestly, and conscientiously to produce a genuine and pure article; and now he wishes to sell his production, which those best able to judge pronounce to be equal at least to the very best and purest Teas grown in China; but the brokers tell him that these and inferior China Teas have so long held the first place in the markets of England, and that the public have been so impressed with the notion that no other Tea can bear comparison with them, that they have the greatest difficulty in procuring a fair trial for his Tea. The Indian planter finds that the vast quantity of China Tea which is annually imported into England, and the variety of quality and flavour which these Teas possess, together with the facility afforded for mixing the growths of various districts and different qualities of Teas, so as to meet the taste of the English consumer, have vitiated that taste, and rendered the pure, unadulterated, unmixed and wholesome Tea of the hills of India, an unknown, and, consequently, unappreciated article in the English market. It very soon becomes plain to him that his interests are sacrificed to those of the retail dealer; and thus, when Teas of widely different value, of flavour, of season and of growth are imported in enormous quantities, the temptation to mix them, so as to force the consumption of low-priced Tea at such a price as should, of right, only be commanded by those of the best flavour and growth amongst them, is almost irresistible by mercantile morality.

As most of the Indian Teas are of remarkable strength and flavour they are largely bought, not to sell in their pure state, but to mix with greatly inferior Teas; and in order to keep an open market for these mixed and adulterated Teas the public, in many instances, is allowed to believe that Indian Teas are unfit for drinking in their pure state; and the Indian planter finds that this interested and persistent misrepresentation stands in the way of every honest attempt on his part to introduce to public notice an article second to none of the very best produce of China. As he is unwilling that his Tea should be regarded only as an article for giving body and flavour to inferior China Teas, and as he believes his Tea to be worthy of the very highest place in the public

estimation, and that the people of England can only rarely, as things are, taste the Tea of the Kangra and other hill districts, he has now determined to be, as far as possible, the salesman of his own produce. He is encouraged to do this because, though the taste for Indian Tea is shown to be increasing by the fact that so many dealers comparatively now profess to sell it, an Anglo-Indian on his return home very seldom finds that, even in these shops, he can get the same kind of Tea as he drank with so much relish in India. It is only in some unknown slip of a shop, or a room, where little attempt at publicity is made, that he can buy the real article he wants, out of the chest in which it was originally packed, in the garden in which it grew.

WILHELMSHÖHE.

Wilhelmshöhe is situated 3 miles west of Cassel, in the centre of Germany, and in a very fine and picturesque country. The castle is surrounded by one of the most beautiful parks existing in Germany; Art and Nature combined their efforts to create something quite extraordinary, and they have been very successful, there is no doubt whatever. The park consists of about 820 English acres, covering the eastern slope of a well-wooded mountain. The highest elevation of the park, the top of the mountain, is 1600 feet, and the castle 900 feet above sea level. This situation adds much to the beauty of the park, by permitting the construction of grand waterfalls and rockeries. As the latter existed already, slight alterations and improvements here and there were the only things necessary.

From the castle, and still more from the more elevated parts of the park, beautiful views in the surrounding country are to be had. Looking eastward there is a fertile valley about 7 English miles broad, with Cassel in the centre. Cassel is a finely built flourishing town of somewhat more than 60,000 inhabitants, connected with Wilhelmshöhe by steam tramway and railway, clean and very healthy, and therefore visited yearly by thousands of strangers. A large number of Englishmen live here, especially scholars, Cassel being noted for its good schools.

Wilhelmshöhe is not only famous on account of its beautiful situation and picturesque park scenery, but perhaps still more on account of the luxuriant growth of the trees. It is probable that no other park exists in Germany in which such robust and healthy trees are found. Many of those beautiful trees which add so much to the beauty of English parks are entirely wanting here, such as Cedars, Araucarias, evergreen Oaks, in fact, nearly all evergreens, the common Ivy, Mahonias, Box, and some hardy Conifers excepted. The winters are too cold.

At first a few words as to the castle itself. This is a large building with its front directed towards the east, erected by Landgrave William about the end of the last century. From 1807 to 1813, Jérôme, king of the then newly created kingdom of Westphalia, brother of Napoleon I., resided here. In 1866 Hessia being annexed to Prussia, Wilhelmshöhe ceased to be the regular summer residence of a prince, but notwithstanding that, the park and castle are always kept in the best possible state. Wilhelmshöhe became much known through the Emperor Napoleon III., who lived here as prisoner of the Emperor William, from September, 1870, till March, 1871, in a golden cage, as people said. Round the castle are many splendid trees standing, amongst them several very rare ones on the Continent. I mention but a few:—Catalpa syringæfolia, 30 feet high; Gingkgo biloba, 40 feet; Magnolia acuminata, over 50 feet high; Picea excelsa, 130 feet, girthing 15 feet at 3 feet above ground; several 1000 years old Oaks, the oldest and finest pyramidal Oak in Europe, 100 feet high, to which I shall refer later in an illustrated article, also to the flower-beds, which are always planted very tastefully and are very well kept. *C. Wissenbach, Royal Gardens, Wilhelmshöhe, near Cassel.*

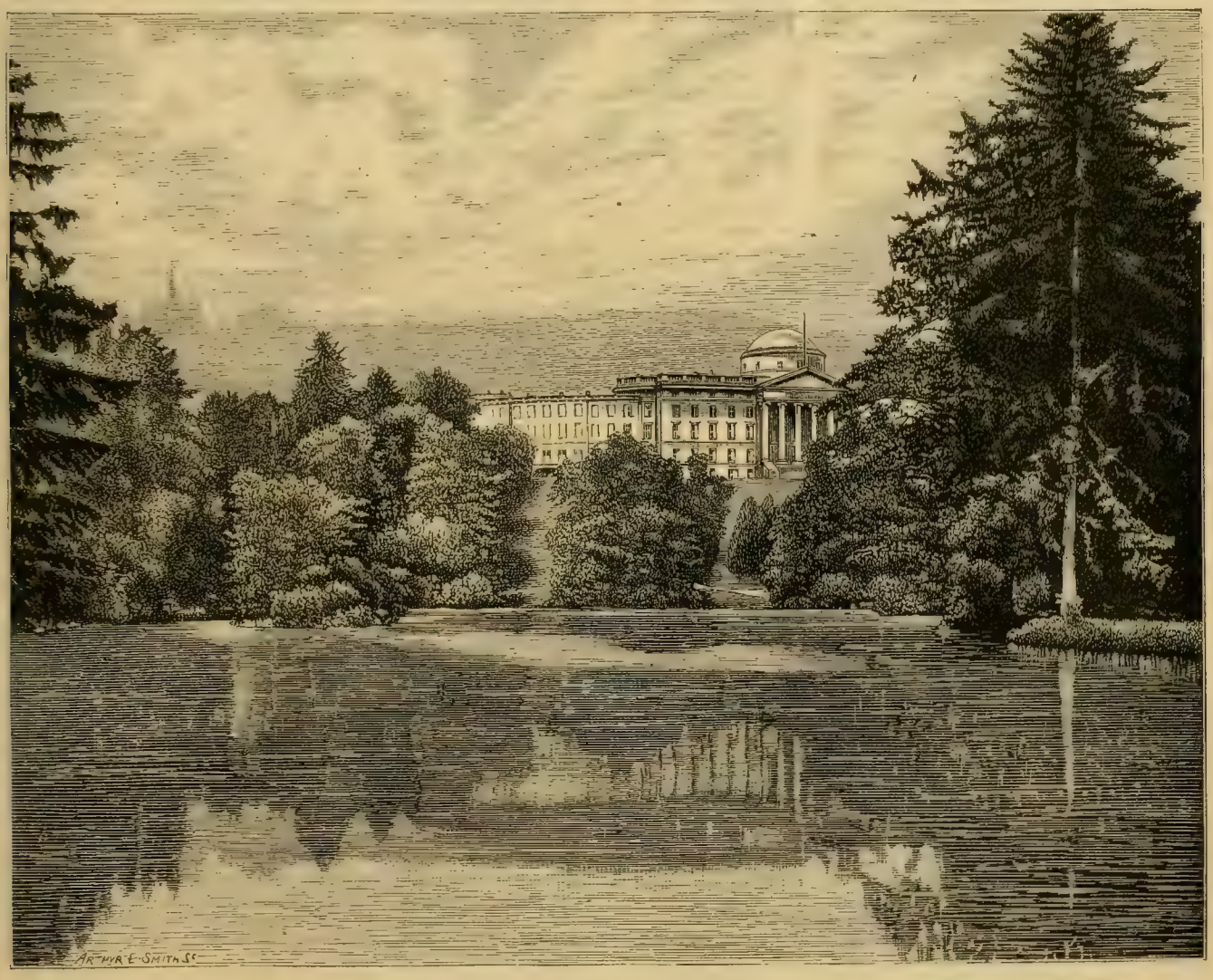


Fig. 144.—Wilhelmshöhe, near Cassel, Germany.

The planter believes that if he comes himself to England, and offers the public the produce of his own garden in its pure unmixed state, he will soon run John Chinaman's mixed and artificially strengthened rubbish out of the market, secure his own interests, advance the prosperity of India, and speedily command from the English public that support to which all honest trade is entitled. He will be at hand to afford any information possible regarding the cultivation, manufacture, and sale of his produce; and if it be true, that from any cause the present system works neither for the advantage of the producer nor the consumer, it is only right and reasonable that he should use every proper and legitimate means to improve matters without being considered guilty of any unseemly or unfair competition with wholesale or retail tradesmen. *A Planter.*

Orchid Notes and Gleanings.

THE DENSE, STIFLING, NAUSEOUS FOGS of December 10—11 made sad havoc with the more delicate Orchid flowers in the neighbourhood of London. Has it ever been ascertained what may be the constituent part of the fogs that cause the destruction to Phalænopsis and Calanthe blooms? [The subject is being investigated by Dr. Russell. ED.] I do not know whether the answer to the question would be gas, but I think nothing is more likely. In a dense fog the quantity of gas consumed in London streets must be very great. If such is the case, lighting the City with the electric apparatus would be a great boon to the nursery trade, and also to suburban amateurs. In looking over one or two of the large trade collections ten days after the visitation of the fog I found that some species had not recovered, as even the half-opened blooms and buds were much injured. All the species of Phalænopsis had suffered most; the plants themselves were unhurt, but every bloom was gone, and nearly all the buds. Next to the Phalænopsids the Calanthes suffered most—not a flower was left. Angræcum sesquipedale was also badly injured, flowers and buds nearly all killed. Be it understood that in all cases the flowers only are hurt; the most tender plant does not show the least ill effects elsewhere. *J. D.*

COOL ORCHIDS AT MESSRS. VEITCH'S.—At present, in Messrs. Veitch's nursery at Chelsea, the cool Orchid houses are quite crowded with flowering plants, Odontoglossum crispum and O. Pescatorei being the most prominent. There are many fine varieties of both. Of O. crispum a rare and fine form, with yellow well-formed sepals and petals, stands out prominently as a star of the first magnitude. It is heavily marked with brown blotches. This is far superior to O. Andersonianum, of which there is also a fine variety. O. deltoglossum is a distinct and handsome species, its yellow and cinnamon-spotted flowers, to the number of eighteen on an upright growing spike, are very attractive. One of the sweetest of winter flowering Odontoglossums is O. blandum: there are several charming little plants of it.

THE PHALÆNOPSIS blooms in the nurseries of Messrs. H. Low & Co., of Upper Clapton, have become a sad wreck owing to the fog. Nevertheless, there are some choice specimens in other houses. Odontoglossum Œrstedii, for instance, is a pretty little species; its solitary flowers are pure white with the exception of the crest of the labellum, which is deep orange. Of Odontoglossum bictoniense there are many varieties, one with a pure white lip. Oncidium cucullatum in many varieties forms a very pretty contrast to the paler coloured species. The rich purplish-crimson spotted lip is the prettiest part of the flower. A whole houseful of Masdevallia tovarensis in flower is a sight one might have dreamed of two years ago, but never expected to see. Zygopetalum crinitum cœruleum in flower is a very pretty form of the species. The labellum is densely lined and marked with purplish-blue. Z. Mackayi, also in flower, in the finest variety, is well worth growing in any collection of plants. Z. Murrayanum, quite a novelty, is of a pale yellow or primrose colour. The labellum is marked at the base with deep reddish-maroon lines.

CATTLEYA LABIATA PERCIVALIANA.—Mr. Sander sends us a bloom of this fine variety, which is now in flower with G. Hardy, Esq., of Timperley, Cheshire. The flower, if fully expanded, would measure quite 5 inches across, the narrow sepals and the broadly ovate petals are of a beautiful shade of mauve-lilac, the base and central parts of the lip are golden-orange striped with narrow lines of purplish-brown, the fore part of the lip is of the richest magenta-purple, velvety like the petal of a Pansy, and with a crumpled pale lilac marginal stripe running round the whole lip for a depth of nearly a quarter of an inch. The variety is very beautiful and more acceptable from blooming at this season. With the fresh flower Mr. Sander sends scores of dried native flowers, showing a remarkably uniform tendency of the petals to assume a roundish outline; the rich colouring of the lip, recalling that of C. Dowiana, is also constant throughout the series.

ODONTOGLOSSUM CRISPUM.—In no other genus of the whole Orchid family is there more remarkable signs of improved cultivation than in the different varieties of Odontoglossums. Mr. B. S. Williams, of Upper Holloway, always among the first to discover those changes which are most beneficial to the plants and advantageous to cultivators, has now a wonderful specimen of the above in flower in his nursery. There are two spikes of flowers from the same bulb, one bearing fourteen flowers and the other thirteen. The flowers are of large size and beautifully marked. It is interesting to trace the increased size of the bulbs, year after year, and also to observe the various forms and colours of the different varieties now in flower in the collection.

LYCASTE GIGANTEA.—A vigorous plant of this fine Orchid in flower gives a stranger a pleasant surprise if it does not puzzle him a little. It is only human to crave after the curious, and to think about it. The flower is not a sprightly one, but it is interesting to examine its peculiar colour and formation. The sepals and petals are brownish-green, and the lip is chestnut-brown, not sprightly colours, as we have said, but still curious enough to attract attention.

CYMBIDIUM MASTERSII.—Why this Orchid is not grown by the score for supplying cut flowers at Christmastide is a problem that seems rather difficult to solve. If it were a new plant, and sold at a fancy price, one could understand that it was not everybody's plant. But the case is far different. It is now producing its lovely spikes of flowers of from ten to twelve flowers to a spike, which would last for days in a cut state, and would be a real joy to ladies who make choice flowers their daily companions during the dull days of winter.

ORCHIDS AT THE HANDSWORTH NURSERIES.—Amongst a quantity of Orchids here, comprising most of the popular kinds, including quantities of large beautiful specimens of Phalænopsis, Vandas, Aërides, Saccolabiums, Cattleyas, and Lælias, as well as the cooler species, may be named a long row running the entire length of a good sized house of Masdevallia tovarensis literally smothered with flowers; so strong are the plants that many of the spikes bear four blooms each. In another house is an extraordinary form of Oncidium varicosum Rogersii with flowers, the lip of which is over 1¾ inch across, and this from a comparatively small bulb, not long enough imported for the plant to make them near up to the full size. Here also was a very distinct Burlingtonia received under the name of B. fragrans, but quite different from that species, almost the whole flower, including sepals, petals, and lip, being strongly suffused with pale reddish-pink, the base of the lip bright yellow. With these was a large specimen of a very distinct form of Cypripedium insigne, bearing immense flowers, the dorsal sepal of which is proportionately large, heavily spotted, and with a greater amount than usual of pure white; some of the scapes bear two flowers. Amongst the numerous forms of this useful autumn blooming Orchid we have met with this is one of the finest.

DENDROBIUM THYRSIFLORUM.—A very curious form of Dendrobium thyrsiflorum has just flowered in Mr. H. M. Pollett's compact little collection at Fernside, Bickley. The flower-spike is produced from the base of the last matured pseudobulbs, after the manner of flowering of Epidendrum Stamfordianum; that is to say, the flower-spike proceeds from the top of a specially made growth an inch or so in height. There is nothing stunted about either flowers or growth, and examination shows that the mode of producing its flowers is not the result of a freak of Nature, but that it is the fixed habit of this particular plant, it having so flowered every year, and recorded the fact itself by the alternate production of fine healthy pseudobulbs over 1½ foot in height, and short ones, of which only an inch remains after the flowers go off, the next large growth being sent up from the base of the previous short flowering growth. It is curious to see the fine inflorescence hanging over the side of the pot. Provided good seed could be obtained from the plant, and some one with sufficient skill and patience to raise and grow it into flowering plants, it would be interesting to see how many of the progeny inherited their parents' eccentricity. A peep into Mr. Pollett's houses at this dull time of year would set any one Orchid growing. No other class of plants could produce such a quantity of flowers and such variety at this season—Phalænopsis, Odontoglossum Alexandræ, O. tripudians, O. Pescatorei, O. Roezlii, O. Uro-Skinneri, O. Londesboroughianum; Masdevallias, Oncidium Forbesii, O. tigrinum, O. prætextum, O. varicosum; Sophronitis, numerous Cypripediums, Calanthes, Dendrobes, Cœlogynes, and Lælias, making all the houses alike showy.

AT STEVENS' ROOMS, on December 14, were sold (as was mentioned in your last) some exceptionally fine varieties of Odontoglossum Alexandræ, and one plant of the rare old O. vexillarium superbum. This exceedingly marked variety is as yet very rare, and needs to be seen to be appreciated; but for the guidance of far-away readers I may say the sepals are a fine dark rosy mauve with a distinctly paler margin, the two lateral ones having a very decided dark line, half an inch long, at the base. The lip is the *pièce de resistance*, having the basal portion intensely dark, with almost a velvety appearance; the remainder is very dark, and when the plants of this variety become large and strong they will eclipse all others. The plant, one of three small bulbs, was knocked down at 30 guineas. The O. Alexandræ were unusually large plants, and were "from the original importation of Veitch by Chesterton." The finest variety, a very boldly spotted one, with flowers 4 inches in diameter, with very broad segments, bearing a spike of seventeen blooms, fetched 30 guineas, three others ranging from 12½ to 20 guineas. There was also one small plant, bearing a spike of two blooms on the first bulb after importing (and this a very small one), which on comparing with the above-mentioned 30 guinea plant proved to be one-third larger than it in all its segments. This variety was flushed with rose, the lip being very broad, and the only spotted segment; it realised £4 10*s.*, the plant having but four old bulbs. It came from the Hextable Horticultural Company, whose successes in Orchid growing have lately been well reported on in the horticultural Press. *De B. C.*

SOPHRONITIS GRANDIFLORA.—Is it a common thing, or a known one, for Sophronitis grandiflora to have two flowers on one bulb? If so, I shall be much obliged if readers will reply. *Angræcum.*

The Kitchen Garden.

THE late short spell of frost has afforded a good opportunity for wheeling manure on to all pieces of ground from which the crops had been cleared, and which required manuring for the next crop. This should be either deeply dug or trenched, into the ground without unnecessary delay, so that it may not lose any of its virtue by exposure to the weather. Horse Radish:—This will be a good time to make plantings of this useful though much neglected root—a root which, like many other things, if grown at all, is worth growing well. And with this object in view it will be necessary to take up half the old plantation to select roots from for making the new beds, which we do in this way:—We open a trench 2 feet wide and about 18 inches deep; this we fill up and raise to the height of 18 inches from the surface with well decomposed dung and leaves taken from an old Cucumber bed; the whole is trodden well together and made into the shape required, when the line is put down 6 inches from either side of the ridge, and the whole covered or earthed-up with soil, thus forming a good ridge 18 inches wide on the top, with the centre 3 inches lower than the side and end, forming a kind of basin for the water. In planting we select the second size roots, which, if to be had, should be from 20 to 30 inches long, and plant them in their entirety with a long dibber, two rows, 1 foot apart, and 8 or 9 inches apart in the row, on the ridge, and slanting slightly to the interior of the latter, with the crowns about 1 inch under the surface. A planting should be made every second or third year, according to the extent of the previous year's plantings and the quantity of Horse Radish used in the year, so as to always have a supply of it, good in quality and quantity.

The present will also be a good time to make an

early sowing of Peas in pots. For this purpose we use 3-inch pots three parts filled with light mould, into which about a dozen Peas are put, and then covered with some of the same soil. The pots are removed to an early vinery or Peach-house, and thence, when the Peas have made a couple of inches of growth, to a cooler and more airy house, where they can be gradually hardened off preparatory to being finally planted out in sunny borders later on. For this crop we shall sow Laxton's Earliest of All, Day's Early Sunrise, Sutton's Ringleader, Sutton's Emerald Gem, and William I., all excellent early varieties, and from which we shall expect to gather Peas about the third week in May. Concurrently with this sowing there should be one made out-of-doors in well prepared ground of the following varieties, in rows running north and south, and 10 or 12 feet apart (the intervening space being planted with four or five rows of Cauliflowers later on), viz., Laxton's Earliest of All, Sunrise, Laxton's Supreme or Dickson's Favourite, and Culverwell's Telegraph. There should also be made a sowing of Seville Long-pod Beans in boxes for transplanting in a favourable situation out-of-doors when it is considered safe to do so, at the same time there should be a sowing made in a south border at 3 feet between the rows: these, like the Peas, will make a good succession to those raised in pots and boxes. Peas which were sown out-of-doors at the end of October or early in November will now require to have a little soil drawn to them, after which they can be staked, and in the event of severe weather ensuing, some Spruce boughs can be put in the ground on either side of the rows, which will prevent them being injured thereby. Should birds and mice interfere with the Peas—which they frequently do—their numbers should be reduced; the latter should be trapped—the old figure of 4 brick and tile trap being the readiest and perhaps most efficient for this purpose—and the former shot, and their feathers strewn among the rows of Peas and other crops as a deterrent to others. Herb-beds:—See that these, together with quarters of Cabbages, Onions, Spinach, walks, &c., are kept free of weeds, and that a surface dressing of leaf-mould is laid on beds of Mint and Tarragon, which will prevent the roots getting frost-bound in the event of frost setting in; and let good order and judicious management be observed throughout this department—a department respecting the productions of which there has been little, if any, cause for complaint during the year which is now drawing to a close.

Forcing Department.—Maintain a bottom and top heat of from 60° to 70° in Asparagus frames, and should it be likely to fall below this the linings should be freshened up by the addition of fermenting material—a good heap of which should be kept in reserve for this and other purposes, for anything like a stagnant growth would be prejudicial to the quality of the "grass." Ventilate the frames in accordance with the condition of the beds, the stage of growth at which the occupants of each frame may have arrived, and the weather. These remarks are also applicable to pits and frames which have been recently planted with Potatos, and sown with Carrots and Radishes. French Beans, when they have grown a few inches above the rim of the pot, should be top-dressed with soil of the same temperature as that in which they are growing, and have the points of the shoots pinched out so that the plants may branch; and weak liquid manure given to the roots when the plants are podding, will tend to the production of finer Beans. Damp the plants overhead with tepid water on fine days, and make successional sowings at short intervals—in quantity according to the accommodation for their growth and demand for the same—so as to maintain a regular supply. *H. W. Ward, Longford Castle Gardens, Wilts.*

The Orchard House.

The earliest house may now be shut up and started gently. There is nothing to be gained by forcing Peach and Nectarine trees in pots too early; nor is it desirable to push them along too fast. It is not worth while to grow any other class of trees in the early house than Peaches and Nectarines, neither Plum nor Pear trees set their fruit well in a forcing atmosphere. At first a minimum night temperature of 50° is quite high enough, and in fine weather air should be admitted rather freely. It is not necessary to have very much moisture in the atmosphere of the house; indeed moderation in the use of artificial heat, and also of atmospheric moisture, promotes the healthiest development of leaf and bud. See that the trees receive sufficient water, but not more at this time than enough to keep the compost in the pots moist. The trees intended to be fruited in the late house should be placed there as soon as it is convenient. If the house is required for other plants they may remain out-of-doors for some time longer. I have seen the trees taken into the house as late as the end of February or the first week in March, and with that treatment they bore abundant crops of good fruit. I must refer to p. 623, in No. 463, for further details of management, to save repetition. I may add that the ventilators of the house should be kept well open, and in mild weather they may be left open all night. The pots of Strawberry plants on the shelves do not require much attention, merely to see that they do not suffer for want of water. Some persons dry the roots of these too much; I find if they receive water about once in a week it is sufficient, until they begin to move. Those in the forcing-house will require rather more water, and it is also desirable to syringe them. They are very liable to be attacked with red-spider, and the syringing either checks or destroys it. If worms have managed to get into the pots of either the Strawberries or fruit trees, they should be watered with lime water; this will either kill them in the pots, or they will come to the surface and die there. *J. Douglas, Loxford Hall, Ilford.*

Plants and their Culture.

Suitable Plants for Hanging Baskets.—Many a stove, greenhouse, and conservatory would be greatly improved in appearance by a judicious selection of climbing and semi-scandent plants grown in baskets, wherewith we might also add to our resources in several instances for supplying cut flowers and foliage. Our houses for plant cultivation are not certainly built so lofty as of yore. In some respects this is an advantage, whilst for the proper development of climbing plants, and those adapted for basket culture, a moderately roomy structure is to be preferred, and if span-roofed, so much the better in all respects. In our travels we have seen several instances where hanging baskets would have been a decided acquisition. In one notable case, however, we saw only last autumn, when calling at Normanhurst Court, near Hastings, some splendid examples of basket culture carried out with Ferns. Mr. Allen was growing these to perfection in the conservatory attached to the mansion. In association with Tree Ferns and other fine-foliaged plants these produced a beautiful effect. Adiantum cuneatum, Davallia canariense, and Platycerium alcicorne were in rude health. Those who contemplate basket culture will do well to procure the receptacle for the plants as soon as they can. Galvanised wire baskets will be found very durable, whilst strips of pottery-ware in imitation of pieces of Oak or other woods, fixed together after leaving the kiln with copper wire, will make very pretty baskets. Of stove flowering plants the following will all be found useful when grown in this manner, viz., Æschynanthus fulgens, Æ. Lobbianus, Æ. speciosus, Æ. splendidus. All of these are most beautiful objects when in flower, but much neglected at the present day. Hoya bella and H. Paxtoni both look well when grown in this style, their flowers being seen to far better advantage. Epiphyllum truncatum in varieties will furnish us with excellent subjects for autumn and winter decorations, and for which room can be found in other houses during the summer, when such as Torenia asiatica and T. Fournieri will be first-rate substitutes. The latter kind is easily raised from seed, a pinch of which, if sown now or soon, will make good flowering stuff early in the summer. Of the fine-foliaged section nothing surpasses the Nepenthes, with their singular yet beautiful appendages in the way of pitchers, varying in their hues from deep green to bronzy red and crimson. It is needless to individualise varieties of these, so many excellent drawings having appeared in recent numbers of the *Gardeners' Chronicle*. Pot or basket the plants in rough fibrous peat and sphagnum moss, allowing them an abundance of water and the warmest position in the stove; there they will thrive admirably. Peperomia prostrata is another pretty scandent plant, suitable for small baskets, whilst Panicum variegatum and the Tradescantias will be handy either by themselves or dotted here and there among the flowering section, but only moderately, in order to prevent them gaining the monopoly. Of tuberous-rooted plants the Achimenes will provide us with excellent variety for the summer, to be removed when out of bloom, thus admitting more light and air to other subjects. These would, when in full beauty, be found to do well for a while in the conservatory, where also the tuberous-rooted Begonias would thrive and display their blossoms to good advantage, if grown in a similar way. The more scandent growing varieties will be found the best for this purpose. Those who contemplate giving these a trial had better start them into growth in the baskets which they are to occupy; then, as the shoots extend in length, they can be pegged towards the sides of the basket. For the cool greenhouse Campanula fragilis, with its pendent growth and pale blue flowers, should be grown in the most limited collections. Convolvulus mauritanicus is another attractive and distinct plant, with shoots attaining a greater length than the Campanula. Saxifraga sarmentosa, often seen in cottage windows, should not be despised; whilst Lachenalia tricolor and the choicer kinds make beautiful early spring blooming objects.

Ferns of many genera and species are well adapted for basket culture. Of these, Adiantum amabile is one of the very best for a stove; in a cooler house A. assimile will grow freely. A. cuneatum, grown in baskets, will supply fronds of greater durability than is generally the case under pot culture. Asplenium longissimum, a stove species, is a beautiful object where sufficient height is obtainable for its long fronds to hang out of harm's way. In a cool stove A. flaccidum will thrive well. Cheilanthes elegans we have succeeded in growing satisfactorily in a basket in a cool house, choosing a somewhat dry position. Davallia bullata, D. canariense, D. dissecta, and D. elegans, are all most valuable when grown in this manner, yielding excellent and most durable fronds for cut purposes. Goniophlebium subauriculatum we have found to be one of the best of its class, seen to better advantage in a basket than in any other way. It is not safe, however, in a temperature often below 50° in winter. Hypolepis distans will do well also, but it must not be overlooked for water, being, like Pteris scaberula, most sensitive in this respect. Platycerium alcicorne, as previously hinted at, is another distinct Fern, but one that is most patient as regards its supply of water. Where it is contemplated to add to the attractiveness of any house by hanging baskets, I would advise attention being given thereto as soon as convenient, in order to secure as long a season as possible; more time can also be spared now than will be the case later on. Select vigorous healthy plants in preference to starved or aged stuff. Use soil as fibrous as possible, as renewals or shifts are often an awkward matter. Choose baskets suitable to the growth and future development of the plants, in which, when once established, let them have every attention with regard to watering and cleanliness. If suspended in a position where the drip caused by giving water would occasion any inconvenience, let that work be done either the last thing at night or early in the morning. If any basket at the first start should look somewhat naked and bare, a few pieces of Selaginella Krausiana dotted here and there will soon remedy the defect. *James Hudson, Gunnersbury House Gardens, Acton, W., Dec.* 19.

Peaches and Nectarines.

The trees in early houses will by this time be slightly on the move, and the temperature may now be increased a little during the day. Whenever we get a little bright sunshine (a thing of rare occurrence of late) it may be allowed to run up to 65° or 70° with a nice free circulation of air. Still keep a steady night temperature of 45° to 50° at the highest, and get the heat up to the desired height in good time in the morning, so as to make the most of the little daylight we get during these short days. Where fermenting material is used inside it must be kept sweet by being turned over on alternate days, and having a little fresh manure and leaves added as the heat declines. Where there are three or four or more houses, a second may now be started in the usual way, by giving a thorough watering at the roots with clear tepid water at about 85°, and the same temperature as given to the early house when started. A third house may also be cleansed and prepared for starting by the second or third week in the new year. Succession and late houses may be kept as cool as possible, only just keeping the frost out of those that are filled with bedding or other plants; any that are empty may be well frozen. If we get a spell of frost, it will tend to clear the trees of scale and other insects that infest the Peach tree. *J. Wallis, Keele Gardens, December* 19.

SATURDAY, DECEMBER 23, 1882.

THE REPORT on the progress and condition of the ROYAL GARDENS at KEW during the year 1881, a copy of which has just reached us, does not suffer so much from the delay in its publication as might have been expected. Much, indeed, relating to the current work of the garden during the year has been forestalled by what has appeared elsewhere. The distinctive feature of these reports, and that which gives them their value, is, however, not the mere passing record of how many people visited the garden during the year and what works in it were executed during the period, but the insight they give into a branch of the work of the garden of vast importance, but of which the general public know little or nothing, and, indeed, have no means of knowing, unless from the perusal of these reports.

Reference to a few points touched on will suffice to give some idea of the variety and extent of the work done at Kew.

As a matter of much moment to practical horticulturists we note it recorded that the system of carrying a hot-water flow and return pipe round the upper part of the Palm stove near the roof has been very successful in equalising temperature, obviating drip, and promoting economy in the use of fuel by avoiding the necessity of driving the furnaces in severe weather. This plan has been adopted by several of our nurserymen, as by Messrs. CANNELL and BULL, with excellent results; and there can be little doubt that it will become general in all cases where plants have to be kept in an active state all the winter.

The collection of economic plants is now very large, but crowded for room. Were space afforded to grow these into specimen plants, so as to show the true habit, the advantage from an educational point of view would be great, especially if fuller information were given on the labels. The list of plants of this character given in the appendix is, we suppose, the largest and most complete of the kind to be found anywhere.

We are glad to see that the nurseries originally formed at Kew in 1861 for the benefit of the Royal parks have been exhausted. Surely it should be no part of Kew to supply what any contractor could furnish equally well or better. Kew should be a source of supply for rare and interesting plants not in commerce or not readily to be got, but should not be called on to grow Elms and Ash for the parks.

But the extracts from the reports of colonial botanic gardens, as it were, affiliated to Kew, are most important, as showing the value of the work done by these institutions, with Kew as the head centre. We here learn of the efforts made at Kew to collect valuable plants from all corners of the globe and to distribute them in those of our colonial possessions supposed or known to be best adapted by their climatal conditions for the cultivation on a large scale of these useful products.

The introduction of Cinchona into India, Ceylon, Jamaica, and elsewhere is one of those triumphs likely in the long run to be of far more widely diffused and permanent value and importance to the human race than the expedition of a successful military commander. The Cinchona enterprise is probably that which is best known to the public, but that is now so firmly established that probably greater attention may now well be paid at Kew to other matters which more need the fostering initiative of the parent establishment. Liberian Coffee, Cocoa, the Eucalypts, various fodder-plants, and specially caoutchouc-producing plants, are now probably occupying more attention at Kew than are Cinchonas.

The reports of the progress of the various colonial botanic gardens is interesting, and may, we hope, serve to make some, as, for instance, the New Zealand authorities, bestir themselves. New Zealand is not so prosperous that she can afford to neglect her resources or refrain from extending them.

Of out-of-the-way things which the department has to attend to, as evidenced by this report, we may mention certain food-products, such as honey from the Jubæa spectabilis, Creole Spinage (Amaranthus sp.), Laver bread, Negro Coffee (the seeds of Cassia occidentalis, pronounced excellent), Rice-corn (Sorghum cernuum), Vegetable Rennet, and many other substances. The last-named consists of the pounded capsules of a Solanaceous plant—Puneeria coagulans—and made use of in Afghanistan for the purpose of cheesemaking. As many natives would not touch cheese made with animal rennet, the importance of a vegetable substitute may be imagined; but anxiety was felt owing to the plant being a member of the Solanum family: but, as here pointed out, it belongs to a division of the family free, or relatively so, from the poisonous principles which characterise the Atropeæ and Hyoscyameæ. "An instance of this kind," says the Director, "brings into prominence the utility of submitting such a botanical problem to a central institution, where all available information can be brought to bear upon it."

The information given as to the sources of gutta-percha, and the importance of protecting and of diffusing plants producing it in appropriate localities, fills a noteworthy part of this report. The time cannot be far distant, the report tells us, when the natural sources of gutta-percha will be definitely used up. Unlike caoutchouc, which is derived from milky-juiced plants of many natural families, gutta-percha appears to be only yielded by species of Sapotaceæ, the principal source in Malaya being the plant now known as Dichopsis gutta. Much requires to be ascertained with reference to the trees yielding Bornean gutta-percha, and much, in view of the fact that the "running out of existing natural sources of gutta-percha is an event within measurable distance," remains to be done in protecting the forests and in developing the culture of the trees in appropriate localities elsewhere. First of all, however, it is necessary to know for certain what are the trees which yield the precious juice, and to do this suitable specimens in a fit state for botanical analysis and determination should be procured. It is obvious, or ought to be, to practical men intent on developing such sources of industry, that the accurate determination of the plant is the first thing to be done, and nowhere can this be better done (if proper material be forthcoming) than at Kew.

We have not space to allude to this report at greater length on this occasion, but we have said enough to show that the practical applications of botanical science are not neglected at Kew, but rather that they are so pursued as to prove of more general practical utility to mankind than any other department.

—— A STOVE AT CHISWICK.—Visitors to Chiswick during the past year or two will have no difficulty in recognising the little plant stove depicted in the accompanying illustration (fig. 145). The house in its time has been very usefully utilised by Mr. BARRON, but in our recollection it has never been more artistically furnished than when it was in charge of the late plant grower, Mr. HEMSLEY, who had always a clean healthy stock of young plants coming on for general decorative purposes, and which were confined to the back stage, while the flat stage in front was occupied in summer with Gloxinias, and in the autumn, when the photograph was taken, with Tydæas, of which a good collection has been grown this year for the purposes of comparison and selection.

—— THE FOOTSCRAY NURSERY.—We learn that, in consequence of the death of Mr. SIM, this old-established nursery—so famous, among other things, for its collections of hardy Ferns—is for disposal.

—— THE "JOURNAL OF BOTANY."—With the present number the twentieth volume of this useful periodical terminates. Latterly it has been conducted by Dr. TRIMEN, the chief burden of the editorial work falling on Mr. JAMES BRITTEN during Dr. TRIMEN's absence in Ceylon. Dr. TRIMEN now formally resigns his responsible connection with the periodical. Financially the *Journal* has never been successful, but in this respect it has, we imagine, not differed from any other purely botanical publication. In an editorial notice Mr. BRITTEN gives a brief history of the publications devoted to British Botany since 1830, and announces his intention of carrying it on at his own expense for one more year, in the hope that at least his expenses may be recouped. It is not very flattering to British botany that not one purely botanical journal can be successfully maintained; but we trust that this reproach may be wiped away, and that so marked a contrast between Germany, America, France, and other countries, may not long exist.

—— TORENIA RUBENS.—In the propagating department at Kew there is a flowering specimen of this beautiful stove basket plant, which was received last year from the Botanic Gardens, Hong-Kong. It is not new, having been introduced by Mr. FORTUNE to the Royal Horticultural Society in 1844 from China, where he found it in the island of Hong-Kong, in wet ground, at an elevation of 2000 feet. It has been figured in the *Botanical Register*, 1846, 62, and other publications, under the name of T. concolor—a specific appellation which is more applicable than the present. The flowers are uniformly pale violet, with darker tubes. The whole plant is neat, constituting itself a pretty and desirable companion for T. Bailloni, a deep yellow flowered species with dark spots, but which is only of annual duration.

—— HYBRID CHINESE PRIMULAS.—At p. 793 of our last number a correspondent stated that at a meeting of the Nottinghamshire Horticultural and Botanical Society, held on December 12, Mr. EDINGTON, gardener, Woodthorpe Grange, Nottingham, exhibited "an interesting collection of Chinese Primulas hybridised with the Polyanthus," with reference to which very doubtful statement we asked what were they like? The question Mr. EDINGTON has kindly answered by sending us flowers which prove to be only the Primula sinensis purpurea punctata sent to Chiswick some five years ago, and from which Mr. BARRON raised the pretty variety illustrated by a coloured plate in the January number of the *Florist and Pomologist* for 1880. The flowers before us are much darker than those shown in the plate, and, being very pretty indeed, are well worth saving and perpetuating; but it is perfectly certain that the Polyanthus has had no part in their production, and we are surprised that any practical gardener should have made a statement of so improbable a character.

—— WINTER FLOWERING ZONAL PELARGONIUMS.—Those who were at the last meeting of the Royal Horticultural Society must have admired the glowing trusses of bloom exhibited by Mr. CANNELL on that occasion. One of these we were permitted to take away with us; the flowers measured more than 2½ inches across, and were of the most brilliant scarlet. But what attracted our attention most was the extraordinary length of time the petals remained attached. The flower was subjected literally to much knocking about, having been put loosely into a bag containing books. In spite of all this, it did not drop a petal, and it remained intact in a specimen glass for several days after. Of course, gumming was suspected, but no gum was to be seen, and we are assured there was none. Since then we have received from Mr. CANNELL other flowers of a fine orange-scarlet variety, measuring 2¾ inches across. The value of the Pelargonium for winter decoration is incontestible.

—— CHRISTMAS CARDS.—The millions of those little pictorial missives which under the designation of Christmas cards are to-day being sent per post into nearly every household in the kingdom afford the

most conclusive evidence, were such needed, of the popular love for flowers. Fair Flora, long the Queen of Summer, also now finds her beautiful brows bedecked with the Christmas Holly wreath, for if she is not personified in living flowers at least she is in pictorial illustrations most charmingly represented. It is one of the loving tributes which Art pays to flowers that she finds in them the most perfect and pleasing types of beauty and delicacy of coloration. There was but a few years since little that was of high art in Christmas cards; as a rule, in fact, they were of a vulgar type as far as art and elegance were concerned—mere reproductions of the ancient valentine order, either sentimentally silly or burlesquely vulgar and coarse. The public taste has made a great stride within the past few years; and if in the impulse that taste has developed towards better things the æsthetic school of art professors and disciples has played any part let them by all means have the credit. In the modern Christmas card of floral design, however, the sweetest charms and most pleasing pictures are found where not quaint æsthetic ideas but those of Nature pure and simple have been most closely followed. We have seen reproductions of such distinctive Roses as La France, Général Jacqueminot, and Maréchal Niel, that are perfect; they show at once that even romantic or sentimental artists can be truthful, and in the humble field of floriculture Violets, Pansies, Snowdrops, and myriads of other popular but unpretentious flowers have been depicted with skill that professional artists might well envy. We accept with pleasure this evidence of the popular love for beautiful flowers, and not least do we rejoice that in depicting them for popular admiration taste and skill are now exhibited that elicit universally the warmest commendation.



FIG. 145.—A PLANT STOVE AT CHISWICK. (SEE P. 816.)

—— THE ACTION OF "METAMERIC" BODIES ON PLANTS.—It is well known that certain substances have exactly the same chemical composition but are nevertheless very different in appearance and properties—charcoal and the diamond are cases in point. Dr. EMERSON REYNOLDS has been lately experimenting on plants with the view of showing how differently substances of the same chemical composition may act upon plants. He took two bodies, "ammonium sulpho-cyanate" and "thiocarbamide," or "sulphurea," which have exactly the same chemical composition, each containing two proportionate parts of nitrogen, four of hydrogen, one of carbon, and one of sulphur. The elements are the same, and the proportions are the same, but the molecules of which the two are composed are arranged or grouped differently. Without going into details, for the full comprehension of which an acquaintance with chemistry is needed, it may be said that while the ammonium sulphocyanate acts on plants as a powerful poison, its "metamer," thiocarbamide, or sulphurea, stimulates the growth of the same kinds of plants otherwise grown under like conditions, and induces healthy development of all their parts, thus acting as a distinct plant food.

—— PITH HATS IN AUSTRALIA.—As an illustration of the superiority of Chinese manipulation over that of the native Indians, the following extract from a report on the Indian products at the Melbourne International Exhibition of 1880 81 may be quoted. Referring to pith hats, the reporter says:—"A large trade used formerly to be done with India in this article, but China has now absorbed all the trade, not because China pith hats are actually stronger or of better material, but simply because they are more neatly finished, have, consequently, a better appearance, and are sold cheaper.

—— VRIESIA PSITTACINA (Lindl., VAR. MORRENIANA ×) (*Belgique Horticole*, 1882, t. x.—xii.) is a cross between V. psittacina and V. carinata. Its leaves are in vase-like tufts, from the centre of which emerges a long, erect, scarlet flower-spike; flowers distant, scarlet at the base, yellow at the tips. In V. psittacina the flowers are densely crowded, in short, flat, fan-shaped racemes; in V. carinata they are in long racemes, with the flowers moderately distant one from the other, while in the cross they are much more widely separated.

—— PLUM PUDDING.—Whilst antiquarian inquirers perchance are digging deep into Christmas lore in the hope of discovering the origin of that popular association which exists between the wondrous combination that is universally known as Plum-pudding, but which is not Plum at all, the readers of the *Gardeners' Chronicle* may well, and doubtless wonderingly, ask what possible connection can exist between the said pudding and gardening. Our reply to this query is that, after all, the chief component parts of our great festive dish are plant products, and of such kinds as are in their respective countries and commercial departments held in the highest esteem. It is true that the great staple

article of food, wheaten flour, and which is popularly supposed to constitute a major portion of the Christmas pudding is, after all, but very moderately represented; but what the Wheat plant fails in is more than compensated for by the abundance of the fruit of the Vine, of Orange, Lemon, and of Citron, of juice of Sugar-cane, and products of spice trees in delicately perfumed variety. The pudding is, however, of so composite and representative a kind that not only does animal life administer to its construction, but the domestic fowl adds its share, so that the beasts of the pasture, the poultry of the yard, the corn from the field, and the fruit trees of the garden, all administer to its complex and varied composition, for truly a real Christmas pudding is a domestic dainty that is fearfully and wonderfully made. Probably no dish of which we partake contains so many diverse constituents, obtained from so wide a geographical area. The flour may be home-grown, or it may have come from Russian steppes or Western American States. The Raisins, delicious, sweet, juicy morsels that the modern cook will in the Christmas pudding cut up and spoil, are perchance from far California, or nearer Spain. Greece or the Ionian Islands may send us the Currants which so bother us in their strange appellation, because they, too, are not Currants at all, but are the fruit of the Vine also. From the West Indian Islands perhaps come the Oranges and Lemons, which give the prized candied peel, and the rich spices have inhaled their pleasant odour under equatorial sunshine. Truly does a Christmas Plum-pudding in its cosmopolitan and heterogenous compound represent the universality of British commerce—of the world peacefully and profitably conquered. Our contemporary, the *Lancet*, which now and again persists in disturbing our torpid minds with some alarming facts as to evils, moral and physical, which we have long borne far too listlessly, at least compensates us somewhat by the assurance that Plum-pudding is capital stuff after all, though by middle-aged humanity oft held in terror as promotive of indigestion and dyspepsia. To children especially this is welcome news, and we shall not be surprised if the youngsters quote to careful and perhaps over-nervous Paterfamilias the *Lancet* authority in favour of yet another helping. Puddings, of course, vary in quality, and perhaps it is in the sense of "goodness" so called or otherwise that they are good for our stomachs or the reverse. The plain well-boiled Plum-pudding is, if not eminently nutritive, at least substantial diet. The rich fruity pudding, which the goddess of the kitchen regards as "good," is perhaps, like old port wine, productive of ills to which the flesh will become heir. Like to Potatos, however, the goodness or otherwise of the puddings depends very much upon the cooking; and whether the *Lancet* dictum be accepted with faith or incredulity, at least we can give no better advice than that the pudding should not only be boiled, but should be so thoroughly.

—— TULIPA BRACHYSTEMON (REGEL, in *Gartenflora*, t. 1099) is not much to look at, according to the figure, but there is no telling what cultivation may do for it, as few things improve so much by cultivation as the Tulip.

—— MAXILLARIA GRANDIFLORA. — This fine Orchid, now flowering at Kew, is a native of the Andes of Peru, and has been authorised by LINDLEY, although few books recognise it under that name. HUMBOLDT, BONPLAND, and KUNTH, *Nov. Gen.*, i., 88, have figured it as Dendrobium grandiflorum. The massive wax-like flowers are produced singly on the peduncle, and are white, with the exception of the labellum, which is brown, tipped with yellow. It forms a pleasing contrast to the popular Lycaste Skinneri, and although of smaller dimensions would rival it in utility for cut flower purposes; and seeing that white flowers are often in great request its beauty and utility are good recommendations.

—— THE ARRANGEMENT OF PLANTS.—Just a word to those who have still to make their arrangements for Christmas. Every one having any connection with a garden is on the *qui vive* in Christmas week, but in the plant department there is more bustle and a greater display of earnestness than in any other. To cut the matter short, there is more work to be done in this department, which accounts for the hurry. A lot of ordinary tying up, trimming and digging, may be done without much mental effort, but the plantsman must use his head as well as his hands. A very good plodding workman may be a veritable noodle in working out a scheme of arrangement, and he may also be a severe critic of work he could neither imitate (if he were asked) nor improve. We have before now encouraged a spirit of rivalry among young men in this particular branch of their business, and can say from experience that there is a vast difference in their calculating powers, and an equally great difference, as a consequence, in their work. This is not written either in disparagement or discouragement of any one—far otherwise. The man who does not excel in one thing may do so in another. But to return to the subject, there is more due to accurate calculation in this matter than is often thought of or admitted. If there are three or more houses to be arranged so as to present a gay effect, there must, or ought to be, some idea of degree of attractiveness that each should present according to its position and status as a plant structure, for these, like the gardeners who manage them, have each a status of their own. A man, therefore, who would excel in arranging plants must be able to take an approximate estimate of the material at his disposal, and the area that he has to furnish, and keep this in his mind's eye all the while the work is progressing, or he will probably have a preponderance of flowers in one place, and next to none in another, or he may be actually short of material of any kind at the finish to complete his arrangement. This kind of calculation may be largely acquired by practice, and we know of no knowledge that is more useful, as it enables the young gardener to see in his mind's eye the consummation of important work before it is actually begun. He will probably be able to point out obstacles to his master, who cannot always be in one place, but who will be ready to appreciate and respect foresight in his assistant of whatever age.

—— BLACK CURRANT, CHAMPION (*Florist and Pomologist*, December).—This is the finest Black Currant yet produced, the berries being very abundant, of large size and fine flavour. To be sent out by Messrs. CARTER & Co.

—— THE HOUSE OF HURST & SON.—On Saturday evening last Messrs. HURST & SON's annual dinner was held at the Three Nuns Hotel, Aldgate High Street. About seventy *employées* of the firm and visitors sat down to a capital spread under the presidency of Mr. HUGH AITON, who subsequently gave the toast of the evening, "The House of HURST & SON," in eulogistic terms. Mr. SHERWOOD paid a like graceful compliment to "The *employés*," and a very pleasant evening was spent.

—— FIXING OF THE DUNES.—In the article on this subject at p. 679, the writer inadvertently stated that the *Elements of Sylviculture* was translated as well as published by Messrs. RIDER & SON. It was translated by Mr. FERNANDEZ and Mr. H. SMYTHIES of the Indian Forest Service, and published only by Messrs. RIDER.

—— GLASGOW ROYAL BOTANIC INSTITUTION.—The annual meeting of the proprietors of the Royal Botanic Institution was held recently, under the Presidency of Mr. WILLIAM CONNAL, and we learn from the sixty-fifth annual report of the directors that the revenue from annual subscriptions, £1353 18*s.* 6*d.*, shows this year a decrease of £33 2*s.* 6*d.*, although the number of subscribers has increased. This diminution is no indication of a waning interest in the garden on the part of subscribers, but is entirely due to an alteration that has been made in the date of issue of tickets to subscribers. The value of the property in the garden has during the past year been largely increased. Not only is there a new range of plant-houses, one of the finest, if not the finest in the country, but the collection of plants has been augmented in value, mainly by donations, by several hundreds of pounds. The Winter Garden has proved one of the greatest attractions of the garden during the past year. Now that the new range of houses is in a condition far enough advanced to admit of the reception of plants, the Palms and other unsuitable plants have been removed from the Winter Garden, and the building will now be devoted entirely to the purposes of a temperate plant-house, for which it was reconstructed. Until the new range of plant-houses is in a condition to allow of the proper disposition of the plants therein there must be a constant shifting of the specimens, and they cannot therefore be exposed to view with advantage. But the directors would refer with satisfaction to the continued beneficial result of their action in stopping the sale of flowers and plants from the garden. In the outdoor collections many alterations have been necessitated by the building operations; but the most important work completed during the past year has been the re-arrangement of the herbaceous ground for study. A most instructive addition has been made to the collections in the garden, in the formation of a tank for water and marsh plants. The Professor of Botany in the University has been regularly supplied with specimens for teaching, and his students, to the number of 185, have had facilities for study in the garden. As the new range of plant-houses is nearly completed, the directors will, in conformity with their statement in last year's report, soon have to consider what steps they ought to take to provide proper accommodation for the teaching of botany in the garden. This matter is one of considerable urgency. The report embodied a letter from Professor BALFOUR, which laid before the Board a statement of the needs of a Botanical Institute such as ought to exist in the Glasgow Botanic Garden. The Botanical Institute should, it was said, contain:—Lecture hall, seated for no fewer than 350; laboratory accommodation, museum, herbarium, and library. Three ways have been suggested by which this accommodation may be provided—by enlarging the present building, by acquiring North Park House, or by the erection of a new building specially designed. The last was the scheme favoured by Professor BALFOUR, who remarked—"For a few thousand pounds all that is required can be provided. Surely that amount will be forthcoming?" There was also appended a letter from Sir J. D. HOOKER, which stated—"Whether, then, for its use as a means of instructing the public by object lessons, or of obtaining valuable and interesting plants for the garden, or for increasing the value of the establishment by enabling it to benefit mankind through its cultures, I would venture to urge the claims of a Museum of Economic Botany on the garden authorities quite independently of its use to the Professor of Botany, which is of itself a sufficient argument for its establishment. I have only to add that such a museum is the most inexpensive of any, whether as regards construction, contents, or maintenance." The report proceeds:—"The directors have gratification in announcing that a continued hearty response is given to their appeal in last year's report for donations. On no previous occasion have they had the pleasure of recording so much liberality as they have this year. Amongst the 700 or 800 plants received are many of great rarity and value, and many of much interest economically, as well as botanically."

—— ASYSTASIA SCANDENS. — This evergreen climber is now flowering in the stove at Kew. Being a native of Sierra Leone, in West Tropical Africa, it delights in a moist warm temperature, and the flowers being produced in terminal racemes, free growth should be encouraged, and the shoots tied in full length. The large pale cream or white coloured flowers are tubular, and much widened towards the mouth. The plant belonged to the extensive and valuable collection of the late Mr. JOAD of Wimbledon, and, although not new, is worthy of cultivation. It is figured in the *Botanical Register*, 1847, t. 31, as Henfreya, and in the *Botanical Magazine*, 4449, but in the latter under the name of Asystasia scandens. Here it will be seen that the bracts, usually so conspicuous in the inflorescence of other Acanthads, are of secondary importance, and almost unnoticeable. The greater part of the order consists of weeds belonging to warm countries, to which the present plant is an exception.

—— CAMELLIA DON PEDRO (*Florist and Pomologist*, December) is a very beautiful variety. White, shaded with rose, regular enough to please the eye without that excessive formality which suggests flowers "stamped out" of Turnips to order. Hort. Bull.

—— GARLIC IN SPAIN.—A recent report on the trade and commerce of Cadiz states that there has been a falling off in the quantity of Garlic exported from thence. This decrease amounted to 247,609 kilos, and was due to the fact that steamers bound to the West Indies and South America (where the

Garlic is mostly consumed) refuse to receive it on board, on account of its unpleasant and penetrating odour, which impregnates the other merchandise and causes annoyance to passengers.

—— A Gardener's Golden Wedding. — The fiftieth anniversary of the marriage of Mr. and Mrs. Peter Loney, of Fingask Castle Gardens, was celebrated on December 14 by the assembling of nearly all their family, and but for the severity of the weather the third generation of grandchildren could also have been numerously represented. One of their sons journeyed from Gothenburg, in Sweden, to be present, and in presenting a handsome timepiece, the gift of the family, their eldest son, Mr. Peter Loney, Jun., from Marchmont, made a few appropriate remarks, expressing congratulations for the present happiness, and good wishes for the future welfare, of the couple now enjoying the jubilee of their married life. Mr. Peter Loney, Sen., who has been gardener at Fingask for the last forty-four years, is widely known in the Carse of Gowrie district for his urbanity of manner to all visitors to the gardens and grounds, which were laid out by the late Sir Patrick Murray Threipland in the ancient style, which Mr. Loney, from his activity and zeal, is still enabled, through the trustees for the young heir to the estate, to maintain in all their pristine beauty. Those employed in the gardens raised a large bonfire in honour of the aged and respected couple.

—— Ceylon Products.—"Cingalese" writes :—"Coffee crops here are smaller than ever, but Cinchona is paying well, and Cacao will soon pay still better. Tea will soon be a very good export from Ceylon ; indeed, I believe Ceylon Tea to be the best in the world. An immense acreage is being planted, so that in spite of Hemileia there is a bright future for this country."

—— The Weather.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending Dec. 18, issued by the Meteorological Office, London :—The weather has been generally fine in the north of Scotland and moderately so in Ireland, but gloomy in all other parts of the country. In many places fog or mist has prevailed, and in the south-west of England some heavy falls of rain have been experienced. The temperature has varied greatly in different districts and on different days, but, on the whole, has been below the mean in all districts except "England, S." In England the thermometer was lowest on the first day of the period, when it fell to 10° in the Midland Counties and from 15° to 20° elsewhere. Over Ireland and Scotland the minima were registered on the 15th, in the former country they varied from 10° to 13°, while in Scotland the unusually low point of 6° was reached. During the latter part of the 15th the temperature rose very rapidly in the northern and western parts of the kingdom, and for the last few days of the period maxima varying from 46° to 49° were recorded in Scotland, while in most parts of England and in Ireland the thermometer rose to between 49° and 52°. The rainfall has been more than the mean in "Scotland, E." and "England, S.W.," but less in all other districts. Bright sunshine has been exceedingly deficient at nearly all stations. In "Ireland, S." 21 per cent. has been recorded, and in "Scotland, E." 18 per cent., but elsewhere the percentages ranged from 8 in "Scotland, W." to 0 in "England, N.E." Depressions observed :—Pressure during this period was generally highest over Scandinavia and lowest in the south-west and western parts of our area. Several depressions approached our west and south-west coasts, but none of importance travelled across our islands. The wind was consequently south-easterly or easterly in direction, and occasionally blew freshly or strongly in the extreme west and south-west. Over central and south-easterly Englane the wind was very light and at times sank to a calm. On the north and east coast of Scotland a fresh south-easterly gale was experienced for a few hours on the 17th.

—— Gardening Appointments. — Mr. H. Birch, for five years Foreman to Mr. Barham, at Croxteth Hall, Liverpool, as Gardener to Baron Ferdinand de Rothschild, at Waddesden Manor, Bucks.—Mr. James Taylor, late Foreman to Mr. Denning, at Londesborough Lodge, Norbiton, as Gardener to the Duchess of Montrose, at Sefton Lodge, Newmarket.

A COTTON YARN FROM COTTONOPOLIS.

The newspapers have hitherto abstained from reporting on the English Cotton crop, a fact that invalidates their supposed ubiquity, and affords us an opportunity of rushing to their aid with something new on the subject. In 1860 the supply of American Cotton required by the Lancashire manufacturers began to decline, in consequence of the secession from the Union of the Southern States. In less than a year the supply had ceased, and Lancashire operatives were reduced to terrible straits. The public mind was thereby quickened on the subject of Cotton cultivation, and the discovery of substitutes for Cotton. It may be said that, as regards the proposed cultivation, as well as the desiderated substitute, we are now in precisely the same position as in the days immediately antecedent to the Cotton famine. We do not feed the Lancashire mills with home-grown Cotton, and we have not discovered a substitute for this peculiarly cheap and useful fibre. But for all that, some pretty crops of Cotton have been grown in this country, and the matter is of sufficient interest to justify a brief discourse in the way of narrative.

The latest experiment in Cotton cultivation was successful in every respect. The English-grown Cotton was of the very finest quality, and instead of being consigned to a glass case, with a label attached, to perish amid dust and be soon forgotten, it was consigned to a manufacturer eminent in the Cotton world. Thence it passed through certain needful stages of applied industry, and came forth as a manufactured article adapted for the common wants of mankind. The question will occur as a common pendant to this statement, Did it pay? Well, we may as well say at once that it did pay ; but it may be well to add a word on that part of the subject when we have told the simple story we have now in mind.

In the year 1879 Mr. Sam Mendel was enjoying rural felicity in his princely residence, Manley Hall, near Manchester. His gardens were then as famous as any in the country, and his head gardener, Mr. J. R. Petch, being in his full confidence, and having ample horticultural resources at command, was not the man to be alarmed at a proposal to grow a crop of Cotton. Through an accident that is of no consequence whatever, Mr. Mendel became possessed of a fine pod of Sea Island Cotton, and he thought it a pity to lose the opportunity thus afforded for a bit of toy gardening, such as we are given to exalt by describing it as an experiment. Unfolding his views to Mr. Petch, the determination was arrived at to raise a crop of Cotton from this particular pod. It was the gardener's duty to carry the proposal into practice, and it was no less his delight to embark in the "fad" and hope thereby to gratify Mr. Mendel.

The seed was sown, the plants soon appeared, and having all they needed of heat, moisture, and a kindly soil, they soon became giants of their kind, and made showy specimens in 10-inch pots. The finishing touch in the way of cultivation was given by ranging them in a span-roof Melon-house, and training them to the wires. The result was an abundant bloom and a fine crop, the quality of the Cotton being perfect, and its total weight 12 oz.

Then came the dread question, What will he do with it? But this question troubled the gardener much more than the proprietor, who perhaps by that time had forgotten that he was the owner of a thriving Cotton plantation, and that his manager had harvested a crop that may be described as the finest ever seen. What will he do with it? Petch was in the position of the artist as described by Margaret Fuller :

"If he but sees the half that he must do.
Well may he shade his eyes from the far-reaching view."

But a man of business does not waste his days in dreaming because, forsooth, he has lost his sleep through restless cogitations. Mr. Petch carried his twelve ounces of home-grown Cotton to Mr. Charles Ashworth, who knows all about Cotton, and he said if he could have twelve tons or even twelve hundredweight of such quality he would be able to surprise the world with something unique in the way of manufacture. But twelve ounces, ha ! But the practical planter was as ready with his wit now as with his hands aforetime, and mildly muttered "pocket handkerchiefs." The manufacturer being made of inflammable stuff, and the word uttered being full of fire, there followed a moral conflagration. When the place was cleared, and the watchman had gone to sleep, Mr. Ashworth covered the floor of a sorting-room with newspapers, and covered it with the precious cargo of 12 oz. of cotton. With his own hands he passed it through the centre of the machine in which Cotton is first punished on its way to usefulness. It matters not about the details of this business, for it is sufficient to say that the delicate sample was put in the "cop," or, in other words, made into thread.

But cotton yarn is not a cotton cloth, and the best intentions will not pave any place with cotton handkerchiefs. There still hung in the sky where this Cotton was concealed the perplexing question, What will he do with it? This question came home to Petch once more, and after another restless night a flash of inspiration directed all his thoughts to Middleton. You may not know the place that bears so ambiguous a name. There is a Middleburg in the heart of Zeeland, and a Middlesex somewhere in the suburbs of London ; and as for a Middleton, you may find it anywhere in some form all over the world. But this Middleton is a sort of suburb of Manchester, inhabited for the most part by a very peculiar race, who live at the loom and see nothing but work, work, looming in the future. They are usually regarded as descendants of the persecuted Protestant artisans who fled to this country to save their necks from the halter and their children from infamy, in days when the kings of France and Spain were defenders of the faith under the immediate patronage of the devil. They may be of the Huguenot race, and they may not be. They are industrious, peaceable, given to fads and fancies ; lovers of flowers, pigeons, dogs, rabbits, and singing birds ; their sense of humour is local and exclusive : to the casual man of the world they appear bigoted and serious beyond all other example. But in Middleton the textile, as distinguished from Middleton the stony, or Middleton the muddy, there may be found talent in weaving, and to Middleton the textile did Petch, the Cotton planter, go. And who should he go to but to Mr. Samuel Barlow, J.P., a master of the dialect, a master of the arts and industries, and a trusted gentleman, respected all around, a proper referee on any proper subject.

And so the cotton crop was carried to Stake Hill, and Mr. Barlow became involved in the responsibilities, and heard a voice that said, "What will he do with it?"

Then came a flash of inspiration to the new bearer of the new burden. Said Mr. Barlow, "I know of but one man in the world who can work up this 12-oz. parcel of English-grown Cotton. That man is William Heap, a silk weaver, ingenious beyond the average, and as serious and trustful as all around. We will have William here, and hear what he has to say about it."

And William came ; an earnest, quiet, serious man, with a touch of suppressed humour that pervaded not his face only, but his whole frame from top to toe. Said Mr. Barlow to the sweet William, "I have a job here that I think is full of difficulty. Here are twelve ounces of English-grown Cotton of remarkably fine quality, and we must make something of it, William. Now, if you cannot do it, I think no man in England can ; what do you say to try, William?" The serious weaver was more apt with threads than words, and he replied—

"That is reight, master ; I'll try my hand, but I'll know fust what arm to do."

The business was explained, and a handkerchief of a special make was procured, and the good old weaver set to work. But the job perplexed him, as it might any man who had for half a century fingered silk only, going round and round in a groove like a mill-horse darkened by blinkers. Yes, he, too, had his nights of tossing and his days of woe, and the voice cried in his ears, "What will he do with it?"

But he made the handkerchiefs, and they were as like the pattern as if an inspired Chinaman had been entrusted with the job. Mr. Mendel's monogram was cleverly worked in by the weaver : not a thread was employed that did not belong to the original parcel, and the bleaching and finishing were generously superintended by Mr. Barlow.

And when all was done there remained some small samples of the same Cotton in the pod, in the cop, and in a partly manufactured state for museum purposes, while a box of tasteful design was prepared to receive the handkerchiefs. Of their production up to this time Mr. Mendel knew nothing ; but when he entered his breakfast-room on his birthday the box was on the table, and great was his delight to be thus

presented with a gift that constituted an episode, touched with a fine poetry, in his own eventful life.

And what became of sweet William? He had become great! He had opened an imaginary floodgate in a new stream of British enterprise and industry. Mr. Mendel sent for him, and thus unto him did say: "I have to thank you for all your skill and care in working up this bit of home-grown Cotton so tastefully. I cannot pay you, but I should like to make you a little gift of any kind that may be agreeable. Will you have a five-pound note, or a watch, or a suit of clothes?"

William did not "beat about the bush:" he gave his mind "right off the reel" for a suit of clothes, saying he and his missus would like to be married, and his idea of happiness was to be possessed for the happy day of a green plush coat, a red plush vest, corduroy trousers, and a white hat. At this point of the story we feel bound to cry "Hooray for William Heap!" better known at Middleton as Billie Yep.

The gorgeous costume was, of course, provided, and William wore them once as a kind of dress rehearsal preparatory to being married to his missus. And to complete his "tog out" he mounted a bright blue necktie, and finished off below with patent boots. Unlike gentlemen who wear purple and fine linen every day, William carried his old suit with him in a convenient bundle, and in due time appeared as a bird of finest feather on the railway platform of his native town. Alas! the penalties of notoriety for those who are not used to it! He was partly lionised and partly mobbed. The pressure of mingled admiration, sarcasm, and playful chaff, was too much for his serious head, and he took refuge in a very hospitable public-house, hearing, to his dismay, the chorus of the mob, "Hooray for Billie Yep!"

And the truth must be told, he came forth a merrier and not a wiser man. In fact, he came forth in the careful custody of a guardian of the peace, minus his white hat, his bright blue necktie all awry, and the lustre of the new plush dimmed a little. But fate fashioned a dramatic unity of his adventures. He had to appear before Mr. Justice Barlow, and he pleaded that "them cott'n handkerchers" had done it, and the tender-hearted magistrate inflicted a fine, and at the same time paid it. Thus the curtain falls on the story of the English Cotton crop, and we return to the grave question: Did it pay? The story proves that it paid well, ay, a thousandfold. All the actors in the little drama played out their parts, and were satisfied with results, for even Billie was none the worse in the end for his ready refuge from the pressure of public admiration. And when fadding people work out their fads they have their wages and are satisfied. And besides, to judge the case by material results, Mr. Mendel still possesses a dozen beautiful handkerchiefs manufactured from his own English-grown Cotton. (From the Christmas Number of the *Gardeners' Magazine*, which contains a capital portrait of Mr. Petch, and also one of "Billie Yep.")

BULBOUS PLANTS FOR POTS.

FOREMOST in value for pot cultivation are the Japanese Lilies, than which a finer class of plants are not in existence, and if the Rose had not been dubbed the queen of flowers that titular honour must of right have belonged to the Lily, for nothing can be more regal in the floral world than L. auratum, with its stately stems and magnificent blooms, so exquisitely marked and so deliciously scented. Then again there is L. candidum, unrivalled for its snowy white, and the spotless purity of its petals, and the lancifolium section, all of which are chaste and exquisitely beautiful in their soft colour and finish. For growing in pots the above-mentioned Lilies are invaluable, and the more so that they can be grown by any one having only a pit or frame, as all they require is simply shelter, not so much from frost as rain, too much of which saturates the soil, injures the roots, and often causes the bulbs to suffer and rot. To obviate these evils drainage is of the first importance, and to ensure this being free and open the crocks should be carefully placed in the bottom of the pots intended to receive them, and then covered thinly over with moss. This will prevent the soil running or working down among the interstices, and thus ensure a free and quick passage for the water, which then moistens the ball and leaves it sweet and wholesome for the fibres to feed on.

In the shifting of Lilies from one pot to another much dexterity and skill are needed in handling, as great damage may soon be done by bruising or breaking the roots, which, when at all advanced, are very tender and brittle. The safest way to handle the plants when turned out of their pots is to lay them down on their sides, on the bench, as then the old crocks and loose soil may be picked out with a sharp-pointed stick without much disturbing the roots or snapping them off. This part attended to and prepared, the next thing is to remove the effete soil at the top, and in doing this the old stems should be pulled clean out of the bulbs, which will then be left clear and all ready to go into a size larger pot. In putting them in it is necessary to keep them low down, so as to leave room for top-dressing when the Lily stems are high, as then they form feeders around the base, and it is a great help to the plants if these have nice sods they can lay hold of to help them in the work of unfolding and perfecting their flowers. The soil that suits Lilies best is very turfy loam and peat in about equal parts, and this mixture should be used somewhat rough, and not pressed down over-firm. When potted the proper situation for Lilies is a cold pit or frame, where they can be stood on a hard coal-ash bottom impervious to worms, which, if they get into the pots work sad mischief by getting among the scales and piercing and eating the bulbs. If any danger of these creatures entering is apprehended it is a good plan to stand the pots on slates, as then the way is blocked, and they are effectually shut out. If the soil at the time of potting is moderately moist, as it should be, no water will be required till the young shoots appear, and after that for some time on till growth becomes more active it is necessary to administer it with caution, as the plants take little up till they have a fair length of stem and plenty of leafage. To keep them dwarf and sturdy the lights should be tilted whenever the weather is sufficiently mild and favourable, and on sunny warm days it is advisable to take them off altogether, which will gradually harden the plants and fit them for standing out in the open. This they will safely do by the end of May if a sheltered situation be chosen, and they have a mat or a few evergreen branches laid on rails above them by night, as frost is apt to nip the young tender tops. If any are wanted early they may be slowly brought on under glass, but Lilies are impatient of heat, and do not bear forcing, although L. auratum will stand more of it than most others, but with warmth they must always have plenty of air, or they become etiolated and weak.

During summer, and up to the period of flowering, Lilies are greatly benefited by liquid manure, which, however, should not be given strong, but clear, weak, and often, as then there is no fear of injuring the delicate rootlets, the tips of which soon suffer if they come in contact with powerful stimulants. Next in importance to growing Lilies is the caring for them after they have done blooming—a time when they should be stood out, and have the balls kept just moist by occasional watering till the plants go quietly and naturally to rest, when the stems may be cut away, and the pots turned on their sides till they are taken in for the winter ready for the re-potting again.

Next in point of merit to Lilies for pot culture are Gladiolus, which, dropped in among other plants on a stage so as to stand with their heads clear out, are grand and striking, especially those of the gandavensis section, which have tall, noble spikes, and afford great variety in colour. The different varieties of ramosus, though not so showy, are equally useful, as they come in much earlier, have neat, beautifully marked blooms, and are very valuable for cutting, as the spikes, being small, are just the thing for vases, and the flowers continue to open, and last long in water. The bulbs of the first-mentioned being large, and the plants strong, should be potted one in a pot, the most suitable size being 7-inch, which is quite large enough to hold six of the ramosus kind, and afford the roots plenty of room. The most suitable soil for Gladiolus is one similar to that recommended for Lilies, and in potting it is a good plan to give each bulb a pinch of sand, which helps very materially in keeping them in a sound, healthy condition. February or March is quite time enough to pot the late flowering sorts, but the early kinds should be potted at once and stood in a cold frame where they can come slowly on.

Tritonia aurea is quite unique in its way, and contrasts well with the brilliant Gladiolus, with which it helps to make a fine show in the autumn. To have fine pots of this Tritonia store pots should be at once shaken out and the largest bulbs selected, a dozen or so of which will be enough to place in an 8-inch pot, and about half that number in one that is smaller. The same treatment that is requisite for the Gladiolus suits the Tritonia well, but being subject to red-spider on the leaf, the plants do best during the summer if they are plunged in cocoa-fibre or other similar material out in the open, as there they get the rains and night dews, which are a great help in keeping the foliage healthy and clean.

Lachenalias are also charming for pots, and come in admirably for the embellishment of greenhouses, which they enliven considerably early in spring. Why many fail with these is in giving them heat, which they will not stand, and, therefore, any attempt at forcing is sure to bring them up weak and spoil them for blooming. Where they do best is on shelves at the back of pits, or in houses where they can be stood up near the glass and have plenty of air, and when growing freely or flowering they require plenty of water and an occasional soaking of liquid manure. Lachenalias require a light, rich, sandy soil, and to be kept growing on for a time after they have done blooming, that the bulbs may reach their full size, when they should be allowed to ripen off gradually, and then kept dry till the autumn—a season when they need re-potting again. *J. S.*

CLYFFE HALL, WILTS.

CLYFFE HALL, Market Lavington, Wilts, the residence of the Hon. Mrs. Hay, is a small but very pleasant and conveniently situated estate, lying some six miles from Devizes, and near to what was once the thriving town of Market Lavington, so called as being a market centre, and to distinguish it from West Lavington. Market Lavington is not so important a place as it was formerly, but it is large enough to almost rank as a small town, and not a great distance from the commencement in that district of the famed Salisbury Plain.

The house is close to the road from Devizes to Lavington, and there is a belt of fine trees screening it from the highway. The mansion belongs to the Radnor family, and it bears date about 1750. It is a good square building of the Italian order of architecture, and stands in somewhat restricted though pleasant pleasure grounds. The gardens, gardener's residence, and homestead, are all contiguous; and Mr. James Lye, the well-known Fuchsia raiser and exhibitor, is both gardener and steward. In the grounds are very fine examples of Limes, Beech, Scotch Fir, Oak, and Elm, the last two very fine; Horse Chestnut, &c. A portion of the park, perhaps the best part of it, is situated on the other side of the public highroad from the mansion, close to the Manor House, which is in the occupation of the Right Hon. E. P. Bouverie. The pleasure-grounds are small, but there are a few good coniferous plants dotted about on the lawns, also a fine specimen or two of the evergreen Oak. On the left of the drive is a raised border against one of the walls of the kitchen garden, containing a good assortment of hardy plants and annuals, of a bright and effective character. Behind the plants is a line of trained Plum and other fruit trees. There is an old-fashioned flower garden in front of the mansion, which Mr. Lye keeps very gay with bedding plants; and there are pretty creeping and other plants against the verandah to the house. It is a charming spot, quiet, secluded, and peaceful, full of the beauties of the country which abound on every hand.

The kitchen garden is on the right of the mansion, and is enclosed with walls on the east, south, and west sides; buildings on the homestead making up the northern boundary line. Pears, Plums, Cherries, and Apricots, do well on the walls, but not Peaches and Nectarines. There is a small Peach-house in which some good fruit is produced; and a good lean-to plant-house, in which Mr. Lye grows his fine specimen Fuchsias, Petunias, zonal Pelargoniums, &c. The kitchen garden is well cultivated, and good crops of several kinds of vegetables are found therein. As a raiser and cultivator of Potatos, Mr. Lye is already known, his Favourite and Wiltshire Snowflake being leading exhibition kinds; the last named is an excellent main-crop variety of the Victoria type. Several seedlings are being grown, and they are of a decidedly promising character; one, named Paragon, the result of a cross between Peach Blow and Red Emperor, is a round variety, with a red skin banded with white, handsome in appearance, early, of a dwarf habit of growth, and a good cropper. Wiltshire Giant is a fine looking red kidney, raised between Bountiful and Late Rose, but with the rich colour of the former parent, white flesh, large, good cropper and quality.

An unnamed white kidney, tinted with purple about the eyes, is a supposed seedling from Scammell's Glory, early, dwarf top, good cropper and quality. A handsome round variety in the way of Peach Blow is very handsome in appearance, dwarf haulm, and a good bearer.

In a supplementary kitchen garden Mr. Lye had a fine piece of his Favourite Pea, one of the varieties recently awarded a First-class Certificate of merit by the Fruit Committee of the Royal Horticultural Society, when grown at Chiswick. It is a very fine and prolific variety, with long curved pods that produce ten or twelve fine Peas; it grows to the height of 5 feet, and promises to make an excellent market variety. Choice stocks of vegetables are grown by Mr. Lye with great success, and he is a most successful cultivator also of Mangels, Swedes, Carrots, &c., as the prize lists of the local agricultural societies testify.

It is the splendid Fuchsias that Mr. Lye grows that makes Clyffe Hall famous. He has been termed the champion Fuchsia grower of the West of England, and not without good cause. His plants are well known at the exhibitions of the Devizes, Bath, Trowbridge, Chippenham, and other horticultural societies of the district. This season his specimens have been very fine, the largest averaging 8 feet in height, clothed with fine foliage, large, green, and healthy, and on this a perfect robe of beautiful flowers. There are many who might take exception to Mr. Lye's mode of training—that it is too formal in shape. He may be said to take the sugar-loaf as his pattern, and there is much to be said in favour of this style. The branches are brought downwards and tied in to the frame of the plant till they cover it, and the lowermost branches feather downwards and hide the pots. There is a great advantage in this method in the case of plants grown for exhibition purposes—that they travel so much better, and it must be remembered that Mr. Lye grows specially for exhibition. Those who have to convey large plants of Fuchsias to and from the place of exhibition, know how difficult it is to keep the flowers from whipping against each other and getting spoiled. To prevent this, not a few contrivances have been resorted to, and one of these was the provision of a covering of network to fit over the plants, and keep all secure. This failed in its purpose. Mr. Lye, by tying the bunches of flowers down close to the leaves, actually reduces danger by travel to a minimum, for the flowers cannot whip against each other, and the plants are in no danger of pressing against each other when placed in a van. When Fuchsias are thoroughly well grown and bloomed, the way in which they are trained or tied-out is a matter of but small moment.

During a good part of July and August, Mr. Lye's plants are stood in a cool place on an ash bottom, with a rude covering of canvas arranged so as to keep the sun from falling on the plants, but not excluding side light and a free current of air. Mr. Lye has some thirty fine specimens growing in from 15 to 18-inch pots. The last shift was given about the end of June. On no consideration are the plants allowed to suffer for want of water, and consequently they are very carefully looked after. Out of the thirty specimens grown this season by Mr. Lye, all but two or three were of his own raising.

As a raiser of Fuchsias, Mr. J. Lye has been very successful. Disappointed as a cultivator for show purposes with many of the new varieties raised and distributed, he set himself to produce varieties of a free, vigorous and compact growth, combined with profuse flowering and a fine quality of blossom. The fact that the new flowers Mr. Lye has distributed from time to time are being grown for exhibition in his own district, is a good proof of their fitness for the purpose. He had this season in bloom a few fine new varieties, that it is his intention to distribute during the autumn and spring of next year; these varieties are Ellen Lye, white tube and sepals, deep pink corolla, margined with orange-rose; stout, fine shape, and excellent habit. Mrs. Bright, white tube and sepals, clear orange-scarlet corolla; good habit, very free; an extra fine variety for show and decorative purposes. Mrs. King, white tube and sepals, rich carmine corolla dashed with pink, which expands with age; good habit, very free and fine; Harriet Lye, creamy-white tube and sepals, lilac-pink corolla edged with carmine, fine form, very free, and excellent habit. Lye's Rival, bright red tube and sepals, rich violet-purple corolla, a wonderfully free variety, flowering in large clusters at the points of the shoots, excellent habit. Mr. Lye regards this as the best dark Fuchsia he has yet raised. Lye's Freedom, creamy-white tube and sepals, magenta-pink corolla, wonderfully free, close habit, excellent grower; capital variety for exhibition purposes. Henry Brooks, coral-red tube and sepals, fine plum-purple corolla; large, well shaped, and very fine; excellent free habit, a fine variety for show and decorative purposes; and Thomas King, pale soft coral-red tube and sepals, broad and fine; rich deep purple corolla, sometimes heavily striped with pale red; very fine habit, wonderfully free, and excellent for show purposes.

Other varieties raised by Mr. Lye are Favourite, a very fine light variety; Beauty of the West, light, very rich and well formed corolla; Pink Perfection, light, very large and free flowering; Final, brilliant red tube and sepals, deep purple corolla, very free and good habit, a capital exhibition variety; Charming, a very fine dark; Elegance, large, dark, very fine; Mr. Hooper Taylor, red tube and sepals, rich blue corolla, very free, excellent for exhibition; Bountiful, red tube and sepals, dark purple corolla, beautiful shape and excellent habit; the Hon. Mrs. Hay, dark; Mrs. Hooper Taylor, a beautiful light variety of fine shape; Star of the West, very fine, light; and Miss Welsh, a very pretty pale variety also.

How, it may be asked, does Mr. Lye produce these fine specimen Fuchsias? He replies by saying that he finds the best way to lay the foundation of good specimens is to select plants propagated in March or April, selecting the strongest and most healthy, potting them in a compost made up of mellow loam, leaf-mould, and sea-sand, if it can be obtained, if not silver-sand, and then place them in a bottom-heat, say 65°. As soon as the roots fill the pots a shift into a larger size is given, and successional shifts are given up to the first week in June. All the buds are removed from the plants as they appear, up to the first week in August, when they are permitted to flower. About the third week in October the plants are cut back to the shape required, in order to lay the foundation of good specimens for another season, and when this is done the plants are kept dry for a week or ten days, in order to check the flow of sap, and then a little water is given to induce growth, say to the extent of three-quarters of an inch, as this preserves the old wood by encouraging a flow of sap. The plants are then kept in a cool house all the winter, giving them but little water until the first or second week in August, when they are shaken out of the old soil, and repotted in a new compost made up of three parts of good loam and a fourth part of well decomposed cow-manure, and the same quantity of leaf-mould, adding sand enough to keep the mixture well open. If large specimens are required, the plants are repotted as soon as the pots are pretty well filled with roots. About the first week in June the plants are placed in the open air, on a sheltered border, and well syringed every day during hot weather, to keep down red spider, &c., and they are kept pinched back till some seven or eight weeks before required for exhibition. A good deal depends on the variety, as some require a little more time than others.

Liquid manure is applied at this stage (cow-manure is preferred, with a little soot put in it), and it should soak well for ten days or so before using; a good dose of this is given once a week. It is surprising what growth a Fuchsia will make in a season, as plants cut back almost to the ground have sent up central shoots 5 and 6 feet in length, and of these splendid plants have been made. The specimens shown by Mr. Lye vary from eighteen months to six or seven years of age; beyond that age they are not of much service for exhibition purposes. A plant in the full flush of robust development will reach a height of 9 feet. It is Mr. Lye's conviction that his plants have been, this season, the best he has ever grown, and he attributes this mainly to the fact that he cultivates varieties of his own raising that are, in every respect, suitable for show and decorative purposes.

And not less successful is Mr. Lye in the cultivation of Petunias and zonal Pelargoniums for exhibition purposes. He has an excellent strain of Petunias, which he grows to a fine size, training them to oval-shaped wire trellises, which are covered with flowers. He has raised a few excellent bedding zonal Pelargoniums, which deserve to be known much more widely than they appear to be. One, named Lustrous, has a dwarf, compact, and yet free habit, and throws large and symmetrical trusses of rich crimson flowers of good shape. Another, named Climax, is a pretty pink variety, good in habit, very free, and a capital bedder. These, among others, are in the flower garden at Clyffe Hall, and they are highly effective, and deservedly admired.

Clyffe Hall is one of those places where some things are done exceptionally well, and where much can be learned. It is a place one leaves with regret, for one is there brought face to face with a cultivator who knows and does his work thoroughly. What Mr. Lye can do so well can surely be done in great part by others, and were his cultural process applied more generally to Fuchsias, something would be done towards lessening the force of the reproach, that Fuchsias are, as a rule, about the worst grown of the plants seen at exhibitions. *D.*

Florists' Flowers.

CARNATIONS AND PICOTEES.—THE SPOT.—Mr. Douglas informs the public in general and the enthusiastic amateur in Wales, that he has never seen spot in his own collection, nor in that of Mr. Dodwell, or Mr. Turner of Slough. Turning to the pages of a book on hardy florists' flowers, in the Calendar of Operations for January it is thus written—"Any leaves that become yellow or much spotted should be removed with a pair of scissors." [This does not prove Mr. Douglas' statement to be contrary to fact. ED.] Mr. E. S. Dodwell, writing from Derby in the year 1856, amongst other hints, says "they are prolific of evil—almost, indeed, the only evil to be dreaded, as 'spot' is their certain attendant. Incipient spot is less prevalent than we have known it for years, notwithstanding we grow several varieties peculiarly liable to its attacks." The Slough collection has not been for all time free from "spot" to my certain knowledge. Any grower of these, my favourite flowers, who has not had any "spotted" varieties during the winter months has been much more fortunate than myself and other growers of my acquaintance, extending over a period of many years. *North Norfolk.*

AURICULAS GROWN IN SCOTLAND BUT LESS KNOWN ELSEWHERE.—The Auricula, the pet of our forefathers, is fast growing into favour. It thoroughly deserves its popularity, on account of its many estimable qualities and exquisite beauty. It has no pride about it. Give it pure air and shelter from the storms of winter, and it will gladden the sight of the humblest cottager in his homely frame, as well as the Squire in his elegant plant-house. We know no other flower which takes such a hold of the heart of the grower as the Auricula. He has a lively interest in his collection all the year round. He knows all his plants by the head, as the shepherd knows his flock, because if he wants them to thrive he must frequently have each one in his hand, eyeing them lovingly, cleaning them carefully, handling them tenderly. As we have already said, he must shield them from cutting blasts and pitiless showers, yet provide them with plenty of pure air and the softest of water. All his care is amply repaid when they flower and appear as gay and lovely as beauties at a ball. Every plant, too, has its own history and associations. This is the gift of a dear and valued friend; that is the solitary offset of a plant which you have possessed for many a year, and which stubbornly refuses to grant you more; another you have nursed back from the gates of death to vigorous life by assiduous attention; and yet another is so scarce as not to be had for love or money, and which you have long looked for with all the keenness of the book-hunter for a rare old volume, and at last your reward has come by the gift of a friend of the much desired plant. For twenty years I endeavoured to procure a plant of a scarce variety without success, till at last I received it as a precious gift from an esteemed friend and enthusiastic grower. How much that plant will be cherished and cared for only an Auricula lover knows. This year has been more prolific than usual in Auricula literature, some of it valuable, much of it worthless. This, however, shows how rapidly the flower is again growing in favour. Those who are newly struck with a liking for the Auricula and without much experience, yet willing to learn, cannot fail to be impressed with the difference of opinion as regards the successful cultivation of the flower, Look

for instance at the variety of opinions as to the proper time to re-pot. Some hold May to be the proper month, others June, others July, and some go in for August. Now the fact is, re-potting may be done from June up to the end of September, and I can testify from my own experience that more than once I have re-potted my whole stock in September, and the plants did as well as when they were potted in June or July. Seasons vary, and all Auricula growers do not live in the same latitudes, therefore no strict rule can be laid down as to re-potting, but I am of opinion that it is better to be somewhat late than too early. If the young grower will apply his own common sense, based on the observation of the needs and habits of his plants as he grows in experience, both as to the soil and the season of re-potting, he will not go far astray. To the man just forming a collection I would say, Do not be a too anxious inquirer after varieties named in prize lists and those high-priced in catalogues, spending time and money in trying to procure the most eminent kinds. First get what you can of those that are plentiful; bide your time, and the others will follow, and never refuse a plant however small. I am not of those who think that there are many varieties not worth growing. In all my experience—which is both large and long—I never yet saw the named-variety which I would not grow. Some kinds might not have the classic perfection of the florists' model bloom, but they always had some point of beauty to recommend them. Not long ago I saw somewhere a correspondent complaining of the trouble he had with his Auriculas, and on that account he was thinking of giving up growing them. Why, to the real lover of the "bonnie gems," the trouble in many ways constitutes the pleasure he has in growing his collection. Of course, greenfly will come upon them; they will require watering, re-potting, airing, and many other little attentions, which should be ungrudgingly given them. By frequent handling, affording plenty of air, and proper watering, the greenfly may be extirpated. I do not believe there are this year a score of greenflies on all my plants, just because they are not allowed to obtain a footing.

But, as this is not intended to be a cultural paper, I will now endeavour to carry out an idea which has been in my mind for some time. It occurred to me this spring when my frames were full of plants in bloom that it might interest some Auricula growers to have descriptions of several of those grown in Scotland but less known elsewhere than they deserve to be. The descriptions were noted when the blooms were at their best, and may be depended upon as being correct according to my judgment. Of course it is quite possible that another grower might see them with different eyes, and therefore the estimates of their merits must be taken for what they are worth from my point of view. And first let me introduce a number of seedlings raised by G. B. Simpson, Esq., Broughty Ferry, of which the world as yet knows little. Mr. Simpson's name will be familiar to some as the raiser of May Morning, but he has now many better seedlings than it, some of which I will describe, but before doing so I may mention that as Mr. Simpson is fondest of, and devotes most attention to, the white-edged varieties, there is a certain family likeness about his seedlings though they are sufficiently distinct to warrant their several names.

Simpson's Charles Clark, a seedling of 1865, is a grey-edge of good proportions and excellent shape, and it has a large and stately truss. The ground colour is almost black, but here and there it runs a little too far into the edge. The paste is clear and dense, but not quite circular, the tube palish, and the foliage green. This is a very striking flower, which will at once attract the eye in any collection.

Simpson's President, a seedling of 1865, is a white-edge of fine shape, but with the edge colour rather narrow. The ground colour is purplish-violet, the paste clear and well-defined and the throat a fine lemon colour. The flower is smooth as a rule though now and then a pip will come crumpled. The foliage is white and beautiful.

Simpson's Catherine Grace, a seedling of 1869, is a remarkably neat and pretty white-edge with a ground colour of violet-purple, a clear and circular paste, and a throat of darkish lemon hue. It has a fine light green foliage slightly sprinkled with farina.

Simpson's The Queen, a seedling of 1871, is a very striking white-edge, of fine substance, with a flat and circular flower, and with all the parts well proportioned. The ground colour is a velvety-purple, the paste is solid and circular, and the throat is a palish lemon. The foliage is green, and the plant is a very free grower.

Simpson's Mrs. Simpson, a seedling of 1878, is a fine white-edged flower of good substance, with the parts well proportioned. It grows to a large size, and throws up a fine truss. The ground colour is violet-purple, the paste smooth, dense, and all but circular, the tube palish, and the edge very regular. The foliage is green, sprinkled with dust.

Simpson's Eleanor, a seedling of 1874, is a white-edge of good size, flat, and circular in shape, and of firm substance. The paste is solid and good, though not quite circular, and the ground colour a transparent violet-purple. The parts are well proportioned, and the plant is a fine trusser. The tube is palish lemon, and the foliage white.

Simpson's Florence, a seedling of 1869, is a flower of fine shape, with a pure white edge. The paste is good and circular, and the ground colour crimson-purple. The tube is palish in colour, the foliage white, and the plant is a very free grower.

Simpson's Robert John is a beautiful grey-edge, generally of faultless shape, though sometimes a pip will come a little crumpled. The paste is good, the ground colour violet-blue, and the tube very pale. It is a robust grower, and has fine green foliage, sprinkled sparsely with dust. *J. M., Mains, by Dundee.*

(To be continued.)

ROYAL HORTICULTURAL SOCIETY'S COMMITTEES, 1883.

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Vice-Chairman.—John Lee, 78, Warwick Gardens, W.
Sir C. W. Strickland, Bart., Hildenley, Malton.
H. J. Veitch, F.L.S., Royal Exotic Nursey, Chelsea, S.W.
Secretary.—Archibald F. Barron, Royal Horticultural Society, Chiswick, W.
Blackmore, R. D., Teddington.
Bunyard, George, The Nurseries, Maidstone.
Burnett, J., The Gardens, Deepdene, Dorking.
Crowley, Philip, Waddon House, Croydon.
Denning, W., The Gardens, Londesborough Lodge, Norbiton, Surrey.
Ford, Sidney, Leonardslee, Horsham.
Goldsmith, G., The Gardens, Hollanden, Tunbridge.
Hogg, Robert, LL.D., F.L.S., 99, St. George's Road, S.W.
Howcroft, —, 14, Tavistock Road, W.C.
Killick, Lewis A., Mount Pleasant, Maidstone.
Lane, John E., Berkhampstead.
Laxton, Thos., Bedford.
Lyon, S., The Gardens, Sundridge Park, Bromley.
Mason, Major F., The Firs, Warwick.
Paul, George, Cheshunt, Herts.
Paul, William, Waltham Cross, N.
Rivers, T. Francis, Sawbridgeworth.
Rutland, F., The Gardens, Goodwood, Chichester.
Roberts, J., The Gardens, Gunnersbury Park, Acton.
Silverlock, Charles, 412, Strand, W.C.
Smith, J., The Gardens, Mentmore, Leighton Buzzard.
Stevens, Zadok, The Gardens, Trentham Hall, Stoke-on-Trent.
Sutton, Arthur W., Reading.
Weir, Harrison, Weirleigh, Brenchley, Staplehurst.
Willard, Jesse, Holly Lodge Gardens, Highgate, N.
Woodbridge, John, The Gardens, Syon House, Brentford, W.

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Vice-Chairmen.—B. S. Williams, Victoria Nursery, Upper Holloway, N.
Geo. F. Wilson, F.R.S, Heatherbank, Weybridge Heath.
Shirley Hibberd, 15, Brownswood Park, Stoke Newington, N.
Secretary.—Archibald F. Barron, Royal Horticultural Society, Chiswick, W.
Baker, George, The Gardens, Membland Hall, Ivy Bridge, Devon.
Ballantine, H., The Dell Gardens, Egham.
Bealby, William, The Laurels, Alton Road, Roehampton.
Bennett, H., Shepperton, Walton-on-Thames.
Cannell, Henry, Swanley.
Cutbush, James, Highgate, N.
Douglas, J., The Gardens, Loxford Hall, Ilford, E.
Dominy, John, 11, Tadema Road, Chelsea, S.W.
Duffield, G., The Gardens, Bamford Lodge, Winchmore Hill, N.
Ebbage, H., The Hall, Middlesex.
Eckford, Henry, The Gardens, Boreatton Park, Baschurch, Salop.
Fraser, John, Lea Bridge Road Nursery, Leyton.
Green, Charles, The Gardens, Pendell Court, Bletchingley, Surrey.
Hudson, James, The Gardens, Gunnersbury House, Acton.
James, J.
Kellock, W. B., F.L.S, Stamford Hill, N.
Kinghorn, F. R., Sheen Nursery, Richmond, Surrey.
Laing, John, Stanstead Park, Forest Hill, S.E.
Lee, William R., Vineyard Nursery, Hammersmith.
Llewelyn, J. T. D., F.L.S., Penllergare, Swansea.
McIntosh, James Duneevan, Weybridge.
Moore, Thos., F.L.S., Botanic Gardens, Chelsea, S.W.
Ridley, Henry N., B.A., Natural History Museum, South Kensington, S.W.
Turner, Harry, Royal Nursery, Slough.
Wills, John, Onslow Crescent, Onslow Square, S.W.

HOME CORRESPONDENCE.

Hybridised Primroses.—The note inserted by the Editor in the report of the recent meeting of the Nottinghamshire Horticultural Society expresses doubt as to the product of a so-called cross between the Chinese Primrose and the Polyanthus. My own experience of results of similar would-be crosses induces me to join in the incredulity shown, and to ask for some more tangible evidence of such cross being effective than is found in a line or two of a report. One of the best evidences of the non-product of change in the Chinese Primroses by crosses of this particular kind is seen in the fact that that section of winter blooming plants, though vastly improved by selection and intercrossing, still remain Chinese Primulas, and nothing else; and yet of all the Primula family there is no section more amenable to cross-fertilisation, or, on the whole, more fertile of seed, so that Nature has presented no obstacles of a non-generative kind to the enthusiastic hybridist. But outside of the Chinese, or tender section of the Primula family—and that family is indeed wondrously large and varied—I doubt whether any truly distinctive hybrid has ever been obtained even from the combination of species that are in character almost allied. I have tried the pollen of Polyanthus upon the pistils of Primula Sieboldii or amœna—for the flowers of these latter are almost invariably pin-eyed—but only to result in destroying the fertility of the flower altogether; and the same results have followed attempted crosses of Polyanthus with the Himalayan Primrose. There is no evidence that even Primula elatior and P. Auricula will combine to produce progeny; and if any one were to say that he had successfully cross-fertilised the modern Polyanthus and the Auricula, I should be surprised. Our own indigenous kinds, P. veris and P. acaulis, will cross-fertilise freely apparently, although it is remarkable that the wild forms almost always remain pure. In gardens, however, their progeny, the Polyanthus and Primrose, intercross freely, which leads to the inference that after all the line which divides them is too fine to justify botanists in classifying them into distinctive species. *A. D.* [See *ante*, p. 816.]

Peat Moss as Litter for Horses, Cattle, and Pigs.—Relative to a paragraph in your issue of December 9 under this head, I inclose a cutting from the *Lisbellaw Gazette* of Aug. 15, written from my own observations last spring at Ballycroy. I ask your London and English friends not to judge and condemn true disintegrated peat litter—such as I saw there in use at Colonel Clive's farm, and upon which, as on a bed, any man might sleep pleasantly—from the hard pulped sheets sold in London as German stable moss, but which are made by quite a different process, viz., adapted for preparing fuel cakes or bricks. There is no bog to shave on my own estate here in Fermanagh, or I would soon have a steam-engine or water-wheel at work to tear up peat for my own cattle and horses, and for local sale; but, from many inquiries that have been sent to me, I think that a peat-litter work on a large scale will be set up before next summer on the immense Bog of Allen, at

the back of Dublin, and joined to that populous city by the cheap water-carriage of two canals. In the *Times* of October 20 peat is recommended for dressing wounds; and I venture to add that, in many diseases, peat-litter would be a most healthy bed in hospitals. Mr. Prince, Colonel Clive's steward, told me that the disintegrator which I saw at work was made by Mr. Carter, of Chelmsford. *J. G. V. Porter, Belleisle, Dec.* 12.

"At the Lisbellaw ploughing match dinner last spring a canister was sent round the table with a sample of the turf bedding, as for many years in use for cattle, horses, and pigs on Colonel Clive's large farm at Ballycroy in County Mayo. The turf is torn asunder by a wheel armed with strong hooks, and driven by steam-power, till it becomes in colour and appearance like tobacco for smoking. We never saw cattle more clean and healthy, and Mr. Prince, the steward, an Englishman, said that it made the best possible bedding and afterwards the best manure, as it took up all dung and urine. There are many places in Fermanagh where, close to a bog and a stream, water-power could be used to drive this simple machine, and the bedding would sell well and save the Oat straw for fodder."

Ampelopsis sempervirens, hort. (Vitis striata): p. 790.—I fear that those of your readers will be disappointed who trust to this climber as an evergreen covering for their walls, as recommended by Messrs. Backhouse. I have grown it for five or six years (or more) and always with the same result. I have never lost it, but it completely dies to the ground every winter. Still, it is a very pretty and desirable plant, and very easy of increase by cuttings. *Henry N. Ellacombe, Bitton.*

—— I saw in September, at The Grange, Ascot, a magnificent plant of Ampelopsis sempervirens, or Vitis striata, trained to a full north-east wall, which had withstood the severe winter of 1880, though fully exposed, without any protection whatever. It had covered nearly one side of the mansion, and I must say that it is a great acquisition to our hardy evergreen climbers, and the more so if it climbed like the favourite A. Veitchii without any nailing. *F. Nash, Manager to George Cooling & Son, Bath.*

Eupatorium odoratum for Winter Decoration.—I should like to add this sweet-scented, chastely white, and easily grown greenhouse plant to those you commend for winter blooming (p. 746). I had my attention drawn to it by noticing a very handsome specimen in the large conservatory at Minella, near this town, a few days since. It is doubly valuable as flowering from November onwards, when plants—it can be grown into large specimens—and especially sweet-scented ones, are so scarce. If grown robustly and plunged outside during the summer months it does all the better when taken in afterwards. On a stage it contrasted well with Chorozemas on one side, and Coronilla glauca on the other, having a fine trained specimen of Correa magnifica for a background. *W. J. Murphy, Clonmel.*

The Royal Horticultural Society's Committees.—Thanks to your correspondents for ventilating this subject. Living so far distant from London as many of us do, we have not the advantage of seeing the subjects exhibited, but have to trust to the various horticultural papers for information. I find from the conversation I have had with the principal horticulturists in this quarter that from the prodigal way in which First-class Certificates have been granted they are considered of no more value than waste paper, or useful merely as nurserymen's advertisements; for in nine cases out of ten plants of rapid and easy propagation gain the most certificates. Nurserymen are more interested than other people, and, as they invariably attend in good force, they are pretty sure to vote for any plant likely to be remunerative; in fact, we in the country look upon the Floral Committee as a London nurseryman's committee. Many plants might be sent up that are not sent at present. As experience has proved, unless some one can go up with them they are likely to be passed over with scanty notice, particularly when many subjects are brought forward. We want more genuine plant lovers, less of the commercial element, and the committee should be divided into Floral and Plant divisions, as more satisfaction would then be given, particularly if the names of those that vote are published, as it would give confidence to the public. The idea of 240 plants in one year being worthy of being certificated shows the absurdity of the thing, as in all probability many of of these will never be heard of again after next year. The Society has great difficulties to surmount, and it is only by securing the confidence of the horticultural public that it can do so. *Ebor.*

Severe Frost in Aberdeenshire.—We have experienced a severe storm during the last fortnight. In the first week of the month snow fell to the depth of 12 inches over this part of the country. Fortunately there was an absence of wind, so that no drifting occurred, and traffic was but little impeded. During the second week, however, the frost increased in intensity, when a self-registering thermometer, suspended about 3 feet from the ground, marked 33° of frost on the morning of the 13th inst., on the morning of the 14th 32°, and on the morning of the 15th 38°. From 4 P.M. on the 14th until 10 A.M. on the 15th the mercury was below the cypher. In all my experience I never encountered three consecutive nights at zero. Happily the wind has shifted from north to south, while the mercury has advanced to 40°. A pleasant change, but the country will soon be flooded. *Geo. Donaldson, Keith Hall, Dec.* 16. [When were the thermometers tested? Ed.]

The Codlin Moths.—The moths known as Carpocapsa pomonella and C. funebrana, made their appearance in our gardens in Asia some three years ago, and increasing every year have been very injurious to the Apple and Plum crops. Our Apple crop promised to be an abundant one this season, and the fruit fine, but we have not been able to select a single dish of good fruit for the table. Will some of your readers be so good as to give me any information they may possess as to a remedy for these destructive pests. *C. A. Schroder, Gr. to Aristakes Effendi Azarian, Esq., Buyukdéré, Bosphore, Constantinople.* [One of the pests was figured and described in our issue for November, 1879 (see figs. 146, 147), and the most practical remedies there suggested are to gather and burn the fallen fruits before the larva leaves them; and to scrape off and burn all the loose bark on the stems of the trees, and dress the boles with a glutinous mixture of lime, cowdung, and train-oil to prevent the insect from escaping when it arrives at the winged state. Ed.]

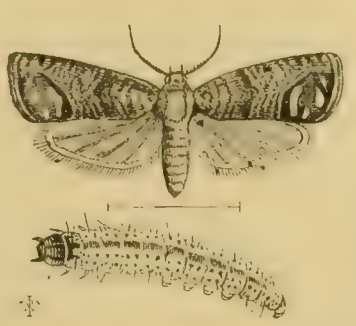


Fig. 146.—Carpocapsa pomonella.

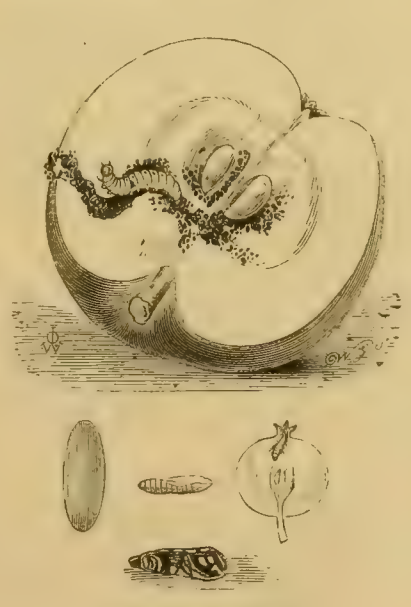


Fig. 147.—The codlin moth.

Laying-in Broccoli.—The advantages of laying-in Broccoli have been pointed out again and again, and though it may be objected to by some on account of the disturbance reducing the size of the heads, there can be no question of its utility in assisting to save a crop, as, with the stems protected, the plants are almost proof against frost, which, when they are exposed, bursts asunder the sap vessels and leaves them to rot. If we could only get harder stalks, with more woody fibre, which Broccoli generally have after hot, dry summers, there would not be so much to fear; but with a season like the past, with frequent rain, they are full of growth and soft, and the chances are, if we get hard weather the losses will be great. To ensure against these losses, the thing is to lay in or bury up the stems, and where plants are wide apart the latter may be done without hurting the roots, as the earth may be banked along the rows in the same way as is done for the protection and blanching of Celery. This not only preserves the stems from injury, but keeps the plants altogether in a drier condition. Those in ordinary plantations may be laid-in very speedily by just opening a trench, or digging out a pit behind, and pushing them on their side, when the earth may be thrown on the stalk, so as to cover each plant well up to the leaves. The way the heads lie matters little; but it is important that the work of burying the stems be done early, so as to give time for fresh roots to be formed before winter sets in. *J. S.*

Gloxinias in Winter.—I can fully endorse all that has been said in favour of the Gloxinia as a winter flowering plant. But there is nothing novel in having them in flower every month in the year, with the necessary heat and a little judgment. I send you a few blooms for your inspection: I have them in bloom every month in the year, more or less, but I do not grow so many in winter as in summer, for the simple reason that the room is wanted for other things. Every plant can be flowered twice in a year. I do not grow named varieties, preferring seedlings from a good strain, from which you can obtain flowers of good substance and of almost every shade of colour. *W. Gallop, Bradford Peverell Gardens, Dorchester.*

Coreopsis præcox.—What plants may be sold under this name I will not venture to say, but the name itself is a mere synonym of Coreopsis palmata, Nuttall, a species related to the C. verticillata. I raised the plant from seed collected in the Nebraska prairies many years since, and offered seed of it for several years successively, so that there is a chance that it is not entirely lost, although my own plants have perished. Leptopoda brachypoda, Torr. and Gray, is, as Mr. Hatfield states, much like a Helenium, if the two genera are really distinct, but more resembles the H. atropurpureum of gardens than the H. grandiflorum. It is difficult to imagine that any one would palm it off for a Coreopsis, and especially for C. palmata. *W. Thompson, Ipswich.*

Mulching for Roses and Other Flowers.—A few years since in emptying out a plant pit in October, for winter occupants, the heating material being leaves and a fraction of stable manure, put in some ten months previously, I divided a portion of the contents among some adjoining Roses, grown in the borders. The effect the following summer was so conspicuous that I determined to use the same material in a more extended manner in future. By tracing effects to their cause and trying to understand the reason why, we frequently acquire important information. There is nothing new in this; yet I venture to say every reader does not practise it. Why mulch Roses, choice Pansies, Pentstemons, Antirrhinums, named alpine Auriculas, bedding Fuchsias, gold-laced Polyanthus, Carnations and Picotees, double Pyrethrums, variegated Veronicas, Hyacinthus candicans, double yellow and purple German Wallflowers, Dielytra spectabilis, the Funkias, and such really sweet things as double white Violets, &c.; and, second, why give a preference to leaf-mould from an old hotbed? Just a few words on each point. I am after completing that attention to the plants named and some other good things I hope to preserve intact outdoors during the winter, because—take Roses for illustration—a smart frost will effectually kill all the recently made fibrous roots immediately near the surface, and all the more effectually if—as usually follows at this season—it is followed by a warm sunshine. The mulching prevents both the one and the other. I make up my mulching, which is porous and dryish, in conical mounds around the stem; the moisture quickly passes away, and where there is no moisture there can be no injurious penetration of frost. This would also apply to coal-ash, which I always heap up around Salvia patens for instance. But why not use it for the plants above named? This brings me to the second point. I do not prefer the leaf-mould manure because of the nutriment from it rapidly conveyed to the roots—no; hardly any outdoor plant requires rich feeding for the next three months. I prefer it because the nutriment is in such a state of preparation that every shower of rain gradually and slowly carries some down for the roots to feed on; because in several instances I have found it either a refuge for, or a bar against, the injury of slugs; because the warm russet appearance is in its favour—appearances count in a garden; and because you can dig it in the spring. If I were to add two other reason that no doubt would be common to green moss, &c., it would be the shelter it affords and the cleanliness frombeing spattered by heavy rains. *W. J. Murphy, Clonmel.*

The Arboretum.

CASTANEA CHRYSOPHYLLA.—Messrs. Veitch have kindly furnished me with the following note on the Californian Golden Chestnut; it will probably interest many of your readers (see p. 716) :—"The Tortworth tree is not the only one that has fruited in England. One of the first plants raised by us, and which is now growing in Mrs. Hammersley's garden adjoining our Coombe Wood Nursery, has, like the Tortworth tree, annually borne sterile burrs for some years past, but no seeds have been observed till this year. This plant is probably as old as that at Tortworth, but its growth has been exceedingly slow, its present dimensions not being more than from 4 to 5 feet high, and as much through, its appearance being that of a dense and somewhat stunted bush. We thoroughly endorse your high opinion of the ornamental qualities of this beautiful Chestnut; but unfortunately its propagation, otherwise than by seed, is slow and precarious, nor can we express confidence in its being sufficiently hardy for ornamental planting of any description except in such favoured spots as Tortworth." *Thomas Shingles, Tortworth Court, Gloucester.*

FORESTRY.

PREPARING GROUND FOR PLANTING. — It is no less a general than a well founded and established fact, that our plantations, young and old, of any considerable extent, are full of blank and open spaces—to such an extent, indeed, that when the crop of wood is to be cut or sold a very great and serious reduction has to be made for the blank spaces. That the whole evil of blanks can be entirely overcome and removed is more than can be expected or undertaken, but that it can by skill and attention be reduced to a fraction of what it now is, is quite certain. It is not only the swampy bog, the bare rock, or whinny hillock, that are found to be destitute of trees, or bearing only worthless or unremunerative ones; no, it is not these, but, on the contrary, the very choicest spots, and best of the ground—not the heights, rain-washed and exposed sterile peaks, but the rich, sheltered, loamy, or clayey dells, corries and general cavities of the ground. It is usually such places as produce rich and luxuriant grasses, Brackens, Thistles, Nettles, Brambles, wild Brier, and such-like rank or strong herbage. When such places are planted, be the plants ever so strong and good, and the work ever so well done, failure is the universal result, though aggravated or modified it may be by continuous cutting and keeping down the herbage. The twofold question is, what is the usual practice in such cases? and, can anything further or otherwise be done to prevent the evil complained of? The common practice is, that before planting such ground, the whole herbage is cut close and bare to the surface of the ground with a string-scythe, hook-bill, or other implement, and either burnt on the ground or carted to some place out of the way. The result of this kind of work is, that the plants thus cut over, of whatever kind, in consequence of being cut grow much stronger, and produce a more rapid growth than they did before, and consequently outgrow and choke the plants which the cutting-over was intended to prevent. What is here recommended as an improvement and found to answer well under such circumstances, is either to plough or dig the ground all over with the common spade, and in the process properly invert the turf; or, what is cheaper and usually more efficient, to cut drains or small trenches about 7 to 8 feet apart, and lay the soil dug out in rounded ridges between them, and plant the trees in lines along the top of the ridges 3½ or 4 feet apart. By this method the trees not only grow better than on the flat surface, especially if inclined to wetness but it rarely happens that the plants by this method ever sustain the least injury from grass or other herbage, or require any attention in that way to keep them from injury. If the ground is at all unduly wet and requires draining, the expense incurred in annually or twice a year cutting the herbage will be more than saved by the trench and ridge system. The drains or trenches do well at 30 inches wide and 15 to 18 inches deep, with a good slope upon their edges. Each drain or trench produces first the turf, which is laid with the grassy side down, and the cleaning of the trench or drain spread over it, which, combined, constitutes the mound or ridge referred to, now ready for planting. It may be objected that this method causes the plants to be planted in rows. It does not necessarily do so, because the trench or drain can be made curved or crooked almost as easily as straight, and the mound and line of trees of course assumes a similar curve. But when it is considered that the spots of ground which so require this form of treatment are usually of comparatively small extent, and as often in the centre as on the margin of the plantation, where they are quite unobservable to the passer-by, and as every one knows, trees grow equally as well and profitably in lines or rows as they do in the irregular or promiscuous form, and it is only a matter of questionable taste, whether they do not look as well in the one way as the other. If the drains or trenches are formed at 7 or 8 feet apart, the plants on the mound, as already said, should be planted at 3½ or 4 feet apart, as the case may be, and then, when they are thinned out to the extent of one plant from between each two, the trees will stand upon the ground 7 or 8 feet apart each way, which is a very good distance for trees after being regulated or thinned the first time. In planting whinny hillocks I also prefer planting the trees in rows; and if the trench and ridge system be carried out it will be found that the plants are kept from injury at a nominal expense, compared with what they can be when planted in the irregular form, when no one can know where the plant is till he discovers that its top, and not unfrequently the stem also, had been cut. Ground that grows whins well will also grow forest trees well, if only prevented from choking or being robbed by their presence.

DRAINAGE.—Comparatively little of the ground devoted to forest tree planting is sufficiently dry for that purpose without draining, and the reason why it is usually so imperfectly done is because of the great expense entailed. In order, however, to do the greatest amount of good at the least possible expense, two things should be observed, namely, that the drains be put in sufficiently close to carry off all surface water, and that they be not too deep and expensive. I recently drained a comparatively level moor, from which turf had in bygone days been taken, and consequently the surface of the ground rendered broken and full of holes, large and small. The drains were put in at intervals of 12 to 15 feet, and smaller ones at various distances and different angles to them, to carry off every pool of water, however small. The drains were in general 24 inches wide and 15 inches deep, and the smaller drains 18 inches wide and 9 to 12 inches deep. The larger sized drains can be made at 5*s.* per 100 yards, and the smaller ones at about 3*s.* per 100 yards.

THE FORESTER'S FOOT-PICK.—I have often recommended the forester's foot-pick as an excellent implement for preparing hard and close soils for planting, and am fully persuaded that breaking up and loosing the soil by means of it, is much better and vastly cheaper than the old practice of making pits, which, on all retentive soils, only constitute basins for holding water, and consequently destroying the plants. *C. Y. Michie, Cullen House, Banffshire, December* 11.

Notices of Books.

Nature at Home: from the French of Théophile Gautier, with Illustrations by Karl Bodmer. (London: Bradbury, Agnew, & Co.)

This is indeed a book to take up at Christmas time—at any time, in fact, when one has leisure to enjoy the beauty and fidelity of the illustrations. The varying distance and perspective of woodland scenery—the flecked lights and shadows—have rarely been better wrought out. The engravings indeed, though some of them seem a little worn, are a real treat to the lover of Nature, and grow upon one more and more. By the side of the engravings the text is not of much importance. It is in that diffuse long-drawn-out style, telling nothing, but occupying much time in the reading that is so relished in France, and is so distasteful in England.

Fairy Tales. By Hans Christian Andersen, illustrated by ten full-page pictures in colours by E. V. B. (Samson, Low, Marston & Co.)

Hans Christian Andersen is always delightful, and loses nothing of his charm in the translation here given by H. L. Ward and Augusta Plesner. The designs of the illustrations are excellent, and show careful study of Italian art, but the colouring is crude and raw, a painful contrast to the elegance of the draughtsmanship.

The Flowers of Shakespeare: depicted by "Viola." (Samson, Low, Marston & Co.)

We do not think Shakespeare would own the flowers here set before us. There is scarcely one correctly drawn, many are very badly "depicted," and the colouring preposterous. What a relief it is to cast one's eyes on the delicious extracts at the bottom of the plates. We can forgive the artist, but beg her before she attempts again to draw flowers to study them beforehand.

—— *The Agricultural Gazette Almanac*, as usual, is full of serviceable matter. The articles on ensilage are particularly appropriate just now.

—— *The Garden Oracle* (*Gardeners' Magazine* Office) is full of useful matter. The list of new garden plants and flowers, for reference purposes, is alone worth the money for the whole book.

Reports of Societies.

Edinburgh Botanical: *Dec.* 14.—Professor Bayley Balfour in the chair. Emeritus Professor Balfour and Professor Oliver, Royal Gardens, Kew, were, on the recommendation of the Council, elected to fill the two vacancies in the Society's roll of British honorary Fellows. The following office-bearers were elected for the current session. President:—William B. Boyd, Esq., of Faldonside. Vice-Presidents:—Isaac Anderson-Henry, F.L.S., F.R.S.E.; Professor Thomas R. Fraser, M.D., F.R.S.E.; Professor Douglas Maclagan, M.D., F.R.S.E.; Professor Bayley Balfour, Sc.D., M.B., C.M. Councillors:—Robert Gray, F.R.S.E.; William Craig, M.D., C.M., F.R.C.S.E., F.R.S.E.; Malcolm Dunn, Thomas Alexander Goldie Balfour, M.D., F.R.C.P.E., F.R.S.E.; James Robson Scott, M.D., James Buchanan, Charles Jenner, F.R.S.E.; Alexander Buchan, A.M., F.R.S.E.; Hugh Cleghorn, M.D., F.R.S.E.; Andrew S. Aitken, Sc.D., F.R.S.E. Honorary Secretary:—Emeritus Professor Balfour, M.D., F.R.SS. L. and E. Honorary Curator:—The Professor of Botany. Foreign Secretary:—Professor Dickson, M.D., F.R.S.E. Treasurer:—Patrick Neill Fraser, F.R. Cal. Hort. Soc. Assistant-Secretary:—Andrew Taylor, F.C.S., 37, South Clerk Street.

Before taking up the business of the meeting the Chairman alluded to the loss which the Society had sustained in the death of Mr. John Sadler, who, he said, for more than twenty years was one of its members. By Mr. Sadler's death the Society had lost not only an eminent botanist but a sincere friend. The Chairman moved that a letter of condolence be sent to the bereaved relatives, and that the Society express in the minutes their sense of the loss they had sustained. The proposal was seconded by Dr. Craig, and adopted; and the Chairman and Professor Dickson were appointed to draw up the minute.

The following communications were then made:—

I. "Valedictory Address on Symbiosis." By Professor Bayley Balfour.

The Chairman pointed out, that in the present day they recognised two distinct kinds of this living together of dissimilar organisms—antagonistic symbiosis and reciprocal symbiosis. In the antagonistic they found parasitism where the host plant was actually killed or harmed by the guest plant. Then they had the reciprocal or beneficial, where two organisms living together aided one another mutually. All cases of symbiosis showed that a principle of socialism pervaded Nature. They showed that plants were quite as capable of combining for mutual support and mutual assistance as were human beings in their highest condition of civilisation. Having referred to parasiticism and the recent views as to the nature of lichens, he also directed attention to Semper's theory of the existence of algæ in lower animal life. The address was illustrated by numerous diagrams, as well as by living plants from the Royal Botanic Garden; and on the motion of Professor Dickson a vote of thanks was awarded to the retiring President.

Mr. Andrew Taylor, Assistant-Secretary, reported that the membership of the Society included:—Hon. Fellows, Royal personages, 4; British subjects, 6; foreign, 20; ordinary Fellows, 155; non-resident, 222; lady Associates, 10; Associates, 28.

II. "Obituary Notice of the late Emeritus Professor George Dickie, LL.D." By Professor Trail, Aberdeen. Communicated by Professor Balfour, Honorary Secretary.

III. "Report on the Vegetation in the Garden of the Royal Botanic Institution, Glasgow." By Robert Bullen, Curator. Communicated by Professor Bayley Balfour.

The lowest night temperatures registered in October, 1882, were 30° on the 24th, 27° on the 25th, 28° on the 26th, 32° on the 27th, 27° on the 28th; or a total of 16° of frost. Garden operations were carried on with difficulty, owing to frequent and heavy rains; nevertheless,

the genial temperature of the first three weeks prolonged the season of autumn-flowering herbaceous plants, though the leaves of the deciduous trees fell somewhat prematurely; the young wood in most trees was filled with watery sap, denoting imperfect maturation. During the past November the thermometer was at or below 32° on seventeen mornings, the degrees of frost varying from 1° to 7°, the latter reading being that of the morning of the 14th inst.; the lowest reading, 1°, was on the 19th. During the month there were collectively 61° of frost. Considering the wet weather which prevailed during the first week of the month the day temperature ruled high, the mean for the first ten days being 49°. The fall has since been gradual, the lowest being 33° on the 12th inst. Rain fell less or more on thirteen days. Outdoor vegetation was entirely dormant.—Mr. Dunn mentioned that since the present storm set in 40 inches of snow had fallen at Dalkeith Gardens, and in the open the average fall was 25 inches. For the past three nights the frost had been very severe, the thermometer having stood at 7°, 6°, and 7°. When he left Dalkeith on the previous evening there were 23° of frost.

IV. "On Temperatures at the Royal Botanic Garden." Forwarded by Mr. Robert Lindsey. Since the month began there has been registered collectively 116° of frost, the lowest register being on the night of the 12th, when the thermometer fell to 7°, or 25° of frost. There was only one morning on which no frost was registered, viz., the 3d. For the corresponding fourteen days of December last year there were registered only 23° collectively.

Obituary.

WITH great regret we have to record the death, at the early age of 38 years, of Mr. WILLIAM HINDS, who was well known to many of our readers as a regular contributor to our columns, and who only six months ago became permanently attached to our staff as a travelling reporter. Mr. Hinds was for several years gardener to Sir Thomas Edward Moss, Bart., at Roby Hall, and subsequently at Otterspool, near Liverpool, and when leaving that place about four years ago, to take up a larger charge at Canford Manor, Dorset, was presented by his Liverpool compeers with a gold watch, in recognition of the high regard in which he was held among them. He caught a cold about three weeks ago, and, inflammation of the lungs setting in, he took to his bed on Tuesday week, and died early in the morning of Wednesday last. By the death of Mr. Hinds we have lost a loyal, keen-sighted, intelligent assistant, and a faithful, sympathetic friend, diffident and modest to a fault, though his knowledge was both wide and deep. His many friends, we are sure, will share with us an expression of deep sympathy for his widow and child.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, DEC. 20, 1882.

MONTH AND DAY.	BAROMETER. Mean Reading Reduced to 32° Fahr.	BAROMETER. Departure from Average of 18 years.	TEMPERATURE OF THE AIR. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years	Hygrometrical Deductions from Glaisher's Tables 6th Edition. Dew Point.	Degree of Humidity, Sat. = 100.	WIND. Average Direction.	RAINFALL.
Dec.	In.	In.	°	°	°	°	°	°			In.
14	29.56	−0.25	40.0	36.0	4.0	38.1	− 2.6	36.3	94	—	0.03
15	29.71	−0.10	42.2	36.8	3.4	38.7	− 2.0	38.0	98	S.E.	0.04
16	29.70	−0.12	46.0	36.5	9.5	42.3	+ 1.6	41.2	93	S.E.: S.S.E.	0.04
17	29.64	−0.18	48.8	43.5	5.3	46.5	+ 6.0	42.7	92	S.S.W.: E.S.E.	0.00
18	29.53	−0.29	46.2	37.5	8.7	42.8	+ 2.6	39.2	88	S.S.E.	0.02
19	29.92	+0.09	49.2	37.0	12.2	43.5	+ 3.5	39.5	86	S.E.	0.00
20	30.14	+0.30	47.8	33.0	14.8	40.5	+ 0.8	38.5	93	S.E.	0.00
Mean	29.74	−0.08	45.5	37.2	8.3	41.8	+ 1.4	39.5	92	S.E.	0.13

Dec. 14.—Dense fog all day. Damp dark night.
— 15.—Dense fog from early morning. Dull overcast day. Drizzling rain from 11.30 A.M. to 3 P.M. Dull, cloudy, damp night.
— 16.—Dull overcast day. Drizzling rain in evening. The maximum temperature of the day took place at midnight.
— 17.—Dull damp day. Fine night, moon showing from 5 P.M. to 9 P.M.
— 18.—Dull overcast morning. Fine bright afternoon; blue sky. Fine clear night.
— 19.—Fine and bright all day. Fine clear night.
— 20.—Dense fog from early morning to 8.30 A.M.; clearer at 9 A.M. Fine bright afternoon. Warm cloudy night.—The maximum temperature of this day took place at midnight.

LONDON: *Atmospheric Pressure.*—During the week ending December 16, the reading of the barometer at the level of the sea increased from 29.76 inches at the beginning of the week to 29.80 inches by 9 A.M. on the 10th, decreased to 29.72 inches by 3 P.M., and increased to 29.78 inches by midnight on the same day, decreased to 29.45 inches by 9 A.M. on the 13th, increased to 29.72 inches by 9 A.M., and decreased to 29.71 inches by 3 P.M. on the 14th, increased to 29.92 inches by 9 A.M. on the 16th, and was 29.85 inches at the end of the week.

The mean reading for the week at the level of the sea was 29.75 inches, being 0.47 inch higher than last week, and 0.23 inch below the average of the week.

Temperature.—The highest temperature in the shade in the week was 46°, on the 16th; on the 10th the highest temperature was 31°. The mean of the seven high day readings was 37°.3.

The lowest temperature in the shade in the week was 24°, on the 10th; on the 15th the lowest temperature was 36°.8. The mean of the seven lowest temperatures was 31°.

The greatest range of temperature in one day was 10°.8, on the 13th; the smallest was 2°.5, on the 11th. The mean of the seven daily ranges was 6°.3.

The mean temperatures were—on the 10th, 27°.1; on the 11th, 27°.5; on the 12th, 32°.6; on the 13th, 37°.9; on the 14th, 38°.1; on the 15th, 38°.7; and on the 16th, 42°.3; being all below their averages excepting only the last day, by 13°.9, 13°.3, 8°.1, 2°.7, 2°.6, 2° respectively; the last day being 1°.6 above its average.

The mean temperature was 34°.9, being 1°.9 lower than last week, and 5°.9 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun, was 58°.5 on the 13th; the lowest reading being 29° on the 11th. The mean of the seven readings was 39°.8.

The lowest reading of a minimum thermometer with its bulb placed on grass, was 20°.5, on the 12th. The mean of the seven readings was 26°.1.

Rain.—Rain fell on four days to the amount of 0.15 inch.

ENGLAND: *Temperature.*—During the week ending December 16 the highest temperatures were 53° at Truro, 50° at Plymouth, and 49° at Brighton; the highest temperature at Sheffield was 36°.5, at Nottingham 37°, and at Bradford 38°.2. The general mean was 43°.1.

The lowest temperatures in the week were 13°.9 at Sheffield, 14° at Hull, and 17°.2 at Bristol and Liverpool; at Brighton the lowest temperature was 25°, at Blackheath 24°, and at Plymouth 22°.8. The general mean was 19°.2.

The greatest ranges of temperature in the week were 31° at Truro, 27°.8 at Bristol, and 27°.2 at Plymouth; the least ranges were 19°.5 at Nottingham, 19°.6 at Bradford, and 20° at Leeds. The general mean was 23°.9.

The mean of the seven high day temperatures was highest at Truro 46°.8, at Plymouth 43°, and at Brighton, 40°.9; and was lowest at Wolverhampton, 32°.8, at Nottingham 33°.3, and at Bradford 33°.8. The general mean was 36°.8.

The mean of the seven lowest night temperatures was highest at Truro, 34°.1, at Brighton 33°, and at Plymouth 31°.4; and was lowest at Wolverhampton, 24°.2, at Sheffield 25°.7, and at Nottingham 25°.9. The general mean was 28°.2.

The mean daily range was greatest at Truro, 12°.7, at Plymouth 11°.6, and at Sunderland 9°.7; and was least at Blackheath, 6°.3, and at Leicester and Bolton, 6°.6. The general mean was 8°.6.

The mean temperature was highest at Truro, 40°.5, at Plymouth 37°.2, and at Brighton 36°.9; and was lowest at Wolverhampton, 28°.4, at Nottingham 29°.6, and at Bradford 29°.9. The general mean was 32°.5.

Rain.—The largest falls of rain were—at Truro 1.57 inch, at Sheffield 0.86 inch, and at Sunderland 0.82 inch. The smallest falls were—at Brighton 0.06 inch, at Cambridge 0.08 inch, and at Blackheath 0.15 inch. The general mean fall was 0.51 inch.

SCOTLAND: *Temperature.*—During the week ending December 16, the highest temperature was 43°.1, at Aberdeen. The highest temperature reached at Edinburgh was 38°.1. The general mean was 41°.1.

The lowest temperature in the week was 6°.4, at Edinburgh, 7° at Glasgow, 8° at Dundee and Aberdeen, 10°.5 at Leith, and 13° at Paisley; at Greenock the lowest temperature was 18°. The general mean was 10°.1.

The mean temperature was highest at Greenock, 28°.3, and lowest at Edinburgh, 22°.5. The general mean was 25°.6, being 7°.9 below that of the week immediately preceding, and 10°.2 below that of the corresponding week of 1881.

Rain.—The largest fall was 2.17 inches, at Edinburgh, and 1°.39 inch at Aberdeen. The smallest fall was 0.10 inch at Glasgow; no rain fell at Paisley. The general mean fall was 0.86 inch.

JAMES GLAISHER, F.R.S.

Enquiries.

He that questioneth much shall learn much.—BACON.

GLADIOLUS SPLENDENS.—Can any of our readers inform us where this fine species can be obtained?

RATING.—Is it legal for a nurseryman to be taxed with House Duty for a workman's house on the premises, part of which is used for business?—also, Are greenhouses liable to be rated? *W. P.*

Answers to Correspondents.

AMPELOPSIS JAPONICA: *S. C. J.* This plant is quite distinct from Rhus toxicodendron, and is quite innocuous. The latter was once sent out under the name A. japonica by mistake. A. cordata is a form of A. heterophylla. A. serjaniæfolia is a species with very remarkably cut leaves hardly to be described in words. A. tricuspidata is the botanical name for A. Veitchii of gardens, but it is not at all unlikely that A. tricuspidata is only a form of the variable A. inconstans. A. sempervirens is the A. striata described in these columns at p. 427, vol. xvi., 1881. A. Hoggi we do not know. A. Roylei of gardens is very like tricuspidata, if not the same.

ANALYSIS OF MANURES: *Veritas.* Mr. Bernard Dyer, 17, Great Tower Street, E.C.

BOOKS: *F. P.* 1, Mr. Douglas, The Cottage, Loxford, Ilford. 2, *Journal of Horticulture* office, 171, Fleet Street, E.C.

DRESSING PEACH TREES: *T. Watson.* Wash the shoots with a dilution of Fir-tree oil, or soft-soap and sulphur mixed with clay to the consistency of paint.

ERRATUM: CRINUM.—An unfortunate oversight occurred in a paragraph relating to this plant (p. 776). Of course it has nothing to do with Japan, but was sent from Zanzibar by Sir John Kirk.

FERNS AND SCALE: *M. J. F.* Try the effect of dipping the plants in a mixture of one wineglassful of paraffin and half a pound of soft-soap to a gallon of water. The mixture must be kept well stirred while the dipping process is going on, and the plants as they are dipped must be laid on their sides to drain, after which a good syringing with clear water must be given them.

NAMES OF PLANTS: *C. E.* Both are Zygopetalum crinitum.—*A. Gordon.* Cœlogyne fuscescens.—*T. T. L.* 1, Adiantum macrophyllum; 2, Lonicera fragrantissima; 3, Ilex insignis.—*R. L.* 1, Selaginella Mertensii; 2, Epidendrum floribundum; 3 and 4, Fittonia argyroneura, two vars.; 5, Schaueria flavicoma. A note upon this will be published shortly.

Letters relating to ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the Publisher, and* not *to the Editor.*

CATALOGUES RECEIVED.

B. S. WILLIAMS, Upper Holloway, London, N.—Flower, Vegetable, and Agricultural Seeds.
SUTTON & SONS, Reading—Amateurs' Guide in Horticulture for 1883; and Pocket Garden Calendar.
JAMES VEITCH & SONS, King's Road, Chelsea—Kitchen Garden and Flower Seeds.
WHITE, NASH, HUGGINS & CO., 79, Southwark Street, S.E.—Wholesale Price Current of Seeds, &c.
ELWANGER & BARRY, Mount Hope Nurseries, Rochester, N.Y.—Ornamental Trees and Shrubs, Perennial Plants, &c.
F. ROEMER, Quedlinburg, Germany—Flower, Vegetable, and Agricultural Seeds.
HAAGE & SCHMIDT, Erfurt, Germany—Novelties for 1883.

COMMUNICATIONS RECEIVED.—J. G. V. P.—D. T. F.—T. Cam.—T. C. E.—R. D.—A. O.—Wild Rose.—J. R. J.—J. G. B.—A. W.—H. S.—M. D. (many thanks)—H. E.—J. R. J.—G. Drummond.—A. M. Kent.—J. A. P.—J. G. B.—W. T. T. D.—E. A.—Alpha.—F. S.—J. C. M.—C. W.—H. C.—W. E.—J. Carter & Co.—F. Antoine, Vienna.—P. C.—G. N.—A. G. B.—D. E.—E. V. B.—A. O.—M. A., Bataline, St. Petersburg.—J. T. B.—W. J. M.—G. S. F.—J. O. B. (What do you mean by channel piping? We do not understand the drift of your enquiry).

Markets.

COVENT GARDEN, December 21.

A fairly brisk business has been done here for Christmas, but in favour of buyers, especially with Grapes, which have been generally refused at higher rates. Importations of Apples are still slight, and prices higher. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	2 6	6 0	Figs, per dozen	0 6	1 0
— Canadian and American, barrel	24 0	35 0	Grapes, per lb.	2 0	4 0
Aubergines, per doz.	4 0	..	Lemons, per 100	6 0	10 0
Cobs, 100 lb.	45 0	50 0	Pears, per dozen	1 0	2 0
			Pine-apples, Eng., lb.	2 0	3 0

VEGETABLES—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe, per doz.	3 0- 6 0	Herbs, per bunch	0 2- 0 4
— Jerusalem, bush.	4 0- ..	Horse Radish, bund.	4 0- ..
Asparagus (Sprue), per bundle	1 6- ..	Lettuces, Cabbage, per dozen	1 6- ..
Beans, Fr. grown, lb.	0 8- ..	Mint, green, bunch	0 9- ..
Beet, per doz.	1 0- ..	Mushrooms, p baskt.	1 0- 2 0
Bruss. Sprouts, bush.	3 0- 4 0	Onions, per bushel	3 0- ..
Cabbages, per doz.	1 0- 2 0	— Spring, per bun.	0 6- ..
Carrots, per bunch	0 4- 0 6	Parsley, per bunch	0 4- ..
Cauliflowers, English, dozen	2 0- 4 0	Radishes, per doz.	1 6- ..
Celery, per head	0 4- ..	Rhubarb, per bundl.	0 9- ..
— per bundle	1 6- ..	Seakale, per punnet	2 0- ..
Cucumbers, each	1 0- 2 0	Small salading, pun.	0 4- ..
Endive, per score	1 0- ..	Spinach, per bushel	4 0- ..
Garlic, per lb.	1 0- ..	Sweet Potatos, lb.	0 6- ..
		Tomatos, per doz.	2 0- 4 0

POTATOS:—Magnum Bonums, 130s to 140s.; Regents, 100s. to 120s.; Champions, 100s. to 120s. per ton.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldii, doz	12 0-24 0	Ferns, in variety, per dozen	4 0-18 0
Arbor-vitæ (golden), per dozen	6 0-18 0	Ficus elastica, each	1 6- 7 0
— (common), dozen	6 0-12 0	Foliage Plants, various, each	2 0-10 6
Azaleas, per dozen	30 0-60 0	Genista, per dozen	8 0-12 0
Begonias, per doz.	6 0-12 0	Hyacinths, per dozen	9 0-12 0
Bouvardia, doz.	12 0-18 0	— (Rom), per pot	1 6- 2 0
Chrysanthem., doz.	6 0-18 0	Marguerite Daisy, per dozen	6 0-12 0
Coleus, per dozen	4 0- 6 0	Myrtles, per doz.	6 0-12 0
Cyclamen, doz.	9 0-24 0	Palms in variety, each	2 6-21 0
Dracæna term. doz.	30 0-60 0	Pelargoniums, scarlet, per dozen	6 0-12 0
—viridis, per doz.	12 0-24 0	Solanums, per doz.	9 0-12 0
Epiphyllum, dozen	18 0-30 0	Tulips, per dozen	6 0- 9 0
Euonymus, various, per dozen	6 0-18 0		
Evergreens, in var., per dozen	6 0-24 0		

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Abutilon, 12 blooms	0 2- 0 4	Lilac (French), bun.	8 0- 9 0
Arum Lilies, per doz.	8 0-12 0	Lilium various, per 12 blooms	3 0- 6 0
Azalea, 12 sprays	1 0- 2 0	Lily-of-Val., 12 spr.	3 0- 5 0
Bouvardias, per bun.	1 0- 1 6	Marguerites, 12 bun.	6 0- 9 0
Camellias, per dozen	3 0- 6 0	Mignonette, 12 bun.	3 0- 6 0
Carnations, 12 blms.	1 0- 3 0	Narcissus, 12 sprays	2 0- 3 0
Chrysanth, 12 bun.	6 0-12 0	— (paper-white) Fr., 12 bunches	4 0- 9 0
— (Fr) per bunch	0 6- 1 6	Pelargoniums, 12 spr.	1 0- 1 6
— white, 12 bunches	9 0-18 0	— zonal, 12 sprays	0 6- 0 9
— 12 blooms	1 0- 2 6	Primula, double, per bunch	1 0- 1 6
Cyclamen, 12 blooms	0 3- 0 6	Roses (indoor), doz.	2 0- 4 0
Epiphyllum, 12 blms.	6 0- 9 0	— (outdoor), doz.	1 0- 2 0
Eucharis, per doz.	6 0- 9 0	— coloured, doz	2 0- 3 0
Euphorbia Jacquiniflora, 12 sprays	4 0- 6 0	Tropæolum, 12 bun.	1 0- 2 0
Fuchsias, 12 bunches	6 0- 8 0	Tulips, 12 blooms	1 0- 1 6
Gardenias, 12 blms.	9 0-12 0	Violets, 12 bunches	1 6- 2 0
Heliotropes, 12 sp.	0 6- 1 0	— French Czar, bun.	1 6- 2 6
Hyacinths, 12 spikes	10 0-12 0	— Parme (Fr.), bun.	5 0- 6 0
— (Roman), 12 spr.	2 0- 3 0	White Jasmine, bun.	1 0- 1 6
Lapageria, white, 12 blooms	3 0- 6 0		
— red, 12 blooms	1 0- 3 0		

SEEDS.

WEDNESDAY: *Dec.* 20.—Transactions on to-day's market were very limited, owing to the dull weather which prevailed. Red Clover seed is firmly held, on account of higher prices being reported from abroad. More attention is now being devoted to white Clover. Alsike has become quiet, but quotations remain unchanged. Trefoil and Italian Ryegrass still tend upwards. Canary, Hemp and Rape seed sell at Monday's currencies. Linseed unaltered. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CATTLE.

At Copenhagen Fields on Monday beast supplies were very short, but more than adequate, and prices depressed. Mutton and prime veal supported late values. Quotations:—Beasts, 4*s.* 4*d.* to 5*s.* 2*d.*, and 5*s.* 6*d.* to 6*s.*; calves, 5*s.* 8*d.* to 6*s.* 8*d.*; sheep, 6*s.* 4*d.* to 7*s.*, and 7*s.* 2*d.* to 7*s.* 10*d.*; pigs, 4*s.* to 4*s.* 8*d.*—Thursday's trade was extremely quiet, and entirely without feature. Prices were nominally the same as above noted.

HAY.

Tuesday's Whitechapel Market report states that supplies were large and trade dull, especially for meadow hay. Quotations:—Prime Clover, 105*s.* to 120*s.*; inferior, 75*s.* to 80*s.*; prime meadow hay, 85*s.* to 92*s.*; inferior, 36*s.* to 60*s.*; and straw, 30*s.* to 42*s.* per load.—On Thursday there was a large supply; trade was quiet, and hay was weak.—Cumberland Market quotations:—Superior meadow hay, 90*s.* to 100*s.*; inferior, 65*s.* to 80*s.*; superior Clover, 110*s.* to 120*s.*; inferior, 75*s.* to 92*s.*; and straw, 38*s.* to 44*s.* per load.

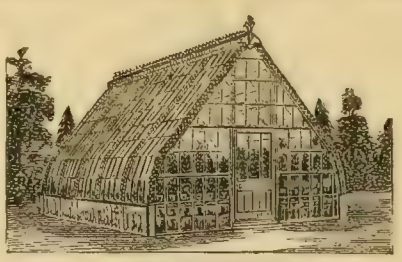
POTATOS.

The Borough and Spitalfields Markets reports state that only moderate supplies were to hand, and demand quiet. Quotations:—Magnum Bonums, 140*s.* to 160*s.*; Regents, 110*s.* to 120*s.*; Champions, 110*s.* to 120*s.* per ton; German reds, 6*s.*; ditto blues, 5*s.* 6*d.*; Dutch Rocks, 4*s.* 6*d.* per bag.—The imports into London last week were:—18,484 bags from Hamburgh, 1859 Bremen, 2 Rotterdam, 560 Harlingen, 70 Boulogne, 244 sacks from Rouen, and 1173 from St. Nazaire.

COALS.

The prices current at market during the week were as follows:—East Wylam, 17*s.* 6*d.*; Ravensworth West Hartley, 15*s.* 6*d.*; Walls End—Hetton, 18*s.*; Hetton Lyons, 16*s.*; Hawthorn, 16*s.* 2*d.*; Lambton, 17*s.* 6*d.*; Wear, 16*s.*; South Hetton, 18*s.*; East Hartlepool, 17*s.* 3*d.*; Tees, 18*s.*

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"The Balmoral."

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"August 1, 1882.

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"Yours faithfully,

"J. FREEMAN.

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RICHARD SMITH & Co. WORCESTER

SEVENTY-FOUR ACRES of FRUIT TREES.—Apples, Pears, Plums, Cherries, Peaches, Nectarines, Apricots, and other Fruit Trees, as Standards, Dwarfs, Pyramids, Bushes, Cordon and Trained Trees in great variety, all full of vigour, and warranted true to name. Descriptive Price LIST, containing a sketch of the various forms of Trees, with Directions for Cultivation, Soil, Drainage, Manure, Pruning, Lifting, Cropping, Treatment under Glass; also their Synonyms, Quality, Size, Form, Skin, Colour, Flesh, Flavour, Use, Growth, Duration, Season, Price, &c., for 1*d.* stamp.

LIST of all the EVERGREEN FIR TRIBE, suitable for Britain, giving size, price, popular and botanical names, derivations, description, form, colour, foliage, growth, timber, use in arts, native country, and size there, situation, soil, and other information, with copious index of their synonyms. Free by post for six stamps.

LIST OF STOVE and GREENHOUSE PLANTS, comprising the best selections of Camellias, Azaleas, Ericas, Epacris, Ferns, &c., free for 1*d.* stamp.

LIST of EVERGREEN and DECIDUOUS SHRUBS, RHODODENDRONS, STANDARD ORNAMENTAL TREES, CLIMBING and TWINING PLANTS, with their generic, specific, and English names, native country, height, time of flowering, colour, &c., and general remarks, free for 1*d.* stamp.

ALL KINDS of GARDEN SEEDS, of first quality. BULBS, MUSHROOM SPAWN, TOBACCO PAPER, ARCHANGEL MATS, and other GARDEN REQUISITES. See LISTS, which may be had on application.

RICHARD SMITH & Co. WORCESTER

SPECIAL NOTICE.

THE

GARDENERS' CHRONICLE

FOR

SATURDAY, JANUARY 6, 1883,

WILL CONTAIN A BEAUTIFULLY

COLOURED ALMANAC

(18 inches by 13 inches),

FROM AN ORIGINAL DESIGN.

PRICE FIVEPENCE; POST-FREE, FIVEPENCE-HALFPENNY;

OR WITH

ALMANAC MOUNTED ON OAK ROLLERS,

READY TO BE HUNG UP, AND ENCLOSED IN CASE,

SEVENPENCE; POST-FREE, EIGHTPENCE-HALFPENNY.

Purchasers are specially recommended to order the Almanac in a Case,

TO PREVENT INJURY FROM FOLDING.

The Publisher cannot be responsible for injury to the Almanac unless it is so protected.

NOTICE TO ADVERTISERS.

As a large Extra Sale of this Number is guaranteed, it will be a very valuable medium for Advertisements.

APPLICATIONS FOR SPACE SHOULD BE SENT IN AS EARLY AS POSSIBLE.

W. RICHARDS, 41, WELLINGTON STREET, STRAND, W.C.

Special Cheap Offer.

ISAAC MATTHEWS AND SON are prepared to make a special offer to the Trade and Large Buyers. Samples and Price List on application :—

ASH, Common, 3 to 4 feet, 4 to 5 feet.
,, Mountain, 3 to 4 feet, 4 to 5 feet, 5 to 6 feet, 7 to 8 feet, 8 to 9 feet.
OAK, English, 1½ to 2 feet.
POPLAR, Black Italian, 3 to 4 feet, 4 to 5 feet, 5 to 6 feet.
SYCAMORES, 2 to 3 feet.
CHESTNUTS, Horse, 9 to 10 feet, 10 to 12 feet.
ELDER, Golden, 2 to 3 feet.
THORN QUICK, strong, 3-yr., 4-yr., strong.
HOLLIES, Hodgins', maderensis, Golden Queen, Silver Queen, Old Silver, myrtifolia, ovata, Shephardii, common Green, in all sizes.
LAURELS, Common, 12 to 18 inches, 1½ to 2 feet, 2 to 2½ feet, fine.
CUPRESSUS, in variety, from 1½ to 7 feet.
RETINOSPORA PLUMOSA, 1 foot, bushy.
YEWS, English, 18 to 24 inches, 2 feet, 2½ feet, 2½ to 3 feet.
AZALEA Pontica, 4 to 6 inches.
RHODODENDRONS, Hybrid and Pontica, 3 to 4 inches, 4 to 6 inches, 6 to 9 inches, 9 to 12 inches, 12 to 15 inches, 15 to 18 inches, 1½ to 2 feet, 2 feet; ditto, choice named sorts, bushy, in 100 varieties.
,, CUNNINGHAM'S WHITE, 9 to 12 inches, 12 to 15 inches, 15 to 18 inches.
,, CAUCASICUM PICTUM, 9 to 12 inches, 12 to 15 inches, 15 to 18 inches.
RHODODENDRON STOCKS, strong.
PANSIES, in 100 varieties.
IVY, Irish, 4-yr., strong.

The Nurseries, Milton, Stoke-on-Trent.

CEDRUS DEODARA. — "The Indian Cedar."—Beautiful specimen trees, frequently transplanted and well-rooted, offered at the undermentioned low prices, to effect a clearance :—

5 to 6 feet, 48*s.* per dozen	7 to 8 feet, 72*s.* per dozen
6 to 7 feet, 60*s.* per dozen	8 to 10 feet, 84*s.* per dozen

ABIES DOUGLASII.—One of the most noble trees grown, well-rooted specimens :—

6 to 7 feet, 3*s.* 6*d.* each ; 36*s.* per dozen
7 to 8 feet, 4*s.* 0*d.* each ; 42*s.* per dozen
8 to 9 feet, 5*s.* 0*d.* each ; 60*s.* per dozen

The above-named trees are highly suitable for Avenues, Lawns, Shrubberies, or Woods, and the opportunity of purchasing on such terms rarely occurs.

RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

GEORGE DAVISON begs to offer to Planters the following well-grown TREES, at a great sacrifice, in consequence of wishing to retire from business :—

ABIES DOUGLASII, 4 to 8 feet.
CEDRUS DEODARA, 3 to 6 feet.
ARBOR-VITÆ LOBBII, 7 to 10 feet.
ASH, 1½ to 2½ feet, 200,000 (Hop-pole Planting).
AUSTRIACA FIRS, well transplanted, 2 to 4 feet.
BEECH, 6 to 7 feet.
CUPRESSUS LAWSONIANA, 7 to 9 feet.
HORSE CHESTNUTS, 7 to 9 feet.
LARCH, fine, 2 to 5 feet, 400,000.
LAUREL, colchic, caucasica, and rotundifolia, 20,000.
,, Portugal, 2 to 3 feet.
QUICK, transplanted, fine, 2 to 4 feet, 500,000.
ROSES, Standard and Dwarf, H.P. and Teas, many thousands.
SILVER FIR, 3 to 5 feet.
SCOTCH FIR, 1½ to 2½ feet.
SPRUCE, 2 to 5 feet.
THUIOPSIS BOREALIS, fine specimens, 5 to 9 feet.
FRUIT TREES—APPLES, fine, tall, for Orchards, many thousands (speciality).

Price on application to
The White Cross Nurseries, Hereford.

ROSES.—ROSES.—ROSES.—50,000 to select from, in all the leading sorts, in fine strong plants, including both Standards and Dwarfs; also extra strong Marechal Niel, Climbing Devoniensis, Cheshunt Hybrid, Madame Berard, Reine Marie Henriette, from 12 to 15 feet long, in pots, and other Teas in pots, fine for forcing.

Price and LISTS post-free.
THOMAS HORSMAN, Rose Mount Nursery, Ilkley, Leeds.

Fruiting Pines.

THE LIVERPOOL HORTICULTURAL COMPANY (John Cowan), Limited, The Vineyard and Nurseries, Garston, near Liverpool, have a fine stock of the above, which they are in a position to offer at low prices; they are principally Queens, Smooth Cayenne, and Black Jamaica.

FLOWERING SHRUBS, in great variety, such as Hydrangeas, Lilacs, Deutzias, Spiræas, Cytisus, Broom, Pyrus, Berberis, Double Cherry, Scarlet Hawthorns, Gueldres Rose, &c., 8*s.* per dozen, 50*s.* per 100.

Descriptive LIST on application.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Special Offer to the Trade.

W. BALL AND CO. have the pleasure of offering the undermentioned :—

APPLES, Standards, straight stems, good heads, 55*s.* per 100.
,, Pyramids, well furnished, our selection, 60*s.* per 100.
,, Dwarf-trained, our selection, 120*s.* per 100.
PEARS, Standards, straight stems, good heads, our selection, 65*s.* per 100.
,, Pyramids, our selection, 75*s.* per 100.
,, Dwarf-trained, our selection, 120*s.* per 100.
CURRANTS, Black, extra strong, 10*s.* per 100, 80*s.* per 1000.
Red, extra strong, 10*s.* per 100, 80*s.* per 1000.
ROSES, Standards, our selection, good heads, and well-rooted, 90*s.* per 100.
,, Dwarfs, very fine, our selection, 30*s.* to 35*s.* per 100.
ALDER, very strong, well rooted, 5 to 6 feet, 25*s.* per 1000; 6 to 7 and 8 feet, 35*s.* per 1000.
BEECH, very strong, 2 to 2½ feet, 22*s.* 6*d.* per 1000.
HAZEL, 3 to 4, and 4 to 5 feet, 30*s.* per 1000.
LARCH, Fir, 1½ to 2½ feet, 20*s.* per 1000.
CHESTNUT, Horse, fine heads, 6 to 7 feet stems, 60*s.* per 100.
SYCAMORE, 3 to 4 feet, 25*s.* per 1000; 5 to 6 feet, 40*s.* per 1000.
FIR, Scotch, 2 to 2½ feet, 25*s.* per 1000.
PRIVET OVALIFOLIUM, strong, 1½ to 2 feet, 40*s.* per 1000.
ARTICHOKES, Green Globe, strong, 20*s.* per 100.
ASPARAGUS, 1-yr., extra strong, equal to 2-yr, 10*s.* per 1000.
SHALLOTS, very fine, 12*s.* per cwt.

Bedford Road Nursery, Northampton.

8000 **Winter-Flowering Carnations.** 8000

TWELVE GOOD PLANTS, in six best varieties, in 54's, 7*s.* 6*d.* per dozen, 50*s.* per 100; in 48's, 15*s.* and 18*s.* per dozen, £5 and £6 per 100.

See CATALOGUE.
W. M. CROWE, Boleyn Nursery, Upton, Essex.

STEPHANOTIS FLORIBUNDA.—Good plants in 48's, 2*s.* each, 18*s.* per dozen, £7 per 100. Prices of larger on application.

W. M. CROWE, Boleyn Nursery, Upton, Essex.

ROSES, well rooted, many-shooted, truly named, of matured growth, and of the best kinds.

DWARFS, R. S. & Co.'s selection, 8*s.* per dozen, 60*s.* per 100.
STANDARDS, 21*s* per dozen.

Descriptive LIST on application.
RICHARD SMITH AND CO, Nurserymen and Seed Merchants, Worcester.

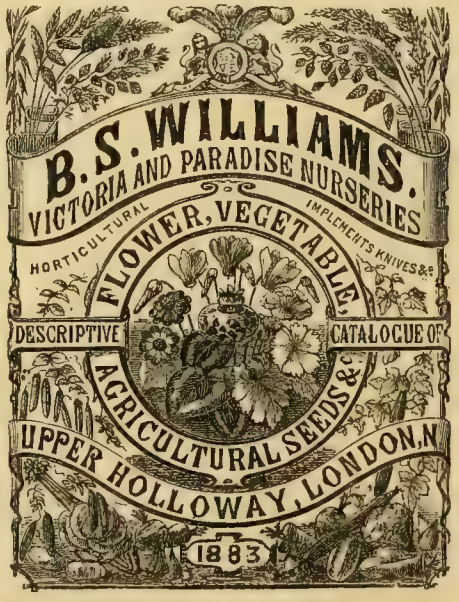
Planting Season.

R. AND A. MORRISON, The Nurseries, Elgin, N.B. (Established 1822), invite the attention of Planters to their extensive Stocks of Seedling and Transplanted FOREST TREES, ORNAMENTAL TREES and SHRUBS. They have a very large and healthy Stock of Seedling and Transplanted LARCH and SCOTCH FIR, which they guarantee as true native, being the produce of Seed collected by them in the North of Scotland.

CATALOGUES and Samples on application.

GRAPE VINES and ORCHARD HOUSE TREES in POTS.—GRAPE VINES, extra strong, short-jointed and well ripened; Planting Canes, 3*s.* 6*d.* to 5*s.* each; extra strong Fruiting Canes, 7*s.* 6*d.* to 10*s.* ORCHARD-HOUSE TREES, fruiting in pots, consisting of Peaches, Nectarines, Apricots, Plums, Cherries, Pears, Apples, and Figs. Descriptive Price LIST for 1*d.* stamp.—RICHARD SMITH AND CO., Nurserymen and Seedsmen, Worcester.

NOW READY, POST-FREE.



B. S. WILLIAMS begs to announce that the above is now published. It contains upwards of 60 Pages, copiously Illustrated with *Engravings of all New and Choice Flower and Vegetable Seeds*, with full Cultural Directions.

ROSES AND FRUIT TREES. — Fine Pyramid APPLES and PEARS of the hardiest and best cropping varieties only, 6*s.*, 9*s.*, 12*s.*, and 18*s.* per dozen. Dwarf trained trees, 24*s.* and 30*s.* per dozen, all with splendid fibrous roots.

PLUMS and CHERRIES, Pyramids, 12*s.*, 18*s.*, and 24*s.* per dozen. Dwarf trained trees, 30*s.* per dozen.
RED and BLACK CURRANTS, 2*s.* and 3*s* per dozen.
RASPBERRIES, 1*s.* 6*d.* and 2*s.* per dozen, 8*s.* and 10*s.* per 100.
STRAWBERRIES, 2*s.* 6*d.* per 100. CATALOGUES free.
LA GRIFFERAIE ROSE CUTTINGS for Stocks, 1*s.* per 100, 7*s.* 6*d.* per 1000, cash.
DWARF H.P. ROSES, all the leading varieties, 7*s.* per doz, 50*s.* per 100. CATALOGUES free.
WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

Special Culture of

FRUIT TREES and ROSES.—A large and select stock is now offered for sale. The Illustrated and Descriptive CATALOGUE of Fruits, post-free for threepence. The Descriptive CATALOGUE of Roses post-free.

THOMAS RIVERS AND SON, The Nurseries, Sawbridgeworth, Herts.

To the Trade.

HOME-GROWN VEGETABLE and FIELD SEEDS.

H. AND F. SHARPE will be pleased to make special offers of their fine selected stock of SEEDS, raised this season with the utmost care and attention. The quality is very fine, and the prices will be found unusually low.

Seed-Growing Establishment, Wisbech.

FRUIT TREES.—Standard, Pyramid, 2-yr. and Maiden APPLES, PEARS, and PLUMS, also Purple and Weeping BEECH, 6 to 14 feet; HORSE CHESTNUTS, 12 to 17 feet. Price per 100 or 1000 on application to WILLIAM FLETCHER, Ottershaw Nursery, Chertsey, Surrey.

FOR SALE, CHEAP, as must be cleared at once for new railway :—

Large HORNBEAM, 8 to 12 feet.
,, HAZEL, 5 to 6 feet.

Well rooted and safe for removal. Price on application.
ROBT. J. DARBY, Cirencester Nurseries.

JOSEPH TREMBLE AND SON, NURSERYMEN, 1, Market Square Penrith, offer the following :—

LARCH, 2½ to 3 feet.
SCOTCH, 1½ to 2 feet.
THORNS, 1½ to 2 feet, strong.

All healthy and well rooted. Price on application.

CABBAGE, CAULIFLOWER, LETTUCE PLANTS, &c., Autumn sown, best varieties, in any quantities. LIST, and printed copy of many recent (1882) Testimonials, on application. Prices moderate, no charge for packages.—EDWARD LEIGH, Dunsfold, near Godalming.

SEAKALE, exceptionally fine Roots for Forcing, 2*s.* 6*d.* per dozen, 16*s.* per 100.

ASPARAGUS, strong, for Forcing, 12*s.* per 100; specially selected ditto, 16*s.* per 100.

RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

R. AND A. MORRISON, The Nurseries, Elgin, N.B., offer :—

ABIES DOUGLASII, 1-yr., very fine, from Scotch seed.
SCOTCH FIR SEED, guaranteed True Native, our own collecting, and taken out of cone on our own kilns.

Samples and prices on application.

TWO HUNDRED THOUSAND HERBACEOUS and ALPINE PLANTS for Borders, Rockwork, &c. See Descriptive LIST, giving colour, height, time of flowering, &c., free by post for 1*d.* stamp.

Selection of 100 good showy varieties for 25*s.*
R. SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

ABIES DOUGLASII, 10 to 12 inches, transplanted, 16*s* per 100.
ABIES DOUGLASII, 3 to 3½ feet, transplanted, 50*s.* per 100.
,, ,, 4 to 5 feet, 75*s.* per 100.
ESCALLONIA MACRANTHA, 1 foot, 10*s.* per 100.
CEDARS Red, 8 to 12 inches, 1-yr. transplanted, 10*s.* per 100.
CUPRESSUS LAWSONIANA, 2½ feet, 30*s.* per 100.
PINUS INSIGNIS, 3-inch pots, 7*s.* per 100.
,, NORDMANNIANA, 6 to 8 inches, 12*s.* per 100.
CEDRUS DEODARA, 4 to 5 feet, 18*s.* per dozen.
,, ,, 6 to 7 feet, fine, 36*s.* per dozen.
PICEA NOBILIS, 4 feet, 60*s.* per dozen.
,, ,, 5 feet, 70*s* per dozen.
THUIA LOBBII, 2½ to 3 feet, 60*s.* per 100.
,, ,, 4 to 5 feet, 12*s.* per dozen.

Catalogues free on application.
GARLIES MITCHELL, Nurseryman, Stranraer.

GREEN HOLLIES.—Several hundreds of the above for Sale, from 5 to 7 feet high, well furnished, transplanted stuff. For particulars apply to
A. BARKER, The Gardens, Hindlip, Worcester.

APPLES, Standard and Pyramid; PRIVET and HAZEL, 3 ft. to 4 ft; QUICK, 2-yr., fine. Price per 1000 to
CHAS. AND J. W. TOWNSEND, Nurserymen, Fordham, Cambridgeshire.

ROSES.—Strong, healthy, well-rooted, best named show varieties, 7*s.* 6*d.* per doz., 27*s.* for 50, £2 10*s.* per 100. Standards, 18*s.* per doz.

SWEET VIOLETS, full of bud. New York, the best double, 2*s.* 6*d.* per doz.; De Parme, Double Red Russian, Belle de Chatenay, Odoratissima, 3*s.* 6*d* per doz.

LIST of Roses, and twenty-six varieties of Violets, with directions for cultivation, 1½*d.* Address
Mr. R. W. BEACHEY, Fluder, Kingskerswell, Devonshire.

GRAPE VINES.—All the leading kinds in finely ripened canes, details on application to
FRAS. R. KINGHORN, Sheen Nurseries, Richmond, S.W.

WILLIAM EVANS,
SEEDSMAN
to the Council of Agriculture, Montreal, Canada.

Exporter of RED and ALSIKE CLOVER, TIMOTHY SEED, PEAS, BEANS, OATS, &c.

Samples and prices on application.

Cable address:—W. EVANS, Montreal.

LAPAGERIA ALBA (the best White variety), from 10*s.* 6*d.* each; RUBRA (the best Crimson variety), from 7*s.* 6*d.* each; a few extra strong plants, price on application to
R. H. VERTEGANS, Chad Valley Nurseries, Edgbaston, Birmingham.

R. H. V.'s pocket CATALOGUE of Herbaceous and other Hardy Plants free on application.

THE NURSERIES, DUMFRIES.
(Established 1787.)

Our Stock, which is one of the largest in Scotland, comprises FOREST, FRUIT, and ORNAMENTAL TREES, DECIDUOUS and EVERGREEN SHRUBS, ROSES, GREENHOUSE PLANTS, &c.; also a very large and splendid Stock of THORN QUICKS, for Hedging and for filling up Gaps.

The Trees and Shrubs are of all ages and sizes, and are well adapted for extensive planting or giving immediate effect in the formation and improving of Ornamental Parks, Pleasure Grounds, &c. Prices on application.

THOMAS KENNEDY AND CO., Seed and Nursery Establishment, Dumfries.

SPIRÆA PALMATA:
The largest stock for forcing in the world.
LAURUS CAUCASICA:
The finest Laurel ever introduced.
RHODODENDRONS:
All kinds and all sizes.
STANDARD RHODODENDRONS:
You may select from thousands.
HARDY TREES, SHRUBS, ROSES, &c.
For general planting, acre after acre.

Intending planters are invited to come down and see the stock. The Nursery is ten minutes from Sunningdale Station, S.-W. Railway.

CHARLES NOBLE, Bagshot.

R. AND G. NEAL, NURSERYMEN, SEEDSMEN, and CONTRACTORS, Wandsworth Common, S.W., respectfully invite an inspection of the large and varied Stock of SHRUBS, FOREST, ORNAMENTAL, FRUIT and ROSE TREES grown at their Nurseries, which are now in fine condition for transplanting. All plants delivered free by own vans, within 6 miles of the Nursery. Builders supplied at Trade Prices. CATALOGUES on application.
The Nurseries are within 1 mile of the Clapham Junction and Wandsworth Common Stations.

Standard and Dwarf Roses.

W. B. ROWE AND CO. (Limited) have to offer a few thousands of the above, which are unusually fine; they also call particular attention to the large stock of FRUIT TREES—Standards, Pyramids, Dwarf-trained and very fine Horizontal Fruiting Apples and Pears.
Barbourne Nurseries, Worcester.

CHRYSANTHEMUMS—380 best sorts, flowered under glass, true to name—none better can be bought. Cuttings, buyer's selection, 1s. 9d. per doz., 10s. per 100. Plants, 2s. 6d. per doz, 14s. per 100. For my selection, grand new varieties, Marguerites, &c, see CATALOGUE, 1 stamp.
W. ETHERINGTON, Manor House, Swanscombe, Kent.

Dulwich Balsams.

FRANCIS T. SMITH AND CO., West Dulwich Nursery, S.E., offer their splendid strain of BALSAMS, in collections of nine colours, 2s. 6d. each; the same quantity, mixed, 2s. per packet; half the quantity, ditto, 1s. per packet. CINERARIA, in beautiful colours, and finest form, 1s. and 2s. 6d. per packet. CALCEOLARIA, in beautiful colours, and finest form, 1s. and 2s. 6d. per packet. PRIMULA, in beautiful colours, and finest form, 1s and 2s. 6d. per packet. Their Balsams were exhibited at the Royal Horticultural Society on two occasions this autumn, and were Highly Commended.

GARDEN REQUISITES.

COCOA-NUT FIBRE REFUSE.

4d. per bushel; 100 for 25s.; truck (loose, about 2 tons), 40s.; 4-bushel bags, 4d. each.
LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack; 5 sacks, 25s.; sacks, 4d. each.
BLACK FIBROUS PEAT, 5s per sack, 5 sacks 22s; sacks, 4d. each.
COARSE SILVER SAND, 1s. 9d. per bushel; 15s. per half ton, 26s. per ton; in 2 bushel bags, 4d. each.
YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1s. per bushel.
SPHAGNUM MOSS, 8s. 6d. per sack.
MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO CLOTH, RUSSIA MATS, &c. Write for Free Price LIST. H. G. SMYTH,
17A, Coal Yard, Drury Lane (late of Castle St., Long Acre), W.C.

COCOA-NUT FIBRE REFUSE, by Chubb's Patent Process, as supplied to all the Royal Gardens and principal Nurseries of Europe; useful at all seasons. Invaluable for Potting, Plunging, Forcing, Ferneries, Strawberries, Bedding-out Plants, &c.; Destroys all Slugs and Insects.
JULY 1, 1882.—In consequence of the great scarcity of husks and enormous Continental demand for our "Refuse," we are compelled from this date to advance prices as follows, and only orders accompanied by remittance will receive attention (in rotation). We also find it necessary to caution purchasers to beware of spurious imitations and buy the genuine "Refuse" direct. Sacks, 1s. 6d. each; 10 Sacks, 13s.; 15 Sacks, 18s; 20 Sacks, 23s.; 30 Sacks, 30s. (all Sacks included); Truck-load, free on rail, £2. Limited quantities of P.M. *Special Quality*, granulated, in sacks only, 2s. 6d. each (2 prize medals), valuable for potting and use in conservatory. Terms strictly cash with order.—To obtain the genuine article, buy direct from the Manufacturers, CHUBB, ROUND AND CO., Fibre Works, Milwall Road, West Ferry, London, E.

GARDEN REQUISITES as supplied to the Royal Gardens. Cocoa-Nut Fibre Refuse, 1s. 6d. per sack; 10 for 13s.; 15 for 18s.; 30 for 30s.; all sacks included. Trucks (loose), 40s. Selected Brown Fibrous Peat, 5s. per sack; 5 for 22s. 6d. Black Fibrous Peat, 4s. 6d. per sack; 5 for 20s.; sacks 4d. each. Coarse Silver-Sand, 1s. 6d. per bushel. Yellow Fibrous Loam, Leaf-Mould, and Peat-Mould, each at 1s. per bushel. Manures of all kinds. Fresh Sphagnum. Garden Sticks and Labels. Russia Mats, &c. Tobacco Cloth and Paper, best in the market; Cloth, 8d. per lb.; Specialité Paper, imported solely by us, 10d. per lb., 28 lb. 21s. Write for Price LIST.—W. HERBERT AND CO., Horticultural Stores, 19, New Broad Street, E.C. (turning by Gow's, Fishmonger), one minute from Broad Street Railway Station.

COCOA-NUT FIBRE REFUSE, best and pure only, 4 bushel bag, 1s. 4d.; 15 bags, 14s.; 30 bags, 25s.; sent to all parts. Truckloads 33s., free to rail.
A. FOULON, 32, St. Mary Axe, London, E.C.

LOAM, splendid Yellow Fibrous, 15s. 6d. per ton. Useful Brown PEAT, 22s. per ton, free to Bricklayers' Arms, S. E. R. Fine ORCHID PEAT, as supplied to the principal Orchid Growers. Prices on application.
A. FOULON, 32, St. Mary Axe, E.C.

SUSSEX DOWN TURF, of finest quality.—For price on rail at Portslade Station (4 miles from Brighton), in large or small quantities—special quotation to the Trade—apply,
W. MILES, West Brighton Nurseries, West Brighton, Sussex.

12-oz. Sample Packets, free by post, 12 stamps.

FIBROUS PEAT for ORCHIDS, &c.—BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6s. per Truck. BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, 15s. per ton per Truck. Sample Bag, 5s.; 5 Bags, 22s. 6d; 10 Bags, 45s. Bags included. Fresh SPHAGNUM, 10s. 6d. per Bag.
SILVER SAND, Coarse or Fine, 52s per Truck of 4 tons. Red Sandstone ROCKWORK, £5 per Truck of 4 tons. GRAVEL, good colour, 25s. per Truck of 6 tons.
WALKER AND CO., Farnborough Station, Hants.

PEAT.—Excellent for Rhododendrons and common purposes. Delivered at Nine Elms Station, at 21s. per ton; sample bag (1 cwt.) on Rail Ringwood, 2s.
GATERELL AND SON, Peat Merchants, Bisterne, Ringwood.

Thomson's Vine and Plant Manure.

Manufactured by

THE LIVERPOOL HORTICULTURAL COMPANY
(JOHN COWAN), LIMITED,
The Vineyard and Nurseries, Garston, near Liverpool,
and Sold by them and all Nurserymen and Seedsmen.

This is the Manure used to produce the splendid Grapes grown by Messrs. WM. THOMSON & SON, Clovenfords.
For full particulars, see New Circular, sent post-free on application; giving extracts from Horticultural Press and from letters received by the Company from those who have used the manure.

GISHURST COMPOUND.—Used by many of the leading Gardeners, since 1859, against Red-spider, Mildew, Thrips, Greenfly, and other Blight, in solutions of from 1 to 2 oz. to the gallon of soft water, and of from 4 to 16 oz. as a winter dressing for Vines and Fruit Trees. Has outlived many preparations intended to supersede it. In Boxes, 1s., 3s., & 10s. 6d.

AMERICAN BLIGHT on APPLE TREES CURED by rubbing a wet hard Painter's brush on Gishurst Compound, and working the lather into the infected part.

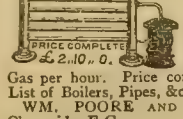
GISHURSTINE, for dry feet and boot comfort, is much used by Gardeners, Farmers, Ladies, Sportsmen, and Shore-waders; is sold by Nurserymen and Oilmen, with testimonials and directions for use, in boxes, 6d. and 1s. each. Wholesale by PRICE'S PATENT CANDLE COMPANY (Limited), London.

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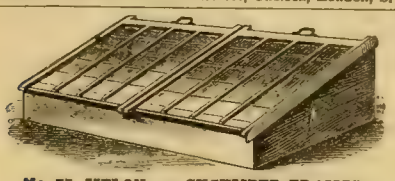
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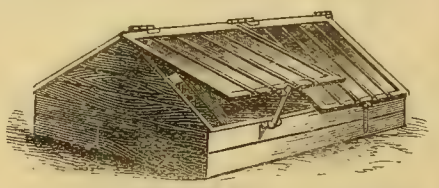
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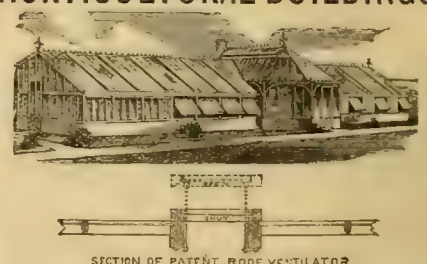
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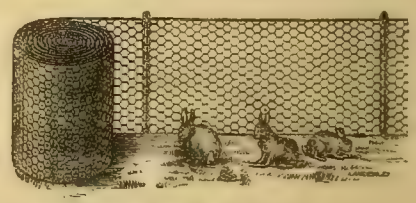
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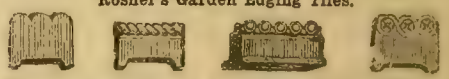
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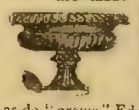
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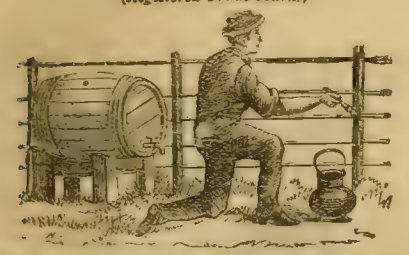
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WANTED, a young man, as INVOICE CLERK; must be quick, and one who understands German and French.—Send full particulars in own handwriting, to H. CANNELL AND SONS, Swanley, Kent.

WANTED, as ASSISTANT, a young man about 18 to 21, to learn the trade. Would be required to Assist at Counter and Warehouse.—Apply by letter to J. W. J., Messrs. Nutting & Sons, Seed Warehouses, 60, Barbican, London, E.C.

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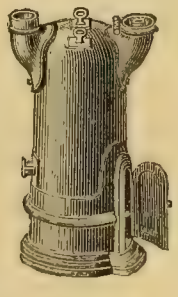
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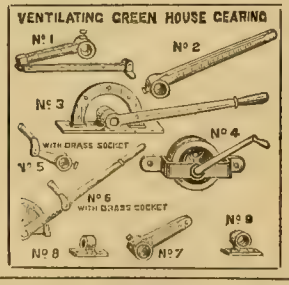
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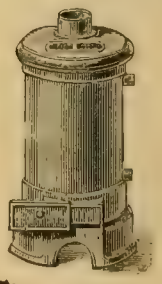


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THE

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The GARDENERS' CHRONICLE for Saturday next, Jan. 6, 1883, will contain a COLOURED ALMANAC.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

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Sale Thursday Next, January 4, 1883.

CATTLEYA TRIANÆ, very finest varieties.
ODONTOGLOSSUM VEXILLARIUM, very finest varieties.

MR. J. C. STEVENS has received instructions from Mr. F. Sander to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, January 4, 1883, at half-past 12 o'Clock precisely, an immense importation of CATTLEYA TRIANÆ, very finest forms, and in grand health and masses; also an extra lot of ODONTOGLOSSUM VEXILLARIUM — the plants are from the same locality from whence our importation came among which three O. vexillarium superbum have flowered; together with an importation from Mexico, and a specially grand lot of ODONTOGLOSSUM ALEXANDRÆ, in finest large flowered, round-petaled varieties, and other ORCHIDS.

On view morning of Sale, and Catalogues had.

WANTED TO RENT, a NURSERY, near London. Address, with full particulars, Mr. POTTS, 3, Clyde Villas, St. Mark's Road, Hanwell, W.

To Nurserymen and Others.

FREEHOLD LAND, Leyton, containing Greenhouse 80 feet by 18, Hot-water Pipes, and large stock of Plants for Propagating for ensuing season.
WINNINGTON, Skelton's Lane, Leyton.

TO BE LET, GARDENS—about 6 acres, and a quantity of Glass, at Theobald's Park, Waltham Cross, Herts.
May be seen by applying for an order to Messrs. BAKER, FOLDER AND UPPERTON, 52, Lincoln's Inn Fields, W.C.

PALM SEEDS.—Just arrived, in good condition, fresh seeds of three handsome Kentias from Lord Howe's Island: K. Fosteriana, 20s. per 100; K. Belmoreana, 20s. per 100; K. Canterburyana, 40s. per 100. These Kentias are now known to be some of the best of the Colder Palms, and therefore most suitable for Greenhouse and Conservatory decoration.
Mr. WILLIAM BULL'S Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

ROSES.

Woodlands Nursery, Maresfield, Sussex.

WM. WOOD AND SON offer from a very extensive Stock, left to their own selection:—
STANDARD and HALF-STANDARD ROSES, at 18s. per dozen.
DWARFS, 8s. per dozen, or 60s. per 100.
DWARF TEA ROSES in POTS, 12s. to 18s. per dozen.
A very fine collection of various kinds of SPIRÆAS, WEIGELAS, DEUTZIAS, HYDRANGEAS SAMBUCUS, VERONICAS, &c., at 6s. per dozen, 40s per 100.
Post-office orders made payable to WILLIAM WOOD AND SON, Maresfield, Sussex.

Special Offer.

H. THORNTON AND CO. have the pleasure of quoting the undermentioned at lowest ash prices:—
SEAKALE ROOTS for forcing from, 70s. per 1000.
" " for planting, 40s, 56s., and 60s. per 1000.
RASPBERRY CANES, Carter's Prolific, 40s. per 1000.
HERB ROOTS, 15s. per 100.
JERUSALEM ARTICHOKES, 3s. per bushel.
GLOBE ARTICHOKES, 4s. per dozen.
RHUBARB ROOTS for forcing, 50s. per 100.
" " for planting, 30s. per 100. [1000.
ASPARAGUS ROOTS, 1-yr. and 2-yr. old, 20s. and 30s. per

To the Trade and Others.

THE PLANTING SEASON.
LARCH FIR, extra fine, strong, transplanted, 2 to 3 feet, and 3 to 4 feet.
ASH, MOUNTAIN, 8 to 10 feet, and 10 to 12 feet.
WALNUTS, STANDARD, very fine.
QUINCES, STANDARD, very fine.
CHERRIES, extra fine strong Dwarf-trained May Duke.
APPLES and PEARS, extra fine Pyramidal.
AMPELOPSIS VEITCHII.
JERUSALEM ARTICHOKES.
Prices on application Address, WM. WOOD AND SON, The Nurseries, Maresfield, Uckfield, Sussex.

To Planters.

JAMES BIRD offers the undermentioned Forest stuff, price on application:—
LARCH FIR, 5 to 6 feet.
SCOTCH FIR, 1½ to 2 feet, and 2 to 3 feet.
SPRUCE FIR, 1½ to 2 feet, and 2 to 3 feet.
HAZEL, 4 to 5 feet.
ROSES, Standard and Dwarf.
The Nurseries, Downham.

EXTRA CHOICE SEEDS.
For Season 1883.

ELLIOTT'S PRIZE COCKSCOMB.—The best variety in cultivation, having been selected with great care for eighteen years. Was awarded a Cultural Certificate for two plants exhibited at South Kensington, August 2, 1876, by the Royal Horticultural Society; and has taken prizes for a number of years at the principal Horticultural Exhibitions in this district. Per packet, 1s. 6d.

ELLIOTT'S SELECTED FRENCH MARIGOLD.—This may be relied upon as being a very superior strain, selected from the best coloured and most perfectly formed flowers. The blooms are very large, and for beauty of marking and variety of colour cannot be surpassed. Per packet, 1s.

ELLIOTT'S "YORKSHIREMAN" CUCUMBER.—A new variety of very excellent quality, being remarkable for its solidity, showing, when cut, almost an entire absence of core. It is a very deep green, of perfect shape, and grows about eighteen inches long. It is a fine exhibition kind, a strong grower, and free bearer. Per packet of Six Seeds, 1s. 6d.
Trade price on application.
G. E. ELLIOTT, Seedsman, 97, Bradford Road, Huddersfield.

FINEST SEEDLING and TRANSPLANTED TREES.
ALDER, 3 to 4 feet, 18s. per 1000.
ASH, 2 to 3 feet, 16s. per 1000.
LARCH, 2-yr., extra, 3s. 6d. and 5s. per 1000.
" 3 to 4 feet, 26s. per 1000; 4 to 5 feet, 30s. per 1000.
SPRUCE FIR, 2-yr., £7 per 100,000.
" 1 to 1½ foot, 10s per 1000; 1½ to 2 feet, 12s. per 1000.
SCOTCH FIR, 1 to 1½ foot, 12s. per 1000; 1½ to 2 feet, 15s. per 1000; 2½ to 3½ feet, 18s. per 1000.
PINUS AUSTRIACA, 2-yr., fine, 2s. 6d. per 1000, or £12 per 100,000.
" LARICIO, 10 to 15 inches, 20s. per 1000; 1½ to 2 feet, 25s. per 1000; 2 to 3 feet, 30s. per 1000.
THORNS, 1½ foot, 10s. 6d. per 1000; 2 feet, 12s. per 1000; 2 to 3 feet, 13s. 6d. per 1000.
CRABS, 1-yr., extra, 3s. per 1000.
PEARS, fine, 1-yr, 5s. per 1000.
GARLIES MITCHELL, Stranraer.

TUBEROUS BEGONIAS.—JAMES KING (the celebrated Raiser of New Coleuses) having taken the above Begonias in hand for several years, has, by careful crossing, succeeded in obtaining a grand strain; having again made a series of crosses, begs to offer Seed from such in 2s. 6d. and 5s. packets; price to the Trade on application.—JAMES KING, Florist and Seed Grower, Rowsham, Aylesbury.

4000 Azaleas, Camellias, Ericas, and Epacris. 4000

AZALEA INDICA, in best varieties, for forcing, including Whites, well set with buds, 24s, 30s., and 42s. per dozen, £8 to £15 per 100.
AZALEA MOLLIS, good bushy stuff of these invaluable plants for early forcing, in all shades of colour, 21s., 30s., and 40s. per dozen, £8 to £15 per 100.
HEATHS and EPACRIS, best varieties, well set with flower, 18s. and 24s. per dozen.
CAMELLIAS, in best varieties, including Whites, 25s., 30s., and 42s. per dozen, £9 to £15 per 100.
CATALOGUE free.
W. M. CROWE, Boleyn Nursery, Upton, Essex.

LARCH, 2 to 3, and 3 to 4 feet, strong, transplanted. A large quantity to be sold.
EDWIN HOLLAMBY, The Nurseries, Groombridge, Tunbridge Wells.

Winter List.

JOHN LAING AND CO.'S New CATALOGUE of Roses, Fruit Trees, Vines, Ornamental and Forest Trees, Shrubs, &c., has been issued to all Customers. Copies gratis on application. Goods all first quality at moderate rates. Address
JOHN LAING AND CO., Nurseries, Forest Hill, S.E.

CHRYSANTHEMUMS. — We have been awarded Four First-class Certificates for our this season's novelties. Cuttings can now be had of the 20 extraordinary grand new varieties introduced by us this year, at 1s. 6d. each, or the set for 20s. Well rooted plants can also be had now of all the sorts, at 3s. 6d. each. See CATALOGUE (gratis) for description. Cuttings of the best older varieties, our selection, from 2s. per dozen.
S. DIXON AND CO., Amhurst Nurseries, Auton Street, Hackney, E.; and City Seed Warehouse, 34, Moorgate Street, London, E.C.

CREEPERS for WALLS, TRELLISES, &c., in great variety. See Descriptive LIST. Most of these plants being in pots, may be moved now.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

RODGER, McCLELLAND AND CO. offer as under, prices, &c., on application:—
SALIX BASFORDIANA, the best of all the red-barked Willows, 5 to 7 feet.
" NIGRA, black bark, 4 to 5 feet.
POPLAR, Canadian, 3 to 4, 5 to 6, and 6 to 8 feet.
LAUREL, COLCHIC, 1½ to 2, and 2 to 3 feet.
BERBERIS DARWINII, 1½ to 2, and 2 to 3 feet.
" STENOPHYLLA, 2 to 3 feet.
" " Hybrid, 1½ to 2 feet.
PINE, Austrian, extra transplanted, and very stout, 1 to 1½, 1½ to 2, 2 to 2½, and 2½ to 3 feet.
" Corsican, 1 to 1½, 1½ to 2, 2 to 2½ feet.
PRIVET, oval-leaved, 1½ to 2, and 2 to 2½ feet.
" Common, 1½ to 2, and 2 to 3 feet.
ASH, Mountain, 6 to 8, and 8 to 10 feet.
MAHONIA, 6 to 12, 12 to 18, and 18 to 24 inches.
PINUS EXCELSA, 18 to 24 inches.
CUPRESSUS MACROCARPA, 18 to 24, and 24 to 30 inches.
PICEA NORDMANNIANA, 9 to 12, 12 to 18, and 18 to 24 in.
COTONEASTER SIMONSII, 18 to 24, and 24 to 36 in.
" HOOKERII, 18 to 24 inches.
ESCALLONIA ILLINITA, 6 to 9, 9 to 12, 18 to 30 inches.
" MACRANTHA, 9 to 12, 18 to 24 inches.
" INGRAMMI, 9 to 12, 18 to 24 inches.
76, Hill Street, Newry.

Special Cheap Offer.

ISAAC MATTHEWS AND SON are prepared to make a special offer to the Trade and Large Buyers. Samples and Price List on application:—
ASH, Common, 3 to 4 feet, 4 to 5 feet.
" Mountain, 3 to 4 feet, 4 to 5 feet, 5 to 6 feet, 7 to 8 feet, 8 to 9 feet.
OAK, English, 1½ to 2 feet.
POPLAR, Black Italian, 3 to 4 feet, 4 to 5 feet, 5 to 6 feet.
SYCAMORES, 2 to 3 feet.
CHESTNUTS, Horse, 9 to 10 feet, 10 to 12 feet.
ELDER, Golden, 2 to 3 feet.
THORN QUICK, strong, 3-yr., 4-yr., strong.
HOLLIES, Hodgins', maderensis, Golden Queen, Silver Queen, Old Silver, myrtifolia, ovata, Shephardii, common Green, in all sizes.
LAURELS, Common, 12 to 18 inches, 1½ to 2 feet, 2 to 2½ feet, fine.
CUPRESSUS, in variety, from 1½ to 7 feet.
RETINOSPORA PLUMOSA, 1 foot, bushy.
YEWS, English, 18 to 24 inches, 2 feet, 2½ feet, 2½ to 3 feet.
AZALEA Pontica, 4 to 6 inches.
RHODODENDRONS, Hybrid and Pontica, 3 to 4 inches, 4 to 6 inches, 6 to 9 inches, 9 to 12 inches, 12 to 15 inches, 15 to 18 inches, 1½ to 2 feet, 2 feet; ditto, choice named sorts, bushy, in 100 varieties.
" CUNNINGHAM'S WHITE, 9 to 12 inches, 12 to 15 inches, 15 to 18 inches.
" CAUCASICUM PICTUM, 9 to 12 inches, 12 to 15 inches, 15 to 18 inches.
RHODODENDRON STOCKS, strong.
PANSIES, in 100 varieties.
IVY, Irish, 4-yr., strong.
The Nurseries, Milton, Stoke-on-Trent.

NEW ROSES of 1882, in pots.—Vendors' Selection, 30s. per dozen; Purchaser's, 36s. per dozen. The above comprise all the best English and French raised Hybrid Perpetuals, Perpetual Polyantha, Teas, Hybrid Teas, and Perpetual Moss.

ROSES of 1881, of above-named classes, 18s. to 24s. per dozen, in pots.

CHOICE ROSES. — Tea-scented, Hybrid Tea, Noisette, China, and Bourbon, 18s. to 24s. per dozen, strong plants in pots.
Descriptive LIST on application.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

EIGHTY THOUSAND CLEMATIS, in Pots, of all the finest double and single varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants.
Descriptive LIST on application.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Gardenias.

MESSRS. JOHN STANDISH AND CO.'S Stock of GARDENIAS was never so extensive or good as it is this season. They have thousands of plants to select from, in all sizes, from fine specimens in 18-inch pots to small plants in 60's. All clean and healthy, and to a large extent well set with buds for winter-flowering. VERY REASONABLE Prices will be quoted on application.
Royal Nurseries, Ascot, Berks.

HORIZONTAL TRAINED FRUIT TREES.—For extra sized Horizontal Trained Pears, which will cover bare walls, and come into bearing at once.
PYRAMID APPLES and PEARS and ESPALIER APPLES, extra transplanted, and in fruiting condition.
AUCUBA JAPONICA, beautifully coloured and very fine.
AUCUBA VERA, thickly set with berries.
Through trucks to any part of the United Kingdom. Plants and trees added to compensate for freight. Apply to
GEORGE SMITH, The Dell Nursery, Rock Ferry, Cheshire.

STRAWBERRIES.—Strong roots for present planting and for fruiting next year, 4s. per 100. Descriptive LIST and price for plants in pots for forcing on application. — RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

J. FIDLER, MARKET GARDENER, 87, King's Road, Reading.
Has to dispose of 500 Stools of LINNEUS RHUBARB for Forcing, or can be divided into eight or ten plants for planting-out. Price, from 1s. to 1s. 6d. per stool, cheaper by the 100. Also young roots for planting-out, from 4s. to 6s. per dozen. Also 200 plants of ROYAL ALBERT, the earliest, high in colour, which I consider the best in cultivation, at 6s. per dozen.

To the Trade.

DECORATIVE PLANTS FOR CHRISTMAS.

W. M. CROWE has a large stock of the following, in excellent condition:—
DRACÆNAS—amabilis, terminalis, stricta, Baptisti, congesta, gracilis.
PALMS—Corypha australis, Latania borbonica, Phœnix reclinata, &c.
Azaleas in flower, Lily of the Valley, Ficus elastica, Aspidistras, Grevilleas, green and variegated Aralias, Ferns in variety. Prices on application. An inspection is solicited.
W. M. CROWE, Boleyn Nursery, Upton, Essex.

SEED POTATOS.

BEAUTY OF HEBRON,
MAGNUM BONUM.

FRUIT TREES.

BLACK CURRANT,
RED CURRANT,
GOOSEBERRY.

Apply—

R. BATH, CRAYFORD.

SPIRÆA PALMATA:
The largest stock for forcing in the world.
LAURUS CAUCASICA:
The finest Laurel ever introduced.
RHODODENDRONS:
All kinds and all sizes.
STANDARD RHODODENDRONS:
You may select from thousands.
HARDY TREES, SHRUBS, ROSES, &c.
For general planting, acre after acre.
Intending planters are invited to come down and see the stock. The Nursery is ten minutes from Sunningdale Station, S.-W. Railway.
CHARLES NOBLE, Bagshot.

THE NURSERIES, DUMFRIES.
(Established 1787.)
Our Stock, which is one of the largest in Scotland, comprises FOREST, FRUIT, and ORNAMENTAL TREES, DECIDUOUS and EVERGREEN SHRUBS, ROSES, GREENHOUSE PLANTS, &c.; also a very large and splendid Stock of THORN QUICKS, for Hedging and for filling up Gaps.
The Trees and Shrubs are of all ages and sizes, and are well adapted for extensive planting or giving immediate effect in the formation and improving of Ornamental Parks, Pleasure Grounds, &c. Prices on application.
THOMAS KENNEDY AND CO., Seed and Nursery Establishment, Dumfries.

LAPAGERIA ALBA (the best White variety), from 10s. 6d. each. RUBRA (the best Crimson variety), from 7s. 6d. each; a few extra strong plants, price on application to
R. H. VERTEGANS, Chad Valley Nurseries, Edgbaston, Birmingham.
R. H. V.'s pocket CATALOGUE of Herbaceous and other Hardy Plants free on application.

WILLIAM EVANS,
SEEDSMAN
to the Council of Agriculture, Montreal, Canada.
Exporter of RED and ALSIKE CLOVER, TIMOTHY SEED, PEAS, BEANS, OATS, &c.
Samples and prices on application.
Cable address:—W. EVANS, Montreal.

GRAPE VINES.—All the leading kinds in finely ripened canes, details on application to
FRAS. R. KINGHORN, Sheen Nurseries, Richmond, S.W.

APPLES, Standard and Pyramid; PRIVET and HAZEL, 3 feet to 4 feet; QUICK, 2-yr., fine. Price per 1000 to
CHAS. AND J. W. TOWNSEND, Nurserymen, Fordham, Cambridgeshire.

ABIES DOUGLASII, 10 to 12 inches, transplanted, 16s. per 100.
ABIES DOUGLASII, 3 to 3½ feet, transplanted, 50s. per 100.
" " 4 to 5 feet, 75s. per 100.
ESCALLONIA MACRANTHA, 1 foot, 10s. per 100.
CEDARS Red, 8 to 12 inches, 1-yr. transplanted, 10s. per 100.
CUPRESSUS LAWSONIANA, 2½ feet, 30s. per 100.
PINUS INSIGNIS, 3-inch pots, 7s. per 100.
" NORDMANNIANA, 6 to 8 inches, 12s. per 100.
CEDRUS DEODARA, 4 to 5 feet, 18s. per dozen.
" 6 to 7 feet, fine, 36s. per dozen.
PICEA NOBILIS, 4 feet, 60s. per dozen.
" " 5 feet, 70s. per dozen.
THUIA LOBBII, 2½ to 3 feet, 60s. per 100.
" " 4 to 5 feet, 12s. per dozen.
Catalogues free on application.
GARLIES MITCHELL, Nurseryman, Stranraer.

TWO HUNDRED THOUSAND HERBACEOUS and ALPINE PLANTS for Borders, Rockwork, &c. See Descriptive LIST, giving colour, height, time of flowering, &c., free by post for 1d. stamp.
Selection of 100 good showy varieties for 25s.
R. SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

R. AND A. MORRISON, The Nurseries, Elgin, N.B., offer:—
ABIES DOUGLASII, 1-yr., very fine, from Scotch seed.
SCOTCH FIR SEED, guaranteed True Native, our own collecting, and taken out of cone on our own kilns.
Samples and prices on application.

SEAKALE, exceptionally fine Roots for Forcing, 2s. 6d. per dozen, 16s. per 100.
ASPARAGUS, strong, for Forcing, 12s. per 100; specially selected ditto, 16s. per 100.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

CABBAGE, CAULIFLOWER, LETTUCE PLANTS, &c., Autumn sown, best varieties, in any quantities. LIST, and printed copy of many recent (1882) Testimonials, on application. Prices moderate, no charge for packages.—EDWARD LEIGH, Dunsfold, near Godalming.

JOSEPH TREMBLE AND SON, NURSERYMEN, 1, Market Square Penrith, offer the following:—
LARCH, 2½ to 3 feet.
SCOTCH, 1½ to 2 feet.
THORNS, 1½ to 2 feet, strong.
All healthy and well rooted. Price on application.

R. AND G. NEAL, NURSERYMEN, SEEDSMEN, and CONTRACTORS, Wandsworth Common, S.W., respectfully invite an inspection of the large and varied Stock of SHRUBS, FOREST, ORNAMENTAL, FRUIT and ROSE TREES grown at their Nurseries, which are now in fine condition for transplanting. All plants delivered free by own vans, within 6 miles of the Nursery. Builders supplied at Trade Prices. CATALOGUES on application.
The Nurseries are within 1 mile of the Clapham Junction and Wandsworth Common Stations.

8000 Winter-Flowering Carnations. 8000
TWELVE GOOD PLANTS, in six best varieties, in 54's, 7s. 6d. per dozen, 50s. per 100; in 48's, 15s. and 18s. per dozen, £5 and £6 per 100.
See CATALOGUE.
W. M. CROWE, Boleyn Nursery, Upton, Essex.

STEPHANOTIS FLORIBUNDA.—Good plants in 48's, 2s. each, 18s. per dozen, £7 per 100. Prices of larger on application.
W. M. CROWE, Boleyn Nursery, Upton, Essex.

To the Trade.
HOME-GROWN VEGETABLE and FIELD SEEDS.
H. AND F. SHARPE will be pleased to make special offers of their fine selected stock of SEEDS, raised this season with the utmost care and attention. The quality is very fine, and the prices will be found unusually low.
Seed Growing Establishment, Wisbech.

Special Culture of
FRUIT TREES and ROSES.—A large and select stock is now offered for sale. The Illustrated and Descriptive CATALOGUE of Fruits, post-free for threepence. The Descriptive CATALOGUE of Roses post-free.
THOMAS RIVERS AND SON, The Nurseries, Sawbridgeworth, Herts.

ROSES AND FRUIT TREES. — Fine Pyramid APPLES and PEARS of the hardiest and best cropping varieties only, 6s., 9s., 12s., and 18s. per dozen. Dwarf trained trees, 24s. and 30s. per dozen, all with splendid fibrous roots.
PLUMS and CHERRIES, Pyramids, 12s., 18s., and 24s. per dozen. Dwarf trained trees, 30s. per dozen.
RED and BLACK CURRANTS, 2s. and 3s. per dozen.
RASPBERRIES, 1s. 6d. and 2s. per dozen, 8s. and 10s. per 100.
STRAWBERRIES, 2s. 6d. per 100. CATALOGUES free.
LA GRIFFERAIE ROSE CUTTINGS for Stocks, 1s. per 100, 7s. 6d. per 1000, cash.
DWARF H.P. ROSES, all the leading varieties, 7s. per doz., 50s. per 100. CATALOGUES free.
WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

Standard and Dwarf Roses.
W. B. ROWE AND CO. (Limited) have to offer a few thousands of the above, which are unusually fine; they also call particular attention to the large stock of FRUIT TREES—Standards, Pyramids, Dwarf-trained and very fine Horizontal Fruiting Apples and Pears.
Barbourne Nurseries, Worcester.

Planting Season.
ANTHONY WATERER begs to invite attention to the following well grown and properly rooted NURSERY STOCK:—
AUCUBA JAPONICA, 1½, 2, and 3 feet. Thousands.
BOX, Green and Variegated, 2, 3, 4, 5, 6, and 7 feet. Thousands.
YEWS, English, 2, 3, 4, 5, 6, 8 to 10 feet. Thousands.
" Golden, all heights up to 10 feet, and various shapes—Globes, Pyramids, &c. Thousands.
" Irish, 5, 6, 7, to 10 feet.
JUNIPERS, Chinese, 5, 6, 7, to 10 feet.
PICEA PINSAPO, 5, 6, 7, to 10 feet.
" NORDMANNIANA, 5, 6, 7, to 10 feet.
SPRUCE FIRS, well furnished, 3, 4, 5, 6, and 7 feet. Many thousands.
" Black, 3, 4, and 5 feet.
SPRUCE, Hemlock, 4, 5, and 6 feet.
WEARE'S ARBOR-VITÆ, 4, 5, 6, and 7 feet.
HOLLIES, common Green, of all heights, up to 10 feet. Thousands.
" Green, of sorts, such as LAURIFOLIA, MYRTIFOLIA, HODGINS', ALTACLARENSE, Yellow-berried, &c. An enormous Stock.
" Variegated, from 3 to 5, 6, 7, 8, and 10 feet.
" Waterer's, beautiful Specimens.
" Golden Queen, up to 10 feet. Hundreds.
" Silver Queen, up to 10 feet. Hundreds.
" Perry's Weeping Standards and Pyramids.
" Golden Weeping Standards and Pyramids.
The Stock of Hollies of various kinds comprises many thousands, and affords a choice quite unequalled.
CUPRESSUS LAWSONIANA ERECTA VIRIDIS, 3, 4, 5, 6, 7, and 8 feet. Thousands.
" " GRACILIS, 3 and 5 feet.
" " ARGENTEA, 3 and 5 feet.
" " LUTEA, hundreds of fine plants, 3, 4, and 5 feet high.
RETINOSPORA PLUMOSA AUREA, 3, 4, and 5 feet.
" OBTUSA AUREA, 4, 5, 6, and 7 feet.
" PISIFERA AUREA, 3 and 4 feet.
THUIOPSIS DOLABRATA, 3, 4, 5, and 6 feet. Hundreds.
BEECH, Purple, 6 to 10 and 12 feet. Thousands.
LIMES, 10, 12, 14, 15, and 16 feet. Thousands.
PLANES, 10 to 20 feet.
MAPLE, Norway, 10 to 15 feet.
CHESTNUT, Horse, 10 to 16 feet.
" Scarlet, 10 to 16 feet.
POPLAR, CANADENSIS NOVA, 10 to 16 feet. Thousands.
OAKS, Scarlet American, 10 to 12 feet.
ACER DASYCARPUM, 10 to 16 feet.
" SCHWEDLERII, 10 to 12 feet.
And a vast and Miscellaneous Stock of Flowering DECIDUOUS SHRUBS and EVERGREENS, which intending purchasers are respectfully invited to come and see.
Knap Hill Nursery, Woking, Surrey.

Order from your Seedsman
LAXTON'S NEW BEANS,
JOHN HARRISON and GIRTFORD GIANT.
Particulars in previous Advertisement, or post-free from
THOMAS LAXTON, Bedford.

GRAPE VINES and ORCHARD HOUSE TREES in POTS. — GRAPE VINES, extra strong, short-jointed and well ripened; Planting Canes, 3s. 6d. to 5s. each; extra strong Fruiting Canes, 7s. 6d. to 10s. ORCHARD-HOUSE TREES, fruiting in pots, consisting of Peaches, Nectarines, Apricots, Plums, Cherries, Pears, Apples, and Figs. Descriptive Price LIST for 1d. stamp.—RICHARD SMITH AND CO., Nurserymen and Seedsmen, Worcester.

Planting Season.
R. AND A. MORRISON, The Nurseries, Elgin, N.B. (Established 1822), invite the attention of Planters to their extensive Stocks of Seedling and Transplanted FOREST TREES, ORNAMENTAL TREES and SHRUBS. They have a very large and healthy Stock of Seedling and Transplanted LARCH and SCOTCH FIR, which they guarantee as true native, being the produce of Seed collected by them in the North of Scotland.
CATALOGUES and Samples on application.

ROSES, well rooted, many-shooted, truly named, of matured growth, and of the best kinds.
DWARFS, R. S. & Co.'s selection, 8s. per dozen, 60s. per 100.
STANDARDS, 21s. per dozen.
Descriptive LIST on application.
RICHARD SMITH AND CO, Nurserymen and Seed Merchants, Worcester.

Order from your Seedsman
LAXTON'S NEW PEAS,
EVOLUTION and WILLIAM HURST.
Particulars in previous Advertisement, or post-free from
THOMAS LAXTON, Bedford.

EWING & CO.,
EATON, NORWICH,

Having given instructions to

MESSRS. PROTHEROE AND MORRIS to SELL by AUCTION, WITHOUT RESERVE, on February 13 next, and following days, almost the whole of their thriving outdoor

NURSERY STOCK,

HEREBY GIVE NOTICE, that they will not be prepared to Receive Orders for TREES, SHRUBS, PLANTS, &c., after the 31st of this month—December 18, 1882.

The remaining portion of the Stock (including the splendid collection of TEA and NOISETTE ROSES in Pots) will probably, so far as the Pot Plants are concerned, be SOLD by AUCTION in May or June next.

Order from your Seedsman
LAXTON'S SANDY PRIZE ONION, AND OTHER NOVELTIES.
Particulars in previous Advertisement, or post-free from
THOMAS LAXTON, Bedford.

FLOWERING SHRUBS, in great variety, such as Hydrangeas, Lilacs, Deutzias, Spiræas, Cytisus, Broom, Pyrus, Berberis, Double Cherry, Scarlet Hawthorns, Gueldres Rose, &c., 8s. per dozen, 50s. per 100.
Descriptive LIST on application.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Fruiting Pines.
THE LIVERPOOL HORTICULTURAL COMPANY (John Cowan), Limited, The Vineyard and Nurseries, Garston, near Liverpool, have a fine stock of the above, which they are in a position to offer at low prices; they are principally Queens, Smooth Cayenne, and Black Jamaica.

ROSES.—ROSES.—ROSES.—50,000 to select from, in all the leading sorts, in fine strong plants, including both Standards and Dwarfs; also extra strong Maréchal Niel, Climbing Devoniensis, Cheshunt Hybrid, Madame Berard, Reine Marie Henriette, from 12 to 15 feet long, in pots, and other Teas in pots, fine for forcing.
Price and LISTS post-free.
THOMAS HORSMAN, Rose Mount Nursery, Ilkley Leeds.

GEORGE DAVISON begs to offer to Planters the following well-grown TREES, at a great sacrifice, in consequence of wishing to retire from business:—
ABIES DOUGLASII, 4 to 8 feet.
CEDRUS DEODARA, 3 to 6 feet.
ARBOR-VITÆ LOBBII, 7 to 10 feet.
ASH, 1½ to 2½ feet, 200,000 (Hop-pole Planting).
AUSTRIACA FIRS, well transplanted, 2 to 4 feet.
BEECH, 6 to 7 feet.
CUPRESSUS LAWSONIANA, 7 to 9 feet.
HORSE CHESTNUTS, 7 to 9 feet.
LARCH, fine, 2 to 5 feet, 400,000.
LAUREL, colchic, caucasica, and rotundifolia, 20,000.
" Portugal, 2 to 3 feet.
QUICK, transplanted, fine, 2 to 4 feet, 500,000.
ROSES, Standard and Dwarf, H.P. and Teas, many thousands.
SILVER FIR, 3 to 5 feet.
SCOTCH FIR, 1½ to 2½ feet.
SPRUCE, 2 to 5 feet.
THUIOPSIS BOREALIS, fine specimens, 5 to 9 feet.
FRUIT TREES—APPLES, fine, tall, for Orchards, many thousands (speciality).
Price on application to
The White Cross Nurseries, Hereford.

CEDRUS DEODARA. — "The Indian Cedar."—Beautiful specimen trees, frequently transplanted and well-rooted, offered at the undermentioned low prices, to effect a clearance:—
5 to 6 feet, 48s. per dozen | 7 to 8 feet, 72s. per dozen
6 to 7 feet, 60s. per dozen | 8 to 10 feet, 84s. per dozen

ABIES DOUGLASII.—One of the most noble trees grown, well-rooted specimens:—
6 to 7 feet, 3s. 6d. each; 36s. per dozen
7 to 8 feet, 4s. 0d. each; 42s. per dozen
8 to 9 feet, 5s. 0d. each; 60s. per dozen
The above-named trees are highly suitable for Avenues, Lawns, Shrubberies, or Woods, and the opportunity of purchasing on such terms rarely occurs.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Grape Vines.
THE LIVERPOOL HORTICULTURAL COMPANY (JOHN COWAN), Limited, The Vineyard and Nurseries, Garston, near Liverpool, have a splendid stock of VINES, grown from eyes this year, suitable for fruiting in pots and planting.
CATALOGUES free. The Trade supplied.
Also a fine stock of TEA ROSES.

R. H. VERTEGANS' New Double CINERARIAS, the finest in cultivation. The set of 12 distinct varieties will be sent, packing and carriage free, on receipt of Post-office Order for 31s. 6d.
VORTIGERN, the finest double crimson, 3 plants showing flower free for 10s. 6d., 1 for 5s.
Chad Valley Nurseries, Edgbaston, Birmingham.

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Gloxinia, Leeds Prize.

This magnificent erect flowering strain is probably unequalled. It has a strong robust constitution, produces flowers 3½ to 4 inches in diameter, and embraces upwards of 50 distinct and charming varieties. Wherever exhibited this strain has, without a single exception, carried off the first prize. In 1879 a leading London Nurseryman gave 20 guineas for the 6 plants shown at Leeds. This fact will give some idea of its merits. The strain has been greatly improved since then, and the seed now offered will produce plants very much superior. Price, per packet, 2s. 6d.

Wallflower, Charles Kershaw's Brilliant Dark.

This strain is unsurpassed, and may be relied upon to produce not one light-coloured flower. C. K. has selected it with the greatest care for many years, and has now got it to such perfection that it cannot be surpassed. Per packet, 6d.

New Celery, Thornhill Prize Red.

This is the stock of a noted exhibitor, who in 1881 and 1882 took upwards of 70 prizes with this variety. Wherever exhibited it has without an exception carried off the first prize; it never runs, is early, large, solid and crisp, is of fine flavour, and keeps well; is equally good for exhibition or general use. Per packet, 1s. Stock very limited.

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THE SLEAD SYKE NURSERIES,
BRIGHOUSE.

AN OFFER NEVER BEFORE MADE.

CHRISTMAS TREES 11 to 17 feet,

PERFECT SPECIMENS.

ABIES NORDMANNIANA, 10s. 6d. to 21s.

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A very large quantity of fine
Half-Standard and Dwarf-Standard
ROSES,
Of all the leading sorts, to offer cheap.

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EXTRA STRONG ROSES,
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HYBRID PERPETUALS, TEA SCENTED, and NOISETTES;

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We have now published our Wholesale CATALOGUE of Vegetable, Flower, and Agricultural Seeds, containing, also, all the best Novelties of the season. It may be had on application. All our Regular Customers should already have received a Copy by post; any not having done so, will oblige by letting us know.

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WEDNESDAY NEXT.

CATTLEYA MOSSIÆ

(AUTUMN-FLOWERING VARIETY).

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, January 3, at half-past 12 o'Clock precisely, by order of Messrs. SHUTTLEWORTH, CARDER & CO., a grand Importation of CATTLEYA MOSSIÆ (Autumn-flowering variety) in fine masses and fine condition, collected by Dr. Ernst and our Mr. John Carder (per ss. *Nile*); ODONTOGLOSSUM CRISPUM (ALEXANDRÆ), in fine masses and good breaks; ONCIDIUM PAPILIO MAJUS, CATTLEYA MOSSIÆ HUNTLEYA VIOLACEA, &c.—all in the best possible condition.

On view morning of Sale, and Catalogues had.

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SALE, THURSDAY NEXT, JANUARY 4, 1883.

CATTLEYA TRIANÆ, very finest varieties.
ODONTOGLOSSUM VEXILLARIUM, very finest varieties.

MR. J. C. STEVENS has received instructions from Mr. F. SANDER, to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, January 4, 1883, at half-past 12 o'Clock precisely, an immense importation of CATTLEYA TRIANÆ, very finest forms, and in grand health and masses; also an extra lot of ODONTOGLOSSUM VEXILLARIUM—the plants are from the same locality from whence our importation came among which three O. VEXILLARIUM SUPERBUM have flowered; together with an importation from Mexico, and a specially grand lot of ODONTOGLOSSUM ALEXANDRÆ, in finest large-flowered, round-petaled varieties, and other ORCHIDS.

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Have just received from the United States of Colombia a magnificent importation of CATTLEYA TRIANÆ. The plants are in the best possible condition, varying much in appearance, and giving promise of fine varieties.

They are on Sale, at very low prices, by the dozen, 100, or 1000.

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PLANTS FOR POTTING AND FORCING:—

AZALEA MOLLIS, with from 10 to 30 buds

" a selection of the best hardy kinds, including PONTICA, NARCISSIFLORA, well budded.

KALMIA LATIFOLIA, nicely grown plants with flower-buds on wellnigh every shoot.

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DEUTZIA CANDIDISSIMA, fl.-pl., established in pots.

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ANDROMEDA PULVERULENTA or SPECIOSA.

These can be obtained in satisfactory plants and at fair prices from

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A Double First-class Certificate,

The Highest Honour ever bestowed by the Royal Horticultural Society, was awarded to the

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In the Trade, suitable for STOVE and GREENHOUSE cultivation, for Outdoor Ferneries, and other purposes. Special LIST free on application. Illustrated CATALOGUE 6d.

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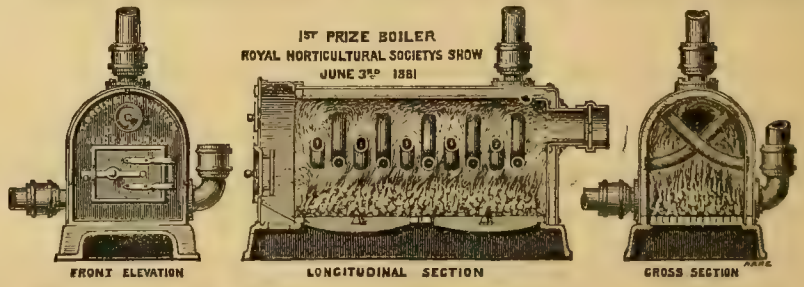
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Had the First and Highest Prize—a SILVER MEDAL—

Awarded at the Royal Horticultural Society's Exhibition, South Kensington, London, on June 3, 1881.



The "Journal of Horticulture" of June 9, says:—

"HEATING APPARATUS.—A great number of boilers, valves, &c., were exhibited by eight competitors, and considerable interest was manifested in the verdict of the judges, and much discussion was brought to bear on the merits and shortcomings of the different boilers. The apparatus for which the Silver Medal was awarded was a wrought-iron saddle boiler, with a series of intersecting tubes, somewhat in the form of the letter X, but the tubes in ogee form, in the crown of the boiler. Most gardeners who examined the boiler expressed a favourable opinion of it. It is no doubt a quick and powerful boiler without being complex, the latter condition having, no doubt, had weight with the judges."

The "Garden" of June 11 says:—

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GLOXINIA HYBRIDA ERECTA GRANDIFLORA	1	0
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ADIRONDACK.	MAMMOTH PEARL.
MANHATTAN.	PRIDE of AMERICA.
QUEEN of the VALLEY	SCHOOLMASTER.
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WHITE ELEPHANT.	VICAR of LALEHAM.

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SUTTONS'

LIST No. 2

FLOWERS, FRUITS, NOVELTIES, VEGETABLES, POTATOS,

For 1883.

See also our Advertisement in last week's "Gardeners' Chronicle," p. 807.

Suttons' Safeguard Broccoli.

Valuable and distinct, of remarkably protecting habit, which enables it to stand through the most severe winter. Heads medium size, pure white, and fine quality.
Per packet, 1s. 6d., post-free.

Suttons' Incomparable Endive.

The largest Endive known, and stands a very long time before going to seed. Not so finely curled as some other varieties, but produces a beautiful white crisp heart.
Per packet, 1s., post-free.

Welford Park Seedling Melon.

A fine scarlet-fleshed variety, of round, handsome shape, distinctly ribbed, skin very thin, smooth, and of a clear golden colour. Flesh bright red, exceedingly rich, sugary, and melting. Awarded First-class Certificate by the Royal Horticultural Society, as well as First Prizes at many of the principal Horticultural meetings.

"A fine rich yellow, smooth-skinned, ribbed Melon, with a pink flesh, and very richly flavoured. It was awarded a First-class Certificate, and received the name 'Welford Park.'"—*Journal of Horticulture, October* 14, 1880.
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Suttons' White Leviathan Onion.

Now offered by us for the first time. Somewhat later than the flat white Tripoli, but is certainly twice the size of that variety. The skin is a beautiful pearly white. As an exhibition Onion it is unequalled. Flavour mild and delicate.
Per ounce, 2s. 6d.; packet, 1s. 6d., post-free.

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A grand Pea of remarkably strong and robust growth; foliage dark green; very long pods produced in pairs from bottom to top of the plant. Each pod contains from 9 to 12 fine Peas, which are of delicious marrow flavour.
Per quart, 5s.

Suttons' Rosy Gem Radish.

Very beautiful and delicious; round in shape, delicate rose-coloured skin, with a white tip. Flesh hard and crisp.
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New Crimson French Breakfast Radish.

Superior to the ordinary French Breakfast, and now the most popular variety in the Paris market. Oval shape, deep crimson colour, with a beautiful white tip. Flesh white, solid, and of fine flavour. Leaves very small.
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From ten to fourteen days earlier than any other; fruit round and medium sized, brilliant red colour, and of a rich mild flavour. A continuous cropper, and one of the best Tomatos for ripening out-of-doors.
Per packet, 1s. 6d. and 2s. 6d., post-free.

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Of great merit; it proved the best of upwards of forty varieties grown last summer in our experimental grounds. Handsome in shape, of medium size, almost smooth, of brilliant red colour, and ripens uniformly. Flesh very solid, almost free from seeds, and of a rich piquant flavour.
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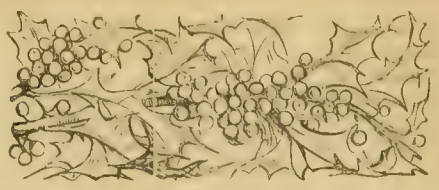
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THE QUEEN'S SEEDSMEN,
and by Special Warrant
SEEDSMEN TO THE PRINCE OF WALES,
READING, BERKS.



THE

Gardeners' Chronicle.

SATURDAY, DECEMBER 30, 1882.

THE NEW YEAR.

THE rise of the New Year into our horizon may remind us of certain phenomena specially interesting to those employed in the cultivation of plants. The Old Year sleeps—we will not say dies—and a wide view of the world's development reveals the truth that sleep is older than waking, since darkness and sleep preceded the creation. As we write a newer and a younger time is on the point of dawning. May health and happiness smile upon our readers in the New Year, and attend them to its close! May it be a year of peace and plenty, of bright blossoms and good crops Peace in gardening, it is true, can never be complete, on account of the unnumbered plagues that assail both gardens and gardeners in the shape of blights and mildew, pests of several sorts, and provocations more numerous than the votaries of almost any other art are called upon to suffer.

But if the life of the professional gardener —and of the amateur, too, to some extent —has its worries, and little trials hard to bear, it enjoys ample compensations, which this hour of hovering between the Old Year and the New, between sleep and waking, may recall. How interesting are the thoughts which the coming time invites, and how close are the connections between speculations appropriate to the garden with the greater world outside! It is in the youth of plants—and the coming of the young year recalls the reflection—that the force of life is strongest and adaptability greatest. Train up the plant, then, in the way it should go, for when it is old, hampered with the products of its own activity, with a stem no longer soft and cellular, but stiff and tough with woody fibre and bark perhaps an inch thick, you will find the pliability of its disposition quite departed, you can no longer bend and train it to your mind and will. Only the other day we observed a decorative Poinsettia pulcherrima surrounded by a group of elegant persons unfamiliar with these specific formative impulses which gardeners so well understand, and a knowledge of which would have instantly explained something that seemed to puzzle them. In order to reduce the awkward length of stem of a plant drawn up rapidly in a forcing-pit, it had been bent and rebent in a manner surprising to untrained observers, who came to the conclusion that the specimen before them, which a hot room was scorching, must be dying from the effects of a cruel operation. Gardeners, however, know better the beautiful adaptability of young life—you can mould it almost as you will. A young gardener, for example—for the same rule holds with persons as well as plants when young—will rise at 4 A.M., without effort when trained to do so, say his prayers or not, just as he may have been taught, and commit to memory a hundred hard names; or on the contrary leave his head idle and untroubled by learning, for want of being taught or turned in the right direction.

At the opening of the year young folks would do well to consider what their lives are capable of, and what by due attention and use

of their opportunities they may perhaps make of themselves. Nature does not give to all the stuff which makes a Lindley or a Paxton, but she gives to every young gardener materials quite sufficient for the composition of a useful man, provided they are turned to good account. The ranks of men are chiefly the result of circumstances, their capability the effect of education, and in these days education is within the reach of all. The million, therefore, have now the power of deciding their own fate and future far more effectually than they could in the days when William Cobbett was a helper, for a time, in the Royal gardens at Kew, and when he only acquired his education by dint of the strongest effort of will and of self-denial. At present all may choose their own position in the long gradation from the ignoramus to the well-taught man—at least, to a considerable extent; and as there are, as naturalists tell us, several stages among the vertebrates, as fish, reptile, bird, man, so there are stages of intelligence and position among gardeners, and now is the time when young men may well consider what stage they would reach—that of the fish, or that of the man.

Surely these are cheerful reflections, for there is nothing more inspiriting than the idea of progress. But the appropriate thoughts of this season are not confined to ideas of personal advancement of fortune or of mental powers, for this crisis of the Old Year reminds us that the new season, that of 1883, will rapidly advance, and the gradual awakening characteristic of spring will once more occur. Already we have seen, in early spots and sheltered corners, the opening blossoms of the Cowslip; the other early flowers will follow, and then the whole vegetable kingdom, which some one has called the "workshop of spring," will once more exhibit its full activity. Spring, that season of unbounded joy to the animals, we could almost be persuaded to think that plants too rejoice in spring, when, as a German author has said, "Millions of vegetable atoms in brief space spin the threads to clothe the trees and weave the verdant carpet of the earth."

The sleep of the Old Year reminds us, too, that the breath of spring only unfolds what was long preparing in silence during the period of Nature's rest. Winter is still with us, it is true, and in spite of this very mild spell of weather, long frosts may lie between the earliest Cowslips and the blossoming of the Thorn. But spring will steal upon us almost unawares, and after spring the maturity of the year, and then once more its age and final sleep. And how insensibly the seasons change! We may mark the calendar as we will, but who shall say exactly when youth, maturity, and age begin? It is the same with plants and men — they change insensibly. In both youth sometimes breaks forth even in age; and in the case of one of them—to renew the note of warning and entreaty to all who may be disposed to let time drift ill-employed—it is possible to be a child in mental development when old in body. Our lecture shall end, then, by a piece of advice of very general application, especially in gardening—to take time by the forelock. This is an old saying, but a good one, and we beg to follow it up with another phrase of excellent antiquity by wishing all our readers a happy New Year!

CULTIVATION OF THE SUGAR-CANE IN SPAIN.—The Sugar-cane is reported to grow well in the sheltered and watered valleys in the vicinity of Algeciras, Spain, and several tracts of land have recently been planted with it, giving the owners, so far, favourable returns, and encouraging them to extend their plantations; and it is hoped that in course of time the Sugar-cane may become an important produce of the district. The cane is sent by sea to La Sabanilla, close to Estepona, the nearest place where a sugar-mill is established.

TRANSPLANTING EVERGREENS.

IT has sometimes been asserted that the operation of transplanting evergreens may be successfully performed at almost all seasons of the year, even during summer, which statement is rather too sweeping, and the work certainly more of necessity than propriety. For several reasons midsummer planting, if the practice may be adopted, is not to be recommended, one of the greatest objections being that the generally warm and dry weather experienced during that season is anything but beneficial for newly planted shrubs. Should for some time cloudy wet weather succeed midsummer planting the operation may be successful, but unless in a real case of necessity, which sometimes does occur, the practice is to be censured and not recommended.

We find autumn or spring, or say from October to February, the best time for successfully transplanting shrubs, as during that period they are not so liable to suffer from the intense heat of the sun, and are also more likely to be benefited by dews and rains. October and November are, however, the best months of the year for transplanting evergreens, provided that the weather and ground are favourable. Of course, in the case of a wet, retentive soil or cold, damp bog, spring planting is certainly to be recommended, as the shorter time the tender rootlets are in contact with such soil, before starting to grow, the better. In transplanting evergreens it matters little what size they have attained, even to 20 feet in height, if judicious care in lifting, so that the rootlets are uninjured, and common sense in the method of removing and planting, be observed.

The preparation of the ground intended to receive the plants is also of vast importance, as on this, as well as careful lifting, the success of the operation in a great measure depends.

The pits should be opened of sufficient size to allow of the roots being spread out to their full extent—irreparable damage often resulting from crossing or cramping the roots—and the sides and bottom thoroughly loosened with a pick, so that the tender rootlets may meet with no barrier, such as is too often the case in stiff ground by using the spade alone. The surface should be laid on one side of the pit, and the clean earth on the other.

When planting, the surface, chopped fine with a spade, is put into the pit first, and a quantity of soil along with it; part of the soil is then gathered to the centre of the pit in a conical form, the plant is then placed on the centre, and the roots carefully spread out to their full length; the soil is thrown in loosely around it—not trod in—and a basin made to hold a quantity of water, which should be filled several times until the whole becomes thoroughly saturated; this will convey the soil down to the roots of the plant, and render it much more firm than by any other method. By this mode of treatment the plants, however large, will not be injured by removal, but soon become established, and make rapid progress.

Mulching newly planted shrubs is also highly beneficial, as it not only preserves warmth, but prevents the too speedy evaporation of moisture, surface cracking of the soil being thus avoided.

During November, 1881, we had occasion to remove several large shrubs, amongst which were three Yews over 20 feet in height, and otherwise large in proportion, for screen planting; all of which, by pursuing the above method, were successfully operated on, and, from their present healthy appearance, they seem as if they had never been disturbed. The staking of all newly planted evergreens should receive careful and immediate attention, especially in the case of large specimens, as, apart from the injury to roots consequent on the plant swaying with the wind, we know of nothing in forestry more glaring and neglected-looking than a lot of trees—as the Welsh expression has it—half cant with the wind.

Small plants, say under 6 feet in height, require but a single stake driven in, where practicable, at about a foot from the stem, and on the side from which the prevailing winds of the district blow, bearing in mind that the nearer the stake is driven to the stem of the plant, the greater will be the power of resistance obtained.

Large plants require three stakes driven in, equidistant, or triangular-fashion, and at 4 or 5 feet from the stem. They should be driven firmly down to within 6 inches of the top, and leaning from the tree. Galvanised wires are then stretched from the ground level of these stakes to a collar placed round the stem of the tree, and at any convenient height above 5 or 6 feet. Plants treated in this way will remain stationary at the base during the most severe storm, as, from whatever quarter the wind blows, there is a stay pulling against the wind pressure, and holding the tree in an erect and steady position. *A. D. Webster, Penrhyn Castle, North Wales.*

New Garden Plants.

CŒLOGYNE (PLEIONE) BIRMANICA, *n. sp.**

WHETHER this is a typical species or a sub-species only I cannot pretend to decide. The plant has cost me much time during these foggy days. I have at hand the published representations of Cœlogyne præcox, my own sketches, as well as copies of those of Dr. Lindley, and a glorious set of specimens with fifty-five flowers, gathered by W. Griffith, T. Lobb, Dr. J. Hooker, T. Thomson, and C. B. Clarke. All these specimens, as far as I am able to judge them, show the anterior part of the lip with most prominently developed fringes and five rows of toothed crests. I know well there is a representation with but four rows (*Bot. Reg.*, xxvi., tab. 24, fig. 1). Dr. Lindley says, perhaps on account of this representation, "disci cristis 4—5." Mr. Bateman, having had plants from the same source before him, simply speaks of "four parallel ridges of white tubercles" (*l.c.*), The border of the androclinium consists of a slit, even fringed membrane.

Lately Mr. Boxall found a fine thing in Birmah, which has occupied Mr. Stuart Low eagerly since February last. The bulb is exceedingly handsome, fine, fresh, bluish-purple (like thin Elderberry juice) with numerous white circles, and the sheaths of the breaks are similar. After the leaves fall the top of the apicilar cone of the bulb sinks down, and there appears then a very prominent rounded wall around its top. I find that in the genuine C. præcox this wall is much less prominent, and the apex of the cones is far more slender and elongate. Mr. Boxall declares the plant has usually two-flowered peduncles. This was the first specimen sent by Messrs. Hugh Low & Co. The anterior lacinia of the lip has very short teeth. The border around the anther is nearly entire, neither slit nor fringed. I have the impression that the purple is altogether of another shade. Along the crests are several fine brown oblong or round small blotches on a white ground.

The plant would also appear to flower much later than the genuine C. præcox. Our fine old-fashioned plant we had from Messrs. Haage & Schmidt, of Erfurt, has long since ceased to produce its very numerous flowers. My requests for fresh flowers addressed to numerous correspondents were all in vain. Messrs. Veitch forwarded me kindly a single flower, but this was just of the same variety as Mr. Low's plants. It would be very interesting to hear from Messrs. Veitch whether their plant came from Birmah too.

After all, the genuine Cœlogyne præcox comes also from Birmah. I have two fine flowers at hand sent with a very indignant letter by Mr. B. S. Williams, who complains of having paid for a plant said to Cœlogyne Reichenbachiana, but which, now that it has flowered, is seen to be only C. præcox. It is known that Cœlogyne Reichenbachiana comes from Birmah, and Mr. Rimann expressed to me the other day his belief of having finally succeeded in destroying the species by taking the last stock for Mr. F. Sander. *Après nous le déluge. H. G. Rchb. f.* [Where is the hangman? ED.]

THE SPANISH CORK FORESTS.—In the same report from whence the information relating to the Sugar-cane is obtained we read that there are also extensive cork woods near Algeciras. In years past it seems that the destruction of these trees was enormous, but now the owners take every care to protect them and increase their growth, in view of the fair and increasing returns they bring; and as the demand for cork is very great, it is believed that the exportation from Algeciras will very much increase.

* *Cœlogyne (Pleione) birmanica*, n. sp.—Pseudobulbo demum omnino obvallato retuso; cono foliifi omnino abbreviato; labelli lacinia antica denticulata non fimbriata; carinis per discum ternis; androclinii limbo subintegro non lacero. Birmah. *H. G. Rchb. f.*

AGAVE VICTORIÆ REGINÆ.

This species [which we saw first at an exhibition in Cologne, and which was subsequently described in our columns for the first time by Mr. Thomas Moore] flowered in the Botanic Garden of Cambridge, U.S., in the latter part of August and beginning of September of this year (see fig. 149, p. 845). The specimen was obtained by Dr. E. Palmer, near Monterey, Mexico, in February, 1880. It forms a regular compact cone of over 200 conniving leaves; the stalk, about 2 inches thick at base, was over 10 feet high, and about 6 feet of it consisted of the very dense flowering spike, while the lower part of the scape was covered with numerous bracts, linear-subulate, from a broad base, the lower ones 4—5 inches long, and spiny-pointed, each one bearing in its axil 3 small knobs, evidently abortive flower buds. The flowers, with all their parts pale greenish-yellow, were densely crowded, and very regularly and constantly arranged in threes, just as the capsules were in the native specimen described in this journal, June 19, 1880 (p. 788). The flowers are 1¼ inch and not 2 inches long, as was misstated in the former article, the ovary about ½ inch, the perigon ¾ inch, its tube being only 1½ line long; stamens inserted about the middle of the tube, and exserted beyond the perigon about 1¼ inch; anthers ½ inch long; tube filled with nectar to the brim. The stigmatic lobes in most cases never opened, and thus no fertilisation took place, except in some flowers near the top of the spike. Young plants raised from seeds in the spring of 1880 begin only now, after more than two years, to show the character of the species. Until now the leaves were unspotted, their edge slightly denticulate, and the terminal spine simple. The cut, fig. 149, p. 845, is from a photograph sent by Dr. A. Gray. *G. Engelmann, St. Louis, U.S.*

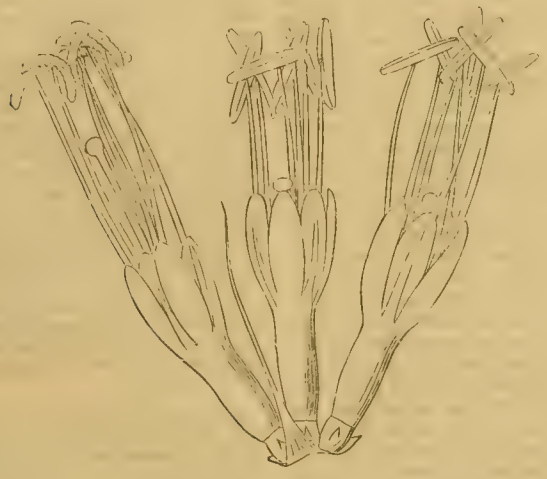


Fig. 148.—Flowers of Agave Reginæ: greenish-yellow.

A BUCKINGHAMSHIRE GARDEN.—III.

December 6.—Among the strange and beautiful sights of the garden during the hard hoar-frost that ushered in the first days of the month, not the least beautiful were the spiders' webs. Passing along the Larch Walk, the Oak palings that divide us on that side from the new road, (the old road, made by Richard, King of the Romans in the twelfth century, is now within the grounds), were hung all over with white rags—or so it seemed at first sight. And then, just for one second, that curious momentary likeness of like to unlike chanced. I remembered the street of palaces at Genoa, the day that I saw it last; the grand old walls covered with fluttering rags of advertisements—yes, English advertisements: "Singer's Sewing Machine." The white rags on our palings were spiders' webs, both new and old, a marvellous number thus crystallised, as it were, into existence by the frost, where scarcely one had been before. In open weather the webs are as good as invisible to human eyes; but now that frost had thickened the minutest thread to the size of Berlin wool—though in beauty of texture they resembled fine white velvet chenille—there was a sudden revelation of these wonderful works of Art! One cannot help thinking if the nets show only half as large and thick to a fly's eye, the spider's trade must be a difficult one. Here is a calculation that will probably interest nobody: 567 feet of pales over 5 feet high, and an average of 18 webs to every 9 feet. It may prove, however, something of the unsuspected multitude of spiders; though it is nothing to the acres of ploughed land that the level sun-ray of an autumn afternoon, will show completely netted over with gossamer. Making the most of a few minutes' inspection—for I should myself have frozen had I watched much longer these frozen webs—I could see but two varieties of work—the cobweb which usurped the corners, and the beautiful wheel-within-wheel net. In them all one might observe once more that ever-recurring stern immutability of the thing called Instinct. Here, for instance, are two sets of spiders living close neighbours for years together. Each set makes its snares on an opposite plan; and although they cannot help seeing each other's work continually, neither takes the least hint from the other. The plain cobweb is never made more intricate; the artist of the wheel never dreams that she might do her spinning to a simpler pattern. Happy people! They trouble not their heads about improvements; yet, on looking closer at the last-named webs, there seemed something of the faintest indication of a slight individuality, so far as in a dozen nets there would be five or six worked within a square of four lines, while the remainder had five, tied rather carelessly in a knot below. It is possible the variation marks two distinct species; or it might have been accidental. Next day every visible trace of the strong, beautiful webwork, I had so admired was gone with the frost. The spider may have "spread her net abroad with cords" as usual, but there was no magician's wand to touch it.

The orchard ought to be very gay in the spring; Daffodils have been dropped in all over the turf, and a round patch, dug round each Apple tree, is to be filled with yellow Wallflowers. This is an experiment, and I do not feel sure that I shall like the flowers so well as the trees simply growing out of the grass. A change, however, is always pleasant, though, perhaps, one would hardly care to lay out the garden differently every year, as the Chinese are said to do. I had a dream, of the orchard grass enamelled with many-coloured Crocuses—in loving reminiscence of certain flowery Olive grounds I know; but the bulbs would most likely have become food for field-mice, and, after all, the imitation would have been as poor as a winter sky, compared to the glowing blue of June. I am not without hope some day—that golden some day which so seldom comes—to naturalise in our orchards here the real *enamelling* of the Olive groves—that often-used phrase is too hard in its sound and usual meaning to express the loveliness of those lilac star Anemones—with here and there a salmon-pink, or a fiery scarlet, blazing like a sun in the living green beneath the trees. I used to think nothing on this earth could come so near a vision of the star-strewn fields of Paradise.

In the north, or entrance court, we have been busy—between the frosts—transplanting some large Apple trees, that had overgrown their place; and setting free the trimmed Yews, between which they grew. The blackness of these formal, cut Yews shows well against the old walls, which are covered with very old Green Gages and Golden Drops. On the turf between each of the pyramid Yews, broad oblong beds have just been made; in April we hope to plant them with pink China Roses, which are to grow very dwarf; and to flower the whole year through! The border round the Roses, may be blue Nemophila; or perhaps the lovely Santolina fragrans, with the soft grey foliage.

I think the "going in" to one's house should be as bright and cheerful as it is possible to make it. But it is difficult to brighten up a north aspect; and ours has hitherto been far too gloomy. In the garden the bed of Roman Roses is warmly matted over for the winter. This brave little red China Rose is one of my great favourites; it goes on flowering for ever! Even now, when the matting is raised a little bit, I can see buds and leaves and the red of opening blooms. I call it the Roman Rose, chiefly because it grows at Florence, which is so very Irish, that I think there must have been some better reason, now forgotten. The Rose hedges in the beautiful Boboli Gardens are crimsoned over with blossom as early as the end of March; with us, however, it needs protection when planted in the open ground.

Under the east wall is our only Christmas Rose; it is a very large plant, and over it was built up, about a month ago, a little green bower of Spruce Fir branches. The shelter is to save the blooms from frost, which so often tarnishes their whiteness with red. Almost daily as I passed, I have peeped in to watch the cluster of white buds nestled snugly within. The buds have duly swelled and lifted one by one their heads, and now this morning our first bunch of perfect Christmas Roses has been gathered. This flower must, I think, be dear to every one with a heart for flowers. Its expression is so full of innocence and freshness (it is not only human persons who have expression in their faces!); and then, the charm of its Myrtle-like stamens and clear cut petals—snow-cold to the touch—and its pretty way of half-hiding among the dark leaves—always ready to be found when sought—and always so many more blossoms than had been hoped for! To some, indeed, the associations bound up with the Christmas Rose—with even the sound of its name—may be dearer than all its outward loveliness, recalling, perhaps, the house and garden of their childhood, and happy Christmases of long ago; "the old familiar faces," and tones of the voices that are gone. I must here make the confession, that last year, in my anxiety for the whitest possible of blossoms, I had glass over the plant; and in spite of warnings, put matting over that; which all ended at Christmas in a fine show of green Roses! In the pits there are several of the smaller kind coming on in pots, which will soon be ready to cut. These are easy enough in their ways. But the Christmas Rose, out in the border, is a difficult thing to grow; full of quirks and fancies, and like a woman, hard to please. Once, however, it settles down in a spot, it will thrive there, and then will sooner die than take to a new place.

Dec. 13.—Our second white frost has vanished, and the grass appears again with a moist and pleasant smell.

The forest of the Fantaisie is thinned, and the encircling Laurels trimmed. The whole took just half a winter's day to do..

At the end of the turf walk, between the bushes and the golden Yews, peers out a Spindle tree, with its pink and scarlet fruit. The birds seem not to care for it, for the fruit is all there. I wonder if the name of Spindle comes from the unnatural thinness of the tree? Ours are all of the same slender make. [Query: from the use of the wood to make spindles. Ed.]

After these many years of working to a special end, we seem now to have almost reached it, in one direction, for the garden looks nearly as green and furnished in winter as in summer—so far, at least, as the outline goes. The Yew hedges and Pines and evergreens are at their best now, in mid-winter; they would even seem to have grown and thickened out since the summer died away. Watching the growth of these trees and hedges has been the delight and

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solace of many a troubled time, and one cannot but feel the most affectionate interest in them. In the centre of a triangular-shaped bit of lawn, surrounded by Conifers (I would not use that word if I could find another), we have placed a large stone vase, on a square stone pedestal. The vase is old and grey, and had long stood in another place where it made no show. The grey stone looks well against the warm greens that back it, and will look better when the season comes to fill it with bright summer flowers. The trees that stand around, all wear a sort of charmed double life—at least to me—silently, fancifully. It was at a time of sickness, that the sleepless hours of the long winter nights came to be passed in spirit with the trees in the garden, and especially with half-a-dozen or so of our beautiful straight young Pines. Dare I tell the secret? They all became knights and ladies of King Arthur's Court! The great Wellingtonia standing a little apart is Arthur himself. The Nordmanniana, with its whorls of deepest green and strong upward shoot of 15 inches in the year, is Sir Launcelot. The gold-green softly feathered Douglas Fir, Sir Bedevere. The young Cedar of Lebanon, with fretted boughs of graceful downward sweep, Sir Agravaine. Sir Bors is the rounded solemn English Yew of slow and steadfast growth. Sir Palomides, a fine pillar-shaped Thuia, towers between Sir Gawaine and Sir Gaheris, both clad in the wondrous green, with almost metallic lustre, of Cupressus Lawsoniana erecta viridis. These all stand round the triangular lawn, and amongst them comes, by some strange chance, St. Eulalie, a beautiful Pine allied to P. excelsa, whose robe of grey-blue tufted foliage wraps her feet, and trails upon the grass.

Beyond, on the long lawn, next "the park," stands Sir Tristram, the fine young Pinsapo; he all but perished in the frost of 1879–80, but now he seems to have drawn new strength and vigorous green from that nearly fatal conflict with his terrible enemy. On the house lawn the Deodara is the fairy Morgan-le-faye. Near her stood Sir La Cote-mal-taille, an ill-formed Lawsoniana; but he is transplanted elsewhere. King Mark is a rather wretched ill-grown Cedrus, in summer almost hidden by Laburnums. Dame Bragwaine is a curious Cryptomeria elegans; she has so many names (seven, at least, that I know of—down to Retinospora elegans), and she takes such odd diverse disguises; once, in a heavy snow she had to be supported by a stake, and took the semblance of a bear leaning on a ragged staff. In summer she is green, and in winter wears a dress of purple brown; in rain or heavy dew she is spangled all over with diamonds and pearls. Queen Guinevere was never represented, no tree was found to fit her character. But near King Arthur and Sir Tristram, the two great Pampas tufts, still waving wintry plumes, are "La Beale Isoude" and "Isoude les Blaunch Mains."

From our foolish garden-dreaming let us rest, and turn with a long look of revering love to the great Oak that stands in his strength out in the park field beyond the garden. On three sides round are lines of guardian Elms, in all their pride of delicate leafless intricacy; alone, amid the leafless ones, rises the Oak, wearing still his crown of brown, sear leaves. Smooth and straight grows up the giant stem, full 20 feet to the spring of the lowest branch. Two brother Oaks stand on either side. Their form is more rounded, more perfect; but high above them the great Oak uprears his head—unconcerned, and grandly branched, though shattered by every fierce west wind that blows. Every storm works some loss, but from the way each torn limb lies, you would say he had thrown it down in proud defiance. The wood-pigeons shelter among the summer leaves; the autumn ripens a rich store of acorns; and now, as I survey him from the terrace walk, or gaze upwards from the wet dead leaves beneath, through all his depths of bare and spreading boughs, I think of Keats' stanza—

> "In a drear-nighted December,
> Too happy, happy tree,
> Thy branches ne'er remember
> Their green felicity;
> The north cannot undo them,
> With a sleety whistle through them
> Nor frozen thawings glue them
> From budding at the prime."

The Oak is to my mind the tree of trees; and its destruction by insect ravages, that has saddened so many fine parks and woods, has not come near us, I rejoice to say. Our few (there are but four or five) are safe as yet. I heard the gardener of one great place that had suffered much, has acknowledged the cause to be the scarcity of birds. The time perhaps is coming when the eyes of all will be opened to their value.

Orchid Notes and Gleanings.

WORK IN THE HOUSES.—The remarkable alternations in the outdoor temperature that have frequently taken place during the past week or ten days, have made it rather difficult at times to maintain a steady degree of heat and moisture in the different Orchid-houses. Under the above conditions the two extremes in the atmosphere—aridity and saturation—must be carefully guarded against. The former condition, if long continued, is fatal to the health of the plants, and the latter, when allowed to remain stagnant for the want of ventilation to give buoyancy to the atmosphere, is very injurious at this dull season of the year. Extremes of temperature must also be avoided, especially when they are created either by an excess or deficiency of firing. A natural rise with the rising of the thermometer outside should be taken advantage of at this season to thoroughly change the air in every house. No fixed rule should be adopted either that says the houses should be closed at a certain hour every afternoon, as we have proved the folly of this rule with more things than Orchids. We prefer to see our East Indian house with half an inch of air along the top of the house at 10 o'clock at night—even at this season—to seeing it entirely closed; but we always take the precaution to have a piece of tiffany over the ventilators. Preparation will now have to be made for the busy season, and as one of the most tedious jobs is the cleaning and picking of the sphagnum moss, as much of this work as possible should be got through at once. If Orchids are to thrive and give satisfaction to all concerned in them, the best of everything should be obtained, be it peat, moss, pots or baskets. The Phalænopsids are now fast completing their spikes, and promise to be very fine; these we keep nicely moist at the root without saturating them too frequently, and the temperature they enjoy is 63° at night and 68° by day. In the same house the early flowering kind of Angræcum sesquipedale will be fast opening its flowers. In the Cattleya-house the different species of Lælia will be at their best. One of the most delicate in colour, and the best for cutting, is L. albida; but it is not so frequently seen in collections as it deserves to be. The gem of all is undoubtedly L. anceps Dawsoni, and it is much to be regretted that it is so scarce, as it is a good grower, and very free. Where there is only one batch of Calanthes grown these will now be on the wane, and as soon as the plants are cleared of their spikes the bulbs should be stored in a temperature of about 60°, and kept dry. It is quite possible to have a later batch of these plants by keeping a portion of the stock before they show signs of starting in a little cooler atmosphere after the middle of February. By this means they will not start into growth before the middle of May, and need not be repotted till early in June. C. Turneri is a beautiful kind for succeeding the red and yellow-eyed varieties of vestita, but unfortunately it is scarce. There are so few scarlet Orchids that the blooms of the Sophronites are very welcome at this season of the year; these will now be going out of flower, and if they have been removed while in flower to some convenient place for displaying their beauty they should at once be returned to a position near the glass. Another scarlet Orchid now showing for flower, and one too seldom seen, is Ada aurantiaca. It is a handsome plant when well done, and grown in good sized masses it is very showy. It will grow freely treated in the same manner as the cool Odontoglo sums, placing it at the warmest end of the house. It will also bear gentle forcing without injury. This, with Masdevallia coccinea, M. ignea, and M. Veitchii, form a group of fine red and scarlet spring flowering Orchids, and these will be succeeded by the well-known Epidendrum vitellinum. Any of the Odontoglossums that are in right condition for potting should be seen to now, as they will soon commence to form new roots, and the growths will keep strengthening as the days advance in length. The handsome O. madrense is now just right for potting. I see one of our best authorities on the culture of Orchids recommends in the *Orchid Album* to grow this plant in the Cattleya-house. Ours have been grown in the cool house, and have made bulbs this season double the size of the imported ones, and the plants look as healthy as can be. *J. Roberts, Gunnersbury Park Gardens.*

EFFECTS OF FOG ON ORCHID FLOWERS.—The removal of all the elements which the combustion of coal fires and consumption of gas add to a fog, will not, I fear, prevent the injury to Phalænopsis, Calanthe and Angræcum blooms and buds to which "J. D." refers on p. 814. Having grown these plants both in London (Regent's Park) and in the purer atmosphere of Bickley the result of several years' experience in each locality, shows conclusively there is no difference in the kind of damage, but the variation is solely in degree. Here, 12 miles south-east of London, the fogs are never as pungent and smoke-laden as in town, and they are very seldom of the yellow "London fog" nature; they seem more generally like white sea fogs, though, perhaps, once or twice in a season the yellow fog prevails even here. But white or yellow, London or Kentish, city or country, the deleterious effect is the same, varying with the intensity and duration of the unwelcome visitation. The yellow fog as a rule is more intense than the white, and more damage results; but the succession of foggy weather (December 10—15) did as much harm in the way of destruction of flowers as I ever remember in Regent's Park. Calanthes do not often fall victims till the petals begin to expand; but from the time the buds are the size of a large Pea, or Horse-bean, fog is fatal to Phalænopsis flowers. Angræcum sesquipedale is very susceptible when the bloom-buds reach the size of a Cob-nut; but the expanded flowers resist better than the buds. I cannot agree with "J. D." that the ill-effects are restricted to the loss of flowers and buds; on the contrary, the plants suffer, and require careful washing in tepid water to remove the deposit the fog leaves behind. Any one can roughly test what this is like for himself, by simply applying the tongue to the leaf of a plant where the bloom has been affected, though what the constituent element which causes the injury may be, I must leave to chemists to determine. *F. A. Philbrick, Oldfield, Bickley Park.*

THUNIA MARSHALLIANA, RCHB. F.—This very beautiful species, with white flowers, with the disc of the lip yellow, with numerous fine threads and orange striæ, has been recently illustrated in Regel's *Gartenflora*, t. 1098.

CALANTHE VEITCHII AT GIVONS GROVE.—Some very fine examples of this popular winter flowering Orchid are now in perfection at Givons Grove, Leatherhead, the residence of Russell Sturgis, Esq.; they are grown three bulbs in 32-sized pots, and some of the bulbs measure from 10 to 11 inches high, throwing fine well coloured spikes nearly 4 feet long, and bearing nearly fifty flowers on a spike. There are also some fine plants flowering freely of the varieties of vestita lutea and rubra; these are grown in quantities for cutting from. Noticeable also in the same collection is a beautiful plant of Masdevallia tovarensis with twenty-two spikes of flowers; a grand display of the old but useful Cypripedium insigne in 6 inch pots, bearing an average of about fifteen fully expanded flowers. Lælia anceps with about thirty spikes will shortly be in perfection; a grand lot of Cœlogyne and Dendobium nobile are grown in 48-pots for decorative purposes, and from the condition they are in will be most valuable for that purpose in the spring. A fine Phalænopsis Schilleriana attracts one's attention, having about four dozen buds just ready to open.

SOPHRONITIS GRANDIFLORA.—In reply to the enquiry of "Angræcum," two flowers on one pedicel or foot-stalk, though not common, are not unknown. In March, 1882, a plant grown here in a small pan threw three such pairs of flowers, *i.e.*, six flowers on three stalks. The plant is not yet sufficiently forward this season to predict, but the new growths seem more vigorous than ever. Another plant just going out of flower has, this month, thrown two blooms from the same stalk, and in all cases one of the flowers has been of full average size, the other somewhat smaller. Messrs. Veitch flowered certainly one plant last spring with two flowers on the footstalk. It will be interesting to notice if this habit is constant, and the plants that show the peculiarity are worth careful watching, to determine the point. It ought, perhaps, to be mentioned, that all these double-flowered Sophronitis were deep scarlet, true militaris in colour. *F. A. Philbrick.* [Mr. Clements, gr. to C. G. Hill, Esq., Arnott Hill, Nottingham, informs us that a plant in a 6-inch pot bears with him 24 flowers, including three twin flower-spikes. ED.]

The Flower Garden.

Planting. — With a continuance of such mild weather as we have lately experienced every exertion should be made to follow up the work of planting, both for new work and in connection with alterations which may be in progress. All the groundwork, such as trenching and preparing the soil, having been got ready, as before advised, it now becomes necessary to get the planting performed as early as possible, before the advent of spring wakes up the vitality of the trees, when it will be found that those trees which have been securely fixed in their places will stand by far the best chance of living and breaking into a fresh growth. I am alluding here to the ordinary modes of planting shrubs and Conifers for ornamental purposes in plantations and shrubberies; but where such alterations imply the removal of large trees of 25 feet or more in height, much more care will be requisite, as it will be necessary in the first place to secure a large ball of earth to the tree—sometimes nearly a ton in weight, if absolute success is to be secured in the removal: and with proper precaution this is a matter of certainty, always premising that time and labour are secondary considerations. The great thing is to keep the ball of earth from breaking to pieces and thus rupturing the roots in all directions; and this can be very well effected by throwing out a trench 2 feet wide and as much deep round the tree at a distance from the outside of the trench of 5 or 6 feet from the stem, which will give what I call plenty of elbow-room and leave a solid ball of earth of 6 feet in diameter, which must not be forced in any way, but with a rather short handled, light, and finely pointed pick the outside of the ball must be gradually reduced and the ball itself undermined with the same tool as far as it can be done without causing it to break, taking care to peg back all loose roots on to the ball; then have ready an extra stout piece of sail-cloth, about the size of an Archangel mat, with eyelet-holes of brass or iron, half-inch diameter, securely fixed round the outside, and also a good length of ordinary packing rope, and pass the cloth under the ball as far as possible and lace it tightly backward and forward, under and over the ball, after which it will be easy to shift it, either on planks or a low broad-wheeled truck, to any desired position with safety and success.

Rose Garden.—Every advantage should be taken of frosty mornings to wheel out manure and composts to every department requiring it, but especially will it be necessary to apply good dressings to Roses whether they are arranged in beds or borders or as isolated plants, since in any situation they will require the stimulus of well decomposed manure either applied as a surface-dressing or to be well incorporated with the compost in which they are planted. Well established plants have a great power of absorbing nourishment from liberal surface-dressings, the fertilising parts of which, if put on early, will, through the influence of the different changes of the atmosphere, become dissolved, and percolate down to the roots. If new plantations are contemplated in the spring the interval may very well be employed in draining, trenching, manuring, and otherwise thoroughly preparing the soil.

Winter Work.—In inclement weather during the dull season, when the men cannot well work in the open air, there will always be found plenty of work under cover for all hands in making preparation for the coming season, and work which is indispensable and must be done in the summer and in fine weather, if not prepared beforehand. We all know how irksome it is to have to set men to work at such little jobs in the busy season, when their hands are required elsewhere, such as making and sharpening flower-sticks of various lengths and sizes, splitting up heart-of-oak and making pegs for marking the sites of plants which die down out of sight in the winter; making small hooked pegs of Fern, Beech, or Birch—all of which are well adapted for the purpose of pegging down various plants, and for the finer work of carpet bedding; and where it is usual to peg down Roses or other strong growing plants in beds or borders, it will be useful to keep in store a supply of pegs for which the strong growing branches of Birch are very suitable, cut into various sizes, from 6 to 18 inches long; any work, in short, which will tend to lessen labour at the busy season may be prosecuted. Rolling gravel walks and grass will be the principal work on the lawns, but as the new year will soon be opening upon us, all opportunities must be taken to relieve the inevitable pressure of the incoming season. *John Cox, Redleaf.*

The Hardy Fruit Garden.

The unsettled state of the weather during the last three months will have prevented work from having been brought as forward as it ought to be in most gardens, and much nailing and pruning remains yet to be done. It will be well to proceed with all necessary pruning on espalier trees of Apples and Pears, as opportunity offers for performing the operation without getting upon the ground when it is in too wet a state. Remove a portion of the oldest and most unpromising spurs where there appears to be any indication of crowding; cut back others that project begond reasonable limits, and reduce those that are carrying no bloom-buds. Shoots for extension will be the better for having their points shortened a little to a good bud, and it is preferable that the bud cut to is on the lower side of the shoot, to assist it in starting again straightly. No great amount of pruning ought to be required on espalier trees at this time if the summer pruning has been attended to. Where a fruitful form of wood has not resulted from due attention to the removal of breastwood during the growing season, it will be well to consider the state of the roots and the means to be taken to remove them from the subsoil into which it will probably be found they have penetrated. Restricted supplies of food on borders that have long been devoted to fruit cultivation frequently cause premature decay in the trees, and it is necessary to bear this in mind at a time that heavy dressings of rotten manure can be applied in order to encourage fresh growth by providing new supplies for surface roots. See that all cross branches are removed from pyramidal trees in pruning, and that no more shoots are retained than will be required to furnish the tree when each branch will have become covered with spurs, and will require much more room laterally than at present. No pruning will be wanted on extensions that proceed in the required direction and are not too long; others must be cut to a bud that may start in the direction needed. The leader may, however, be cut back to about 18 inches in length, to ensure a sufficiency of branches on any varieties that require this assistance. Ill-placed branches that cannot be spared in the furnishing of trees must be regulated with ties of tar-cord fasted to pegs in the ground, or to stakes, to bring them in proper position. The pruning of bush fruits may now be proceeded with. Where birds are, however, extremely troublesome in their continued attacks upon the buds, it may, perhaps, be preferable to leave such pruning until the spring, or a wash of hot lime may be given immediately after pruning, which will generally prevent the birds from attacking such bushes where any choice of food offers. All young shoots of Gooseberries may be spurred in that are not required for the formation of the bushes, and see that all growths that are left to furnish the frame, or for extension, start in the necessary direction—that is, in as direct a line as possible from the centre to the circumference, and thus avoid the difficulties encountered in gathering amongst crossing and irregular branches. Avoid as far as possible cutting back rank growths that are not required, as, in common with suckers, they ought to be pulled off, in order to remove the clusters of buds around their bases. Free extension should be encouraged in young bushes, removing only those tips that bends towards the ground, weak and ill-placed branches, and any that promise to crowd the bush. Black Currants will require little but the removal of exhausted and crowded branches. Red and white Currants will need the same attention to prevent crowding as Gooseberries, but it is not well to spur in all the shoots so closely as is generally done in the case of the latter, as many of the short twigs may be retained as fruit bearers. Cuttings of bush fruits should be put in at once if not already done. Use strong but well-ripened growths, cut to about a foot in length, and remove all the buds but three or four at the top, except in the case of black Currants, and insert deeply and firmly, using a little sand for Gooseberry cuttings if the soil is at all heavy. *Ralph Crossling, Penarth Nurseries.*

Grapes and Vineries.

The earliest vinery can now be kept at a night temperature of 60° to 65°, with a rise of 10° by day. In very severe weather it is better to let the night temperature fall a few degrees lower than to use fire-heat excessively. Raise the temperature in the early part of the day, so that the forcing is done when there is plenty of light; admit air on the back ventilators when the temperature reaches 70°, and increase it as the heat rises, closing the house early in the afternoon with plenty of atmospheric moisture, while the sun has power. By closing early much fire-heat is saved, and the atmosphere is more healthy. When the border is dry water thoroughly with clear tepid water at 85°. Disbud the Vines as soon as the best bunches can be seen, when the syringing overhead must be discontinued. When the bunches are showing, if the weather is dull, less atmospheric moisture must be used, or they will often run to tendrils instead of branches if kept in too humid an atmosphere. Stop the shoots at the third or fourth joint beyond the bunch, according to the room there is on the trellis, so that there is plenty of foliage without overcrowding. Keep the evaporating pans filled with weak manure-water until the blooming period, when they must be kept dry until the fruit is set. The fermenting materials on the inside border can now be dispensed with, and if there is any heat left in it, it must be cleared out before the Vines come into flower. Examine the fermenting material on the outside border, and add fresh dung and leaves to keep the temperature as near 75° as possible. If a second house was started, as advised in my last Calendar, keep the fermenting material on both inside and outside borders renewed, so that the heat may be kept steady. Turn the material on inside borders every morning, to liberate the ammonia. Keep the night temperature at 50°, with a rise of 10° by day, and close the house early in the afternoon, with plenty of moisture. A second house of Hamburghs can now be started, if not already done; and if the weather is mild, and fermenting material is used on the inside borders, no fire-heat will be required during the first fortnight. The present is a good time to start Muscats where there are several houses, keeping them at a night temperature of 50°, with a rise of 10° by day. Before starting water the border thoroughly with clear tepid water at a temperature of 85°; syringe the rods with tepid water several times daily; but if fermenting material is used on the inside borders much less syringing will be required. The season for ripe Muscats is now fast drawing to a close, and the fruit should be taken from the Vines and be bottled. Great care will now be required to keep them in good condition until the end of January, which is as long as they can be kept profitably. As soon as the fruit is cut throw the house open for a few days before pruning, then prune and dress the cuts with styptic, and keep the house as cool as possible until starting time. *Joshua Atkins, Lockinge Gardens, Wantage.*

The Pine Stove.

Keep the temperatures as indicated in my last Calendar. The present is a good time to look over all pots that are available for next season's use, and have them cleaned ready for use. Get in some good bones and bone-meal, so that these may be ready when required. Plenty of crocks should also be got ready, also a quantity of good prepared charcoal. If any of the rooted suckers are getting too much pot-bound, give them a shift before the spring potting. Water all plants cautiously at the present time, as it is the most trying period of the year; ascertain the true state of the ball, and only give water when required. Prepare a lot of soil for spring potting, break it in pieces with the hand so as not to break the fibre. After the soil is prepared put it in a dry place until required for potting. Pick out any worms that are visible, and check wireworms by dusting a little soot among the loam. Regulate the atmospheric moisture according to the amount of firing, as too much is quite as injurious as too little. Any plants now showing fruit should be well taken care of, as they will come in at a time when fruits are scarce. Stake all fruits before they get too large, and in this operation be careful not to twist or injure the stems, as it interferes with the proper swelling of the fruit. Keep the plunging materials well round the pots, so as to prevent the roots from becoming too dry. *D. Wilson, Castle Hill.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Jan. 1	Sale of Lilium auratum Bulbs from Japan, and other Hardy Bulbs, at Stevens' Rooms
WEDNESDAY,	Jan. 3	Sale of Roses, Fruit Trees, Hardy Plants and Bulbs, and Imported Orchids, at Stevens' Rooms.
THURSDAY,	Jan. 4	Sale of Imported Orchids from Mr. F. Sander, at Stevens' Rooms.
SATURDAY,	Jan 6	Sale of Hardy Plants and Bulbs, at Stevens' Rooms.

ONCE more the time has arrived to take note of the DOINGS of the PAST YEAR, to record our progress, take lessons from our failures, and pluck up fresh heart for the future. The retrospect on the whole is far from unsatisfactory. In spite of an unfavourable season; in spite of untoward circumstances; in spite of the loss of mighty men and good men; there has on the whole, we venture to think, been substantial progress in matters horticultural. The weather—we are such creatures of circumstance that we must begin with that—was singularly mild throughout the winter quarter. Spring frosts were less fatal than usual, but the relatively cold rainy summer, the spring gales, and other circumstances, including the legacy of a cold wet autumn, combined to spoil our fruit crops and render outdoor gardening scarcely average. For all that gardeners were to the fore, and we believe we may fairly chronicle a distinct advance, especially in the evolution of tuberous Begonias, Amaryllis, and greenhouse Rhododendrons.

The shows in London were scarcely up to the usual average, and, worse sign still, the fortnightly meetings of the Royal Horticultural Society showed signs of falling off in interest. This will, we hope, be remedied at once, for of all exhibitions these are the most interesting and the most generally useful. Next year it may confidently be expected that an unusual number of the public will visit these meetings. The exhibitions at Manchester, Edinburgh, York, and several provincial towns, have been unusually good, and point to the necessity of making the Royal Horticultural Society no longer a mere metropolitan, but a national Society. While speaking of the parent Society we cannot but allude to the termination of the lawsuit, a consequence of which is, that the debenture debt is cancelled, and that the Society now occupies the gardens at South Kensington merely on sufferance, and may be turned out at any time. There is no immediate prospect of such a contingency arising; but a very large part of the garden is now occupied with buildings for the Fisheries Exhibition. Altogether the outlook for the Society is not very bright. All the more reason for the energetic and persistent support of those who feel that horticulture has very high claims upon the community, quite independent of its commercial importance.

Of the Royal Gardens, Kew, we have lately spoken at some length. It is an institution to be proud of, and each year sees some new development of its utility. This year two departments have been added—one, a gallery of paintings of plants in their native haunts, executed with care, fidelity, and unusual skill by Miss NORTH, who has generously presented the nation not only with her works of art, but also with the shrine wherein they are enclosed. The other addition to Kew is the rock garden, constructed with much taste in a remarkably short space of time, and which, good at the beginning, will improve year by year, as experience points out what modifications are requisite.

The Gardeners' Royal Benevolent Institution—another society in which the general body of horticulturists feel an interest—has been fairly successful during the year, and a substantial addition has been made to the pension fund; still we can but feel that the Lord Mayor, who presided at the annual dinner, was quite right when he expressed his regretful surprise at the comparatively limited support accorded to this useful institution. We trust that the example set, under unfortunate circumstances as regards weather, by Lord and Lady HENNIKER and their energetic gardener Mr. PERKINS, may be followed in the ensuing year. Surely there must be scores, if not hundreds, of gentlemen who would willingly give up their parks for one day in the year for so beneficent an object, and so enable the number of pensioners to be increased, and, what is perhaps just now more important, to augment the annual sum now given to those already on the list.

The visit of a deputation from the School of Horticulture and the *Cercle d'Arboriculture* of Ghent was one of the pleasant features of the year to those who had the pleasure of meeting our *confrères*. Our friends came to see what could be seen in a week of gardening in all its aspects round London; an ample and well-considered programme was arranged for them, which was carried out without a hitch, and those who felt how desirable it was that fit return should be made for the courtesy and hospitality always shown to Englishmen visiting Belgium, may be gratified to know that our Belgian friends are warm in their recognition of the attention paid them, and of their admiration, with few exceptions, of British horticulture.

Turning now to scientific horticulture, we have little or no progress to relate as regards the application of the electric light to plant culture during the year, though we have no doubt under certain circumstances it will hereafter be found serviceable.

As regards plant diseases a good deal has been done during the year in unravelling the course and life history of various parasitic fungi. We may mention in this connection the papers on the "Sclerotia" of the Potato fungus, described by Mr. WILSON in these columns, and the remarkable "heterœcism" proved in the case of the Wheat mildew, the Juniper fungus, and others, by Mr. PLOWRIGHT, who has been able amply to confirm the experiments of his predecessors. We cannot now dilate upon these experiments and their practical application, but must refer those interested to the original papers. A curious disease of the Hart's-tongue Fern has been well illustrated by Mr. W. G. SMITH, who has also shown a hitherto unsuspected way in which the Hollyhock fungus may be propagated; and the nature of the changes producing the gouty swellings on Silver Firs has been explained.

The Egyptian Campaign, unlike the Affghan Expedition, has not added much to our knowledge of Egyptian vegetation, already, indeed, pretty well known; but as part of our army still remains in the country, there is reason to hope that important information as to climate and other matters may be forthcoming.

The obituary record is always necessarily sad, this year it is sad, but a halo of glory surrounds it. The great naturalist of our age, DARWIN, was laid to his rest in Westminster Abbey, in the presence of statesmen, ministers of all denominations and sects, and, of course, of representatives of all branches of science. Within a quarter of a century this great man by quiet perseverance, by love of truth that nothing could affect, by candour that nothing could pervert, by a temper proof against all aggression and aspersion and free from the slightest tendency to recrimination, lived to see his views not only generally accepted, but moulding and modifying the progress of almost all departments of knowledge, and to witness the fears and ill-bodings of the timid allayed and nullified. His method of work may be imitated by all of us. The results he obtained are an encouragement even to those not specially gifted. The beautiful simplicity and honesty of his character we may admire, but few can hope to rival. By the side of this great loss others seem less — less they are to the great world of science, but no less to the narrower circle of friends and associates. France has lost one of her acutest and most laborious botanists in DECAISNE, and not only one of the foremost of botanists, but the most scientific of modern pomologists. This is not the place to dilate upon personal characteristics, apart from our own department, but we cannot help adverting to the testimony given as to DECAISNE'S charity and beneficence—matters not suspected by any but his most intimate friends, if indeed by them, till death revealed the secret that the man who was persecuted and aspersed in some quarters for his supposed lack of consideration for others, is now shown to have been one of the most charitable of men—a caution against partial and superficial judgments. His position as a botanist and horticulturist, however, was always safe from all assaults. The death of Dr. THWAITES removed from among us a skilled botanist whose merits and discoveries in cryptogamic botany have never been adequately estimated. He did his best work in these departments when little attention was given them in this country, and so, like GRIFFITH, the full measure of appreciation due has never been paid to him, and others get the credit for discoveries made before they were born. Of his administration of the Ceylon Botanic Garden we have recently spoken. The deaths of JOHN SADLER, and of our colleague, WILLIAM HINDS, are of too recent occurrence to demand further notice on this occasion.

So much for generalities. In subsequent issues we shall hope to speak more in detail of our gains and losses in special departments of horticulture, and of our anticipations for the coming year.

—— THE GHENT QUINQUENNIAL.—It is hoped that this exhibition, which will be held in Ghent from April 15—22 next will be "the most important of any yet held throughout the world." The number of medals to be awarded is 846, not including the extra ones awarded to meet special cases of merit. Of these medals 131 will be of gold. The King's prize will be for fifty plants in or out of flower; the Queen's prize, for the most numerous and best collection of exotic Orchids in flower. The Fédération offers a prize of 500 francs (£20) for the best collection of miscellaneous plants. There will also be thirty-four gold medals of the value of £8 each, and five large gold medals framed (*encadrées*). Of silver-gilt medals there are to be 280; of silver 245 of the first, and 190 of the second class. There will be no bronze medals. Mr. BULL offers six cups for new plants introduced by him into commerce. The VAN HOUTTE Committee, as already announced, offer two cups to be competed for exclusively by Belgians. It will be a busy week.

—— THE COMMITTEES OF THE ROYAL HORTICULTURAL SOCIETY.—Our attention has been drawn to a statement made in the letter of "X. X.," at p. 790, implying that retiring members are not officially informed of the fact that their services are no longer required, or that in the natural course of rotation their term of office has expired; and further it is suggested by "X. X." that a vote of thanks might be given to the retiring members. In reply to this we have been favoured with a copy of the circular sent to retiring members, which shows that the authorities at South Kensington are not so destitute of courtesy as "X. X." makes them out to be. For the present we cannot communicate with our correspondent, but we are sure he will be as glad to acknowledge his error as we are to be the means of enabling him to do so.

—— "IMPORTANT NOTICE."—Gardeners, like other people, are looking out for almanacs for the coming year, but, unlike other people, they interest themselves very much in the question of pruning, especially pruning Vines. We always thought that very good Grapes might be had by any system of pruning, but we never expected to double the weight of our bunches by any such method. However, we must have been mistaken, for "Mr. RAPHAEL" announces that the fortunate possessor of his almanac who "pruned his Vines at the time stated in the almanac," had "double the weight of Grapes" he had the year before. So it is not a case of cutting to the best eye, but one of selecting the right day. But the testi



The Gardeners' Chronicle,] FIG. 149.—AGAVE VICTORIÆ REGINÆ IN THE CAMBRIDGE (U.S.) BOTANIC GARDEN. (SEE P. 841.) [December 30, 1882.

monialist does not tell us how many pounds of Grapes he had the year before. We experience the perplexity of the Irish schoolmaster, who said, "If once naught's naught, twice naught must be summat."

—— FOOL'S PARSLEY.—Some errors are very hard to kill, among them the statement that Æthusa Cynapium is poisonous. We do not say that it may not be so exceptionally, but the elaborate experiments of Dr. JOHN HARLEY conclusively proved that the plant in question is usually harmless. The case lately recorded in the *Garden* probably refers to some other plant.

—— AMSTERDAM COLONIAL AND GENERAL EXHIBITION.—In connection with this exhibition a horticultural section has been arranged, to comprise—1st, a permanent exhibition from May 15 till the close of the exhibition (date not stated); 2d, six temporary exhibitions, each of one month's duration—the last one in September being devoted to fruits. The exhibits will be judged when they are in their best condition. Medals and other awards will be made. Exhibitors of glasshouses must give notice of their intentions before January 15, and their buildings must be erected by April 15. Nurserymen desirous of showing plants in the permanent beds must have the plants duly planted by April 15. For this exhibition the schedule includes classes for Conifers, Hollies, evergreen shrubs, trained fruit trees, Roses, deciduous trees and shrubs, Dahlias, Cannas and hardy herbaceous plants; greenhouses, heating apparatus, and rockeries furnished with alpine plants. Further inforamtion may be had from the secretary of the horticultural department, Mr. J. P. R. GALESLOOT, Amsterdam.

—— DOUBLE FLOWER OF TETRATHECA CILIATA.—Baron VON MUELLER has kindly sent us a dried specimen of double flowers of this very pretty greenhouse shrub. If the variety could be perpetuated and introduced, it would doubtless be a favourite as a decorative plant. Some of the flowers sent had two rows of petals and eight stamens in a single row, three of the eight being more or less petaloid; in other cases, in addition to the supernumerary petals, several of the stamens had assumed more or less of the guise of petals. Apart from its decorative character, double flowers in this order have a special botanical interest, owing to the fact (1) that in some cases the stamens, though in a single row, are twice the number of the petals—a circumstance that is suggestive of a primordial branching, or division, of one stamen into two; (2) that in other cases where the stamens are in two rows, the outermost row is placed in front of, instead of between, the petals—a deviation from the ordinary rule of alternate or intermediate position and sequence of parts that is susceptible of more than one interpretation, but which is the right one can only be determined by examination of the flower in all stages from its birth upwards, and by comparison with allied forms.

—— INDIAN PRIMROSES.—In the last number of the *Journal* of the Linnean Society is an interesting paper on some undescribed and little known Indian species of Primula and Androsace, by Dr. GEORGE WATT, who has paid great attention to the order both in Sikkim and at the herbarium at Kew. The number of species of Primula enumerated is twenty-four, and of Androsace six, and the enumeration is accompanied by some notes by Sir J. D. HOOKER. Several of these plants will doubtless soon be in the hands of our cultivators, on which account we think it well to call their attention to the publication of this paper with its numerous illustrations.

—— THE PLANTS OF MADAGASCAR.—At the last meeting of the Linnean Society a paper was communicated by Mr. J. G. BAKER, containing descriptions of a large number of new species of Dicotyledons of the gamopetalous series of natural orders, gathered in Madagascar by recent English collectors, especially the Rev. R. BARON, F.L.S., of the London Missionary Society. The most interesting of these novelties is Schismatoclada, a new genus of Rubiaceæ, allied to Cinchona. The other new genera are Tetraspidium, of the group of semi-parasitic Scrophulariaceæ, such as Pedicularis and Melampyrum, which turn completely black in drying, remarkable for its four shield-shaped one-celled anthers; Forsythiopsis, an erect shrubby Acanthaceous genus, with flowers like Forsythia, and leaves not fully developed till after the flowers fade; and Monachochlamys, another genus of Acanthaceæ, allied to Mendoneia and Thunbergia, with numerous small flowers, each contained in a persistent spathaceous bract like the hood of a Franciscan monk. Of representatives of well known European genera the present collection includes two species of Anagallis nearly allied to tenella, two Ajugas, a Salvia, two Micromerias, three species of Stachys, five Senecios, three Cynoglossums, and a Lysimachia. The genera represented most largely are Danais, Vernonia, Helichrysum, Gaertnera, Clerodendron, and Hypoestes. There is a single species of the beautiful Acanthaceous genus, Strobilanthes, which is almost restricted to Tropical Asia. There is a new Vinca nearly allied to rosea. Of endemic genera, known previously in the island, there are new species of Aspilia, Epallage, and Oncostemum. Of Cape types the principal are a Lightfootia, a Halleria, an Alectra, and two Heaths of the genus Philippia.

—— THE ACTION OF MANURES ON FRUITS.—Cultivated plants are the inheritors of whatever benefits or disadvantages they may have derived from their predecessors. The thing is obvious enough to those who look on plants from an evolutionist's point of view; and the practical outcome is that, except under special circumstances, or for some special purpose, it is best, in our attempts to improve upon what we have got, to deal with a plant that has been in cultivation for a long time, and so avail ourselves of its stored-up inheritance. It would be a long uphill work to start afresh with the Crab or wild Pear, for instance, although for the sake of getting a new "break" or more robustness of constitution it may be desirable sometimes to begin again at the beginning, or at least to infuse some less conventionalised blood into our plants, if we may so speak. A curious illustration of the contrast between the wild and the civilised condition is afforded in Professor GOESSMAN'S paper on "Mineral Constituents in Plant Growth" in the *Transactions of the Massachusetts Horticultural Society*. The Professor has been experimenting on the difference in chemical composition between Vines unmanured and Vines manured. In the course of his experiments he analysed the juice of a wild Vine (Vitis Labrusca) grown without manure, and the juice of the same Vine when treated with manure. At one bound the sugar rose from 8.22 per cent. in the wilding without manure, to 13.67 per cent. in the same wilding appropriately fed. This shows the advantage of the manure. But now, looking to the analysis of the cultivated variety (Concord), we find that in its juice, even when unmanured, the sugar amounted to 13.89 per cent., so that the cultivated variety, without manure at all, yielded a larger percentage of sugar than did the wild form with ample manure. The increase of sugar is coincident with a large increase of potash, and a largely diminished proportion of lime. In the case of Strawberries the wild unmanured variety contains much less potash, much more lime, much less magnesia, much more iron, and about the same percentage of phosphoric acid as the cultivated and manured variety. The wild Strawberry, moreover, contains one part of acid to two of sugar, while in the cultivated varieties the proportion of acid is one to four or more of sugar.

—— RABENHORST'S KRYPTOGAMEN FLORA.—The second volume of this useful publication contains the commencement of the systematic enumeration of the seaweeds of the German and Austrian coasts, under the editorship of Mr. FERDINAND HAUCK. The text is in German, but the woodcuts illustrative of the genera appeal to people of all tongues. A preliminary chapter details the method of observation and preparation. The arrangement adopted is the one convenient for use if not very scientific, viz., that into red, olive, green, and blue seaweeds respectively.

—— PRACTICE WITH SCIENCE.—We wonder what our Massachusetts friends can have thought of the "gentleman from the Royal Horticultural Society of London," who told them the other day that charcoal, dissolved in tanks of water, was the best means of supplying plants with carbon! A minute before the speaker had expressed his respect for science, and his regret that Professors are not practical men. We are sure the Professors must regret their inability to dissolve charcoal in water, but at the same time we are afraid practicals are not likely to be more successful. The Hon. Marshall WILDER was at first too diffident to correct the gentleman from the Royal Horticultural Society, but he soon took occasion to put the matter straight. Lest the notions expressed by the gentleman from London should create a wrong impression of his worth and ability, we hasten to say that although we respectfully decline to accept his theoretical views in general, and those relating to the solution of charcoal in water in particular, the gentleman in question possesses an unusual knowledge of plants, and is an excellent cultivator. Though charcoal be not soluble in water, and though plants do not, as he asserts, get their carbon through their roots, there is no question as to the utility of charcoal in plant cultivation. It was in the attempt to explain the reason why that the gentleman from London went wrong.

—— NORTH OF SCOTLAND HORTICULTURAL ASSOCIATION.—We have received a copy of the second annual report of this Association, containing the reports of some papers read before the Association. The idea is excellent, and some of the papers are worthy a place in any journal. Others, however, are so full of errors and misstatements (we allude especially to those relating to vegetable physiology) that we suggest in future that the papers intended for publication should be referred to a committee of selection, and revised by a competent editor. When the Society can command the services of University Professors and of such observers as the author of the article on the Club-Root Fungus, it is worse than a blunder to allow the publication of papers on vegetable physiology by writers evidently unacquainted with the subject on which they profess to write. Why should not such writers confine themselves to detailing their practical experience as cultivators, when they would be doing good service to horticulture instead of bad?

—— BOUVARDIAS AND STEPHANOTIS AT BEXLEY HEATH.—Each year sees something or other fresh grown here in all but incredible quantities. When the double white Bouvardia, Alfred Neuner, made its appearance last year Mr. LADDS felt so convinced that the flowers would take in the market that he went in for it in earnest, the result being that he has ten houses, each from 150 to 280 feet long, by 12 wide, all filled with it, and now in bloom, presenting a sight such as it is difficult to describe. The plants do not appear to have been stopped more than once in the way they often are with a view to make them dwarf and round-headed, but have been encouraged to make several strong shoots each from 12 to 15 inches high; these, in addition to the truss of bloom at the points, push ten or twelve stout side-shoots at the joints below, much stronger, and admitting of being cut with longer stalks than when the plants are hard stopped. The fact of a flower being double not unusually conveys the idea of an absence of elegance, but such is not the case with this Bouvardia, which in addition to its pretty appearance on the plant is one of the best flowers in cultivation for general cut purposes, its unusually lasting properties being not the least merit it possesses. Preparation has been made to provide Stephanotis daily through the coming season, virtually by the barrow-load. The plants now cover a great part of the roofs of two houses, each 160 feet by 35, one 250 feet by 12, and a fourth 300 feet by 25. It might be supposed that such quantities of flowers would gorge the London market, and in fact no doubt would do so if all found their way there, but Liverpool, Manchester, Leeds, Birmingham, and other large towns take no inconsiderable amount.

—— THE AMERICAN SUGAR TRADE.—It is stated in a recent report on the sugar trade of the United States, that the manufacture and consumption of glucose and Grape sugar has of late grown to an enormous extent. The present production is estimated at not less than 10,000 tons a day. While the product is chiefly used by brewers, it is also largely used as a substitute for sugar in the manufacture of confectionary and mixing of syrups. "New process" sugar, also, for which there is an increasing demand, contains about 20 per cent of glucose, and it is difficult to distinguish it from the pure product of the cane, for which it is no doubt largely sold. A low grade of sugar is also being extensively manufactured by the reboiling of foreign molasses. Philadelphia is said to do the largest business in this respect, to the extent of 20,457 tons, after which comes New York with 14,500 tons. This branch of industry is, however, not on the increase. The attempts to produce raw sugar from Beet-root and Sorghum do not meet with much success. Maple sugar is still, however, produced in considerable quantities in Vermont and

some of the Western States, the annual production being estimated at about 10,000 tons. The total yield of Louisiana sugar for 1882-83—the largest since the Civil War—was over 120,000 tons.

—— Begonia jatrophæfolia.—This species is another addition to an exceedingly variable genus, remarkable at once for habit and range of size, but chiefly in shape and beauty of the leaves. In the present species they are large, palmately 5—7-lobed, deep green and splashed with bronzy markings. They are all radical and set off the flower-scapes to advantage. These are about a foot long, and terminate in dense cymes or clusters of pinkish flowers. Although these are comparatively small, yet the foliage itself is sufficient recommendation to gain its admittance to a collection of stove plants. There are some healthy flowering specimens in the Begonia-house at Kew, originally obtained from the Berlin Botanic Garden—the source from which many of these fine-foliaged plants have been received, and probably introduced to this country for the first time.

—— The Late Mr. Hinds.—We are sorry to learn that the widow and child have been left quite unprovided for. Several friends have written to express their willingness to assist. We shall be glad to help in any movement that may be made, and to receive any contributions that may be forthcoming for the help of an eminently deserving case.

—— Tomato Growing for Market.—Those who have ever seen Mr. Ladds' acres of glass at Bexley Heath will not require to be told that in whatever he undertakes to grow there are no half measures adopted. When there is a prospect of a crop being made remunerative the principle that the more grown the cheaper *pro ratione* it can be produced is acted on, be it in the case of plants, flowers, or fruit. It was in this way that Mr. Ladds this season began to cultivate this now favourite vegetable. Now, we repeat, for until within recent times there were comparatively few in the country who cared for or even would eat Tomatos. On first acquaintance taste and smell are alike to most people disgusting, yet there is nothing that we can think of so different to other articles of food that people so soon take an absolute liking to: added to which, the unanimous verdict of medical men as to their wholesomeness has gone far to popularise them. In the spring of this year a score of houses, averaging 135 feet in length by 12 wide, were built on an open piece of ground which Mr. Ladds has bought at Dartford Heath, some four miles from the Bexley establishment; these were planted with Tomatos on each side of each house, and trained up under the glass like Vines in the ordinary way, and have borne remarkably well all through the season: from 5 to 7 and as much as 8 cwt. were marketed daily, that is, six days per week. Later in the season ten more similar houses were added at Dartford Heath, and with the others kept on bearing until within a few weeks back, when the cold weather stopped them, the houses up to that time not being heated. During the summer as many plants were struck from cuttings as filled twelve of the houses at Bexley, running from 160 feet by 12, to 300 feet by 25—a row of plants on each side of the former, and four rows in the latter. These at the end of November were bearing a large quantity of fruit, and by the liberal use of fire-heat which they receive would continue so for some time. The Dartford Heath houses are now having hot-water pipes put in. The next crop which a good many of them will contain will be forced Strawberries, for which purpose 30,000 have been potted in 32-sized pots.

—— Japanese Chrysanthemum Ethel.—Among the late flowering Japanese varieties this appears to be one of the most useful. The flowers are white, and they are freely produced, and on the day before Christmas Day plants could be seen growing in an ordinary greenhouse, yielding flowers of good size and quality. There is no reason why, by means of making use of the later flowering types, Chrysanthemum flowers should not be had up to the end of January.

—— Publications Received.—*Auswahl von Ausssertropischen Pflanzen.*—This is a translation into German of Baron Ferd. von Mueller's "Select Extra Tropical Plants readily Eligible for Industrial Culture or Naturalisation." The translation has been effected by Dr. Goeze, Inspector of the Royal Garden, Griefswald, who has added some additional names.—*Di Alcune Varietà di Agrumi;* pel Dr. L. Savastano ("Descriptions of various varieties of Lemons, Limes, and Orange").

Home Correspondence.

The Royal Horticultural Society's Committees.—Your correspondent, "Ebor," p. 823, has, as he says, "not the advantage of seeing the subjects exhibited." I think his views would be much changed if he had. He goes on to speak of the prodigal way in which certificates have been granted, and a little farther on of exhibits having been "passed over with scanty notice;" in other words, complains that more certificates have not been awarded. People, unless they see the vast number of interesting plants that come before the committees in the course of the year, may think 240 certificates too many; whether this be so can only be decided by the plants being considered one by one. Happily, if we judge by the number of exhibits, and the keenness for certificates, they are not generally considered "waste paper." As to plants being neglected if sent without an attendant, I may mention the case of the Pernettya, in which prodigality was lately, in ignorance, complained of—they came unattended from County Down. Here my criticism ends, and I entirely agree with "Ebor," that "we want more genuine plant lovers, less of the commercial element," and may add that I believe the Society would be only too grateful to "Ebor" if he could point out the way to find them. It is the great difficulty to find good amateurs who know plants, and who can and will give the time to attend the meetings at all regularly. As to dividing the committees, good authorities seem to favour this. It rather strikes me as a practical difficulty that there would be many exhibits which we should not know how to class. Take, for instance, a new Lily flowered in the open border, and cut almost to the ground for exhibition. Would this be a plant or a flower? [A newly introduced species should go to the Plant Committee, a newly introduced variety of an old species to the Floral Committee. Ed.] Or, say, in the case of alpines, some of which grow best in rockwork, run their roots deep, and cannot be taken up without serious injury to the plant, which, if they were grown in pots, might be objected to as not showing the natural growth. In this case the best course is to cut off enough of the plant to show the habit, and exhibit this; but there would be the doubt whether to call it a plant or a flower. [To our thinking this should be exhibited before the Plant Committee. Ed.] *George F. Wilson.*

The Winter Moth (Cheimatobia brumata).—A few days since a sharp-eyed young observer called my attention to a moth that in the erect carriage of its wings when at rest was more like a butterfly than a moth. Proceeding along a hedgerow adjacent, hundreds of little whitish moths were seen fluttering about, to the surprise of some who did not expect such visitors at this season, and attributed their presence to the mild season. They are, however, indifferent to cold, and are very interesting from the very different appearence presented by the male and female insects respectively, the male (fig. 150, 3), being the one that attracts attention by his silvery-grey barred wings; while the female (fig. 150, 4) is inconspicuous, having only rudimentary wings. The male can fly away from danger, but protection is afforded to his mate by her inconspicuous appearance and her habit of feigning death. The female deposits her eggs on the twigs of the Hawthorn and also of fruit trees, so that in spring the tiny hairy caterpillars find an ample supply of food in the newly expanded leaves. Though so tiny they do a great deal of damage. Mr. Curtis, who gave a very interesting account of the insect in your columns so long ago as 1841, p. 812, recommeds fastening a strip of brown paper smeared with tar round the trunks of the trees. The females endeavouring to ascend for the purpose of laying their eggs will then be trapped in large numbers. Probably the tomtits would be our best allies in the extermination of this curious moth. *F.*

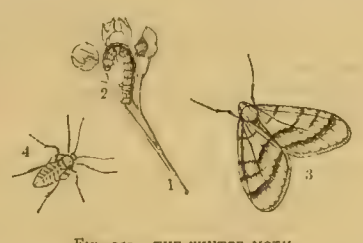


Fig. 150.—THE WINTER MOTH.

Irish Potatos—Champions.—You discuss this subject in a brief sub-leader, p. 785, and specially refer to the Champion variety, evidently keeping in mind the present state of the poorer districts, the climate, and the system of growth pursued. I am well acquainted with three-fourths of Ireland and England, north and south, and, not wholly agreeing with your views, I presume you will permit me to say why. Has the Champion Potato proved a "failure"? I have not found it so, and this is true of large districts besides this. But I must qualify my negative by explaining; and first a word about climate. "In England we have a climate that is forward and dry." I admit the counties south of London, especially those bordering on the English Channel, are more salubrious than, say, the county of Tipperary; but if you mean by England any of the northern counties, I must differ with you. Take Lancashire or Yorkshire. You have, as a rule, neither as good a climate nor as good land, generally, as in this county; but probably you refer to such Irish counties as Clare, Galway, Mayo, or Sligo on the western seaboard. Here the vast majority of the farms are cold, undrained, and, in many cases, half reclaimed or cut away bog-land, that few farmers in Sussex or Devonshire would accept a present of and live on them. You are quite right in saying the Champion is a "failure" here (Connaught), but only a "failure" as compared with the counties just named, or with, say, Tipperary or Limerick. As compared with any other variety in those western counties, the Champions—say the 1000 tons ordered from Carter's by the Lord Mayor of London—are a decided success. The real fact is, this year every other variety is more or less of a failure as compared with that variety in the West, and to which alone your climatic reference can apply. It would be quite a mistake to think that "when you are digging fairly ripened crops," say, in the southern counties, "those of the sister island are all a-growing and a-blowing." We are able to use them in the open air here the same time. For instance, though last summer was not unusually warm, I find from my diary I dug from the open field Beauty of Hebron—not the earliest variety either—the 9th June. If I had a warm south border with a wall behind to reflect back the warm rays of the sun I might have them some days earlier. I will tell you what the principal cause of the "failure" has been; in the west of Ireland principally, where it is most desirable there should be no mishap—late sowing, and consequent want of ripening or no ripening. Though I had sown our field Potatos, principally Champions and Magnum Bonums, between the middle of March and beginning of April, yet I was late. If this was so with me, having plenty of horse and hand labour, what was the state of things in numbers of other districts, especially the west and north of the island? Just this, owing to the constant dripping season and inability or unwillingness in cases to get the crop down in time, in numberless cases Potatos (Champions) were planting up to the end of April and into the middle of May. What was the result? Referring to my diary again I find here the first appearance of the blight was noticed July 11, and in a week the papers chronicled it here and there through Ireland. Why the late Potatos referred to were not more than 6 inches over the clay, and except a miracle interposed—which it never does in such cases—they could not be otherwise than a miserable failure. Our Champions or Magnum Bonums were then commencing to blossom, but they never did so, never fully ripened, and never fully matured, yet they were, if not a splendid, certainly a good crop. In spite of this want of maturation the quality has been excellent, the difficulty being to cook them without bursting. And contrary to my expectation there has not been one stone of diseased tubers to the acre. I must in justice say with us the Magnum Bonums grown side by side are equally free from disease; but neither, probably from the early blighting mentioned, gave as heavy a yield per acre as last year. If the Champion is of the best quality for table use the Magnum Bonum is decidedly the best keeper—the former we found useless after April for table purposes. One of the lessons I intend to practise this coming season, and that I think you may safely commend to your Irish readers, is universally to sow earlier, and to cover somewhat heavier, so as to meet the possibilities of late frosts. As to the Jensen remedy for blight it is not necessary for early varieties that are matured or removed before it comes, and for late Potatos and field crops it is impracticable, or, if practicable, too expensive to be useful. *W. J. Murphy, Clonmel.*

Toxicophlœa spectabilis.—I can fully endorse the remarks made on this beautiful and useful winter flowering plant at p. 754, and am surprised that it is not more extensively grown. It is a splendid thing as a specimen, but to have really good useful plants cuttings should be taken in February, put in single pots (thimbles), in strong heat. When they are rooted shift them into 60's, then into 48's, in which they will flower. I have grown them in these sized pots with three branches, each bearing from two to four of its beautiful Ixora-like trusses of pure white flowers, which are deliciously scented. The compost they do well in is peat and good fibrous loam in equal parts, one-third part of leaf-mould and sand, and a good handful of charcoal. *D. E.*

The Late Severe Weather.—The following readings were taken from two self-registering thermometers which I placed on snow in the garden here about 100 yards distant from each other:—On the morning of the 12th inst., 27° of frost; 13th, 30°; 14th, 28°; 15th, 34° of frost, or 2° below zero. On the morning of the 15th, at 10 A.M., the mercury was below zero, after which it gradually rose to 5°, and remained there during the rest of the day until 4 P.M., when an agreeable change came, and at 10 P.M. it stood at 31°, or 1° of frost. I may say the thermometers are new, one only three weeks from Messrs. Lennie, Edinburgh. *William Jamieson, Elchies, Aberlour, N.B., December 25.*

Lifting Shrubs for Forcing.—Those who lift large flowering shrubs for forcing, which take tubs or large boxes to hold their roots, will find fresh leaves of the current season excellent potting material, being very much lighter to carry about than ordinary soil or even leaf-mould, besides keeping the roots in a nice moist state for a length of time, and requiring very little watering. They ought to be rammed round the roots very firmly. *H. Henderson.*

Champion Potatos in Ireland.—I am not at all surprised at the Champion Potato not succeeding in some parts of Ireland. It may not be generally known, but vast quantities of Potatos were sent to Ireland under the name of Champions that were nothing of the kind. I know myself that large quantities of Potatos were collected in Lancashire and Cheshire, and sent over for distribution; anything that had the least approach to Champions passed for them, and Irish cultivation hastened the failure. *Alpha.*

Early Peas.—If there is one thing people who are fond of their garden pride themselves on more than another, it is in getting early Peas, to produce which there is generally much rivalry among neighbours as to who shall be first, and various are the artifices resorted to to coax them along; some sowing in boxes or on turves and placing them in heat, while others depend more on those put in during November on some border out in the open. Both plans are good, and the best way is to adopt both, for it often happens that the latter fails owing to various causes, such as sharp unsuitable weather, the persistent attacks of mice, birds and slugs, the last-named of which are quite a scourge in many places and very difficult to deal with and stop in their foraging. On light warm lands they are not so troublesome, and it is only in soil of this description that it is worth while attempting the culture of early Peas by sowing them at this season, but in gardens and districts where the conditions are favourable they are a tolerably certain crop, and one that is highly prized and pays marvellously well. To get them early in gardens there is no situation so suitable as a sloping south border, under a high wall, as there they not only have extra warmth from the sun, but shelter from the keen blasts of winter and spring, which cut and injure the young succulent tops more than frost by bruizing and damaging the leaves. In digging and preparing for them the great point is to break up the ground well and make it fine, but unless very poor manure should not be used, as it causes the Peas to grow rank and strong—a thing to be avoided, as in that state they are more tender and susceptible of suffering injury from cold. What is beneficial and does them much good is leaf-mould, a dressing of which may be dug in with great advantage, or if at all scarce a more economical way of using it is to cast a sprinkling along the drills before sowing and another after, so as to cover the Peas. This will cause them to lie dry and prevent the seed rotting, which it often does if it is not thoroughly hard and ripe through being well harvested, or if heavy rain follows quickly after the sowing. Some use cinder ashes instead of leaf-mould for the covering in, but having no vegetable matter in them they are not so useful, as there is nothing for the rootlets to feed on to help and nourish the plants. The distance at which rows of Peas should be sown depends entirely on the sorts; but as few, if any, of these grow above a yard high, the space between need not be more than 4 feet, which affords plenty of room for them to spread, and allows a full share of sun and light between to set the blooms and encourage the podding. As to kinds, after trying very many, I find none better or earlier than the old Kentish Invicta, which not only comes in as soon, or sooner than any of the others, but it has the additional merit of being nice and green when cooked, and of most excellent flavour. Next to this I should place William I., which is also a green Pea and a heavy cropper, and turns in about a week or so after Invicta. Another Pea of great merit is Day's Sunrise, which, with Advancer, another old sterling variety, should be sown at the same time as the two first named, to succeed them, as both are second earlies, and, being marrows, of superior quality. These do best in an open quarter, grown in deep, good soil, as, coming later, when the weather is warmer, they do not then suffer from drought. To shelter Peas in winter I have always found it a good plan to sow sifted leaf soil along the rows, which, from its non-conducting and frost-proof power is a great protection to the tops, as is also Whin, stuck in or pegged along the sides of the rows, where it not only breaks the cold blasts, but defies slugs and bothers sparrows by pricking them when they alight, and thus warning them off. In cases where Whin is not used these feathered marauders may be kept at bay by straining black cotton just above the Peas, and if three lines are stretched within about 2 inches of them, and the same distance apart, they will be found to act as a charm, for once the sparrows touch them the effect the unseen danger has on them is so great that they are very careful not to come near it again. In sowing Peas in pans, pots, boxes, or on turves, the middle of January is quite soon enough, as by keeping them in frames where they can have a little warmth, they soon germinate, and under glass they grow at a quick rate and become ready for transplanting. The soil most suitable for starting them in is sifted leaf-mould, which should be just moist, as the Peas must not have water, or a great many will rot. To keep them from drawing when up, it will be necessary to tilt the lights so as to give plenty of air, which will keep them hardy, and render them fit for planting, which may be done, if mild, towards the end of February or very early in March. This is most easily and quickly effected by cutting or opening out a trench along the side of a line, in the way generally done when laying in Box edgings, as then the long roots can be placed properly in a downward direction without being broken or bent. A long board for the operator to work on is a great help, as it prevents treading the ground, and saves much time and labour in putting right after. *J. Sheppard.*

Re-afforesting Ireland.—Is not this a matter deserving your warmest approval, and of every horticultural journalist, from every point of view, national, social, political, and even economical? [Most decidedly if practicable. ED.] Why spend millions, as suggested by Lord Derby, in sending able-bodied men out of the country, when a fraction of the amount would find useful employment for them in planting hardy forest trees on the hill sides, commonages, and waste lands? Does it pay? Why, here, adjacent to this town, the largest of the local landlords made more money recently by the sale of a small planted hill—£10,000 it is said—than the same would make, tilled or cultivated in any other way, until the Day of Judgment, no matter how far distant that event may be. Labour can now be had in vast districts in Ireland at a nominal rate. The nurseries are full of young trees, and if the Government cannot or will not do this, let them lend money to the landlords, or others, on proper security. Whatever is done should be done at once, as in many districts the people are unemployed. Irishmen in this way may fairly claim your assistance. *W. J. Murphy, Clonmel.* [We trust our correspondent will give us the benefit of his local knowledge in the advocacy of this most important matter. ED.]

Chrysanthemum Meg Merrilies, for Christmas Decoration.—At Christmas, when there is a great demand for cut flowers and flowering plants for decorating, the Chrysanthemum Meg Merrilies, a Japanese variety, will be found one of the most useful and desirable of subjects to grow on for the purpose. Here we grow a large quantity, having standing orders for several hampers to be sent away the day before Christmas, and at home various places to decorate with cut flowers and flowering plants, and all to be white flowers. The fact that it naturally comes into bloom at this season in a cool house, that the flowers are almost pure white, its easy culture, and its adaptation for decorative purposes commends itself. The culture of this plant has been treated of so recently in these columns, that it is unnecessary to enter into it here, beyond stating that in thinning the buds three may be left on the apex of each shoot, two of them may be removed and wired for cut flowers, the one left on would be quite sufficient for effect on the plant. *D. P.*

A Sweet-scented Viola.—We send for inspection a bunch of our new perpetual flowering sweet-scented Viola, gathered on Dec. 27 from the open ground, where they have been growing at our nurseries upon a stiff cold clay, frequently under water during heavy rains. We have never yet seen anything approach this variety for continuance of flowering as it does from one year's end to the other; and we think you will admit it makes a by no means to be despised coat flower, as the colour lightens up in a peculiar manner when the atmosphere is dull and the light bad. *James Carter & Co.* [The flowers are of good form; 1¼ inch in diameter, heavily shaded porcelain-blue in colour, and delicately scented. ED.]

Cinerarias at Midwinter. — These are now coming in with Primula, Cyclamen, Epacris, &c., to make the dead winter months gay until the first dawn of spring gives an impulse to a much more numerous group of plants. Some people grow on their plants in a close greenhouse with other and tenderer plants, where they become drawn and lanky, and often much infested with greenfly. The best place for the plants is a cold frame, with the specimens near the glass, so that the lights can be tilted when it is necessary to give air, and yet remain over the plants. This is the way to have vigorous-growing, stout-leaved plants, clean, healthy, dwarf, and compact. The dwarf close habit of Cinerarias depends as much on proper cultivation as on the "strain;" and a further advantage of having the plants in a cold frame is, that they can be so readily fumigated when they need it. They are also better kept from the ravages damp will sometimes work among them when grown in a house with other plants; the specimens can be looked over with comfort, and turned to the light as required. Besides, Cinerarias will stand a much lower temperature than is generally supposed, and we have known a collection of plants, overtaken by unexpected frost and the leaves hanging apparently half dead, to recover effectually if covered up close and kept dark until a thaw set in. Nor must Cinerarias be starved. They are fast-growing plants, and to have vigorous plants they must be well sustained at the roots. They must be carefully and effectually watered also. In dull, damp, cold weather, when occupying a pit not heated artificially, mildew is apt to become troublesome; but a little dry powdered sulphur, sprinkled over the affected parts, will arrest the progress of decay from this cause. Constant and unremitting attention is now necessary on the part of the cultivator of Cinerarias. *R.*



The Rosery.

THE WINTER PROTECTION OF ROSES. — The sharp taste of winter which we lately experienced, after a very wet autumn, will make many Rose growers turn their thoughts to the subject of protection; they will wonder whether they have done what they ought, and whether anything further is needed: a few remarks, then, on the subject may not be inappropriate at this time.

And assuredly the first question that meets us is, What do we want to protect? There are a good many persons who, despite of all warning on the subject—despite the bitter experience they have had in severe winters—do still grow standards; need I say that the difficulty of protecting them is very great. You can put litter about the roots, but what can you do with the head? The only way in which the effect of frost can be minimised is by placing branches of Fir trees or pieces of Bracken Fern amongst them, tying them loosely, and so inviting the frost to lay hold of them before touching the Rose. In severe winters even this fails, and in those of 1880 and 1881, they perished by millions in this country and in France, or dragged out a miserable existence for another year and then succumbed. I hardly think that after such experience many real rosarians care to grow them; they are to be seen in large gardens, and, strange to say, in suburban villas, dotted about on grass, and looking as much out of place as do the Araucarias and Wellingtonias in the same places, which, planted as small plants, have grown up so as to throw all the house into darkness.

Dwarfs, then, whether on own roots or budded, are our concern; and the question is in what way to protect them. It used to be said (Canon Hole and others recommend it), a good mulching of hotbed manure is the very best thing; and envious thoughts filled the minds of many to whom such a thing was an impossibility, and who, of course, thought they belonged to the "ill-used family" because they could not get it. But I question if there is anything much worse than this: we all know how sodden and heavy it is, and I cannot think that a mass of such material, placed round a Rose, and becoming (as I have seen in some winters) a solid frozen mass, can give any protection whatever. We used to be told also to scatter straw, Bracken, or some such material, amongst the branches, so as to preserve them. This used to be in the days when pruning was decided to be done, so as to bring the trees into a symmetrical shape; but, of late,

different ideas on this subject have been widely promulgated and acted on, viz., what is called hard pruning, when the whole bush is cut away down to within 3 or 4 inches of the junction, and the plant for the season created, so to speak, from this. It is manifest, then that our chief concern will be to protect the roots and the lower part of the Rose. There are several ways in which this may be done. Mr. Radcliffe, a thoroughly good rosarian, used to recommend earthing them up as far as you would do Potatos, as this not only protected the roots, but made a sort of drain for the water to escape. He used to be laughed at, but one of our very best rosarians has just recommended the very plan, in dealing with Tea Roses; and I am sure the same would hold good with regard to perpetuals. Then another plan is to place long littery manure either from the stable-yard or pig-stye round them. This is lighter, does not retain the frost so much as the hotbed manure, and is easily, at the end of the winter, either dug in or else carried away. Straw is by some recommended, but this is very untidy in a garden, as it is continually blowing about, whereas the stable litter has just enough moisture to keep it fixed.

Tender Roses on walls, in severe winters, also require some protection; but care must be always exercised, for, if they are matted up, or covered in with any close material, they are made very susceptible to frost, and started prematurely into growth, when one of our May frosts will very sadly interfere with them. All that is wanted is really to sift the frost, and therefore a covering of tiffany, Collinge's covering, or what is called scrim—the material used for damp walls to put paper on—will be sufficient. In the severe winter of 1879 and 1880 I had cut down to the ground a Rose which had well-nigh covered one side of my house. It was not protected in any way, and, planted on the east side, it of course caught the weather severely. It has started again from the bottom, and is now covered up with tiffany—not very sightly, perhaps, but gardens never look so in winter, and we must only take care that they are so taken care of as to be ready to display their beauties in spring and summer. We must look for that which is to please us in winter in the houses, and not in the open.

It has been generally supposed that Tea Roses require a much larger amount of protection than others, and in the system of cultivation hitherto adopted—when they are simply shortened and not cut hard—it is of course necessary to give them an extra amount of protection, as the wood is more easily injured; but an opinion has been gaining ground that there is no reason why they should be treated differently to the perpetuals, and that they may be cut equally hard. The same amount of protection would therefore suffice for them, so far, at least, as the southern half of England is concerned—in the north the better plan would be to take them up, lay them in closely together, and cover them with some protecting material.

I have been now treating of Roses which one has already growing in the garden, but every Rose grower during the autumn gets in fresh plants, either of newer varieties, or else of some to supply the places of others which have been lost; and a discussion has been carried on in the pages of a contemporary as to the best method of treating these. While some have maintained that they had better be at once planted, others have inclined to the opinion that it is better to lay them in, protect them with litter, and then plant at the end of February or March. It is maintained that in such a season as the present, for instance, it would not possibly do any good to plant when the ground has been so thoroughly soddened with wet, followed by a sharp frost and heavy fall of snow; it can only be on light soils that they could possibly make any progress. The advice always given has been to plant in November; but when Roses come from a distance—have perhaps been three or four days out of the ground—it is argued that it is much better to lay them in, and then, when the ground is in better condition, to plant. This has been very strenuously advocated in your own columns by Mr. Miller, of Combe Abbey, and he distinctly says that he is sure that nobody who has ever tried it once will fail to repeat the practice, his plan being to prune at the time of planting. It must still be a matter of question, but I rather fancy that a good many experiments in that way will be tried during the present season, enabling us to come to a more decided opinion. The weather has again broken, but as our severest frosts come at at the end of December and after Christmas, it is well to be prepared for all eventualities, for "forewarned is forearmed." *Wild Rose.*

Reports of Societies.

Scottish Horticultural Association.—The ordinary monthly meeting of this Association was held in 5, St. Andrew Square, Edinburgh, on Tuesday, the 5th inst., the President in the chair. Mr. Macfarlane, B.Sc., Assistant to the Professor of Botany, delivered an address on the "Nutrition of Plants." He explained the forces at work in the elaboration, ascent, and assimilation of plant food, the differences being pointed out between the modes of feeding by ordinary plants and those of parasites, such as the Dodder, Mistleto and fungi. An example of the Cuscuta nepalensis growing on Ivy was exhibited, and some discussion took place as to whether it killed its host by the mechanical operation of twining around it or by sucking its sap. Messrs. Dickson & Sons, Dalkeith, exhibited a double white Primula in fine condition; and Mr. G. Mackinlay, Kilconquhar Gardens, exhibited an elaborate plan of Dalkeith Park Gardens.

Meteorological.—The usual monthly meeting of this Society was held on Wednesday evening, the 20th inst., at the Institution of Civil Engineers, Mr. J. K. Langton, M.A., F.R.A.S., President, in the chair. The following papers were read:—1, "Popular Weather Prognostics," by the Hon. R. Abercromby, F.M.S., and Mr. W. Marriott, F.M.S. The authors explain over one hundred prognostics by showing that they make their appearance in definite positions relative to the areas of high and low atmospheric pressure shown in synoptic charts. The method adopted not only explains many which have not hitherto been accounted for, but enables the failure, as well as the success, of any prognostic to be traced by following the history of the weather of the day on a synoptic chart. The forms discussed are cyclones, anti-cyclones, wedge-shaped and straight isobars. The weather in the last two is now described for the first time. They also point out (1) that prognostics will never be superseded for use at sea and other solitary situations; and (2) that prognostics can be usefully combined with charts in synoptic forecasting, especially in certain classes of showers and thunderstorms which do not affect the reading of the barometer. 2. "Report on the Phenological Observations for the year 1882," by the Rev. T. A. Preston, M.A., F.M.S. The most important feature of the phenological year was the mild winter. The effect of this upon vegetation was decidedly favourable; and had it not been for the gales—especially that of April 28—the foliage would have been luxuriant, and therefore free from insect attacks, but the contrary effect has been produced on insect life, for the scarcity of insects, especially butterflies and moths, has been the general remark of entomologists. Mr. J. S. Dyason, F.R.G.S., exhibited a series of typical clouds in monochrome, and also a series of sketches of clouds in colour made in June, July, and August, 1882.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, DEC. 27, 1882.

Month and Day.	Barometer.		Temperature of the Air.					Hygrometrical Deductions from Glaisher's Tables 6th Edition.		Wind.		Rainfall.
	Mean Reading Reduced to 32° Fahr.	Departure from Average of 18 years.	Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years	Dew Point.	Degree of Humidity. Sat. = 100.	Average Direction.		
Dec	In.	In.	°	°	°	°	°					In.
21	29.74	−0.10	47.9	38.0	9.9	43.6	+ 4.3	38.1	81	W. : W.S.W.		0.04
22	29.46	−0.39	44.0	36.5	7.5	40.6	+ 1.8	37.9	90	W. : S.S.W.		0.03
23	29.47	−0.38	42.0	35.0	7.0	38.6	+ 0.2	32.4	78	N.W.		0.03
24	29.68	−0.18	38.2	33.0	5.2	35.9	− 2.3	30.1	81	W. : W.NW		0.00
25	29.35	−0.57	52.2	35.0	17.2	46.3	+ 8.3	44.7	94	S.W.		0.12
26	29.32	−0.57	52.0	48.0	4.0	50.2	+ 12.4	47.9	92	S.W.		0.37
27	29.43	−0.46	56.0	48.1	7.9	53.3	+ 15.7	46.9	78	S.W. : S.S.W.		0.05
Mean	29.50	−0.37	47.5	39.1	8.4	44.1	+ 5.8	39.7	85	S.W.		0.64

Dec. 21.—Rain in early morning. Fine day and night.
— 22.—Fine and bright all day. Thin rain at night.
— 23.—A dull, overcast morning. Gleams of sunshine at times during the day. Windy afternoon. Fine, clear, cold night.
— 24.—Fine day and night.
— 25.—A dull, mild, rainy day. Windy night.
— 26.—Heavy rain in early morning. Fine mid-day. Rain in evening. Fine at midnight.
— 27.—Dull, unsettled day. Thin rain. Windy at night.

LONDON: *Atmospheric Pressure.*—During the week ending December 23, the reading of the barometer at the level of the sea increased from 29.85 inches at the beginning of the week to 29.91 inches by 9 A.M. on the 17th, decreased to 29.67 inches by 3 P.M. on the 18th, increased to 30.43 inches by 9 A.M. on the 20th, decreased to 29.90 inches by 3 P.M. on the 21st, increased to 29.95 inches by midnight on the same day, decreased to 29.45 inches by midnight on the 22d, and was 29.77 inches at the end of the week.

The mean reading for the week was 29.88 inches, being 0.13 inch higher than last week, and 0.14 inch below the average of the week.

Temperature.—The highest temperature in the shade in the week was 49°.2, on the 19th; on the 23d the highest temperature was 42°. The mean of the seven high day readings was 46°.6.

The lowest temperature in the shade in the week was 33°, on the 20th; on the 17th the lowest was 43°.5. The mean of the seven lowest temperatures was 37°.2.

The greatest range of temperature in one day was 14°.8, on the 20th; the smallest was 5°.3, on the 17th. The mean of the seven daily ranges was 9°.4.

The mean temperatures were—on the 17th, 46°.5; on the 18th, 42°.8; on the 19th, 43°.5; on the 20th, 40°.5; on the 21st, 43°.6; on the 22d, 40°.6; and on the 23d, 38°.6; and these were all above their averages by 6°, 2°.6, 3°.5, 0°.8, 4°.3, 1°.8, and 0°.2 respectively.

The mean temperature was 42°.3, being 7°.4 higher than last week, and 2°.7 above the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun, was 72°.5 on the 21st. The mean of the seven readings was 60°.

The lowest reading of a minimum thermometer with its bulb placed on grass, and fully exposed to the sky, was 26°.5, on the 20th. The mean of the seven readings was 30°.2.

Rain.—Rain fell on four days to the amount of 0.12 inch.

ENGLAND: *Temperature.*—During the week ending December 23 the highest temperatures were 52°.2 at Plymouth, 52° at Truro, and 50°.3 at Brighton; the highest temperature at Hull was 45°, at Bolton was 46°.4, and at Sheffield was 47°. The general mean was 48°.9.

The lowest temperatures in the week were 30° at Hull, 30°.8 at Cambridge, and 32°.8 at Wolverhampton; the lowest temperature at Plymouth was 40°, at Truro was 37°, and at Bristol was 37°. The general mean was 34°.7.

The greatest ranges of temperature in the week were 19°.2 at Cambridge, 16°.2 at Blackheath, and 15°.8 at Wolverhampton; the least ranges were 10°.4 at Bolton, and 12°.2 at Plymouth and Bristol. The general mean was 14°.2.

The mean of the seven high day temperatures was highest at Plymouth, 50°.2, at Truro 49°.9, and at Cambridge 47°.3; and was lowest at Hull, 42°.1, at Bradford 43°.5, and at Bolton 44°.4. The general mean was 46°.1.

The mean of the seven lowest night temperatures was highest at Plymouth, 42°.7, at Truro 41°.4, and at Brighton 40°.4; and was lowest at Cambridge, 36°.2, at Hull 36°.4, and at Wolverhampton 36°.7. The general mean was 38°.6.

The mean daily range was greatest at Cambridge, 11°.1, at Blackheath 9°.4, and at Wolverhampton 8°.9; and was least at Bradford, 5°.6, at Hull 5°.7, and at Leeds 6°.1. The general mean was 7°.5.

The mean temperature was highest at Plymouth, 46°.5, at Truro 45°.6, and at Brighton 43°.7; and was lowest at Hull, 39°.3, at Bradford 40°.7, and at Wolverhampton 41°.1. The general mean was 42°.4.

Rain.—The largest falls were 1.64 inch at Plymouth, 1.09 inch at Truro, and 0.70 inch at Bolton. The smallest falls were 0.09 inch, at Cambridge, 0.11 inch at Sunderland, and 0.12 inch at Blackheath. The general mean fall was 0.50 inch. Rain fell on every day in the week at Plymouth.

SCOTLAND: *Temperature.*—During the week ending December 23, the highest temperature was 49°, at Glasgow and Paisley. The highest temperature reached at Dundee was 45°. The general mean was 47°.4.

The lowest temperature in the week was 29°, at Dundee; at Greenock the lowest temperature was 35°. The general mean was 32°.6.

The mean temperature was highest at Aberdeen, 42°, and lowest at Edinburgh, 39°.3. The general mean was 40°.5, being 1°.9 above that of the week immediately preceding, and 5°.6 above that of the corresponding week of last year.

Rain.—The largest fall was 1.78 inch, at Greenock, and the smallest fall was 0.28 inch at Edinburgh. The general mean fall was 0.83 inch.

JAMES GLAISHER, F.R.S.

Obituary.

THE death, in her ninety-sixth year, of ELIZABETH HARRIET COOKE is announced. The deceased lady was the widow of George Cooke, the well-knowu engraver, and mother of Edward Cooke, the naturalist artist who achieved such success as a landscape gardener. Those who had the pleasure to be acquainted with the deceased lady will remember the charm of her conversation, her cheerfulness, her varied information about persons, things, and events, and the keen interest she took in passing affairs up to a very advanced age.

Enquiries.

He that questioneth much shall learn much.—BACON.

CARRIAGE ROAD.—Will some of your correspondents kindly advise me as to the best method of renewing a carriage drive in the following condition? It is 350 yards long and 15 feet wide; the subsoil is sand, and there are about 5 inches of material on the top consisting of cinders and very bad gravel. I propose removing the old material and replacing it with from 6 to 8 inches of cinders and 3 inches of good gravel. There is a good deal of carriage traffic. *G. Ellis, Gr., The Dales, Whitefield, near Manchester.*

Answers to Correspondents.

DAISIES AND PLANTAINS: *An Old Subscriber.* The best of all methods of extermination is to encourage the growth of the grass by dressing it with Watson's Lawn Sand—or, better still, with nitrate of soda, applied at the rate of 100 lb. to the acre.

FLORA OF BRAZIL: *E. D.* We are not aware of any available book. Martin's *Flora* (incomplete) is in several folio volumes with numerous plates.

NAMES OF PLANTS: *A Constant Reader.* We cannot name them. Try some nursery.—*A. M., Kent.* 1, Chrysophyllum imperiale; 2, 5, and 6, probably species of Pitcairnia, which we cannot name without flowers; 3, Russellia juncea; 4, Gasteria verrucosa.—*J. A. P.* 1, Sprengelia incarnata; 2, Epacris serpyllifolia.—*W. C. B.* 1, Hæmanthus, known in gardens as H. superbus; 2, Nephrodium patens; 3, next week; 4, Platycerium alcicorne; 5, Panicum plicatum.

NEPENTHES SANGUINEA: ERRATUM.—The plant figured under the above name should have been called N. Veitchii.

SEXUALITY OF PLANTS: *Nil sub sole novum.* Yes, certainly the influence of the pollen, the process of artificial fertilisation, and the fact that female Date Palms remain sterile if not fecundated, were all known to the ancients. We cite for your benefit the following passage from Pliny, lib. xiii., cap. 4, which amply bears out the statements above made. Aristotle and Theophrastus make similar statements, and even the agency of insects was not unknown, although the method was misunderstood:—"Cætero non gignere fœminas sine maribus sponte edito nemore confirmant, circaque singulos plures; nutare in eum pronas blandioribus comis; illum erectis hispidum, affiatu visuque ipso et pulvere etiam reliquas maritare, hujus arbore excisa viduas, post sterilescere fœminas. Adeoque est veneris intellectus ut coitus etiam excogitatus sit ab homine, ex maribus flore ac lanugine interim verò tantum pulvere insperso fœmineis."

VINES: *J. E.* If done carefully there is no reason why you should not take out the few old Vines and plant young ones, but we think your best plan would be to graft or inarch them with better sorts. There is a new book on the Vine coming out shortly which will suit you.—*R. H. B.* The main stems should properly be trained under the wires, so that they can be let down easily for pruning and cleaning, and that they can be tied down before they commence growth, to encourage them to break regularly.

CATALOGUES RECEIVED.

WEBB & SONS, Wordsley, Stourbridge—Spring Catalogue of Seeds for 1883.

STUART & MEIN, Kelso—Vegetable and Flower Seeds, &c.

DICKSON & ROBINSON, 12, Old Millgate, Manchester—Select Vegetable and Flower Seeds.

CHARLES SHARPE & CO., Sleaford—Farm and Garden Seed List for 1883.

RALPH CROSSLING, Penarth, South Wales—Select List of Vegetable and Flower Seeds.

ROBERT VEITCH & SONS, 54, High Street, Exeter—Kitchen Garden and Flower Seeds.

C. FIDLER, Reading—Seed Potatos.

H. & F. SHARPE, Wisbech—Garden and Agricultural Seeds, Wholesale.

HARRISON & SONS, Leicester—Flower and Vegetable Seeds, Wholesale.

R. & G. CUTHBERT, Southgate, N.—Garden and Farm Seeds.

COMMUNICATIONS RECEIVED.—N. E. B.—C. S. T.—G. T. B. W. R.—A. D. W.—A. H.—E. V. B.—Planter (we do not know of any English nurserymen having connections in the places named).—G. S. F.—J. E.—D. C. P.—T. E.—Enquirer (next week)—H. M. P.—W. H. F.—A. M. Mackay.—T. E.—E. S.—W. I.—J. D. D.—E. P.—Count Kerchove—H. E.—J. N. C.—W. B.—Thivolet.—M. Chabaud.—R. S.—Paul & Son.

Markets.

COVENT GARDEN, December 28.

WE have no alterations to quote, there having been no market since Christmas Day. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	2 6	6 0	Grapes, per lb.	2 0	4 0
— Canadian and American, barrel	24 0	35 0	Lemons, per case	12 0	20 0
Aubergines, per doz.	4 0	..	Pears, per dozen	1 0	2 0
Cobs, 100 lb.	50	55 0	Pine-apples, Eng., lb.	2 0	3 0

VEGETABLES—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, per doz.	3 0	6 0	Herbs, per bunch	0 2	0 4
— Jerusalem, bush.	4 0	..	Horse Radish, bund.	4 0	..
Asparagus (Sprue), per bundle	1 6	..	Lettuces, Cabbage, per dozen	1 6	..
Beans, Fr. grown, lb.	0 8	..	Mint, green, bunch	0 9	..
Beet, per doz.	1 0	..	Mushrooms, p. baskt.	1 0	2 0
Bruss. Sprouts, bush.	3 0	4 0	Onions, per bushel	3 0	..
Cabbages, per doz.	1 0	2 0	— Spring, per bun.	0 6	..
Carrots, per bunch	0 4	0 6	Parsley, per bunch	0 4	..
Cauliflowers, English, dozen	2 0	4 0	Potatos, new, per lb.	1 0	..
Celery, per head	0 4	..	Radishes, per doz.	1 6	..
— per bundle	1 6	..	Rhubarb, per bundl.	0 9	..
Cucumbers, each	1 0	2 0	Seakale, per punnet	2 0	..
Endive, per score	1 0	..	Small salading, pun.	0 4	..
Garlic, per lb.	1 0	..	Spinach, per bushel	4 0	..
			Sweet Potatos, lb.	0 6	..
			Tomatos, per doz.	2 0	4 0

POTATOS:—Magnum Bonums, 130*s.* to 140*s.*; Regents, 100*s.* to 120*s.*; Champions, 100*s.* to 120*s.* per ton.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldii, doz.	12 0	24 0	Ficus elastica, each	1 6	7 0
Arbor-vitæ (golden), per dozen	6 0	18 0	Foliage Plants, various, each	2 0	10 6
— (common), dozen	6 0	12 0	Genista, per dozen	8 0	12 0
Arum Lilies, per doz.	12 0	18 0	Hyacinths, per dozen	9 0	12 0
Azaleas, per dozen	30 0	60 0	— (Rom.), per pot	1 6	2 0
Begonias, per doz.	6 0	12 0	Lily of the Valley, per pot	2 0	4 0
Bouvardia, doz.	12 0	18 0	Marguerite Daisy, per dozen	6 0	12 0
Chrysanthemums, doz.	6 0	18 0	Myrtles, per doz.	6 0	12 0
Cyclamen, doz.	9 0	24 0	Palms in variety, each	2 6	21 0
Dracæna term. doz.	30 0	60 0	Pelargoniums, scarlet, per dozen	6 0	12 0
—viridis, per doz	12 0	24 0	Poinsettia, per doz.	12 0	18 0
Epiphyllum, dozen	18 0	30 0	Solanums, per doz.	9 0	12 0
Euonymus, various, per dozen	6 0	18 0	Tulips, per dozen	6 0	9 0
Evergreens, in var., per dozen	6 0	24 0			
Ferns, in variety, per dozen	4 0	18 0			

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 blooms	0 4	0 6	Lilac (French), bun.	8 0	9 0
Arum Lilies, per doz.	8 0	12 0	Lily of the Valley, 12 sprays	1 6	2 6
Azalea, 12 sprays	1 0	2 0	Marguerites, 12 bun.	6 0	9 0
Bouvardias, per bun.	1 0	1 6	Mignonette, 12 bun.	3 0	6 0
Camellias, per dozen	3 0	6 0	Narcissus, 12 sprays	1 6	2 0
Carnations, 12 blms.	1 0	3 0	— (paper-white) Fr., 12 bunches	4 0	9 0
Chrysanth., 12 bun.	6 0	12 0	Pelargoniums, 12 spr.	1 0	1 6
— (Fr.) per bunch	0 6	1 6	— zonal, 12 sprays	0 6	0 9
— white, 12 bunches	9 0	18 0	Primula, double, per bunch	1 0	1 6
— 12 blooms	1 0	2 6	Roses (indoor), doz.	2 0	4 0
Cyclamen, 12 blooms	0 3	0 6	— (outdoor), doz.	1 0	2 0
Epiphyllum, 12 blms.	0 6	0 9	— coloured, doz.	2 0	3 0
Eucharis, per doz.	6 0	9 0	Tropæolum, 12 bun.	1 0	2 0
Euphorbia Jacquiniflora, 12 sprays	4 0	6 0	Tulips, 12 blooms	1 0	1 6
Gardenias, 12 blms.	12 0	18 0	Violets, 12 bunches	1 6	2 0
Heliotropes, 12 sp.	0 6	1 0	— French Czar, per bunch	1 6	2 6
Hellebore, or Christmas Rose, 12 blms.	0 9	1 6	— Parme (French), per bunch!	5 0	6 0
Hyacinths, 12 spikes	6 0	9 0	White Jasmine, bun.	1 0	1 6
— (Roman), 12 spr.	2 0	3 0			
Lapageria, white, 12 blooms	3 0	6 0			
— red, 12 blooms	1 0	3 0			

SEEDS.

WEDNESDAY: *Dec.* 27.—The attendance on the seed market to-day was very thin, and quite a holiday spirit was manifested. Meantime values all round exhibit extreme firmness, whilst for red seed a substantial advance is demanded. French Italian also tends upwards. Full prices are asked for Canary and Hemp seed. Other articles, in the absence of business, call for no remark. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

HAY.

Cumberland Market quotations:—Superior meadow hay, 92*s.* to 100*s.*; inferior, 65*s.* to 80*s.*; superior Clover, 112*s.* to 120*s.*; inferior, 70*s.* to 95*s.*; and straw, 38*s.* to 44*s.* per load.

POTATOS.

The latest quotations to hand are:—Regents, 100*s.* to 120*s.*; Magnums, 110*s.* to 150*s.*; Roses, 100*s.* to 110*s.*; Champions, 100*s.* to 115*s.*; Peach Bloom, 90*s.* per ton; foreign Reds, 90*s.* to 120*s.*; ditto Violets, 120*s.* to 140*s.*; ditto Blues, 100*s.* to 110*s.* per ton.

COALS.

The following are the prices current at market during the week:—East Wylam, 17*s.* 6*d.*; Ravensworth West Hartley, 15*s.* 6*d.*; Walls End—Hetton, 18*s.*; Hetton Lyons, 16*s.*; Hawthorn, 16*s.* 3*d.*; Lambton, 17*s.* 6*d.*; Wear, 16*s.*; South Hetton, 18*s.*; East Hartlepool, 17*s.* 6*d.*; South Harflepool, 16*s.* 6*d.*; Tees, 18*s.*

Government Stock.—The Exchange was closed on Monday and Tuesday; on Wednesday and Thursday Consols closed at 100⅞ to 101 for delivery, and 101 1/16 to 101 3/16 for the account.

SPECIAL NOTICE.

THE

GARDENERS' CHRONICLE

for SATURDAY NEXT, January 6, 1883, will contain a beautifully coloured

ALMANAC

(18 in. by 13 in.),

FROM AN ORIGINAL DESIGN.

W. Richards, 41, Wellington Street, W.C.

KENT, the GARDEN of ENGLAND

350,000 Fruit Trees, True to Name.

The Largest Stock of Standard Cherries in Britain.—Cherry Orchards are a paying investment.

The Largest Stock of Black Currants. A lucrative market crop.

The Largest Stock of Gooseberries and Red Currants.—These have again returned large profits per acre.

The Largest Stock of Cluster or Farleigh Damsons.—A grower takes 2500 bushels this year (when fruit is short), and sells at 13*s.* per bushel. A plantation of these will soon buy the ground they stand on.

The Largest Stock of Plums and Gages in Britain.—Many thousands of Standard and Half-Standard Pears and Apples.

The Stock of Garden, Wall, Pyramidal, and Trained Fruit Trees is equally extensive.

The Descriptive Catalogue of Fruits free for two stamps.

The Fruit Trees in these Nurseries are not equalled for vigour, freedom of growth, and abundant fibrous roots. Success in removal is certain.

THE KENT ROSES DO LIVE, because they are wonderfully rooted.

New Descriptive List free by post.

Remarkably fine H.P.'s and Teas, Standards, Half-Standards, and Dwarfs.

Evergreens, Hollies, Coniferæ, Forest Stuff —many acres—are in finest order.

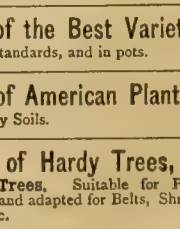
GEORGE BUNYARD & CO.,

FRUIT TREE and ROSE GROWERS,

GENERAL NURSERYMEN, FLORISTS & SEEDSMEN,

MAIDSTONE, KENT.

N.B.—Frequent Trains from London by North Kent or London, Chatham and Dover Line.

GEORGE  JACKMAN

WOKING NURSERY,

ESTABLISHED 1810. & SON, SURREY.

Select List of Choice Fruit Trees. Suitable for Large or Small Gardens.

Select List of the Best Varieties of Roses. Dwarfs, Standards, and in pots.

Select List of American Plants. For Peat and Loamy Soils.

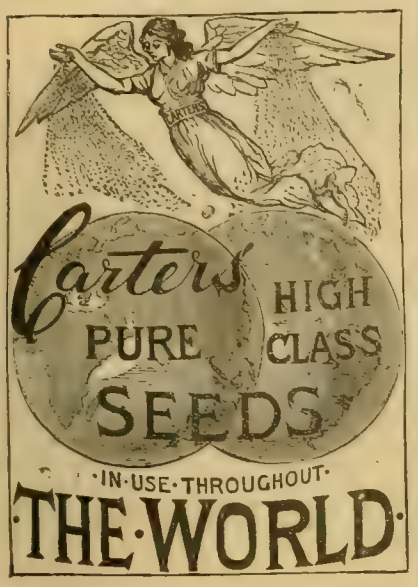
Select List of Hardy Trees, Shrubs, and Forest Trees. Suitable for Parks and Private Gardens, and adapted for Belts, Shrubberies, Screens, Covers, &c.

Select List of Conifers. For Lawns and Pleasure Grounds, also for Winter Bedding, Box and Window Plants.

Select List of Hardy Climbers. Including their celebrated Clematises.

Geo. Jackman & Son's Descriptive Catalogue free on application.

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THE QUEEN'S SEEDSMEN, { By Royal Command to } H.R.H. THE PRINCE of WALES

237 238, High Holborn, London, W.C.

The Largest Rose Gardens in England.

CRANSTON'S NURSERIES

(ESTABLISHED 1785).

ROSES ON OWN ROOTS.

A large quantity of very fine plants of Hybrid Perpetuals, Bourbons, Hybrid Chinas, &c. List of varieties, with prices, on application.

CRANSTON'S NURSERY and SEED CO.

(LIMITED),
KING'S ACRE, HEREFORD.

Special Offer.

LARCH FIRS, 2 to 3½ feet, twice transplanted.
HAZEL, 2 to 3 feet.
HYPERICUM (St. John's Wort).
Prices on application to
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TO BE SOLD CHEAP.
1 ALSOPHILA EXCELSA, 7 feet trunk, 13 fronds.
1 CYATHEA DEALBATA, 5 feet trunk, 8 fronds.
1 KENTIA FOSTERIANA, 10 feet.
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DOUBLE DAHLIAS.—20,000 Pot Roots of the above, in all the new and leading varieties.
KEYNES AND CO., The Nurseries, Salisbury.

To prevent Disappointment, Order at once
THE NEW RASPBERRY,
BAUMFORTH'S SEEDLING,
The Best Raspberry in the Kingdom.
See Testimonials.
Price, 5s. per dozen canes; 35s. per 100.
Extra strong selected, 7s. 6d. per dozen.
EDMUND PHILIP DIXON, The Yorkshire Seed Establishment, Hull.

GARDEN REQUISITES.

COCOA-NUT FIBRE REFUSE.
4d. per bushel; 100 for 25s; truck (loose, about 2 tons), 40s.; 4 bushel bags, 4d. each.
LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack, 5 sacks, 25s.; sacks, 4d. each.
BLACK FIBROUS PEAT, 5s per sack, 5 sacks 22s; sacks, 4d. each.
COARSE SILVER SAND, 1s. 9d. per bushel; 15s per half ton, 26s. per ton; in 2 bushel bags, 4d. each.
YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1s. per bushel.
SPHAGNUM MOSS, 8s. 6d. per sack.
MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO CLOTH, RUSSIA MATS, &c. Write for Price LIST. H. G. SMYTH,
17A, Coal Yard, Drury Lane (late of Castle St., Long Acre), W.C.

COCOA NUT FIBRE REFUSE, newly made, as supplied to the Royal Horticultural Society and principal Nurserymen in England, in sacks at 1s. 3d. each, or 15 sacks, 15s.; 30 sacks, £1 5s., sacks included. Truck-load, loose, 33s.; fifteen bags or more and truck-load free on to rail. Post-office order or cheque with all orders. Established 1872.—J. STEVENS AND CO., "Greyhound" Yard, and 132, High Street, Battersea, S.W.

12-oz. Sample Packets, free by post, 12 stamps.
FIBROUS PEAT for ORCHIDS, &c.—BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6s. per Truck. BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, 15s. per ton per Truck. Sample Bag, 5s.; 5 Bags, 22s. 6d; 10 Bags, 45s. Bags included. Fresh SPHAGNUM, 10s. 6d. per Bag.
SILVER SAND, Coarse or Fine, 52s. per Truck of 4 tons.
Red Sandstone ROCKWORK, £5 per Truck of 4 tons.
GRAVEL, good colour, 25s. per Truck of 6 tons.
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SUSSEX DOWN TURF, of finest quality.—For price on rail at Portslade Station (4 miles from Brighton), in large or small quantities—special quotation to the Trade—apply,
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LOAM, splendid Yellow Fibrous, 15s. 6d. per ton. Useful Brown PEAT, 22s. per ton, free to Bricklayers' Arms, S. E. R. Fine ORCHID PEAT, as supplied to the principal Orchid Growers. Prices on application.
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COCOA-NUT FIBRE REFUSE, best and pure only, 4 bushel bag, 1s. 4d.; 15 bags, 14s.; 30 bags, 25s.; sent to all parts. Truckloads 33s., free to rail.
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COCOA-NUT FIBRE REFUSE, by Chubb's Patent Process, as supplied to all the Royal Gardens and principal Nurseries of Europe; useful at all seasons. Invaluable for Potting, Plunging, Forcing, Ferneries, Strawberries, Bedding-out Plants, &c.: Destroys all Slugs and Insects.
JULY 1, 1882.—In consequence of the great scarcity of husks and enormous Continental demand for our "Refuse," we are compelled from this date to advance prices as follows, and only orders accompanied by remittance will receive attention (in rotation). We also find it necessary to caution purchasers to beware of spurious imitations and buy the genuine "Refuse" direct. Sacks, 1s. 6d. each; 10 Sacks, 13s.; 15 Sacks, 18s.; 20 Sacks, 23s.; 30 Sacks, 30s. (all Sacks included); Truck-load, free on rail, £2. Limited quantities of P.M. *Special Quality*, granulated, in sacks only, 2s. 6d. each (2 prize medals), valuable for potting and use in conservatory. Terms strictly cash with order.—To obtain the genuine article, buy direct from the Manufacturers, CHUBB, ROUND AND CO., Fibre Works, Milwall Road, West Ferry, London, E.

PEAT.—Excellent for Rhododendrons and common purposes. Delivered at Nine Elms Station, at 21s. per ton; sample bag (1 cwt.) on Rail Ringwood, 2s.
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Thomson's Vine and Plant Manure.

Manufactured by
THE LIVERPOOL HORTICULTURAL COMPANY
(JOHN COWAN), LIMITED,
The Vineyard and Nurseries, Garston, near Liverpool,
and Sold by them and all Nurserymen and Seedsmen.

This is the Manure used to produce the splendid Grapes grown by Messrs. WM. THOMSON & SON, Clovenfords.

For full particulars, see New Circular, sent post-free on application; giving extracts from Horticultural Press and from letters received by the Company from those who have used the manure.

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AMERICAN BLIGHT on APPLE TREES CURED by rubbing a wet hard Painter's brush on Gishurst Compound, and working the lather into the infected part.

GISHURSTINE, for dry feet and boot comfort, is much used by Gardeners, Farmers, Ladies, Sportsmen, and Shore-waders; is sold by Nurserymen and Oilmen, with testimonials and directions for use, in boxes, 6d. and 1s. each. Wholesale by PRICE'S PATENT CANDLE COMPANY (Limited), London.

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TOBACCO PAPER, RAG, MANURES, INSECTICIDES, GLOVES, STICKS, LABELS, BOUQUET PAPERS, GARDEN TOOLS, and all Horticultural Sundries at lowest Trade Price.
WREATHS and CROSSES of Cape Flowers, Metal and Porcelain, new and choice patterns for present season.
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ARCHANGEL, TAGANROG, PETERSBURG,
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ASTON CLINTON STRAW MATS. The warmest Coverings for Pits and Frames.
Sizes:—6 ft. 6 in. by 3 ft. 9 in., at 2s.; 6 ft. 6 in. by 4 ft. 6 in., at 2s. 2d.; 6 ft. 6 in. by 7 ft., 3s. 2d. Apply to
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Stands severe tests of Government Departments, thus proving superiority of quality. Lasts four times as long as ordinary Indiarubber Hose, Lighter in Weight, Greater in Strength, and Cheaper in the long run than any other Hose for Garden Use.
A correspondent writes:—"I have had a length of your Red-Rubber Hose in use nine years, and it is now as good as ever."
Private Customers Supplied at Trade Prices.

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THE KANGRA VALLEY TEA.



£.7.£.
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Packed on Plantations, in Packets containing 1 lb., and lined with Tinfoil, guaranteed to be absolutely pure. Can be obtained in any quantity, Wholesale (and Retail not less than 1 lb.) at the Stores of the

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Prices, 2s. 6d., 3s., and 4s. per Pound.

The Association of Planters can, with the greatest confidence, recommend the public to drink these Teas without in any way whatever blending them with others. The pure Hill Teas of India are superior to the blended China Teas, and are generally acknowledged to be equal to those unblended.

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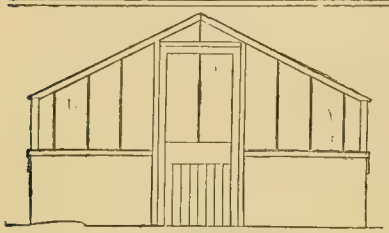
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NURSERYMEN'S GREENHOUSES,

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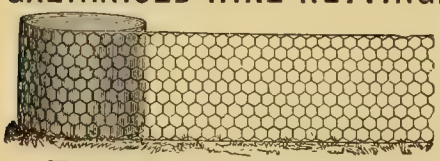
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Iron Hurdles, Bar and Wire Fencing,

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"J. B. BROWN & Co., of Cannon Street, London, maintain their reputation by a most complete collection of splendidly finished Wire Netting"—"*Ironmonger's*" *Report of Christchurch (New Zealand) Exhibition, September 2.*

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TANNED NETTING, 2 yards wide, 1½*d.* per yard; 4 yards wide, 3*d.* per yard; 2 yards wide, 10*s.* per 100 yards; 4 yards wide, 20*s.* per 100 yards. NEW TWINE NETTING, 1 inch mesh, 1 yard wide, 2*d.*; 2 yards wide, 4*d.*; 4 yards wide, 8*d.* per yard. HEXAGON GARDEN NETTING, seventy-six meshes to the square inch, 5*d.* per yard. RABBIT NETS, BAT-FOLDING NETS, on Bamboo poles, 20*s.* CLAP NETS for birds, 30*s.* complete.

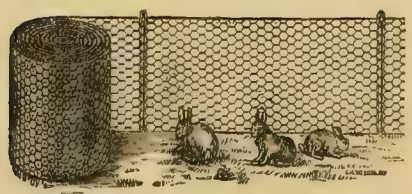
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IRON and WIRE ESPALIER, &c., &c.



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And 3, Crooked Lane, King William St., London, E.C.



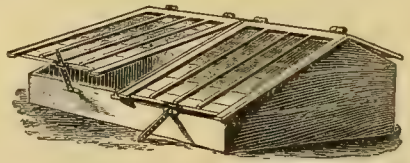
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No. 74. Three-quarter SPAN-ROOF GARDEN FRAME.

CASH PRICES—Carriage Paid.

No. 2 size	..	8 ft. long	..	6 ft. wide	..	£4 15	0
No. 3 size	..	12 ft. long	..	6 ft. wide	..	6 10	0
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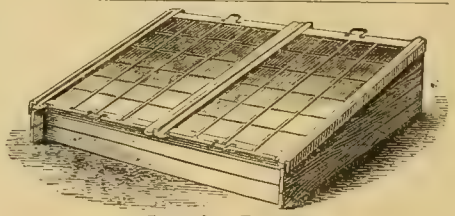
These Frames are 13 inches high in front, 24 inches high at the back, and 32 inches at the ridge. Front or back lights turn over. Set-opes are provided for ventilating. All painted four coats of best oil colour, and the lights are glazed with best 21-oz. English glass.

GREENHOUSES,

Suitable for Villas, Small Country Houses.

NEW CATALOGUE. NOW READY. FREE ON APPLICATION.

BOULTON & PAUL, NORWICH.



Cucumber Frames.

R. HALLIDAY AND CO. desire to draw special attention to their Cucumber Frames, of which they always have a large stock, ready glazed and painted. They are made of the best materials, and can be put together and taken apart in a few minutes by any one.

Prices, delivered to any station in England:—

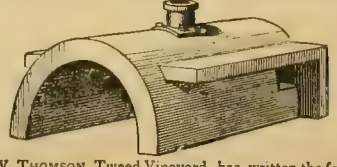
		£	s.	d.
2-light frame, 8 feet by 6 feet	Packing Cases free.	3	10	0
3-light frame, 12 feet by 6 feet		5	5	0
6-light frame, 24 feet by 6 feet		10	0	0

The glass is nailed and puttied in. Lights and framing for brick pits at proportionately low prices.

R. HALLIDAY AND CO., Hothouse Builders and Engineers, Royal Horticultural Works, Middleton, Manchester.

Silver Medal, 1874. First-class Certificate, 1867.

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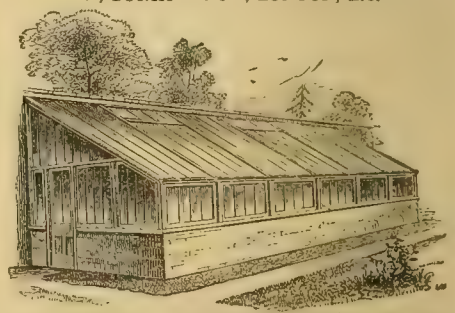
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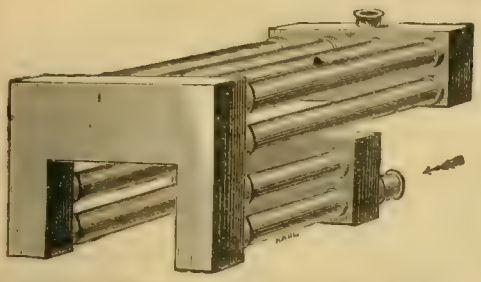
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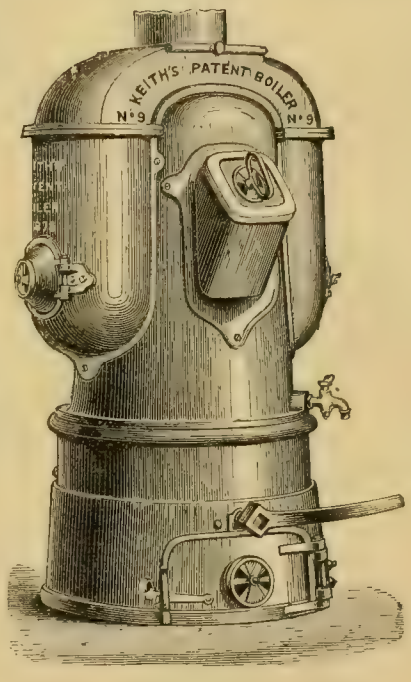
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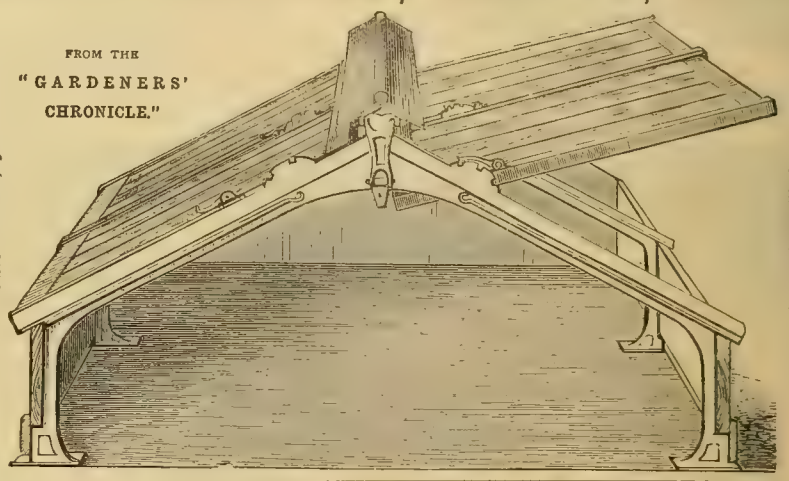
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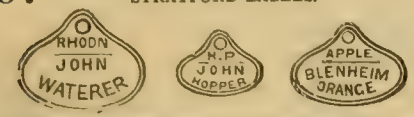
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EPPS'S (BREAKFAST) COCOA.
GRATEFUL AND COMFORTING.
"By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well-selected Cocoa, Mr. Epps has provided our breakfast tables with a delicately-flavoured beverage which may save us many heavy doctor's bills. It is by the judicious use of such articles of diet that a constitution may be gradually built up until strong enough to resist every tendency to disease. Hundreds of subtle maladies are floating around us ready to attack wherever there is a weak point. We may escape many a fatal shaft by keeping ourselves well fortified with pure blood and a properly-nourished frame."—*Civil Service Gazette.*
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Makers of Epps's Chocolate Essence.

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PRIZE STRAINS of FLORISTS' FLOWERS ARE THE BEST.

These Strains have now stood the test for upwards of a quarter of a century, and have during that time been extensively grown by all the best Cultivators and Florists throughout the world, gaining *First Prizes* wherever exhibited. They have also received the highest encomiums of the Horticultural Press, and are continually being eulogised, as the following Testimonials will show.

All the undermentioned Seeds are contained in Sealed Packets bearing my Trade Mark, without which none are genuine.

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After a careful selection of the best strains and novelties as they have appeared, extending over a period of twenty-five years, we have no hesitation in saying that this particular strain is the finest ever offered.



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	Per packet.—*s. d.*
Williams' Primula sinensis fimbriata, superb strain—Red, White, or Mixed, *1s. 6d.*, *2s. 6d.*, *3s. 6d.*, and	5 0
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Williams' Collections of Primulas.—In order to meet the increasing demand for my new Primulas, I have decided to offer mixed Collections at a cheap rate to suit small buyers. These packets contain the following varieties:—Alba magnifica, Chiswick Red, Coccinea, purple, red and white, *1s. 6d.* and *2s. 6d.* per packet.

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This wonderful strain has been selected with the greatest possible care from the dwarfest and most distinct types, and will be found unequalled for profuseness and brilliancy of colour, and the size of its flowers.



CALCEOLARIA.

TESTIMONIALS.

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"Your Calceolaria was truly grand last year."

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"I may state that the Calceolaria and Cineraria from seed imported from you turned out more than I expected of them. I may say the flowers are perfect, not a poor or inferior one to be found."

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	Per packet.—*s. d.*
Williams' superb strain of Calceolaria, ... *1s. 6d.*, *2s. 6d.*, *3s. 6d.*, and	5 0

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We have devoted an immense amount of time to the selection of this favourite flower, and, among other novelties, were the first to introduce the new Giant Strain (C. persicum giganteum). Upon this strain we are improvin g every year. This strain at the present time is the finest in the world.

Testimonials.

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"The Cyclamen I got from you last year have proved very satisfactory. They have been a mass of bloom for the last three months, and will continue for some time."

From Mr. J. WILSON, *The Gardens, Holeherd.*

"You will be glad to learn from me that your Cyclamen seed proved to be the best I ever saw—out of one packet I had seventy-five seedlings, which produced splendid blooms."



CYCLAMEN GIGANTEUM.

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Williams' Cyclamen giganteum album (New)	5 0
Williams' Cyclamen giganteum compactum (New)	5 0
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WILLIAMS' SUPERB STRAIN of CINERARIA.

Having purchased some years ago a stock of Weatherill's choice Market Strain of this lovely plant, we have since greatly improved it by the addition of new colours. It is now the finest strain extant.

TESTIMONIALS.

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"The Cinerarias supplied are a success. I have some blooms 2 inches across.

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"Your strain of Cineraria is exceptionally good, and gives great satisfaction."

From H. S. CROCKER, Esq., *Ballynagarde, Ireland.*

"The Cineraria seed proved very good this year."

From T. BRACHLE, Esq., *Husum, Schleswig, Prussia.*

"When the horticultural exhibition was held at Hamburgh I was much struck with the Cinerarias raised from your seed. Please send me a few packets."



CINERARIA.

	Per packet.—*s. d.*
Williams' superb strain of Cineraria, ... *1s. 6d.*, *2s. 6d.*, *3s. 6d.*, and	5 0
Williams' Collection of 6 superb varieties, ...	5 0
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B. S. WILLIAMS,

SEED MERCHANT and NURSERYMAN, VICTORIA and PARADISE NURSERIES, UPPER HOLLOWAY, N.

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